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INTERACTIVE INNOVATION OF KNOWLEDGE MANAGEMENT AND INFORMATICS AND ITS PRACTICAL SIGNIFICANCE

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Abstract: Entering the era of knowledge economy, China's research on library information science and knowledge management is getting more and more in-depth. Knowledge management is a new interdisciplinary management model. At present, the collision and integration with other disciplines are becoming increasingly fierce. The same is true for informatics, this article mainly studies the interactive innovation of knowledge management and informatics and its practical significance.
Keywords: Knowledge management; Informatics; Interactive innovation; Practical significance

1 THE RELATIONSHIP BETWEEN KNOWLEDGE MANAGEMENT AND INFORMATICS

In recent years, knowledge management research in our country has been very popular, but these research works are basically based on tracking the progress of foreign related research or enterprise management, but rarely involve interactive research on informatics and knowledge management. Knowledge management requires a deep understanding of informatics. To absorb fresh blood, informatics also needs to learn from relevant theories of knowledge management if it wants to achieve healthy and stable development. The two rely on each other and develop together. Therefore, it is necessary to study the interactive innovation and practical significance of the two. It is very necessary[1].
Innovation is the vitality of development in the era of knowledge economy. To a certain extent, knowledge economy can also be called innovation economy. For informatics, if it wants to achieve further development, it must also pay attention to innovation work and integrate it into Explore other areas of development as motivation and goals. The most similar feature of knowledge management and informatics is that they both take knowledge as the research object. For example, informatics mainly studies information dissemination, processing, collection, etc. After a long development process, in the library and information community , the intellectualization of knowledge research has become a trend. For informatics, knowledge has become a new starting point for integrated research, which promotes the continuous development of informatics research. In terms of knowledge management, knowledge has always been the core of its research, mainly because it can integrate information obtained from multiple channels and turn it into knowledge. Therefore, it can be seen that informatics and knowledge management are closely related.
In addition, informatics and knowledge management have another common feature, that is, they both rely on technology as a supporting condition, and the relevant content of informatics research is directly related to the development of human society. With the continuous development of information technology, it has also laid a good foundation for informatics research and promoted this research work to develop in a diversified direction. Therefore, it can be seen that the development of information technology can provide important technical support for informatics research. . The development of knowledge management also requires the support of modern advanced technology. From a certain perspective, knowledge management is an important product of the continuous innovation and development of the knowledge economy and information technology. In order to promote the continuous development of knowledge management, it also needs Integrate it with social practice, focus on technical strength, and use it as the technical pillar to continuously move forward [2].

2 THE NECESSITY OF INTERACTION BETWEEN KNOWLEDGE MANAGEMENT AND INFORMATICS

2.1 The Introduction of Knowledge Management can Further Expand Informatics Ideas

With the advent of the era of knowledge economy, knowledge has gradually become an important driving force for promoting social development and promoting human civilization. As a new interdisciplinary management model, knowledge management is currently interacting and integrating with other disciplines increasingly intensely. At the same time, It has also attracted widespread attention from academic circles. Informatics is a traditional discipline. It mainly manages information dissemination, processing, organization, etc., and has a very close connection with knowledge management. The introduction of knowledge management can further expand the research ideas of informatics. First of all, for the communication objects, intelligence is valuable knowledge, and knowledge is an important attribute of intelligence. In the past, the process of carrying out informatics research work was basically based on the record-type information management of knowledge. That is to manage explicit knowledge, and the specific content includes intelligence needs, basic theories of informatics, intelligence methods, intelligence system design, etc. In the development of modern society, informatics research work is not only carried out around explicit knowledge, but also gradually begins to study tacit knowledge, and pays more attention to human management in the practice process [3].
Secondly, user-oriented informatics research mainly refers to the development of intelligence information, which must take into account the specific needs of users and effectively integrate the two, so that informatics research can be truly

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implemented into practice and highlight its practical significance. . With the continuous development of economics, we must not only pay attention to the innovation of tacit and explicit knowledge, but also start from multiple aspects and angles, focusing on user needs. In practice, we can generally start from the following two aspects: first, to understand user information and grasp their demand trends; second, to organize user information resources and use them as a destination and Starting point, in the context of the new era, human resource management is an important direction of user-oriented informatics research. In the era of knowledge economy, people often say that competition between enterprises is actually a competition for talents. This is mainly because human intelligence is one of the most valuable intangible assets in social development. Therefore, when conducting research on informatics and knowledge management, more attention should be paid to tacit knowledge. For example, in human resource management, the problem of personnel flow is inevitable. Once this problem occurs, it will lead to the flow of knowledge, thus A series of other issues arise, such as intellectual property rights. Therefore, in user-oriented informatics research work, it is also necessary to pay more attention to human resource management, so as to provide guarantee for the healthy and stable development of informatics [4].

2.2 The Introduction of Informatics Can Further Stimulate the Development of Knowledge Management

First of all, studying knowledge management from the perspective of informatics requires people to look at the issues between knowledge management and informatics penetratingly and interactively. Informatics's collation, processing and organization of knowledge does not conform to "knowledge is Therefore, if people study knowledge management from the perspective of informatics, it is inevitable that there will be ambiguity about the principles of knowledge management. Similarly, starting to think about the same concept from different angles, for example, explaining the same problem through different subject knowledge will also cause ambiguity, just like when applying a certain concept in a certain subject field, although this application behavior There is a reason for its existence, but the applied concepts must not be copied without any changes or modifications. The same is true for informatics and knowledge management [5].

Secondly, in the context of the current network environment, knowledge management in the field of knowledge mainly refers to the reasonable allocation and optimal organization of existing resources, so as to maximize the role and value of knowledge. For example, in corporate decision-making, The application of knowledge services can complete integrated services through the enterprise center and user feedback, thereby enriching the concept of knowledge management.

Finally, intelligence technology can generally be called an intelligence system, which mainly refers to the sum of technologies applied in the process of disseminating, storing, processing, inputting and collecting intelligence. It can also be regarded as a kind of application and development of intelligence resources. Equipment and means. Through the application of intelligence technology, the development of knowledge management can be further promoted. For example, in the process of researching artificial intelligence technology, the application of intelligence technology can make the content of knowledge management more clear and specific, and it will also enable people to start from a Understand knowledge management from a new perspective [6].

3 THE PRACTICAL SIGNIFICANCE OF INTERACTIVE INNOVATION IN KNOWLEDGE MANAGEMENT AND INFORMATICS

3.1 Deepened the Research on Knowledge Management

Knowledge management is actually the orderly processing of knowledge. Whether it is from the academic or corporate perspective, for knowledge management, improving the ability to respond to external changes is actually an important manifestation of the orderly processing of knowledge. , and ordering will also become the soul of informatics research. Therefore, informatics and knowledge management develop and penetrate each other, achieving the goal of ordering knowledge in a subtle process. In addition, in the field of knowledge management, economic knowledge management is currently the most involved content. Law can cover all areas of human life, including knowledge management. Intellectual property rights are an important branch of informatics research. This article mainly It is from this aspect that we discuss the legal issues related to knowledge management. The first is patents, which represent the level of advanced productivity. When people apply for patents, it actually means that knowledge management work will be linked to patents, and this will also become a new field of knowledge management. The second is the trademark. With the continuous development of knowledge management, it will gradually evolve into a brand. In a sense, it can represent the knowledge development of the enterprise. Therefore, the comprehensive optimization of knowledge management is actually the improvement of the brand. Carry out the establishment process [7].

3.2 Further Expanded the Field Of Informatics Research

With the continuous development of modern science and technology and social economy, informatics research work must also keep pace with the times and continue to innovate. The current research work on informatics is mainly concentrated in two aspects: application and theoretical research services. The knowledge society is full of vitality. Under such a social background, informatics research must not stick to theoretical research, but should further expand the scope of research [8].

At the same time, in the development of modern society, informatics research must process and organize knowledge based on the principle of integration with the international economy. Specific contents include knowledge management, technology research, digital libraries, information construction, and databases. R&D and so on. In addition, comprehensive innovation in informatics education must also be achieved. Especially in the development of modern society, people pay more and more attention to knowledge. Therefore, comprehensive innovation and integration of informatics education will

also become an important part of information science education. important areas of scientific research. For example, in terms of curriculum setting, we can try to offer professional courses in different layers, while also reforming the previous subject system. In terms of subject frontiers, taking undergraduate education as an example, students in the library and information field have very few opportunities to be exposed to subject frontiers. Students basically summarize and summarize previous research results in school, and rarely touch subject frontiers. Therefore, from From a certain perspective, they have not really entered the field of academic research. In the future development process of information education, it is necessary to penetrate the cutting-edge knowledge of the subject. This can not only improve students' interest in learning, but also give full play to students' inherent potential. It is an important step in the innovation and reform of information education.

4 CONCLUSION

To sum up, this article mainly focuses on the interactive innovation of knowledge management and informatics and its practical significance. In short, there is a very close connection between knowledge management and informatics. Through the effective interaction of the two, it can not only promote Innovation in library and information science can also lay a good foundation for the development of my country's information industry and promote social comprehensive and healthy development of economy and science and technology.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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KNOWLEDGE GRAPH ANALYSIS OF SHARING ECONOMY RESEARCH HOT SPOTS AND TRENDS

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Abstract: In order to clearly understand the current research hot spots and future development trends in the field of sharing economy, CiteSpace V information visualization analysis software was used to conduct information mining on the research results of 5491 documents in the field of sharing economy from 2008 to 2017 in the Web of Science database. From three aspects: annual distribution of literature, keyword co-occurrence network, and research time zone trends, charts and knowledge maps are drawn to sort out the research context and intuitively reveal the research hot spots and future development trends of the sharing economy. The results of the research analysis show that the number of research documents on the sharing economy has gradually increased every year from 2008 to 2017; the research hotspots of the sharing economy can be divided into three levels: macroeconomics, national policy, and environmental protection. The research hotspots of the sharing economy mainly include model, consumption, optimization, sustainability, energy, etc.; the future research trend of the sharing economy is the study of greenhouse gas emissions.
Keywords: Sharing economy; CiteSpace V; Knowledge graph; Visualization

1 OBJECTS AND METHODS

The continuous improvement of the level of information technology has led to the vigorous development of the sharing economy, making shared bicycles, shared cars and other public goods spring up in the public's field of vision. As the global economic growth slows down, the traditional economic development model is unsustainable. To achieve new goals in the new era, new economic growth points must be explored. The sharing economy is a valuable research field in this context. The sharing economy achieves the purpose of improving the utilization efficiency of idle resources by revitalizing idle resources and sharing resources with others for a fee.
In order to facilitate domestic scholars to clearly understand the hot spots and future development trends of sharing economy research, this article uses scientific literature and knowledge graph visualization software CiteSpace V to conduct an in-depth analysis of sharing economy research [1], and conducts an in-depth analysis of the research hot spots in this field from 2008 to 2017. Sort out and summarize, objectively reveal the development trend of sharing economy research, and provide a new reference method for research in this field.

1.1 Data Source

Web of Science (WoS) is an important academic literature database in the world, with certain authority and high influence. The literature data collected in Japanese on December 3, 2018 comes from the Web of Science core collection, ensuring the relative scientificity of the research results. According to the research topic of the sharing economy, the "topic (Sharing Economic)" is limited, "the time span is 2008-2017", and "the document type belongs to Article", the documents in the Web of Science database are refined, and the invalid documents are screened and cleaned. A total of 5,491 valid documents were retrieved, the storage format was plain text, and the record content included full records and cited references.

1.2 Analysis Tools

CiteSpace was developed by Chen Chaomei, a professor at the School of Information Science and Technology at Drexel University in the United States. It uses scientometric methods to conduct visual graph analysis of database literature data and information, making complex information intuitive and excavating potential in research fields. Regular Java application software. This article uses CiteSpace V software to take documents in the field of sharing economy research as the research object. It conducts keyword co-occurrence analysis and sharing economy research trend analysis on 5491 documents refined from the Web of Science to obtain the required knowledge map and clarify Research hotspots and future development trends in the field of sharing economy.

2 RESULTS AND ANALYSIS

2.1 Annual Distribution of Documents

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Through subject search in Web of Science, 5491 documents were retrieved, and these 5491 documents were initially sorted out. As can be seen from Figure 1, the number of research documents on the sharing economy has gradually increased every year from 2008 to 2017. The number of articles published in 2017 was as high as 972, which was 3.25 times the number of articles published in 2008, indicating that the field of sharing economy research is developing rapidly. It has become a hot topic that scholars pay attention to.

2.2 Keyword Co-occurrence Analysis

Keywords are words that highly summarize the main purpose of the article, condense and refine the core content of the article, and can reflect the core idea of the article. Keywords that appear more frequently in the article can reflect the research hot spots in this field [2]. Import the data into CiteSpace software, select "Keyword" as the node, select Top N=30 as the threshold, conduct keyword co-occurrence analysis, and obtain the research hot spots in the field of sharing economy after sorting, as shown in Figure 1 and Table 1 below.

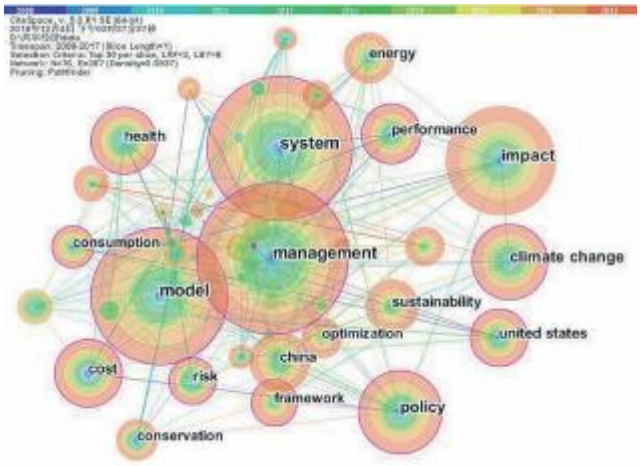

Figure 1 Keyword co-occurrence map in the field of sharing economy

Table 1 High-frequency keywords in the field of sharing economy research

Serial Number	Key words	Frequency	Centrality
1	Management	351	0.12
2	System	332	0.12
3	Model	322	0.19
4	Impact	255	0.10
5	Policy	196	0.17
6	Climate Change	176	0.10
7	Cost	160	0.14
8	Health	157	0.19
9	China	150	0.07
10	Performance	142	0.12
11	United States	140	0.11
12	Sustainability	129	0.04
13	Energy	126	0.06
14	Risk	111	0.10
15	Framework	109	0.12
16	Conservation	104	0.06
17	Consumption	102	0.16
18	Optimization	100	0.05
19	CO_2 Emission	93	0.09
20	Economic Growth	87	0.07

As can be seen from Figure 2, management, system, and model are the three most critical nodes in the field of sharing economy research. Through combing and studying the literature, we found that the management in the hot spots of sharing economy research is mainly about human resource management. Human resource management in the sharing economy mainly includes two aspects. On the one hand, it is to form a professional team to be responsible for the execution of the overall model. On the other hand, it is to develop a series of targeted management methods and management concepts for the idle resources of the shared platform. The sharing economy is an economic model of "Internet +". The sharing platform uses the network system to accurately match the supply side and the demand side at a lower price in the market [3]. The hot models in the sharing economy research mainly explore and study the sharing economy business models that appear in many industries, such as "Airbnb", "Uber" and other shared enterprise models [4].

When the value of keyword centrality is greater than or equal to 0.1, it means that the keyword has strong centrality and plays a pivotal role in the cooperation network [5]. In Table 1, the words with the highest centrality are mode and health, and their centrality is as high as 0.19, indicating that the two keywords mode and health have a strong centrality and have a hub status in the research cooperation network of the sharing economy. Jeremy Rifkin, the founder of the sharing economy, defines the sharing economy as: Sharing basic commodities, green energy, and services in a nearly free manner is a development model with good ecological benefits.

It is also a good model of sustainable economic development. The sharing economy is characterized by low carbon and environmental protection, which can greatly reduce waste and pollution caused by consumption [6]. Reducing pollution by practicing shared consumption methods is sharing health, so shared health is one of the main research directions in the sharing economy.

According to Table 1, the research hot spots of the sharing economy can be divided into three levels: 1) Macroeconomic level, hot keywords include management, system, model, cost, performance, consumption, optimization, and economic growth; 2) National policy level, hot topics Keywords include policy, impact, China, United States, risk, framework; 3) Environmental protection level, hot keywords include climate change, health, sustainability, energy, protection, and carbon dioxide emissions.

2.3 Analysis of Sharing Economy Research Frontiers

Keywords represent research hotspots in different time periods. By using keywords to generate a time zone situation map of the sharing economy research field from 2008 to 2017, we can intuitively see the development process of the sharing economy in recent years and the changes in research hotspots and research frontiers. relation. The node in the upper right corner of the graph represents the frontier of economic sharing research and is an important research trend in the future of the sharing economy.

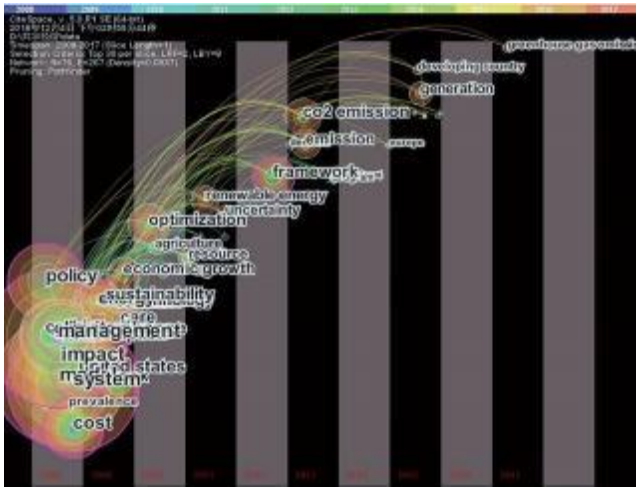

Figure 2 Frontier time zone situation map in the field of sharing economy research

In Figure 2, the development context of the sharing economy research field from 2008 to 2017 can be divided into three stages. The 2008-2009 macroeconomic research stage, with hot topic terms such as management, policy, consumption, etc.; 2010-2013 resource utilization research In the environmental protection research stage from 2014 to 2017, its hot topic terms include carbon dioxide emissions, developing countries, greenhouse gas emissions, etc. Research has been continuously expanded on the basis of macroeconomic research on the sharing economy since 2008, and many research hotspots have also continued to change, such as energy, gas emissions, etc., indicating that the research trend of the sharing economy is in line with the development needs of the times. Many scholars believe that the relationship between the sharing economy and environmental protection is a harmonious and simultaneous development. For

example, Sajid Javid's view on the sharing economy is: The sharing economy can utilize resources in a better way and has a positive effect on environmental protection. In Map 3, the corresponding node in 2017 is greenhouse gas emissions, indicating that the future research trend of the sharing economy is about the direction of greenhouse gas emissions.

3 CONCLUSION

This article uses the information visualization software CiteSpcc e V to The 5,491 research documents on the sharing economy from 2008 to 2017 in the Science core collection are used as a data pool. Keyword co-occurrence analysis and research frontier analysis are conducted on the sharing economy research documents based on objective data. The results of this study show that:

(1) The number of research documents on the sharing economy has gradually increased every year from 2008 to 2017. The number of articles published in 2017 was as high as 972, which was 3.25 times the number of articles published in 2008. The field of sharing economy research has developed rapidly and has become a hot spot for scholars. subject.

(2) Through keyword co-occurrence analysis, it can be seen that the research hotspots of the sharing economy can be divided into three levels: macroeconomics, national policy, and environmental protection. Sharing economy research hotspots mainly include management, system, model, cost, performance, consumption, optimization, economic growth, sustainability, energy, etc.;

(3) Through research frontier analysis, it can be seen that research has continued to expand on the basis of macroeconomic research on the sharing economy after 2008, and many research hotspot directions are also constantly changing. The future research trend of the sharing economy is about the direction of greenhouse gas emissions.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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FACTORS INFLUENCING EDUCATORS' ENGAGEMENT IN THE SHARING OF EDUCATIONAL KNOWLEDGE IN THE DIGITAL SPHERE

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Abstract: At present, information resources in cyberspace have become an effective supplement for people's acquisition of real-space knowledge, but their scientificity and authoritativeness need to be discussed. Educators have advantages in the field of knowledge sharing on educational topics, but the participation rate in actual activities is not high. With the help of structural equation model, this article conducts an empirical investigation to explore the influencing factors of educators' participation in public knowledge sharing behavior. It is found that action control cognition has a positive impact on both knowledge sharing intention and behavior stages, and that sense of responsibility and outcome expectations will promote educators' participation in public knowledge sharing. To generate knowledge sharing intention, self-efficacy and pseudoscientific risk perception have no significant impact on knowledge sharing intention, while sharing intention and coping plan will have a positive impact on knowledge sharing behavior. On this basis, it is proposed that to improve the knowledge sharing participation of educators, the sharing platform needs to create a relaxed atmosphere and enhance behavioral control cognition; to improve the education staff's sense of responsibility and performance expectations for knowledge sharing; in the face of hot issues that urgently need to be solved, units still need to overall planning; a shared response plan needs to be made consciously in advance.
Keywords: Knowledge sharing; Sharing intention; Sharing behavior; Structural equation model

1 INTRODUCTION

With the rapid development of cyberspace and its penetration into daily life, obtaining information from cyberspace has become an extremely important part of people's lives and work. People's ways of seeking solutions to problems are also changing, and they believe that popular science videos, useful information summaries, and questions and answers in cyberspace are supplements to the acquisition of educational knowledge in real space. However, the scientificity and authoritativeness of cyberspace information are open to question. Some self-media accounts appear to be authoritative and professional, but in fact they piece together content that has not been scientifically proven, making it difficult for people who want to obtain educational knowledge in cyberspace. Obtain the required information accurately and effectively. Universities, scientific research institutions, front-line teachers in primary and secondary schools and other entities have inherent advantages in resources, personnel, platforms, environment, etc. in sharing knowledge on educational topics. Among them, educational researchers can track the latest developments in this subject at home and abroad in a timely manner. In the eyes of the public, it is synonymous with science and authority; front-line teaching and teaching and research personnel have rich teaching and practical experience, so it is easier to achieve good communication effects [1]. Therefore, how to stimulate educators' willingness to participate in knowledge sharing in cyberspace and how to promote educators' continuous participation in knowledge sharing activities have become the focus of attention in the field of educational knowledge dissemination research and practice.

2 RESEARCH REVIEW AND EXISTING PROBLEMS

If we want to explore the factors that influence educators' participation in public knowledge sharing activities, we must have an overall understanding of academic research on the public knowledge sharing behavior of scientific researchers or professional groups. At present, research on this topic is mainly presented in terms of concepts such as knowledge contribution, knowledge sharing, and scientific communication. In order to unify the concept, this study is elaborated in terms of knowledge sharing. Reviewing past research, from the perspective of research topics, the academic community has conducted extensive and in-depth discussions on the objects, media and influencing factors of knowledge sharing among scientific researchers. Specifically, the knowledge sharing audience of scientific researchers is mainly divided into two categories: one is the internal personnel of the scientific research community, including members of the scientific research knowledge community of universities, scientific research teams, journal editors and journalists; the second is the public, that is, science popularization The main audience for popular science content such as papers and popular science videos [2-3]. In recent years, foreign scholars have compared the different obstacles existing in knowledge sharing between academic and non-academic groups. They believe that differences in time and workload, communication methods, cognitive basis of shared objects, and media technology in knowledge sharing among non-academic groups The use of, and how to deal with controversial and sensitive topics are important influencing factors [4]. Secondly, because scientific researchers share knowledge with different objects, the media used for sharing are also different, which mainly include academic journals and virtual academic communities for scientific research groups [5], as well as new media or knowledge question and answer communities for the public.

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Finally, from the perspective of the influencing factors on knowledge sharing behavior, based on the above different research scenarios, the researchers analyzed the types of knowledge sharing, individual internal psychological factors, practical appeals, funding initiatives, participation experience, cost structure, incentive policies, etc. This paper identifies the factors that influence the participation of scientific researchers and professional groups in knowledge sharing [6], and provides a reference basis for educators to analyze the influencing factors of knowledge sharing.

After combing through the existing research, we can conclude that there have been useful explorations at home and abroad on knowledge sharing among scientific researchers and other professional groups, but there are still areas worthy of further discussion. Existing explorations have mainly focused on the factors that trigger knowledge sharing intention, and few people are interested in the mechanism of intention-driven knowledge sharing behavior. With the deepening of research, relevant scholars believe that the two stages of "intention-behavior" can be used to present the occurrence mechanism of knowledge sharing behavior. Compared with other behavior occurrence theories, such as rational behavior model and planning model, this theory has The investigation of related factors is more comprehensive and has more explanatory power [7]. In summary, this study will explore the public knowledge sharing behavior of educators in cyberspace based on the action process orientation.

The influencing factors of educators' participation in public-facing knowledge sharing behaviors are analyzed with the help of structural equation model, which provides theoretical guidance for a more reasonable development of educators' participation in cyberspace knowledge sharing activities.

Lead and support.

3 RESEARCH HYPOTHESES

This study attempts to analyze the influencing factors in educators' knowledge sharing activities from the "intention-behavior" process. Based on this, using this theory

The following research hypotheses are put forward:

3.1 Intention Generation Stage

The extent to which educators are willing to participate in knowledge sharing is the knowledge sharing intention that needs to be measured. Based on existing research results and the special scenario of online knowledge sharing among teachers and staff, this study selected self-efficacy, outcome expectations, and educational pseudoscience risk perception as influencing factors to explore.

Bandura, a famous contemporary American psychologist, defined self-efficacy as "people's degree of confidence in their ability to use their skills to complete a certain work behavior." Educators in online virtual communities spontaneously engage in knowledge sharing by answering questions from community members and proactively publishing relevant information resources in an environment that is not their job and unfamiliar to them. The degree of confidence in this behavior is the self-efficacy of educators in cyberspace knowledge sharing. Researchers have also confirmed that individual self-efficacy will positively affect knowledge sharing intention [8]; there is reason to believe that the higher the confidence that educators have in their own professional knowledge structure, the easier it is to have the intention to share knowledge in cyberspace. Therefore, the hypothesis is proposed:

H1: Self-efficacy has a positive impact on educators' intention to share knowledge in cyberspace

Hu Changping [9] defined outcome expectations as an individual's expectations for status, prestige, attention, knowledge, help, etc. obtained after performing a behavior. Outcome expectations are the main driving force for knowledge sharing in cyberspace from the perspective of social exchange theory. Some researchers have found that personal outcome expectations have a significant positive impact on the knowledge sharing intentions of online community members [10]. Therefore, the hypothesis is proposed:

H2: Outcome expectations have a positive impact on educators' intentions to share knowledge in cyberspace

Studies have proven that the higher the risk perception ability of knowledge sharers, the easier it is to participate in knowledge sharing and share risk information with others. For example, some researchers believe that when a knowledge sharer has a higher risk perception and identification ability of the environment and related information, the greater the possibility of being willing to share the risks and harmful consequences of this information with others. [11] The theoretical literacy and practical experience of educators provide them with favorable conditions for sensing and identifying the risks of pseudoscientific information disseminated in cyberspace in fields such as parenting styles and educational methods. Based on this, it is proposed that the stronger the educator's risk perception of educational pseudoscience, the easier it is for them to have knowledge sharing intentions. Therefore, the hypothesis is proposed:

H3: Pseudoscience risk perception ability has a positive impact on educators' intention to share knowledge in cyberspace

Sense of responsibility is the emotional attitude of educators regarding their responsibilities and the conscious fulfillment of their knowledge sharing activities in cyberspace. Practitioners such as doctors, educators, and scientific researchers have high industry knowledge barriers, and their professional attributes also have a strong sense of social responsibility. There is a significant correlation between sense of responsibility and knowledge sharing behavior. For example, based on the perspective of social identity, knowledge sharers in virtual communities realize the superiority of their relatively rich knowledge reserves, and the resulting sense of professional pride and responsibility motivates scientific researchers to make knowledge contributions [12]. It can be concluded that the stronger the sense of responsibility of network users, the more conducive it is to promoting the development of the network.

User knowledge sharing. Therefore, the hypothesis is proposed:

H4: Sense of responsibility has a positive impact on educators' intention to share knowledge in cyberspace

3.2 Behavior Generation Stage

Once educators form behavioral intentions for knowledge sharing in cyberspace, it means that the intention generation stage ends and then enters the behavior generation stage. In the process from generating intentions to generating behaviors, educators need to maintain knowledge sharing intentions, adopt response plans, and take actions to control cognition to promote the generation of expected behaviors.

A response plan is a plan in which educators anticipate the obstacles they may encounter and how they anticipate overcoming them during the process of knowledge sharing in cyberspace. Although knowledge sharing intention is an important force in realizing knowledge sharing behavior, this process does not occur in an independent vacuum environment. There may also be other behavioral intentions or needs that may hinder the realization of the goal. Researchers believe that coping plans can prevent other intentions or obstacles, which ultimately affect the execution of the action plan [13]. Therefore, the hypothesis is proposed:

H5: Knowledge sharing intention has a positive impact on educators' coping plans.

Knowledge sharing behavior refers to educators providing relevant experience, knowledge and skills in cyberspace to help others, thereby increasing knowledge, solving problems, etc. [14]. Researchers use the concept of "intention-behavior" to explain the internal decision-making process of individuals making knowledge sharing behavior, and believe that knowledge sharing intention has a significant positive impact on knowledge sharing behavior [15]. For example, personal health behavior intentions can have a positive effect on coping plans for exercise. At the same time, a reasonable and complete response plan also has a positive effect on promoting the occurrence of exercise behavior [16]. In virtual communities, healthcare workers' coping plans for knowledge sharing positively affect knowledge contribution behavior. Although existing research has focused on the medical and health field, there is also the problem of contrast between individuals' strong intention to participate in activities and weak execution. its total knowledge

The issue of sharing is of reference significance. Therefore, the hypothesis is proposed:

H6: Knowledge sharing intention has a positive impact on educators' knowledge sharing behavior

H7: Coping plans have a positive impact on educators' knowledge sharing behavior

In the theory of planned behavior, an individual's behavioral control cognition represents the extent to which he/she can perform controllable behaviors. When educators have an enhanced awareness of their control over knowledge sharing-related behaviors in cyberspace, it will promote specific actions of knowledge sharing. Existing research has shown that action control cognition has a significant impact on students' information adoption intention, students' learning motivation and behavior, and other stages from motivation to intention decision-making.

positive impact. Therefore, the hypothesis is proposed:

H8: Educators' action control cognition has a positive impact on cyberspace knowledge sharing behavior

H9: Educators' action control cognition has a positive impact on cyberspace knowledge sharing intention

Based on the above assumptions, the study constructed a research model of influencing factors of knowledge sharing among cyberspace educators.

4 QUESTIONNAIRE DESIGN

In order to ensure the content validity of the questionnaire, this study is based on mature scales on the topic of cyberspace knowledge sharing at home and abroad, and makes appropriate adjustments and modifications based on the professional characteristics of educators. The research questionnaire (Table 1&2) was designed as a five-point scale and measured the degree of agreement with the relevant issues (5 means strongly agree, 1 means strongly disagree). Due to certain quality and trust issues in open knowledge community resources, and the anonymity of the user group, it is impossible to confirm whether the knowledge sharer is an educator. This study chose to obtain research samples from universities, primary and secondary schools, education administration departments, etc. to ensure the quality and representativeness of the sample data. In the end, 1043 online questionnaires were collected. After excluding questionnaires that took less than 30 seconds to fill out, a total of 896 valid questionnaires were obtained, with an effective rate of 85.9%. There were 421 males and 475 females among the subjects; 582 primary and secondary school teachers, 203 university teachers, and 111 staff members of educational research institutions and educational administration departments. Distribution of education level: 519 people have bachelor's degree, 288 people have master's degree, and 89 people have doctorate; the age of the subjects is 70 people under 26 years old, 113 people between 26 and 30 years old, 329 people between 31 and 40 years old, 368 people between 41 and 50 years old, 51 people —16 people are 60 years old; 31 people have participated in cyberspace knowledge sharing for less than 6 months, 184 people have been from 6 months to 1 year, 169 people have been from 1 year to 2 years, and 512 people have been participating in cyberspace knowledge sharing for more than 2 years.

Table 1 Measurement items of variables

Variable	References	Question	Question Content
Self-Efficacy		SE1	Whether or not to share my knowledge in cyberspace is primarily up to me
		SE2	It is easy for me to share my educational theory and practical knowledge in cyberspace
		SE3	I have confidence in knowledge sharing in cyberspace

	Kyra Hamilton et al[17]	SE4	I have complete control over whether my knowledge is shared in cyberspace
	Janet Yang et al[11]	ER1	If knowledge sharing in the field of education is carried out in cyberspace, I think we can gain more recognition and respect.
Expected Results		ER2	If knowledge sharing in the field of education is carried out in cyberspace, I think it can help online media maintain its influence.
		ER3	If knowledge sharing in the field of education is carried out in cyberspace, I think it can help other groups in cyberspace enrich their knowledge reserves.
		PRP1	I feel that the current cyberspace education information and knowledge are mixed and the quality is not high.
Pseudoscience Risk Perception Ability		PRP2	I'm worried that some people will easily believe some educational pseudo-scientific information.
		PRP3	I feel that mixed educational information and knowledge is a serious risk to the public

Table 2 Measurement items of variables

Variable	References	Question	Question Content
	Kyra. Hamilton et al[17]	RE1	I believe it is my responsibility to share relevant knowledge in the field of education in cyberspace
Sense Of Responsibility	Janet Yang et al[11]	RE2	Even if other jobs and activities are beneficial to me, I think it is not right to interrupt and leave the knowledge sharing in cyberspace now.
		RE3	I think I need a long term educational knowledge sharing event in cyberspace
		SI1	I anticipate that I will share knowledge in cyberspace
Shared Intent		SI2	I am convinced that I will share knowledge in cyberspace
		RP1	If my job or other activities affect my original plan to share knowledge in cyberspace, I will make corresponding response plans in advance.
Response Plan		RP2	If difficulties arise that hinder sharing activities, I have a specific response plan to continue knowledge sharing
		RP3	I also know what to do if knowledge sharing is not carried out according to the original time, frequency, etc.
	Liu Rui et al[7] Zhou Junjie et al[18]	AC1	My knowledge structure will have an impact on my knowledge sharing in cyberspace
Action Control Cognition		AC2	My ability to express myself will have an impact on my knowledge sharing in online space
		AC3	The resources I have will have an impact on my knowledge sharing in online space
		AC4	My judgment of the difficulty of a sharing task will have an impact on my knowledge sharing in cyberspace
		SB1	I will take the initiative to share knowledge in online space
Sharing Behavior		SB2	I devote myself to sharing knowledge in the field of education in cyberspace
		SB3	I will spend a certain amount of time sharing knowledge in the field of education in cyberspace

5 STRUCTURAL EQUATION MODEL ANALYSIS

5.1 Measurement Model Analysis

5.1.1 Reliability

This study used Cronbach's coefficient to test the reliability of the scale used. The confirmatory factor analysis results are shown in Table 2. The Cronbach's coefficient of each variable is greater than 0.9, which is higher than the test standard of 0.7, indicating that the measurement scale of each variable has high reliability and can effectively measure each variable.

5.1.2 Convergent validity

This study uses three indicators of loadings, combined reliability and average variance extracted value of confirmatory factor analysis as the basis for evaluating the convergent validity of the model. The factor loadings of each measurement item are shown in Table 3. The standard factor loadings of all measurement items are greater than 0.9. The combined reliability of the latent variables represented by each measurement item is above 0.9. The average variance extracted values of each variable are within 0.8 or above. It shows that the measurement model meets the requirements of various indicators.

Table 3 Confirmatory factor analysis results

Variable	Question	Standard Factor	LoadCronbach's α	Cr Value	Ave Value
SELF-EFFICACY	SE1	0.703	0.959	0.911	0.721
	SE2	0.923			
	SE3	0.892			
	SE4	0.861			
EXPECTED RESULTS	ER1	0.754		0.874	0.699
	ER2	0.867			
	ER3	0.882			
PSEUDOSCIENCE RISK PERCEPTION ABILITY	PRP1	0.857		0.898	0.746
	PRP2	0.876			
	PRP3	0.859			
SENSE OF RESPONSIBILITY	RE1	0.838		0.877	0.707
	RE2	0.721			
	RE3	0.948			
SHARED INTENT	SI1	0.929		0.867	0.767
	SI2	0.819			
RESPONSE PLAN	RP1	0.896		0.932	0.820
	RP2	0.944			
	RP3	0.876			
ACTION CONTROL COGNITION	AC1	0.869		0.942	0.804
	AC2	0.905			
	AC3	0.889			
	AC4	0.922			
SHARING BEHAVIOR	SB1	0.884		0.895	0.740
	SB2	0.852			
	SB3	0.845			

5.1.3 Discriminant validity

from Table 4, the latent variables in this study have high discriminant validity. The square root of the AVE value of each variable in this study is greater than its correlation coefficient, indicating that each variable has good discriminant validity.

Table 4 Discriminant validity test results

	Self-Efficacy	Expected Results	Sense OfSharing Responsibil Behavior ity		Shared Intent	Perceived Risks Of Pseudoscience	Response Plan	Action Control Cognition
Self-Efficacy	0.849							
Personal Outcome Expectations	0.756	0.836						
Sense Of Responsibility	0.476	0.619	0.841					
Sharing Behavior	0.535	0.569	0.579	0.861				
Shared Intent	0.630	0.720	0.730	0.704	0.876			

Pseudoscience Risk Perception Ability	0.343	0.377	0.343	0.235	0.332	0.864		
Response Plan	0.523	0.559	0.469	0.807	0.691	0.202	0.906	
Action Control Cognition	0.505	0.562	0.563	0.829	0.673	0.209	0.873	0.897

5.1.4 Structural model analysis

The results of the model fitness test are shown in Table 5. The fitness indicators of the model all reached the ideal level, and the model fit well. The study used Amos 24.0 software to test the structural equation model. Educators' outcome expectations (β=0.247, p<0.05), sense of responsibility (β=0.332, p<0.001), and action control cognition (β=0.342, p<0.001) have a significant impact on knowledge sharing intentions in cyberspace. has a positive impact, assuming that H2, H4, and H8 are established. Educators' self-efficacy (β=0.136, p=0.146) and educational pseudoscience risk perception (β=-0.016, p=0.729) have no significant positive impact on knowledge sharing intention in cyberspace, hypothesis H1, H3 is not established. Educators' cyberspace knowledge sharing intention has a significant positive impact on coping plans (β=0.785, p<0.001), and hypothesis H5 is established. Educators' knowledge sharing intention in cyberspace (β=0.174, p<0.05), action control cognition (β=0.84, p<0.001), and coping plan (β=0.002, p<0.01) have an impact on knowledge sharing behavior There is a significant positive impact, and hypotheses H6 and H9 are established. There is no significant positive impact on knowledge sharing behavior in cyberspace. Hypothesis H7 does not established.

Table 5 Model fitness test results

Common Indicators	χ2	Df	p	Chi-Square Degree Of Freedom Ratio χ2/Df	Gfi	Rmsea	Rmr	Cfi	Nfi	Nnfi
Judgment Criteria	-	-	>0.05	<3	>0.9	<0.10	<0.05	>0.9	>0.9	>0.9
Value	555.477	255	0	2.178	0.811	0.078	0.037	0.938	0.892	0.927
Other Indicators	TLI	AGFI	IFI	PGFI	PNFI	SRMR	RMSEA 90% CI			
Judgment Criteria	>0.9	>0.9	>0.9	>0.9	>0.9	<0.1	-			
Value	0.927	0.759	0.938	0.636	0.758	0.046	0.069 ~ 0.086			

6 RESULTS AND DISCUSSION

This study uses the method of structural equation modeling to analyze the impact of various influencing factors on educators' knowledge sharing behavior in cyberspace.
The following conclusions are drawn comprehensively:

6.1 Action Control Cognition has a Significant Positive Impact on the Entire Process of Knowledge Sharing

In the structural equation model analysis, action control cognition has a significant positive impact on educators' online knowledge sharing intentions and behaviors. In particular, the path coefficient of the influence of action control cognition on knowledge sharing behavior is relatively high (β= 0.84, p<0.001). Educators' behavioral control cognition is their judgment of their own professional knowledge structure, sharing content methods, and their level of competence in possible future cyberspace knowledge sharing activities when making knowledge sharing decisions in cyberspace. This judgment is based on the relevant practical experience of educators and the experience of the difficulty of current relevant work tasks. When educators perceive that behavioral control cognitions are consistent with expected standards of behavior, behavior is enhanced
Intention and direct action drive practical action.

6.2 Sense of Responsibility and Result Expectations are the Main Reasons for Knowledge Sharing Intention

First, the structural equation model analysis results show that in the intention generation stage, sense of responsibility (β=0.332, p<0.001) and outcome expectations (β=0.247, p<0.05) have a significant positive effect on educators' intention to participate in cyberspace knowledge sharing. impact, which is consistent with previous research. Social responsibility is a basic requirement of the teaching profession. This is reflected in the fact that even knowledge sharing on non-work field and non-work practice network platforms has an impact on their behavioral intentions. At the same time, this study shows that educators will form their own outcome expectations before knowledge sharing, and positive outcome expectations can strengthen the generation of their own knowledge sharing intentions. Both affect education
The main reason why workers share knowledge online.

6.3 Self-Efficacy and Pseudoscientific Risk Perception have no Significant Impact on Knowledge Sharing Intention

In the structural equation model analysis, the role of self-efficacy and risk perception of educational pseudoscience on educators' intention to participate in cyberspace knowledge sharing was not significant. The reason for this phenomenon may be that people engaged in education have a strong sense of responsibility and hope for spiritual rewards (such as respect and recognition, increased influence) for knowledge work other than work tasks. The risk perception of space education knowledge is not sensitive, and they are not proactive about their own actions in cyberspace.
The perception of the ability to complete practical knowledge sharing is not strong.

6.4 Sharing Intentions and Coping Plans have a Positive Impact on Knowledge Sharing Behavior

In the structural equation model analysis, sharing intention has a positive impact on sharing behavior. It can be seen that after the knowledge sharing intention of the sharers in cyberspace arises, their response plan becomes a key factor for educators to truly implement knowledge sharing behavior. Even if educators have strong sharing intentions and a reasonable understanding of their own behavioral control, and have made corresponding plans for the methods, frequency, content, etc. of knowledge sharing, in real situations, they will be affected by many factors that lead to the failure of knowledge sharing. Events are interrupted or postponed. And if educators make a complete response plan in advance, they can actively respond to unexpected emergencies and effectively maintain knowledge.
knowledge sharing behavior.

7 PRACTICAL IMPLICATIONS

This study uses structural equation modeling to identify influencing factors and their relationships. The research conclusions can provide certain supplements and expansions for research on knowledge sharing behavior, and provide suggestions for encouraging educators to participate in knowledge sharing in cyberspace.

7.1 Sharing Platform Creates a Relaxed Atmosphere and Enhances Behavioral Control Awareness

The enhancement of individual action control cognition will have an impact on behavioral intentions and ultimately affect specific actions. Cognitive ability of behavioral control can reflect the cognition of the actual conditions that teachers can control in various aspects such as knowledge reserves, output methods, sharing time frequency, and sharing platform operations when facing knowledge sharing activities in cyberspace. In the process of recruiting and absorbing educators to participate in knowledge sharing, cyberspace education-themed virtual communities can clearly put forward requirements in terms of knowledge reserves, teaching experience, expression ability, participation level, etc., to help educators understand how to participate in online knowledge sharing. Judge the difficulty. In addition, the cyberspace education-themed virtual community can also provide activities such as online scoring of the quantity and quality of creations for those who have joined the community. For example, some researchers have confirmed through research that the number of user thanks, ratings and the sharer's professional recognition from the platform can be substituted for each other, and suggested that in management practice, the platform should more actively promote the platform professional certification of more outstanding sharers, especially For some new professional sharers. Help educators participating in knowledge sharing to more comprehensively understand their own behavioral control levels, give them a good knowledge sharing behavioral control experience, and promote knowledge sharers to participate in sharing behaviors.

7.2 Improve Educators' Sense of Responsibility and Performance Expectations for Knowledge Sharing

This study found that in the motivation generation stage, sense of responsibility and outcome expectations have a positive impact on educators' knowledge sharing intentions, supporting previous conclusions that outcome expectations are the main driving force for knowledge sharing in online environments. Based on the research results, if operators of cyberspace education themed communities want to encourage and attract more educators to participate in knowledge sharing activities, they should focus on improving users' outcome expectations. After all, educators are engaged in activities outside of their work tasks in cyberspace. They not only need to pay attention to new trends such as high-quality resources, but also need to pay attention to the improvement of their own influence through knowledge sharing in cyberspace. At the same time, the platform can also be used to promote the knowledge sharing deeds of sharers and enhance the sense of responsibility of educators, thereby better promoting their knowledge sharing in cyberspace.

7.3 Facing Hot Issues that Urgently need to be Solved still Require Overall Planning by the Unit

Factors such as pseudoscientific risk perception and self-efficacy do not have a significant impact on knowledge sharing intentions, but they should also be taken seriously. Compared with those working in the medical and health field, educators do not respond promptly to pseudoscientific knowledge disseminated in cyberspace. In other words, for certain public affairs or focus issues in the field of education, even if some biased views begin to appear in cyberspace, it will be difficult to motivate educators to share knowledge about relevant principles and issues on online platforms. Therefore, in areas such as education hot spots that the society is concerned about, relying solely on improving the sensitivity and perception level of educators to educational knowledge cloaked in pseudoscience may not yield good results. Instead, knowledge sharing operators and education are needed. Workers' affiliated units and social non-profit organizations can work together and plan as a whole, and through good activity organization and incentives, encourage educators to pay

attention to timely discovery and adoption of information that is contrary to educational science and theory prevalent on the Internet. Proper reminders in cyberspace to correct the relevant concepts of cyberspace members.

7.4 It is Necessary to Consciously Prepare Knowledge Sharing Response Plans in Advance

Since the knowledge sharing of cyberspace educators belongs to non-working time, when the goals of educators conflict with their normal work tasks and life arrangements, the response plan can better help them solve this difficulty and obstacle, and then carry out knowledge sharing. shared. Therefore, educators can prepare in advance to maintain knowledge over a longer period of time.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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RESEARCH ON INTERNATIONAL LIVE SALES MODE OF HOME TEXTILE PRODUCTS

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Abstract: The rapid development of the Internet economy and new retail economy in the post epidemic era, the continuous improvement of e-commerce platforms and the advancement of live broadcasting technology have paved the way for the development of the international live broadcasting sales mode of home textile products. The mode of selling home textile products on the international live broadcasting platform is an innovative sales method combining live broadcasting technology and e-commerce, which demonstrates the characteristics, quality, uses and advantages of home textile products through the live broadcasting platform, and the anchor can interact in real time with the global audience, answering questions and providing purchasing advice, thus promoting product sales. However, although the international live streaming sales model presents great potential in the home textile products industry, it still faces some challenges and problems in practice. For example, how to choose a suitable live broadcasting platform, design attractive live broadcasting content, improve audience participation and effectively analyse and utilise sales data need to be thoroughly researched and explored. In this paper, we will take the live broadcast conducted by Company A in Alibaba International Station as an example to conduct in-depth research and analysis on the international live broadcast sales model of home textile products, and discuss how to optimise and innovate the international live broadcast sales model.
Keywords: Home textile; E-commerce; Alibaba; Live broadcast

1 INTRODUCTION

Company A is a large down home textile factory in China, mainly producing and selling down raw materials and down products, with an annual production capacity of 5,000 tonnes of down, including 2,000 tonnes of high down of over 75%. Its down raw materials are mainly sourced from Europe and Northeast China, and its products are mainly sold to large bedding ready-to-wear brand factories in the PRC, as well as overseas regions such as Europe, the US and Japan. Currently, the company mainly conducts live sales on the Jitterbug platform, and has already possessed a more mature operation mode as well as a good sales trend. In recent years, the international situation of the down industry has increased dramatically, so the head of the company has the intention to open up overseas markets, in the form of live sales to customers around the world.

According to the history review and development overview analysis of the global and Chinese bedding market, in 2022, the global bedding market size reached 539.066 billion yuan (RMB). For the global and China bedding industry market development status and prospect analysis, it is predicted that by 2028, the global market size will reach 962.891 billion yuan, the average annual compound growth rate is expected to fluctuate around 10.01% [1]. At the same time, China is a textile production and export of large countries, China's textile industry itself after years of development, the competitive advantage is very obvious, with the world's most complete industrial chain. But also because of so many textile products, which led to a sharp saturation of the domestic market. In contrast, the foreign market has a greater sales space.

From the official website of the World Tourism Organisation (UNWTO), the sudden outbreak of the epidemic in December 2019, the tourism industry, an important economic pillar, suffered a major blow. And as the epidemic situation improves, the policy of restricting travel is gradually liberalised, and the number of international tourists has already shown an increasing trend. 2022 compared to 2021, the number of tourists is greatly improved, and the tourism industry is back to normal. In the post-epidemic era, data shows that tourists are actively participating in tourism activities, and the number of global travellers is on the rise. And as people's lives gradually become better, people are more inclined to enjoy material consumption, tourists are more inclined to high-quality tourism. Therefore, after a tiring journey, they will choose a more comfortable sleeping environment. For hotels, the high or low rate of customer return and the comfort of the bedding is one of the keys. Thus, it can be seen that the recovery of the tourism industry will make the demand for hotels to purchase bedding become larger. According to official data, globally, the United States and Europe have a wider distribution of overnight travellers and a greater demand for booking hotels and hostels, so the European and American markets have a wider potential for development. It is worth mentioning that due to legislation and living habits in Europe and the US, drying is classified as an offence in some US states, and washing is subject to additional sewage charges. Therefore, the consumption of home textile products is large, the product life cycle is short, the repurchase frequency is high, and the demand is large.

Based on the company's background as well as market analyses, Alibaba International is the best choice among many cross-border platforms.

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Firstly, high visibility of the platform. Alibaba international station whether in the traditional European and American developed countries in the foreign trade market or in the new Southeast Asian foreign trade market has a fairly high visibility and publicity and promotion ability. Mainly serves domestic small and medium-sized enterprises, and has the official credit guarantee of Ali, more secure and reliable.

Secondly, the international station has diversified content. The live content of Alibaba International Station is constantly enriched and diversified, covering various forms such as product display, enterprise interview, production process and so on. Merchants use diversified content to attract more users' attention and participation, and improve user stickiness and loyalty.

Thirdly, live broadcasting on this platform has a global audience reach. Alibaba International Station live broadcast can directly deliver products and content to the global audience through the Internet, which means that it can directly reach potential European and American consumers to increase sales and exposure. Moreover, the age group of the online shopping group in Alibaba International Station is mostly distributed in the age of 30 to 40 years old, and they generally have higher education, considerable income and strong purchasing power.

Fourthly, Europe and America are the main buying countries on the international website. From the industry trend interpretation of March 2022 New Trade Festival, it can be seen that the TOP3 countries in terms of transaction size are: the United States, Canada and the United Kingdom [2]. Meanwhile, the distribution of China's export market also takes Europe and the United States as the main market, which is highly consistent with the main market of down products.

From the points mentioned above, International Station is the best platform for live sales that meets the company's needs.

2 LIVE STREAMING DESIGN AND DATA ANALYSIS

2.1 Script Writing

First is theme design. An attractive live streaming theme not only attracts the attention of the target audience and increases viewer engagement, but also helps the corporate brand to create a unique brand image and personality. The product theme is Start with a "feather", find your paradise. product keywords are Peace of mind, Companionship. live broadcast style is defined as professional, comfortable and humorous.

Second is visual design. Home textile products live atmosphere should be committed to creating a comfortable and warm live room, combined with the Chinese classical aesthetics, to create a simple and elegant live room. Live room to the Chinese style of plain flowers and birds and linen sofa as a background, into the Chinese classical aesthetics to give people elegant and quiet visual enjoyment, don't have a Chinese style of meditation. The live background and product design concepts are linked together, projecting the sentiment and warmth of the brand vision in a pleasant and relaxing live space. At the same time, the anchor chose light-coloured casual clothing for the camera, reflecting a sense of comfort and coziness, but also to maintain the visual balance and unity, more comfortable and beautiful for the audience, and more appropriate for the product [3].

2.2 Live Broadcast Planning

Develop a full process sop for the live broadcast planning programme from Table 1. The person in charge interfaces with the company's personnel for the preparation of matters related to the live broadcast, equipment debugging and so on. The anchor and the assistant anchor prepare the content that needs to be explained, and determine how to cooperate between the two and other issues.

Table 1 Live streaming planning programme full process sop

Live streaming planning programme full process sop			
workflows	sports event	concrete content	person in charge
pre-live broadcast	1. Getting in position in advance	All staff arrive at their posts 60 minutes early	guide (on radio or TV)
	2. Backstage Login	alibaba international website account login	field control
	3. Time Alert	Countdown to 30 minutes, 5 minutes, 1 minute before the start of the broadcast	field control
	4. Equipment inspection	1. Is the position, height and direction of the lights (live lights, background lights) correct? Is the brightness appropriate? 2. Is the camera screen transmission smooth? Is the camera position correct?	Field control. Anchor.

		Is the picture clear? Is it skewed? 3. Check whether the network link of the live streaming computer is normal? 4. Is the return mobile phone network normal? Is the mobile phone linked to the power supply? 5. Is the vertical screen pushing the stream? Is the mirror image normal? 6. Adjust the picture quality: adjust the value to ensure that the texture is advanced and the picture has no chromatic aberration.	
	5. Commodity inspection	1. Whether the condition of the product is suitable for display, clean and tidy without any abnormality. 2. The props equipped for each product introduction are in place. 3. Understand the function, special effect, material and advantage of the product.	anchor (TV)
	6. Personnel preparation	Clothing, dress, countertop background organisation	anchor (TV)
	7. Background Settings	1. Live cover, title copy setting, no prohibited words. 2. Live hot topic settings, in line with the product heat. 3. Products are on the shelves, and the order is clear to the relevant people. 4. Subtitle settings, no prohibited words. 5. Shield keyword settings, prohibited negative impact words.	Field control. Anchor.
	8. Pre-proposal questioning	1.Live operation, central control and anchor to finalise the pop-up single product of the day. 2. The product information and specifications of each single product are clear. 3. Logistics and shipping, return and exchange rules and regulations are answered.	anchor (TV)
	9. Live Preview	Live broadcasting information through relevant channels (e.g. WeChat, circle of friends, ins, etc.)	field control
	10. Live streaming	Retweet the live stream to social media platforms at the start of the broadcast	field control
surname Zhi scatter middle	11. Live Cadence	1.Pay attention to the rhythm of the public screen, real-time response to questions. 2. Field control to assist the anchor, combined with order data and the number of viewers, to assist the anchor live atmosphere. 3. Synchronised explanation, the successful transition at the time of transition, handover of products. 4. The main product each time 10 minutes, the rest of the product by the anchor free play single time not more than 10 minutes, product explanation more than two rounds.	Field control. Anchor.
	12. Live Streaming Points of Attention	1. The field control should be timely to the anchor to show the main points of the product, and the anchor smooth co-operation. 2. Anchor in the product introduction should be appropriate to use some means to more intuitively show the details and characteristics of the product. 3. Anchor live emotion to be full and infectious.	Field control. Anchor.
End of live broadcast	13. Review summary	1.Data collection and update, problem record analysis and resolution, summary. 2.Violation of the problem, return data collection, selling peak summary. 3.Live broadcast finishing reset, set up the next open preview after finishing.	Field control. Anchor.

Data source: Live streaming planning official websit

2.3 Live Data Analysis

The first live broadcast of the international station lasted 02:02:21, with a cumulative total of 339 views, 87 viewers, and 0 inquiries. The second time to adjust the title, product order, live time 02:00:32, the number of viewers increased to 130 people, the cumulative number of inquiries 3 people. The third time also re-modify the title, live time 02:01:07, the number of viewers 76 people, the number of inquiries 12 people [4]. Through the first live conversion rate data, we can understand that the live broadcast has a small contribution to sales. Due to the first live broadcast, there are some uncertainties. However, in the subsequent live broadcast process, the cooperation between the anchor is more tacit, the live broadcast is more proficient, which greatly improves the live conversion rate.

3 OPTIMISATION AND INNOVATION OF THE LIVE SALES MODEL

3.1 Selection of Client Groups

The optimisation and innovation of the sales model should first determine the target customer group, and use big data to select the target customer group with a high degree of activity on social media platforms, which are more willing to buy

products through live broadcasting. By analysing customer needs, preferences and purchasing ability, etc., the target customers are accurately positioned. First of all, the company needs to operate and maintain the shop for a long time, and the correct positioning of the shop and matching customer positioning is the first step to win enquiries. It is necessary to adjust the page style according to the target customer's preference, search habits, language logic, and way of thinking, so as to give customers a comfortable web experience. And you need to modify the information of each product according to the popular keywords to enhance the exposure of the product [5]. In addition, the cover and title of the live broadcast need to be thought and polished to emphasise the highlights and special advantages of the live broadcast, so that the audience will know the unique value and benefits of the live broadcast. Some attractive words can also stimulate the curiosity of the audience, but pay attention to the prohibited words in the international site, such as: TOP1, NO.1, etc.

3.2 Multi-Channel Promotion

Online channels, in addition to live streaming platforms, can also make use of various social media platforms, such as Facebook, Twitter, Instagram, YouTube, etc., to post content such as product information, special offers, live streaming previews, highlight clips, and so on, to attract and direct viewers to live streaming platforms to watch live streams. At the same time, if: if there is a database of email lists or mobile phone numbers of relevant customers, you can notify them about the live broadcast by sending emails or SMS pushes. Be sure that the email or SMS is concise and engaging, with a link to the live stream and important timing information. Offline channels include putting up posters and displaying product samples in physical shops, attending offline events and exhibitions to publicise and promote the upcoming live streaming event [6]. Brochures, business cards or the use of QR codes can be distributed to direct people to follow and participate in the live broadcast. Through online and offline multi-channel promotion, the time and content of the live broadcast are publicised in advance to attract the attention and participation of more viewers.

3.3 Scheduling Logic

In order to ensure the diversity and completeness of the content of the live sales, it is necessary to classify the products according to the type, function, price, features and other factors, and display them in a certain order, usually displaying popular products or new products first to attract the attention of the audience, and then gradually displaying the other products, and associated products are often paired with combinations to improve the added value of the products.
Take this live practice as an example, No. 1 and No. 2 products are down pillows and mattress protectors, these two are diversion products, arranged in front to increase the popularity of the 3-6 products are duvets, of which No. 5 and No. 6 products are the main models, the product process is more complex, the price is higher, so it needs to be placed in the popularity of the peak sales, the highest traffic at this time [7]. 7 products is the only special product -- gravity blanket, the product itself has selling advantages, outstanding features, has its own suitable for the crowd, so it should be placed in the peak after the sale. --Gravity Blanket, the product itself exists selling advantages, outstanding features, have their own suitable for the crowd, so it should be placed in the peak after the sale. The last 8-10 products belong to the cannon fodder models, mainly used for comparison with the flow of models, than the quality and price to stimulate customers to order 1-2 products.

3.4 Explanation of Selling Points

During the live broadcast, every second needs to be seized to attract and retain viewers. Therefore, the anchor should focus on highlighting the features, functions and uniqueness of the product during the explanation. Anchor through the actual demonstration, use cases and other ways to show the audience the advantages of the product. For example: all kinds of down pillow filler can be found after comparison of goose down quality is better than duck down, ducks for omnivores, so duck down will have a fishy taste, goose down is relatively light, and goose down fluff is bigger, can achieve a higher degree of fluffiness, warmth and resilience is also stronger. Therefore, the softness and resilience of the pillow need to be demonstrated live in the broadcast. The down pillow can be pressed by hand and the degree of rebound of the pillow can be observed within the specified time [8].
Alternatively, innovative presentations can be made. Introduce short moving videos or promos periodically during the live broadcast for transitioning different topics or content. This can increase the pace and variation of the live broadcast and keep the audience fresh and interested. In the process of displaying products, some product videos can be used to show the features, functions or practical application scenes of the products. Through visual effects and dynamic elements, the value and attractiveness of the product can be better demonstrated. Of course, you can also show the details of the feather, so that the audience can feel the high quality of the product and the specialisation of the company.

3.5 Audience Participation and Interactive Experience

Enhancing viewers' engagement and interactive experience during live broadcasts can create a stronger connection with them and promote viewer loyalty and word-of-mouth. Therefore, try to respond to viewers' questions, comments and feedback during the live stream. Mention their usernames or messages from viewers to make them feel noticed and valued. Alternatively, design fun and interactive activities and games in the live broadcast, including lucky draws, quizzes, question and answer sessions, challenges, etc., and offer viewer-exclusive benefits or special offers, such as

discount codes, freebies, or limited-time promotions, to encourage viewers to actively participate. By offering prizes or special benefits, viewers are motivated to participate, increasing their sense of value and purchase incentive for the live broadcast [9]. However, this requires a discussion with the company to negotiate the original price as well as the discounted price of various items.

3.6 Enhanced Technical Support

The use of advanced technical means to improve the quality, interactivity and viewability of the live content can attract more audience participation and enhance the live effect. First of all, you can use multi-camera switching to display different angles of the screen for the all-round display of the product. The panoramic atmosphere of the live room and the overall effect of the product display need to place the camera at a distance, while some local details need to be shown close-up, the camera is often arranged in front of the anchor, generally need a higher degree of clarity of the equipment. Central control for the switching of the screen should also pay attention to the articulation of the transition, not too much switching, so as to avoid visual fatigue of the audience [10]. In addition, the need for a mobile phone dedicated to interaction, used to provide timely feedback on the live broadcast, so that the audience can interact with the anchor, ask questions, leave messages, increase the sense of participation. Provide real-time audience statistics, so that the anchor to understand the audience's viewing situation and feedback, timely adjustment of live content and rhythm.

4 CONCLUSION

This thesis delves into various aspects of the international live streaming sales model of home textile products, especially the practice of Company A's live streaming on Alibaba International, which provides great support for our research. However, under the ever-changing market environment, the international live streaming sales model of home textile products still faces some challenges, such as policy changes at any time, fierce market competition, maintenance of audience engagement and continuous innovation of live streaming strategy. Therefore, we suggest further research and exploration of the development trend of international live sales model for home textile products to find more innovative approaches and strategies.

Finally, sincere thanks to Company A for their support and co-operation in this study. Their expertise and experience provided valuable resources and practical foundation for the study. It is hoped that this study will lead to more co-operation between the two parties in the future and make greater contributions to the development of the industry.

COMPETING INTERESTS

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EXPLORING THE INFLUENTIAL FACTORS ON INNOVATION PERFORMANCE OF HIGH-TECH ENTERPRISES IN UNIVERSITY-INDUSTRY COOPERATION

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Abstract: University-industry cooperation (UIC) is a key mechanism for businesses in the era of open innovation, providing access to essential complementary resources for the genesis of novel knowledge and the development of breakthrough technologies. This collaboration significantly augments their technological innovation capacity, catalyzing regional economic growth. During his visit to Tsinghua University in April 2021, President Xi Jinping emphasized the need to "boldly overcome the formidable hardles in key core technologies, deepen the synergistic fusion of industry, academia, and research, and promote the transaction of scientific and technological advances into tangible results." The study explores how inter-organizational trust and knowledge management affect the innovation performance (IP) of high-tech firms in UIC. Partial Least Squares Structural Equation Modeling (PLS-SEM) is used for empirical research. Ultimately, a conceptual model is proposed to investigate how different dimensions of trust influence the IP of enterprises in UIC through the mediating role of knowledge management capabilities.
Keywords: University-industry cooperation (UIC); Trust; Knowledge management; Partial Least Squares Structural Equation Modeling (PLS-SEM)

1 INTRODUCTION

Cooperation between academia and industry is a complex social behavior. Only in the state of sincere cooperation can the cooperating parties achieve a high degree of fit, which limits transaction costs to a lower level and the innovation of college-industry cooperation reaches a certain level. In an environment of lack of trust, transaction costs cannot be effectively controlled before and after the contract is signed, which inevitably weakens the competitiveness of college-industry cooperation projects. Lack of trust drives up pre-signing search costs, negotiation costs, communication costs, identification costs and contract signing costs, which limits the improvement of the innovation level of college-industry collaboration. Similarly, due to a lack of trust, post-contract performance costs, monitoring costs, contract implementation costs, arbitration costs and professional investment costs increase, which in turn limits the improvement of the level of innovation in college-industry collaboration. Only by vigorously optimizing the trust environment of University-industry cooperation (UIC), so that the awareness and behavior of honesty are effectively strengthened, can we continuously reduce transaction costs and increase the efficiency of cooperation and innovation. The study of trust in organizations continues to be a focus in knowledge management and faces theoretical and practical challenges. First, although the existing literature confirms various aspects of trust and its role in fostering collaborative relationships, there is still a need for research on the origins and development of trust in collaborative innovation. Surveys have shown that different forms of trust emerge at different stages of the development of collaborative innovation relationships [1]. Second, more systematic research is needed on how the different dimensions of trust affect enterprises' IP in collaborative innovation.

The objectives of this study is “To construct a PLS-SEM model of the factors influencing the innovative performance of enterprises in the context of UIC.” This study focuses on enterprises involved in UIC innovation and focuses on the crucial question: "How do the dimensions of trust affect the IP of enterprises in UIC?" The study explores how enterprises can realize and improve their collaborative IP by building and enhancing knowledge management capabilities. The focus of the study is on defining the relevant theories and critical issues of trust, knowledge management capabilities and collaborative innovation based on a comprehensive review of relevant literature at home and abroad. Based on a comprehensive and detailed literature review, the definitions and dimensions of trust, knowledge management capabilities and corporate IP in this context are comprehensively analyzed in terms of the characteristics of collaborative innovation between industry, academia, and research.

2 CONCEPTS

2.1 Dimensions of Trust

In this study, the trust of companies towards universities in the context of cooperation between academia and industry is divided into three dimensions: institutional trust (IT), cognitive trust (CT), and affective trust (AT) IT is defined as the

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trustor's belief that the trustee will exhibit trustworthy behavior within the norms of institutional factors, thereby justifying his or her trust [2]. The sources of IT can be divided into two categories: formal legal rules and informal organizational cultures that include deterrent or punitive mechanisms. These mechanisms assure the trustor that the trustee will act in a trustworthy manner to avoid sanctions.

CT is defined as the trustor's willingness to trust based on the perception of evidence of the trustee's personal trustworthiness [3]. This evidence includes the trustor's personality traits, cultural background, intentions, competence, consistency of words and actions, and predictability. The trust giver carries out a cognitive process of collecting, processing, calculating and interpreting this information in order to assess his trustworthiness. This cognitive process plays a recurring role in the initial development and in the stable phase of the trust relationship to verify its sustainability. CT arises primarily from shared interests, abilities, social similarity and predictability.

AT is the willingness of the trust giver to trust due to an emotional bond with the trust receiver [4] It is characterized by the fact that it develops in the course of the interaction and does not just arise at the beginning of the exchange relationship. As the trustor becomes aware of the good will and trustworthiness of the trustee through frequent interactions, he develops a willingness to rely on the trustee and build an emotional bond with him. AT is created primarily through a shared emotional foundation built through long-term interactions.

2.2 Dimensions of Knowledge Management

In this study, the knowledge management (KM) capabilities of companies in UIC are categorized into knowledge acquisition (KA) and knowledge transfer (KT).

KA is the fundamental process in knowledge management. Organizational KA enables the development of new knowledge or the substitution of existing knowledge, building on the organization's current tacit and explicit knowledge base [5]. In collaborative innovation between universities and industry, universities and companies jointly create a knowledge ecosystem. Given the dynamic nature of knowledge, which is constantly evolving and overtaking previous knowledge, a gap in knowledge potential between universities and industry is inevitable. When companies realize the gap in knowledge potential compared to universities and the need for technological innovation to improve their competitiveness, they inherently develop a need to absorb knowledge from entities with higher potential, namely universities, thus initiating the KA phase of knowledge management. An enterprise can demonstrate its ability to acquire knowledge by collaborating with universities on innovative projects. This includes the timely acquisition of relevant knowledge and information through observation, academic contributions and scientific exchange. It also includes the acquisition of knowledge about new products, services, suppliers and competitors. This also includes the ability to incorporate the experience gained from cooperation projects into new initiatives and to generate new knowledge from existing findings.

KT is the process by which knowledge is passed from its source to a recipient in a particular environment, followed by its uptake, integration and application by the recipient. Huber [6] refers to the process of KT between organizations as "knowledge refinement"," through which an organization gains access to previously unavailable knowledge, thereby increasing the organization's knowledge base. This article primarily examines KT between two major types of organizations: Companies and universities. In terms of the direction of KT, universities have a significant advantage over enterprises in terms of knowledge reserves and technological expertise. Normally, knowledge flows from institutions with academic and technological superiority to enterprises with lower technological capabilities. Consequently, this study refers to universities as senders of knowledge and enterprises as receivers to emphasize the movement of knowledge from universities and research institutions to enterprises.

2.3 Dimensions of IP

In this study, the innovation performance (IP) of enterprises in UIC is categorized into three dimensions: Knowledge innovation performance (KIP), technology innovation performance (TIP) and management innovation performance (MIP).

KIP is measured by employee learning, employee skills, employee knowledge, the enterprise's core technologies and the enterprise's competitive advantage in the market.

TIP focuses on the impact of collaborative innovation on the number of new products, the speed of new product development, the production value of new products, the number of patents a enterprise receives, the improvement of an enterprise's technological competitiveness, the design of work processes and the speed at which new technologies are adopted in production processes.

MIP assesses the impact of collaborative innovation on an enterprise's organizational structure, process management planning and business process re-engineering.

3 HYPOTHESIS

3.1 The Relationship Between Trust and IP in UIC

In collaboration between universities and industry, trust between the organizations has different effects on the IP of the companies. In the initial phase of cooperation, companies evaluate the reliability of universities primarily based on previous experience, historical cooperation and the reputation of the cooperating institutions. In this phase, the

companies involved can formalize their mutual expectations through contracts or innovative partnership agreements. IT increases the efficiency of college-industry collaboration by creating a stable institutional framework. IT has two main prerequisites: formal regulations and organizational culture. Formal regulations include the management systems developed by both parties to ensure that the collaboration process runs smoothly, while organizational culture represents the informal norms within an organization.

No contract or agreement can comprehensively or exhaustively cover all matters or contingencies. It is impractical for partners to renegotiate contracts in the face of unforeseen events [7]. To protect their knowledge, companies will therefore integrate carefully into new environments and conduct prior analyzes and assessments of their knowledge assets and needs. This includes observing and monitoring the collaborative behavior of academic institutions to protect themselves from opportunistic actions. From this, the following hypothesis is formulated:

H1 IT has a significant positive effect on IP.

Empirical studies on the relationship between CT and the IP of companies show different views. Wang Xueli investigated the role of CT in the relationship between transformational leadership and knowledge sharing in organizations and found that CT hinders knowledge sharing [8]. The occurrence of free-rider behavior suggests that CT, once it reaches a certain level, can hinder knowledge sharing. Conversely, in his empirical study, Chua found a positive correlation between the CT of partners in an enterprise and cooperative IP [9]. The stronger the CT, the more likely it is that close partnership relationships will be established, which has a positive effect on cooperative IP. Within organizations, competitive relationships between individuals can lead to envy towards those perceived as more capable, resulting in a refusal to share knowledge or free-riding. In contrast, collaborative innovation between academia and industry is a cooperative endeavor in which both parties work together to research and develop technologies or products based on shared resources and complementary strengths to achieve common goals. From this, the following hypothesis is formulated:

H2 CT has a significant positive effect on IP.

Emotional trust primarily facilitates communication and collaboration among members and between members and the organization, which reduces transaction costs and thus promotes knowledge management activities. The trust mechanism has been internalized as an organizational management norm and facilitates unhindered communication between academia and business. It also enables enterprises to access and utilize the knowledge they need immediately, which increases the capacity of knowledge supply and increases the likelihood of successful collaborative innovation. From this, the following hypothesis is formulated:

H3 AT has a significant positive effect on IP.

3.2 The Relationship Between Trust and KM in UIC

In the area of IT, companies weigh up the cost-benefit ratio of trust when negotiating KT issues based onnovation cooperation with universities. In CT, enterprises infer the loyalty of Higher Education Institutions (HEIs) to the partnership by evaluating past behavior, particularly the extent to which HEIs adhere to the agreements of the collaborative relationship and provide timely, accurate, advanced explicit or tacit knowledge through various channels. Based on this, companies decide whether and to what extent they have trust, which affects the amount and extent of knowledge provided by HEIs. With emotional trust, companies are more inclined to believe that HEIs provide reliable information, which further simplifies the KA process and improves the enterprise's ability to acquire knowledge. Regardless of whether IT is based on contracts, CT on the recognition of competencies or AT on emotional and value congruence, it has a positive effect on an enterprise's ability to manage knowledge. The following hypothesis is formulated from this:

H4 IT has a significant positive effect on knowledge management.

H5 CT has a significant positive effect on knowledge management.

H6 AT has a significant positive effect on knowledge management.

3.3 The Mediating Effect of KM in UIC

Trust influences cooperative IP in college-industry collaboration by affecting an enterprise's knowledge management capabilities. Organizations can improve KA and transfer through trust-based measures that stimulate innovation enthusiasm and enhance collaborative IP.

Even if IT cannot completely prevent opportunistic behavior, it creates a favorable institutional environment for the development of cooperative innovation relationships between universities and companies. This trust spreads the risks associated with collaborative innovation and makes it easier for enterprises to acquire the technical knowledge needed to innovate in broader and deeper dimensions and to collaborate more fully with universities.

In the case of CT, companies have positive expectations of the capabilities and reliability of universities and are inclined to actively acquire knowledge from these institutions. As the collaborative relationship between companies and universities becomes more stable and mutual trust increases, acquiring knowledge from universities can significantly reduce costs compared to acquiring external resources.

After the development of AT, companies' trust in universities deepens further, enabling faster and more effective KT. This efficiency saves time and costs associated with collaborative innovation and positively increases the IP of companies.

From this, the following hypothesis is formulated:
H7 Knowledge management mediates the positive effect of IT on IP.
H8 Knowledge management mediates the positive effects of CT on IP.
H9 Knowledge management mediates the positive effect of AT on IP.

4 METHODOLOGY

4.1 Conceptual Framework

The specific features of PLS-SEM can be summarized as follows: it estimates the relationships between multivariate and inherently related dependent variables; it represents the relationships between unobservable constructs and can account for measurement error in the estimation process; it defines a model to explain all relationships. The PLS-SEM method is suitable for working with non-normal or secondary data with small samples. PLS-SEM models are also preferred when the research objective is to better understand increasing complexity by examining theoretical extensions of established theories.
This study examines the relationship between UIC, KM and IP. In the study, divides UIC is divided into institutional, cognitive and affective dimensions. The ability to manage knowledge is divided into two dimensions: KA and KT. The IP of companies is divided into three dimensions: technological innovation performance, KIP and MIP. The aim is to analyze in depth how the different dimensions of trust affect the IP of companies, as shown in Figure 1.

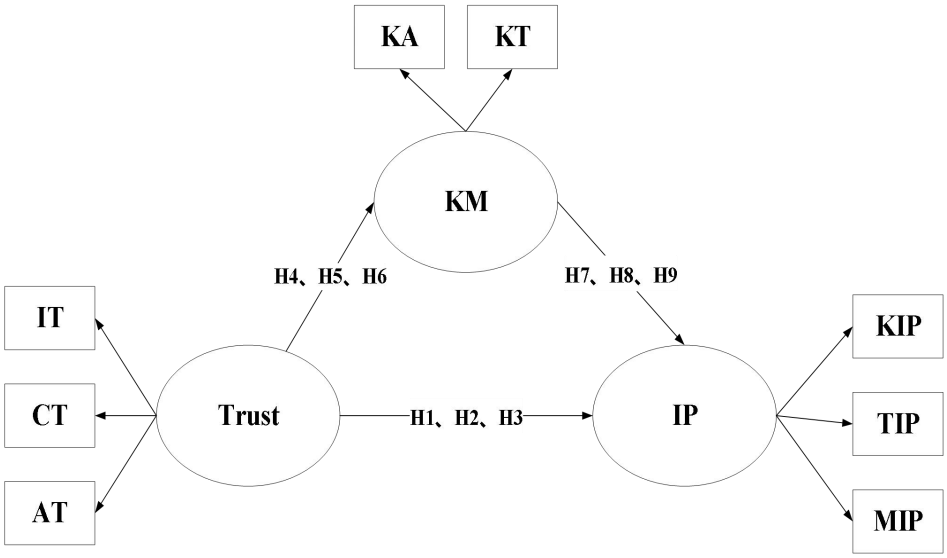

Figure 1 Conceptual Framework of PLS-SEM

To build an PLS-SEM model with IBM-SPSS and WarpPLS. IBM-SPSS is used to perform reliability and validity analysis of the data on the questionnaire results. WarpPLS is used for model construction, fitting and data analysis in empirical research.

5 EXPERIMENTAL DESIGN

5.1 Population and Sample

The population of this study consists of 978 high-tech (new engineering, new medicine, new agriculture) companies that have completed projects under the 2022 Academic Research Cooperation and Collaborative Education Program of the Ministry of Education of China (the most important cooperation project between academia and industry in China).
The sample of this study includes high-tech enterprises from the three northeastern provinces. The SEM model examined in this paper includes 8 parameters, which requires a sample size of more than 160. Therefore, it is assumed that between 250 to 300 sample surveys will be conducted to collect data from managers, technical directors and engineers in about 60 high-tech enterprises, using purposive sampling with a sample size between 200 to 250.

5.2 Technical Route of the Research

A qualitative analysis and assessment of how trust in industry-university-research cooperation affects firms' IP and the mediating role of knowledge management capabilities based on a literature review, field interviews and surveys.
The PLS-SEM method uses sample data from questionnaire distribution. Statistical analysis techniques such as factor analysis and structural equation modelling are used to test the research hypotheses using IBM-SPSS and WarpPLS software tools. The results include the parameters of the factors affecting the variables of interest, as shown in Figure2.

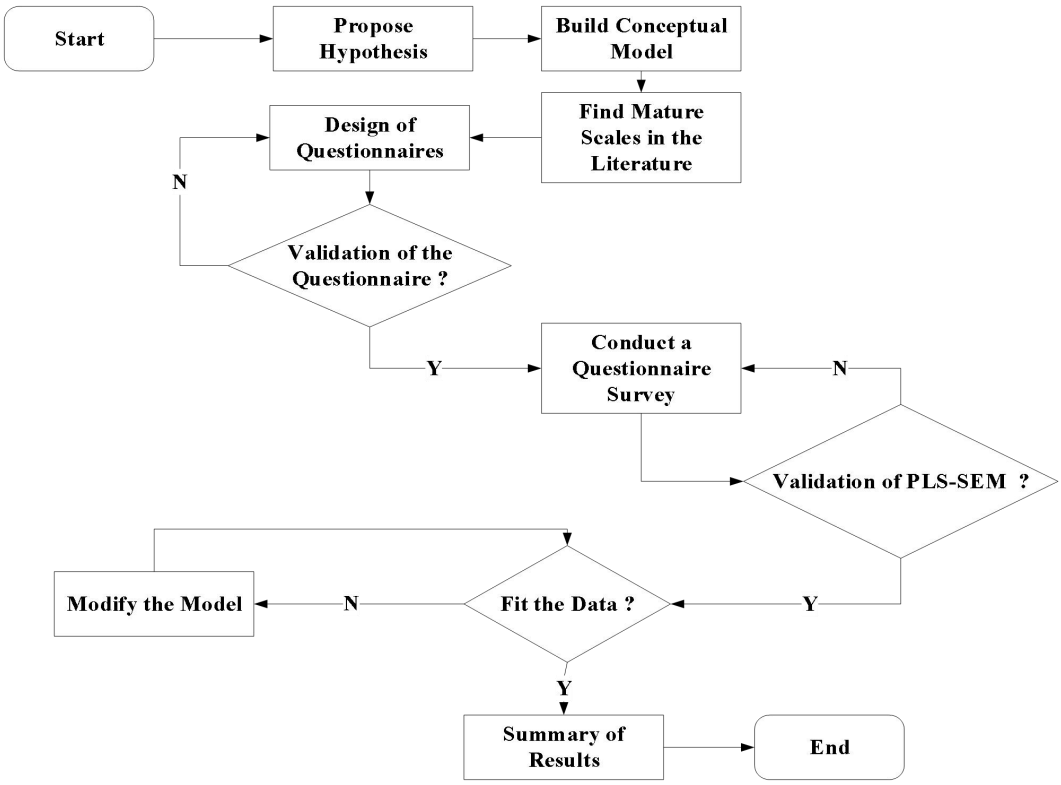

Figure 2 Technical route

5.3 Questionnaire Development

This study conducts a questionnaire survey that thoroughly reviews the literature on inter-organizational trust, corporate knowledge management capabilities, and corporate IP. It draws heavily on theoretical concepts from authoritative research and selects mature scales that are frequently cited in empirical studies both domestically and internationally. These scales, in conjunction with the theoretical framework of this study, serve as guidelines for the design of the measurement instruments.

1.The survey is divided into two main sections: The first section collects basic enterprise data, with participants selecting or giving their answers directly. In the following section, respondents are asked to indicate their agreement on a 5-point Likert scale, where 1 stands for " strongly disagree", 2 for " disagree", 3 for " neither agree nor disagree", 4 for " agree" and 5 for " strongly agree". A positive evaluation approach is used, i.e. the points are awarded directly on the Likert scale: 1 corresponds to 1 point, 2 corresponds to 2 points, 3 corresponds to 3 points, 4 corresponds to 4 points and 5 corresponds to 5 points.

2.Since the study focuses on corporate knowledge management, technological innovation, management innovation and knowledge innovation, subjects who have a clear understanding of the processes and outcomes of collaborative innovation between academia and industry are needed. Consequently, this study interviews the heads of technology and management departments of companies involved in science-industry innovation, primarily middle and senior managers.

3.The questionnaire explicitly asks respondents to reflect on their most recent experience of college-industry collaboration to avoid problems with recall.

4.To encourage open and honest responses, the introduction to the survey clarifies that no questions relate to specific management or operational procedures or confidential business information to ensure that all data collected remains confidential and is not used for commercial purposes.

5.To avoid misunderstandings, the questionnaire is developed with extensive input from experts, academics and business leaders, resulting in refinement of content and adjustments in wording and terminology.

5.4 Data Collection

The data collection process is divided into two stages: small sample and large sample.

1. Small-sample test

After finalizing the structure and items of the questionnaire, a preliminary small-scale distribution will be conducted to assess the reliability and validity of the pre-survey questions. This phase involves selecting 10 high-tech companies with a cooperative relationship with the researcher's working unit, with an estimated distribution of 70 questionnaires.

2. Large-sample test

Contact will be made with 50 high-tech companies across the three northeastern provinces. Mid-to-senior level managers within these companies will be asked to distribute the survey, with an expected distribution of 200 questionnaires.

From both phases, an estimated 200 to 250 valid questionnaires are anticipated to be collected. Descriptive statistical analysis will be performed on the sample, including handling any missing values in the questionnaire to facilitate monitoring large-sample data. The analysis will cover various indicators such as the respondents' positions, enterprise size, ownership type, years of operation, and industry sector.

5.5 Data Analysis

5.5.1 Descriptive Statistics

Descriptive statistical analysis presents the general characteristics of a population by analyzing the characteristics of a sample. This analysis usually uses metrics such as the mean and standard deviation. In this study, descriptive statistics were applied to assess the identity of respondents, enterprise size, type of enterprise ownership, industry sector, years of enterprise establishment, and the mean, standard deviation, skewness, and kurtosis of the sample data.

5.5.2 Questionnaire Reliability and Validity Verification

The reliability and validity test ensures that the scale-type questionnaire has a high degree of reliability and validity. Assume that the reliability and validity of the questionnaire are good. In this case, this proves that the data reliability of the questionnaire is high, the internal consistency of the questionnaire data is high, and the questionnaire can be used for subsequent model analysis; on the other hand, if the reliability and validity are not high, the questionnaire needs to be redesigned and redistributed. The standard methods for testing reliability and validity are listed in Table 1.

Table 1 Questionnaire Reliability and Validity Verification

Verification	Parameter	Content	Standard
Reliability	Cronbach's alpha	Equation (1) α is the reliability coefficient. **K** is the number of test questions. $\mathbf{S_i}$ is the variance of the scores of all subjects on question i. $\mathbf{S_x}$ is the variance of the total score obtained by all subjects.	$\alpha \geq 0.9$: Excellent $0.8 \leq \alpha < 0.9$: Good $0.7 \leq \alpha < 0.8$: Acceptable $0.6 \leq \alpha < 0.7$: Questionable $0.5 \leq \alpha < 0.6$: Poor $\alpha < 0.5$: Unacceptable
Validity	Content validity	Expert judgment	Judge whether the scale is reasonable and enough.
	AVE	Equation (2) λi represents the standardized loading of the $\mathbf{i^{th}}$ indicator on the latent variable, **n** is the total number of indicators of the latent variable.	AVE ≥ 0.5 Good
	HTMT	WarpPLS	HTMT< 0.90 Good HTMT< 0.85 Excellent

$$\alpha = \frac{K}{K-1}\left(1 - \frac{\sum S_i^2}{S_x^2}\right) \quad (1)$$

$$\text{AVE} = \frac{\sum_{i=1}^{n} \lambda_i^2}{n} \quad (2)$$

5.5.3 Validation of PLS-SEM

Path coefficient (t): a significant path coefficient (p-value < 0.05) indicates a significant relationship between the variables.

The coefficient of determination (R^2) indicates the explanatory power of model. In general, values of 0.67, 0.33, and 0.19 are considered robust, moderate, and weak, respectively.

$$R^2 = 1 - \frac{\sum_{i=1}^{n} (y_i - \hat{y}_i)^2}{\sum_{i=1}^{n} (y_i - \bar{y})^2} \quad (3)$$

In equation (3), are the observed values, are the predicted values, is the mean of the observed values, is the number of samples.

The predictive relevance (Q^2) is determined using the blind sample method. A value greater than 0 means that the model is predictively relevant. The calculation of is similar to R^2 but is used for cross-validation.

Effect size (F^2) : 0.02, 0.15, and 0.35 stand for small, medium, and large effect sizes respectively.

$$F^2 = \frac{R^2_{included} - R^2_{excluded}}{1 - R^2_{included}} \quad (4)$$

In equation (4), is the coefficient of determination when the specific predictor variable is included in the model, is the coefficient of determination when the predictor variable is excluded from the model.

Goodness-of-fit index (GOF) : The GOF coefficient is a value between 0 and 1 used to assess the ability of the model to explain the observed data. It combines the degree of fit of the measurement model and the structural model.

Bootstrapping: Bootstrapping is the main method for estimating the standard error in PLS-SEM.

$$S_I = \sqrt{\frac{1}{N_S}\sum_{i=1}^{N_S}(\beta_i - \bar{\beta})^2} \quad (5)$$

S is a set of samples created from an empirical data set. Each sample within is created by randomly selecting rows from the original dataset with the possibility of repetition, ensuring that the size of each sample is equal to that of the dataset in terms of the number of rows. Denote as the number of such samples. The standard error denoted as S1, derived by bootstrapping for a given path coefficient β, is determined as described in Equation (5). Here, represents the estimate of the path coefficient for sample i, while is the average path coefficient for all samples [10].

6 CONCLUSION

This study proposes a conceptual model to explore how different dimensions of trust influence the IP of firms in UIC through the mediating role of knowledge management capabilities. The dimensions of trust, knowledge management and IP are delineated through a literature review. The conceptual model and technical route of PLS-SEM are given, and the scope, methodology, questionnaire data collection method and calibration method of the empirical study are designed. The next step is to conduct the questionnaire survey and data collation according to the technical line . Software experiments are carried out according to the conceptual model and model fitting results and conclusions are drawn. Ultimately it will provide targeted data parameters to help companies improve their IP through UIC and provide managers with insights into the development of knowledge management practices.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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RESEARCH ON THE EFFICIENCY AND ACCURACY OF GENERATIVE AI IN THE EDITORIAL PROCESS OF SCIENTIFIC JOURNALS

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Abstract: This study aims to explore the application of generative artificial intelligence (AI) in the editorial process of scientific journals and its impact on editing efficiency and accuracy, thereby foreseeing potential changes in future scientific communication. Utilizing literature reviews and data analysis, this study focuses on literature published between 2020 and 2023, involving top academic journals, conference papers, and authoritative databases. Through qualitative analysis, content analysis, and comparative analysis, the study comprehensively assesses the application of generative AI in the editing of scientific journals. The research shows that generative AI has significant advantages in the preliminary review, language polishing, and format standardization of scientific journal submissions. Although it enhances editing efficiency and manuscript quality, AI has limitations in understanding complex academic content and maintaining high accuracy. The application of generative AI in the editing of scientific journals is in a rapid development stage, but its potential is immense, especially in improving editing efficiency and accuracy. Future research needs to explore in-depth the limitations and ethical responsibilities of AI, as well as the collaboration model between AI and human editors, to ensure the quality and integrity of scientific journal content.
Keywords: Generative Artificial Intelligence; Technological Journal Editing; Editorial Efficiency; Content Accuracy; Challenges in AI Applications

1 INTRODUCTION

As artificial intelligence (AI) technology rapidly advances, generative AI has become a focal point in the technology sector. Based on deep learning language models, such as OpenAI's GPT series, these technologies demonstrate exceptional capabilities in text generation, language understanding, and content creation. These groundbreaking advancements not only drive AI applications across various industries but also bring transformative potential to the editorial processes of scientific journals. Particularly, the application of GPT-3 and GPT-4 models in the field of natural language processing, especially in text generation and understanding, has shown significant impacts on the editorial processes of scientific journals[1].

Scientific journals, as core platforms for academic communication, play a crucial role in ensuring research quality and facilitating knowledge dissemination. Traditional editorial processes, typically time-consuming and labor-intensive, involve multiple steps from initial manuscript review to final publication. Editors and reviewers invest considerable time and effort to ensure the quality and accuracy of manuscripts. Facing the ever-increasing number of scientific journals and submissions, traditional editorial processes are under significant pressure[2].

In this context, generative AI offers innovative solutions. Integrating automation and intelligence tools, generative AI can perform tasks such as initial manuscript screening, language polishing, and format standardization within the editorial process. By analyzing manuscript structure and content, AI quickly identifies submissions that do not meet journal standards or exhibit academic misconduct, significantly reducing the workload of editors and reviewers. For non-native English authors, AI's application in language polishing effectively enhances manuscript language quality, aligning it with international academic standards[3][4]. Generative AI, particularly large language models, is gradually transforming traditional writing and publishing processes, becoming a part of the scientific publication process[5]. This technology not only promises to enhance the efficiency of the publishing process but may also lead to fundamental changes in the field of scientific publishing[6].

Despite the broad prospects of generative AI in scientific journal editing, research in this area is still in its early stages. Currently, there are many issues to explore regarding how generative AI specifically optimizes the efficiency and accuracy of scientific journal editorial processes and the impacts and challenges these technologies may bring.

This study aims to delve into the practical application of generative AI in the field of scientific journal editing, not only exploring the technology but also anticipating potential changes in future scientific communication methods. The research will examine specific applications of generative AI in scientific journal editing, such as initial manuscript screening, language polishing, and format standardization, and assess its actual effectiveness in enhancing editing efficiency and accuracy. Additionally, the study will explore the main challenges and limitations faced when applying generative AI. The research aims to provide new perspectives for the field of scientific journal editing and practical guidance and recommendations for the future development of the scientific publishing industry.

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This study primarily employs a literature review methodology to comprehensively explore the application, efficiency, accuracy, challenges, and developmental trends of generative AI in scientific journal editing. To ensure the thoroughness and depth of the research, strict standards were adhered to in literature selection: focusing on literature published between 2020 and 2023, covering top academic journals, conference papers, industry reports, and authoritative databases. A systematic search was conducted using keywords such as "generative AI" and "scientific journal editing," while strictly assessing the quality and relevance of the literature to ensure the timeliness and pertinence of the research content. During the literature review process, various analytical methods were employed to enhance the objectivity and reproducibility of the research. Initially, qualitative analysis was performed to deeply understand the principles and application cases of generative AI, including a detailed examination of the technical details, application scenarios, and actual effects described in the literature. Subsequently, content analysis was conducted to systematically categorize and summarize the key viewpoints and arguments in the literature. This step involved the induction and comparison of data, theoretical perspectives, and research outcomes in the literature. Finally, comparative analysis was performed to reveal consensus and discrepancies between different publications, thereby identifying gaps in current research and future directions. This process involved contrasting different viewpoints and methodologies in the literature, as well as exploring the reasons behind and the impacts of these differences. Through this comprehensive literature review approach, this study aims to provide a thorough and deep perspective to understand the current applications and future potential of generative AI in the field of scientific journal editing.

2 BASIC PRINCIPLES AND DEVELOPMENT OF GENERATIVE AI

Generative artificial intelligence (AI) has become a key direction in the development of AI technology, especially in the field of natural language processing (NLP). The core of generative AI lies in its ability to learn from massive data sets and subsequently generate new content, such as text, images, and audio. In the realm of scientific journal editing and academic publishing, the application of this technology is primarily focused on text generation and processing.

The foundation of generative AI is machine learning, particularly deep learning models like neural networks. These models learn patterns and structures within data through training on large datasets, enabling them to generate new, similar outputs. In the context of text generation, this typically involves language models, such as OpenAI's GPT (Generative Pre-trained Transformer) series. These models utilize the so-called "transformer" architecture, which effectively handles long-distance dependencies and captures complex patterns within the text[7].

Globally, various research institutions and scholars have extensively studied the development and application of generative AI. For example, researchers in Europe and North America have made significant advancements in exploring the use of generative AI in academic publishing, while studies in Asia have focused more on innovative approaches to handling linguistic diversity with AI technology[8][9]. The consensus among these studies is on the powerful potential of generative AI, while the divergence lies in how best to apply these technologies across different languages and cultural contexts.

As technology has progressed, generative AI has gone through several important stages. Early models, such as those based on RNNs (Recurrent Neural Networks), were limited by shorter dependency relationships and restricted generative capacities. The transformer architecture, however, is a more advanced technology widely used in natural language processing today. Key to this architecture is its unique "self-attention mechanism," which allows the model to consider the relationships between all words in a sentence simultaneously, thereby more effectively processing linguistic information[7]. Unlike RNNs, transformers do not rely on the sequential processing of data. This means they can process entire sentences at once, rather than one word at a time, thus improving both speed and efficiency. Additionally, their multi-head attention mechanism enables the model to capture more complex information across different representational subspaces, which is particularly useful for understanding complex language structures. These features make the transformer an ideal choice for natural language tasks such as text translation, text generation, and language understanding. Based on these advantages, the transformer has become the foundational architecture for large language models like the GPT series from OpenAI.

3 APPLICATION OF GENERATIVE AI IN SCIENTIFIC JOURNAL EDITING

The editorial process of scientific journals is undergoing significant transformations driven by generative artificial intelligence (AI) technology. Currently, the application of generative AI in various stages of scientific journal editing includes manuscript initial screening, automated peer review, language polishing, text proofreading, format standardization, content structure optimization, and data analysis and interpretation.

3.1 Initial Manuscript Screening and Automated Peer Review

In the editorial process of scientific journals, initial manuscript screening and peer review are critical phases. With the advancement of generative AI technology, these processes are experiencing a revolution.

Firstly, AI's role in initial manuscript screening has become increasingly efficient. Traditionally, editors spent considerable time reading and evaluating each submitted manuscript to determine if it meets the journal's basic requirements and quality standards. Now, with AI technology, this process can be automated. AI systems can quickly analyze the basic structure, research field, and compliance of manuscripts, thus determining whether they are suitable

for further review. This not only speeds up the process but also ensures consistency and fairness in the initial screening[1][10].

Internationally, various research institutions have extensively explored the application of generative AI in initial manuscript screening and automated peer review. For example, research in Europe focuses on enhancing the accuracy and efficiency of AI technology, while North American studies emphasize the ethical and transparency issues in the peer review process[11][12]. The consensus among these studies is on the potential of generative AI to improve peer review efficiency, while the divergence lies in how to balance AI's automation capabilities with the professional judgment of human reviewers.

Secondly, the role of AI in automated peer review extends beyond initial screening. Generative AI also assists in identifying major issues in manuscripts, such as improper research methods, errors in data analysis, and even potential academic misconduct like plagiarism. By filtering out these issues in advance, AI reduces the burden on human reviewers, allowing them to focus more on in-depth academic evaluation[3][4].

Moreover, there is the challenge of balancing efficiency and quality. Although AI enhances efficiency in initial manuscript screening and automated peer review, it also brings challenges to quality control. AI systems might not fully comprehend complex academic arguments or capture subtle research innovations. Therefore, the role of human reviewers remains crucial. Ideally, AI and human reviewers should work together, combining AI's efficiency with human depth of understanding to enhance the quality and efficiency of the review process[2].

Lastly, looking to the future, as AI technology continues to evolve, its role in the manuscript review process is expected to grow. The learning capabilities of AI mean it can continually improve its accuracy and efficiency from ongoing review processes. Additionally, AI could also play a role in matching reviewers with manuscripts by analyzing reviewers' professional backgrounds and research interests, to find the most suitable reviewer for each manuscript[13].

3.2 Language Polishing and Text Proofreading

In the editorial process of scientific journals, language polishing and text proofreading are crucial for enhancing the quality of manuscripts. The advancements in generative AI have brought new possibilities to this stage. For non-native English speakers, language polishing is a significant challenge. Generative AI technologies, such as GPT-3, have demonstrated potential in improving the language quality of texts. These systems analyze and modify texts to make them smoother and clearer, thus enhancing the readability and professionalism of the manuscripts[14].

In the international research community, scholars from different regions have extensively explored the application of generative AI in language polishing and text proofreading. For instance, researchers in Asia and Europe have found that generative AI shows great potential in handling the language polishing of non-English texts, while studies in North America focus more on the application of AI technologies in improving the quality of English texts[15][16]. The consensus among these studies is on the effectiveness of generative AI in language polishing, while the divergence lies in how to best apply these technologies to texts from different languages and cultural backgrounds.

Text proofreading involves not only correcting grammatical and spelling errors but also ensuring the consistency and accuracy of the text. AI systems, such as Wordvice AI Proofreader, have shown performance comparable to human editors in automated proofreading. These systems can identify and correct errors in the text, provide language improvement suggestions, and thereby enhance the overall quality of the manuscript[17].

While AI improves efficiency in language polishing and text proofreading, it also presents challenges. AI systems may not fully capture the complex contexts and subtle language nuances. Therefore, the involvement of human editors remains indispensable to ensure the accuracy and appropriateness of the text[18].

As AI technology continues to advance, the role of AI in language polishing and text proofreading is expected to further increase. The learning capabilities of AI mean it can continually improve its accuracy and efficiency from ongoing editing and proofreading processes. Moreover, AI may also play a role in providing more personalized language suggestions to meet the specific needs of different authors[19].

3.3 Format Standardization and Content Structure Optimization

Scientific journals typically have strict requirements for the format of submissions, including citation styles, layout of tables and figures, and the overall structure of documents. Generative AI technologies, such as GPT-3, have proven effective in assisting with the standardization of formatting in scientific journal editing. For instance, Koga (2023) noted that these tools can automatically detect and correct formatting errors, such as incorrect citation styles or inconsistent heading formats, thereby enhancing the overall presentation quality of manuscripts[10]. Hsu (2023) further emphasized the significant role AI plays in ensuring that manuscripts meet the standard formatting requirements of journals[1].

Globally, various research institutions have explored the application of generative AI in format standardization and content structure optimization. For example, according to the study by Bosman and others, small and medium-sized publishers typically submit manuscripts in Word format, and the OS-APS project automatically extracts XML from these manuscripts, provides optimization, and exports in multiple formats (PDF, HTML, XML, EPUB), thereby achieving format standardization[20].

Beyond format standardization, optimizing the content structure is another critical aspect of scientific journal editing. Studies by Lin (2023) and Zenni & Andrew (2023) have shown that generative AI can assist authors and editors in optimizing the structure of articles, such as adjusting paragraph sequences to ensure coherence and logical flow of

arguments. These tools can analyze the entire structure of an article and suggest improvements, such as adding subheadings or reorganizing paragraphs to enhance clarity and the effectiveness of the argumentation[3][4].

Although generative AI enhances efficiency in format standardization and content structure optimization, it also presents challenges. Research by Grillo (2023) and Nature (2023) has indicated that AI systems may not fully understand the complex content of articles or capture subtle structural differences[2][21]. Therefore, the involvement of human editors remains crucial in ensuring the quality of manuscripts. Ideally, AI and human editors should work together, combining AI's automation capabilities with human expertise to enhance the quality and professionalism of the publications.

As AI technology continues to evolve, its role in format standardization and content structure optimization is expected to grow. Yeo-Teh & Tang (2023) suggested that the learning capabilities of AI mean it can continually learn from the editing and proofreading processes, thereby improving its accuracy and efficiency[14]. Additionally, AI might also play a role in providing more personalized editing suggestions to meet the specific needs of different authors and journals.

3.4 Data Analysis and Interpretation

The application of generative AI in the data analysis and interpretation capabilities within the scientific journal editing process is still relatively underexplored, but its application in other areas of data analysis and interpretation can serve as a reference.

Firstly, the automation of data analysis and interpretation. Generative AI can automate the data analysis process, enhancing both efficiency and accuracy. For instance, Zohny McMillan and King (2023) discuss the application of generative AI in clinical pathways, including text generation and data analysis, which can produce text mimicking the style of human authors, thus providing new perspectives in data interpretation[22].

Internationally, researchers from different regions have extensively explored the application of generative AI in data analysis and interpretation. For example, Ganjavi and others conducted a bibliometric analysis of top academic publishers and journals, discussing guidelines on the use of generative AI in academic and scientific publishing[23]. Additionally, Christou's study critically examines the current use of AI in research, highlighting its strengths and limitations, as well as ethical considerations, proposing five key considerations for the responsible, rigorous, and reliable use of AI in research practices[24].

Secondly, assistive decision-making and interpretation. Generative AI can assist scientific journal editors in identifying patterns and trends within complex datasets, thereby providing deeper data interpretations. For example, Lopez Gayoso and Yosef (2020) pointed out that generative models are applied in molecular biology, such as designing new molecules with specific properties or identifying harmful mutations in genomes, showcasing the potential of AI in data interpretation[25].

Furthermore, enhancing the fairness and accuracy of data analysis. Generative AI can also be used to reduce bias issues in data analysis. For example, Burlina and others (2021) explored the use of deep learning methods to mitigate biases in AI, particularly in diagnosing diabetic retinopathy[26].

Lastly, the ethics and responsibility of generative AI. The application of generative artificial intelligence (GenAI) raises a series of ethical and responsibility issues. Spector-Bagdady (2023) points out that GenAI, based on large language models, can gather, coordinate, and interpret massive amounts of data from diverse inputs like the internet, databases, and electronic medical records (EMRs)[27]. As such, governments, professional organizations, and even GenAI developers are calling for ethical analyses to guide policy changes. The research warns of the ethical and responsibility considerations that must be taken into account when using GenAI in the development of scientific journals. These issues not only involve data collection and use but also include how to ensure transparency and fairness in data analysis, as well as how to handle the resulting privacy and security issues.

4 ANALYSIS OF THE EFFICIENCY AND ACCURACY OF GENERATIVE AI APPLICATIONS

4.1 Empirical Analysis of Efficiency Enhancement

In the field of scientific journal editing, generative artificial intelligence (AI) has already begun to significantly enhance the efficiency of the editorial process. Lin (2023) pointed out in his research that large language models (LLMs), such as the GPT series, not only speed up the drafting, editing, and proofreading processes of manuscripts but also enhance the quality of writing[4]. These AI tools, by automating repetitive tasks such as initial manuscript screening and format standardization, significantly reduce the workload of editors and reviewers.

Additionally, Ganjavi et al. (2023) conducted an analysis of top academic publishers and journals, revealing the widespread application of generative AI in academic publishing[23]. They found that despite certain guidelines for using generative AI, its potential to enhance editing efficiency is widely recognized. These tools can rapidly analyze the basic structure and content of manuscripts, speeding up the review process while maintaining consistency and fairness.

Yoo (2024) further emphasized the transformative role of generative AI in scientific journal editing in his opinion article. He suggested that as technology develops, the role of scientific journals might extend beyond traditional gatekeepers to become significant facilitators in the knowledge discovery process[28]. The application of generative AI not only increases editing efficiency but could also lead to a "leap" in scientific knowledge, fostering a more extensive and inclusive scientific ecosystem.

4.2 Empirical Assessment of Accuracy

The application of generative AI in scientific journal editing has also demonstrated important roles in enhancing both editing efficiency and accuracy. Numerous studies have explored and evaluated this, reflecting recognition and challenges of generative AI in enhancing editorial accuracy.

Ganjavi and others (2023) indicated that in top academic publishers and journals, the use of generative AI has provided clear guidance, showcasing recognition of its role in enhancing editorial accuracy[23]. Although there are certain limitations on generative AI as an author, its application in manuscript generation and writing processes is widely accepted.

In the international research community, scholars from different regions have extensively explored the accuracy of generative AI in scientific journal editing. For instance, Carobene et al. evaluated the role, risks, and ethical impacts of AI in scientific publishing, especially in the paper drafting and review process[29]. Moreover, Grimaldi and Ehrler discussed the fundamental transformation of scientific publishing through AI text generation, emphasizing the potential of AI in scientific paper creation and the accompanying concerns[30-31].

As Yoo (2024) emphasized in discussing the future impact of generative AI on scientific journals, generative AI can help journals transcend their traditional gatekeeper roles to become crucial facilitators in the process of knowledge exploration[28].

British scholars have utilized generative AI in their work to improve task efficiency, save time and labor, and enhance competitiveness. However, they have not yet reached a clear conclusion on whether this technology has accelerated the output of academic research or improved its quality[32]. Similarly, Arya and Sharma (2023) explored the application of generative AI in the media industry, revealing the challenges brought by technological innovation, which are also applicable to the field of scientific journal editing. They pointed out that although generative AI has tremendous potential in content creation, it still has limitations in maintaining content quality and accuracy[33].

Similarly, Shah (2023) emphasized the new opportunities and challenges of generative AI in information acquisition. He noted that while generative AI offers new possibilities for addressing accessibility, low-resource areas, and training data bias, it also introduces new challenges related to hallucinations, harmful content, and information sources[34]. These issues are also present in scientific journal editing and require technological advancements and policy changes to address. Ju (2023) found in his experimental study that relying entirely on AI for writing tasks could lead to a 25.1% decrease in accuracy, while AI-assisted reading results in a 12% decrease in accuracy[35].

Hsu (2023) explored the application of generative AI in academic writing from a practical perspective. He cautioned that although generative AI is a valuable tool for generating and designing research ideas, academic writing, and learning English writing, critical thinking remains crucial in ensuring accuracy, ethical considerations, and maintaining rigorous academic standards[1].

Park (2023) further discussed the use of generative AI in scientific publishing, especially the application of large language models like ChatGPT. He highlighted that the rapid expansion of these tools in scientific publishing has triggered ethical and legal issues related to research integrity, plagiarism, copyright infringement, and authorship, affecting not only authors but also peer reviewers and editors[36].

Therefore, although generative AI has demonstrated potential to enhance efficiency in scientific journal editing, its effectiveness in improving editorial accuracy still requires further research and verification. As technology advances and models are optimized, we can expect more precise and reliable outcomes in the future.

5 FUTURE DEVELOPMENT TRENDS

5.1 Initial Manuscript Screening and Automated Peer Review

Generative AI technologies, particularly those based on deep learning language models like the GPT series, are increasingly being applied in the initial screening and peer review processes of scientific journals. These AI tools can automatically analyze submitted manuscripts, quickly identifying those that do not meet journal standards or exhibit potential academic misconduct. For example, AI can analyze textual patterns, citation situations, and data consistency to detect potential plagiarism or data falsification[31]. As technology progresses, the application of generative AI in manuscript screening and peer review is expected to become more intelligent and precise. These systems will be better able to understand complex academic arguments and research methodologies, thereby improving the efficiency and quality of the review process[37].

AI systems will be able to identify more subtle forms of academic misconduct and provide deeper analysis to help reviewers make more accurate judgments. Moreover, the development of AI technology will also make the review process more fair and transparent, reducing the possibility of human bias[38-39]. This technological advancement will profoundly impact the future of scientific journal editing by reducing the workload of editors and reviewers and enhancing the overall quality of manuscripts, ensuring academic integrity.

5.2 Automation of Language Polishing and Text Proofreading

Currently, generative AI technologies, like ChatGPT, have begun to be applied in the fields of language polishing and text proofreading, showing significant development trends. These AI tools can automatically detect and correct grammatical errors, enhancing the fluency and clarity of texts. As natural language processing technologies continue to

advance, the application of generative AI in language polishing and text proofreading is expected to become more efficient and accurate. For instance, systems like Effidit (Shi et al., 2022) provide functionalities such as text enhancement, error checking, and language polishing, significantly expanding the capabilities of writing assistants[40]. Tools like PaperCard (HAL, 2023) also demonstrate AI's application in assisting academic writing, effectively improving the efficiency and quality of literature reviews and text polishing. AI will be able to understand text context and complexity more deeply, offering higher-quality language polishing services[41]. Additionally, AI tools will be able to adapt automatically to specific linguistic needs of different disciplines and even provide customized advice based on particular publishing standards. This technological progress will significantly improve the efficiency and quality of scientific journal editing. AI's application will make language polishing and text proofreading faster and more economical, particularly beneficial for researchers and institutions with limited resources. Moreover, the widespread adoption of AI technologies will help narrow the gap between researchers from different regions and linguistic backgrounds, promoting fairness in global academic communication.

5.3 Intelligent Standardization of Formats and Content Structure Optimization

According to relevant literature, the application of generative AI in format standardization and content structure optimization is continuously improving. Herbert (2019) emphasized the importance of data-driven product companies in the academic publishing field, where AI technologies play a key role in format standardization and content structure optimization[42]. Additionally, Biradar, Khamari, and Bhate (2021) discussed AI's applications in editing decision systems, metadata enrichment, metadata standardization, and search enhancement, all of which are essential components of content structure optimization[43]. Based on these studies, it is anticipated that the future application of generative AI in format standardization and content structure optimization will become more efficient and intelligent. As AI technology advances, these tools will be able to more accurately identify and adapt to the specific formatting requirements of different journals. AI will provide deeper content structure analysis and suggestions, helping authors improve the overall quality and appeal of their articles. Moreover, the development of AI technology will also make content optimization processes more personalized and automated. This progress will significantly enhance the efficiency and quality of scientific journal editing. AI's application will make format standardization and content structure optimization faster and more economical, especially beneficial for researchers and institutions with limited resources. Additionally, the widespread adoption of AI technologies will help enhance the overall presentation quality of scientific journals, thereby increasing their impact in the academic community.

5.4 Deep Integration of Data Analysis and Interpretation

Generative AI technology, especially in the fields of natural language processing and data analysis, is changing the ways in which data analysis and interpretation are conducted[44]. These technologies, through deep learning and machine learning models such as Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs), can generate new data objects, providing deeper data analysis and interpretation[45]. AI tools can handle large amounts of data, quickly identify patterns and trends, and offer preliminary data interpretations. These tools can assist editors and reviewers in understanding complex datasets, providing deeper insights. In the future, the application of generative AI in data analysis and interpretation is expected to become more in-depth and intelligent. As deep learning technologies develop, AI will be able to offer more precise data analysis results and deeper interpretations[46]. AI tools will be able to identify and interpret more complex data patterns and even predict research trends and outcomes. Additionally, AI will present data analysis results in more understandable ways, enabling non-experts to comprehend complex scientific findings. AI's application will make data analysis and interpretation processes faster and more accurate, especially in handling large-scale or complex datasets. Moreover, the widespread adoption of AI technologies will help enhance the depth and breadth of scientific journal content, thereby increasing their impact in the academic community.

5.5 AI in Topic Selection for Scientific Journals

Generative AI technology, particularly in data processing and analysis, is becoming a crucial basis for topic selection in scientific journals. These AI tools, like ChatGPT and other generative language models, can process and analyze large amounts of data, quickly identifying research trends and emerging topics, thereby helping editors and reviewers handle manuscripts more effectively while maintaining up-to-date knowledge of scientific research[44][47][48]. In the future, the application of generative AI in scientific journal editing is expected to become more widespread and in-depth. AI will be able to more accurately predict the impact and audience interest of research, providing more valuable insights to editors while more deeply engaging in the content creation and review process, offering more innovative ideas and suggestions[22][46]. This will enable scientific journals to more effectively discover and promote high-quality and innovative research. This technological progress will significantly enhance the efficiency and innovativeness of scientific journal editing, helping editors better handle the increasing volume of submissions and diversification of research fields[26][43]. The widespread adoption of AI technologies will help improve the innovativeness and impact of scientific journal content.

6 CONCLUSION AND FUTURE RESEARCH DIRECTIONS

This study has thoroughly explored the application of generative artificial intelligence (AI) in the editorial process of scientific journals and its impact on editing efficiency and manuscript accuracy. We found that with the rapid advancement of AI technology, particularly large language models such as the GPT series, these tools have demonstrated significant potential in areas such as initial manuscript screening, language polishing, format standardization, data analysis, and interpretation. By utilizing automated and intelligent tools, not only has the editing process become more efficient, but the quality and accuracy of manuscripts have also been enhanced. This is particularly evident in handling large volumes of submissions and complex data, where generative AI shows irreplaceable advantages.

However, we also identified challenges and limitations in the application of generative AI. Technological limitations, such as the AI models' ability to understand complex academic content, still need further improvement. Ethical issues, including determining authorship, the challenges of plagiarism detection, and ensuring the originality and quality of content, must be seriously considered. Additionally, an overreliance on AI technology could potentially overlook the critical judgment and creativity of human editors, which needs to be balanced through appropriate strategies.

Overall, the application of generative AI in scientific journal editing is in a phase of rapid development, and its potential to improve editing efficiency and content accuracy is immense. However, to fully utilize the advantages of these technologies while addressing challenges and limitations, ongoing research and innovation are required.

Future research directions include:

Exploring the limitations and challenges of generative AI: Future studies should analyze the limitations of generative AI in scientific journal editing, especially focusing on its ability to understand complex academic content and support innovative research.

Ethical responsibility and AI applications: With the widespread application of generative AI technology, research needs to focus on ethical responsibility issues, particularly in confirming authorship, detecting plagiarism, and ensuring the originality and quality of content.

Collaboration models between artificial intelligence and human editors: Future studies should focus on exploring effective collaboration models between AI and human editors to maximize the advantages of AI while retaining the deep insights and judgment capabilities of humans.

Emerging applications of AI in scientific journal editing: Investigate the emerging application areas of generative AI in scientific journal editing, such as automated content generation, editorial decision support, and enhancing the innovativeness and impact of scientific journal content.

Building ethical and legal frameworks for AI technologies: As AI technology continues to develop, research should focus on establishing corresponding ethical and legal frameworks to ensure that AI applications in scientific journal editing are both effective and ethically sound.

COMPETING INTERESTS

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STRATEGIES FOR CONSTRUCTING CLASSROOM READING CULTURE IN THE DIGITAL AGE

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Abstract: This study explores effective strategies for integrating reading culture into classroom culture to create a supportive environment for students' learning and growth. Utilizing a literature review approach, it synthesizes research findings on classroom reading culture construction from both international and domestic sources. Four main strategies are proposed: creating an engaging environment, involving teachers and parents, utilizing digital tools, and connecting reading to the real world. By providing diverse reading materials and comfortable spaces, fostering reading habits jointly with teachers and parents, offering personalized reading experiences through digital tools, and linking reading content with students' actual lives, these methods can effectively promote the construction of a classroom reading culture.
Keywords: Classroom reading culture, Reading environment, Digital tools, Student development

1 INTRODUCTION

In the context of rapidly advancing information technology, reading education is undergoing a profound transformation from traditional teacher-centered teaching models to more student-centered interactive learning models [1]. This shift underscores the importance of classroom reading culture, as a robust reading culture not only enhances students' interest and skills in reading but also fosters their critical and creative thinking[2-3].

Although current research has explored methods to create a reading environment conducive to student development through teacher guidance, school resource allocation, and parental collaboration [4-5], there is still a lack of literature on effectively integrating classroom reading culture with daily school management and environment setting. This paper aims to deeply investigate how to effectively incorporate reading culture into classroom culture building by analyzing and synthesizing existing studies and examples from both domestic and international contexts, creating an environment rich in books that supports learning and growth. It particularly focuses on how modern educational technology and community resources can be used to enrich and expand classroom reading activities, making them effective tools for supporting comprehensive student development.

Through such reviews and strategic analyses, this paper aims to provide educators with specific and practical strategies and insights, promoting the deep development of classroom reading culture and ultimately serving the comprehensive growth and development needs of students.

2 LITERATURE REVIEW

With the deepening of educational research, scholars are increasingly focusing on the construction of classroom reading culture and its positive impact on students' reading habits, cognitive development, and social skills. In recent years, many scholars have explored how diverse strategies and environmental settings can foster students' interest and abilities in reading.

International research provides significant insights into how reading activities enhance students' academic and social skills. Studies by Clark and Rumbold (2006) have highlighted the long-term positive impact of reading for pleasure on personal and educational development [6], a finding supported and recognized globally. For example, research by Wingard et al. (2020) shows that a rich reading environment significantly enhances students' reading frequency and achievement , emphasizing the importance of schools investing in the latest book resources and optimizing reading spaces[7].

Further, Schaffner and Schiefele (2019) in their cross-national studies found that systematic reading promotion programs not only improve students' reading skills but also enhance their understanding of academic content and academic achievements[8]. These studies underscore the profound impact of reading culture on educational outcomes and suggest the possibility of achieving educational goals through structured reading programs. Garner and Bochna (2018) focused on optimizing the reading experience through e-books and digital resources, noting that the introduction of digital reading tools can increase student engagement and strengthen the learning experience through interactivity[9]. Similarly, Peterson and Lach (2020) compared different national reading strategies and found that flexible use of multimedia and interactive technology can effectively attract young readers and foster their interest in reading[10]. From the perspective of educational equity, research by Alam et al. (2023) revealed how providing equal reading opportunities can reduce disparities in educational achievements[11]. They suggested ensuring all students have access to high-quality reading materials through national and community-level programs. Additionally, studies have shown that integrating reading with students' cultural backgrounds and interests, as demonstrated by Walker and Logan (2019),

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can significantly enhance students' motivation to read and their understanding of texts[12]. This approach highlights the importance of culturally relevant educational content in improving reading outcomes for students.

In China, the progress of educational reforms has led schools and teachers to place increasing emphasis on building classroom reading culture. Yi Min (2023) noted that for younger students, cultivating a reading interest requires systematic reading activities and active guidance from teachers[5]. By setting specific reading goals and organizing diverse reading activities, students' motivation to read can be effectively stimulated [13]. Hu Yuyan (2020) emphasized the importance of parental involvement in building classroom reading culture, proposing that schools strengthen parent participation through parent-teacher meetings and other interactive forms, jointly promoting the cultivation of students' reading interests[14]. A well-developed classroom reading culture not only enhances students' reading skills but also boosts their social interaction abilities, critical thinking, and innovative thinking skills [15]. Such a culture provides a platform for students to engage in discussions and develop deep thinking and understanding during their interactions.

Recent research has also begun to focus on how digital technology influences the construction of reading culture. Studies show that using digital tools and platforms can effectively increase students' engagement in reading [16] and offer personalized reading experiences to meet the diverse needs of different students [17]. Moreover, the use of e-books and online reading apps not only provides students with a wider selection of reading options but also makes reading activities more flexible and interactive [18]. Digital tools can effectively stimulate teenagers' interest in reading, improve their reading abilities, and enhance their academic performance, with teachers playing a key role in this process [19]. Even online testing systems and educational tools can enhance engagement, understanding, and relational capabilities through various learning methods and technologies, thus improving students' performance [20].

Through the review of these literatures, we can see that the construction of classroom reading culture not only requires the efforts of teachers and schools but also needs the support of families and communities. An effective classroom reading culture construction should be a multi-faceted, interdisciplinary complex process that involves the cooperation and efforts of teachers, school administrators, parents, and students.

3 STRATEGIES FOR CONSTRUCTING CLASSROOM READING CULTURE

Adopting comprehensive strategies is key in the process of building classroom reading culture. This section will explore four main strategies: creating an engaging environment, involving teachers and parents, utilizing digital tools, and connecting reading with the real world.

3.1 Creating an Engaging Environment

Creating an attractive reading environment is the first step in stimulating students' interest in reading. Schools and teachers can design inviting reading corners with comfortable seating and various lighting options to create a cozy reading atmosphere. Additionally, the presentation of books should also consider aesthetics and accessibility to encourage students to choose reading materials independently[21].

Various strategies can be implemented to create more attractive and functional reading environments. For example, introducing picture book readings during daily noon reading time can spark students' interest in reading. Choosing children's favorite classics like "Different Just Like Me" and "Bigfoot Ballet," and inviting parents to tell stories in class can create a rich classroom reading atmosphere.

Moreover, specific reading corners can be established, equipped with comfortable cushions and suitable lighting, and regularly updated thematic bookshelves can be set up, allowing students to read freely during breaks. By transforming these physical spaces, not only can students' interest in reading be enhanced, but it also helps them develop lasting reading habits.

The selection and display of classroom books are also crucial. Organizing activities like "Reading Floating Bag," where each bag contains four books chosen by students and circulated regularly among classes, not only enriches students' reading choices but also adds an element of fun to reading.

In schools with limited resources, creating ideal reading spaces can be a challenge. Moreover, acquiring high-quality and diverse reading materials might also be restricted by economic or geographical factors. In such cases, schools can increase resource accessibility by crowdfunding, applying for educational funds, or collaborating with local libraries, ensuring all students enjoy a rich array of reading resources.

By integrating these strategies, not only can a functional and aesthetically pleasing reading environment be created, but also significantly enhance students' reading frequency and quality, thereby fostering their reading interest and habits.

3.2 Involvement of Teachers and Parents

Teachers play a central role in stimulating and maintaining students' interest in reading. They should promote student participation through regular reading activities, such as reading groups and book clubs, and encourage parents to support reading activities at home. For example, schools could regularly host "Parents Reading Nights" to invite parents to participate in their children's reading learning and discuss the books together[22].

Teachers can also organize parents to participate in classroom reading teaching by scheduling parents to take turns telling stories or joining in reading discussions. This direct involvement of parents not only increases students' interest in reading activities but also strengthens the collaboration between home and school in education.

Moreover, teachers can use modern communication tools, such as class newsletters or social media platforms, to regularly share reading resources and photos of reading activities, enhancing parents' involvement and support for school reading activities. The use of technology also facilitates communication between parents and teachers, making it easier for parents to understand and participate in their child's learning process.

Teachers should also guide parents to understand their crucial role in their children's reading development and provide training on home reading strategies. For instance, teachers could offer advice on choosing books suitable for their children's ages and interests, and how to create a reading corner at home.

In cases where parents are busy with work, cultural differences exist, or there are insufficient educational levels at home, establishing a community support network can enhance parental involvement. Schools might organize community reading days, inviting parents and community members to participate in reading activities together, thereby creating a supportive community environment for reading.

Through these strategies, teachers and parents can together create a supportive reading environment, not only enhancing students' reading skills but also boosting their social interaction abilities, critical thinking skills, and innovative thinking capabilities.

3.3 Utilizing Digital Tools

With the advancement of technology, digital tools provide new impetus for reading instruction. E-books, interactive reading applications, and online reading platforms can offer personalized reading experiences and help teachers effectively track and assess students' reading progress. Additionally, educational technology tools can be used to enhance students' reading comprehension and critical thinking skills[23].

However, over-reliance on technology may transform active readers into passive recipients of information. Moreover, technological failures or unequal access to technology can affect the effectiveness of digital reading tools. Therefore, while utilizing digital tools, teachers should maintain traditional reading activities, such as reading physical books and taking handwritten notes, to cultivate students' deep reading abilities. Ensuring the stability and ease of use of technological tools is essential so that all students can access them equally.

3.4 Connecting Reading with the Real World

Connecting reading content with students' real-life experiences can significantly increase the relevance and appeal of reading. Teachers can select books or articles related to the local community, or organize students to participate in community service projects, allowing them to understand and engage with community activities through reading. This practice not only enhances students' sense of social responsibility but also increases their interest in reading[24].

Through a variety of activities, the connection between reading and the real world can be promoted. For instance, choosing books related to local community issues or current social events for class-wide reading can help students see the connection between reading and their living environment. If the community is facing environmental challenges, selecting books on themes such as nature conservation can allow students to learn practical knowledge through reading, thus fostering their environmental awareness. Furthermore, organizing "Reading Floating Bag" activities, where students place their favorite books in specially designed bags and exchange them within the class or school, not only increases students' reading choices but also promotes a community culture of reading, deepening students' understanding and respect for their peers' reading interests. Additionally, picture book reading can serve as a bridge linking curriculum knowledge with real-life. Choosing picture books related to local culture, scientific discoveries, or social events can help students learn practical knowledge about nature, science, history, and culture while enjoying the story. Lastly, organizing students to participate in reading activities at community libraries or read together with elderly community members not only enhances students' social responsibility but also provides practical reading application scenarios. For example, students can discuss the content of books with elderly people after reading, or showcase their reading outcomes at community centers, such as book reports or thematic exhibitions.

Through these specific reading activities, students can not only gain knowledge in the learning process but also experience the practical value of reading in personal growth and social participation. These activities help establish a comprehensive reading culture, making reading a part of students' daily life and community interaction.

4 CONCLUSION

This paper has explored the construction of classroom reading culture, focusing on strategies such as creating an engaging environment, involving teachers and parents, utilizing digital tools, and connecting reading with the real world. These strategies demonstrate potential in enhancing students' interest and participation in reading while also facing some implementation challenges.

Creating an Engaging Environment: Creating an attractive and comfortable reading environment is crucial for stimulating students' interest in reading. Schools should strive to provide a variety of reading materials and appealing reading spaces.

Involvement of Teachers and Parents: Active participation by teachers and parents is essential for fostering students' reading habits. Their collaboration can support students' reading growth through family reading activities and school reading programs.

Utilizing Digital Tools: As technology advances, digital tools offer convenience and new possibilities for reading instruction. However, using these tools appropriately and balancing traditional reading methods with modern technology is key to future developments.
Connecting Reading with the Real World: Connecting reading content with students' real-life experiences can enhance the relevance and attractiveness of reading. This approach helps students better understand reading materials and apply the knowledge learned to real-life situations.

5 FUTURE RESEARCH AND PRACTICAL OUTLOOK

Future research should further explore how to effectively combine traditional and modern educational tools to promote students' comprehensive reading development. Additionally, researchers should consider different cultural and educational backgrounds in their practices, exploring more inclusive and diverse methods for building reading culture.
In practice, educators should be committed to innovating and testing new educational strategies to meet the rapidly changing educational demands and technological advancements. Furthermore, policymakers and educational leaders should provide necessary support and resources to schools to achieve educational equity and promote effective reading culture construction strategies.
Through these efforts, we can anticipate that future schools will provide an environment that supports and enhances reading development for all students, enabling them to succeed academically and personally.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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RESEARCH ON MARKETING STRATEGY OF SHANGHAI Y TEA HOUSE IAPM MALL STORE

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Abstract: To analyze and address the current marketing challenges faced by Shanghai Y Tea House iAPM Mall Store, this study adopts interviews, literature review, and observation methods to deeply analyze the store's marketing strategy issues. The research found that the main problems include unstable product quality, low cost performance, lack of diversified channel integration, and single promotion mode. These issues mainly stem from inadequate product quality control, inflexible price adjustment mechanisms, excessive use of traditional business thinking, and traditional promotion methods. Based on this, the study proposes corresponding countermeasures, including strict product quality control, differentiated pricing implementation, online and offline channel integration, and innovative promotion methods to improve its marketing strategy, enhance competitiveness, and promote sustainable and healthy store development.
Keywords: Marketing strategy optimization; Product quality; Channel integration; Promotion innovation

1 INTRODUCTION

With the development of China's economy and the spread of tea culture, the competition in the teahouse industry has become increasingly fierce. As a traditional leisure venue, teahouses have recently transitioned from traditional business models to modern, diversified business models. Consumers' demand for teahouses has shifted from merely being a place to drink tea to seeking higher-level cultural experiences and social spaces [1]. Therefore, marketing strategies in the teahouse industry have become particularly important.

As a high-end chain store under Y Tea House, the Shanghai Y Tea House iAPM Mall Store holds a certain level of representativeness in the market. The teahouse attracts numerous customers with its unique Sino-Japanese fusion decor and high-quality tea products. However, amidst increasingly fierce market competition, the Shanghai Y Tea House iAPM Mall Store also faces a series of marketing challenges, such as unstable product quality, low cost performance, lack of diversified channel integration, and single promotion modes.

This paper selects the Shanghai Y Tea House iAPM Mall Store as a single case study, deeply analyzing the problems in its marketing strategy and proposing corresponding improvement suggestions to provide insights and references for the development of the teahouse industry. The Shanghai Y Tea House iAPM Mall Store is chosen as the case primarily because of its representativeness in the high-end teahouse market and the unique challenges it faces. By analyzing the main problems in the current marketing strategy of the Shanghai Y Tea House iAPM Mall Store, practical improvement suggestions are proposed to help enhance its market competitiveness and provide valuable references and guidance for other practitioners in the teahouse industry.

Through this study, it is hoped to provide theoretical support and practical references for the teahouse industry to cope with market challenges and optimize marketing strategies, thereby promoting the sustainable and healthy development of the teahouse industry.

2 Literature Review

Research on the marketing strategies of the teahouse industry, both domestically and internationally, mainly focuses on the following aspects: the application of the 4P theory, consumer behavior analysis, and market competition strategies. Existing studies have shown that product quality, pricing strategies, channel integration, and promotional innovation are key factors influencing the success of teahouses.

The 4P theory, namely Product, Price, Place, and Promotion, is the core theory of marketing strategies. When formulating marketing strategies, teahouses need to comprehensively consider product diversity and quality, price rationality, channel coverage, and promotional innovation[2]. Through the application of the 4P theory, teahouses can more effectively meet consumer needs and enhance market competitiveness.

Consumer behavior analysis is of great significance in teahouse marketing. Modern consumers' demand for teahouses has shifted from simply drinking tea to seeking higher-level cultural experiences and social functions[3]. Therefore, when designing marketing strategies, teahouses need to deeply understand the consumption psychology and behavior habits of target customers, and improve customer satisfaction and loyalty through precise market segmentation and positioning[4].

In the fierce market competition, teahouses need to continuously innovate their marketing strategies to maintain a competitive edge. Teahouses should combine their own characteristics and market environment to formulate differentiated competitive strategies, such as brand positioning, service innovation, and experiential marketing[5].

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Through cross-industry cooperation and diversified channel integration, teahouses can expand their market influence and attract more consumers[6].

In summary, existing research provides important theoretical support and practical guidance for this paper. However, most studies focus on macro-level theoretical discussions and lack in-depth analysis of specific cases. This paper aims to fill this research gap by conducting a single case study of the Shanghai Y Tea House iAPM Mall Store, providing empirical references for the optimization of marketing strategies in the teahouse industry.

3 Research Design and Case Description

3.1 Research Design

This study adopts a single case study method, using interviews, observations, and literature review methods to deeply analyze the marketing strategies of the Shanghai Y Tea House iAPM Mall Store. The single case study method is suitable for detailed, in-depth research on a single subject, particularly for exploratory and explanatory research.

Interviews: Interviews are an important method for obtaining in-depth information and understanding the perspectives of respondents. This study conducts semi-structured interviews to collect the views and suggestions of the store manager, employees, and some customers on the teahouse's marketing strategies. The interviewees include the store manager, senior employees (with at least 3 years of work experience), and 10 regular customers. The interview content design includes evaluation of existing marketing strategies, existing problems, and improvement suggestions. Each interview lasts about 30-60 minutes, and the interviews are conducted in a quiet private room within the teahouse.

Observations: Observations are used to directly understand the operation of the teahouse and customer behavior, supplementing the data from the interviews. Observations are conducted at various times throughout the week (including weekdays and weekends) in different areas of the teahouse. Observation content includes customer entry and exit times, customer activities within the store, and employee service behaviors. Observations are recorded using notebooks and mobile phones, and photos are taken when necessary (with permission).

Literature Review: The literature review method involves collecting and analyzing existing literature to understand relevant research and theoretical foundations. Relevant literature on teahouse marketing strategies is collected through academic databases, industry reports, and internal teahouse materials. Literature related to teahouse marketing strategies, consumer behavior, and market competition strategies is selected for analysis. The collected literature is categorized, organized, and analyzed to summarize the main points and findings of existing research.

3.2 Case Description

Y (Shanghai) Cultural Communication Co., Ltd. was established on March 24, 2016, with a registered capital of 10 million yuan. Its subsidiary, Y Tea House, is a high-end chain teahouse brand that meets the diverse needs of young people and business professionals. Y Tea House attracts a wide range of customers with its Sino-Japanese fusion decor style, providing a comfortable and diverse tea drinking environment, becoming an "urban oasis." Y Tea House has successfully expanded to four major cities: Shanghai, Hangzhou, Chengdu, and Beijing through continuous innovation and adaptation to market demands. As of the end of 2023, Y Tea House has 43 stores in these cities, including 41 in Shanghai, 3 in Hangzhou, 2 in Chengdu, and 1 in Beijing.

The Shanghai Y Tea House iAPM Mall Store is an important store of the brand, located on Nanchang Road in Xuhui District, Shanghai, covering an area of about 400 square meters. The store has 22 indoor rooms and 11 outdoor rooms, each being a private room. The store's decor combines Chinese and Japanese styles, creating an elegant environment. The store employs 11 staff members, including 1 store manager, 4 tea artists, 2 receptionists, 2 logistics staff, 1 supervisor, and 1 cleaner. The teahouse mainly sells seven types of tea, including black tea, white tea, oolong tea, rock tea, pu-erh tea, cold brew tea, and flower tea, paired with fruit, cakes, ice cream, and nuts.

The Y Tea House iAPM Mall Store is located in a prime location near the subway station exit, attracting a large flow of customers. Additionally, the brand influence of Y Tea House and a large number of loyal customers ensure its stable operation and revenue. Through years of development, Y Tea House has not only become a transmitter of tea culture but also an important place to meet residents' spiritual and cultural needs. Its comprehensive marketing strategies provide valuable case studies for other teahouses and similar businesses.

In terms of product strategy, Shanghai Y Tea House offers a total of 12 types of products, including tea and snacks. Y Tea House is committed to innovation, continuously creating and launching unique and diverse product combinations to build its brand, thereby meeting the diverse needs of customers. Additionally, it changes snacks with the seasons to increase customer expectations. While teahouses generally focus on tea, Y Tea House offers a variety of products including tea, fruit, cakes, ice cream, nuts, noodles, and baked milk. This diversity in products helps shape the brand image, enhancing brand awareness and influence.

In terms of pricing strategy, Y Tea House stores are geographically dispersed, mostly located in core areas with high foot traffic. The different store sizes, decor styles, and geographic locations result in inconsistent pricing. Different types of products adopt cost-oriented pricing to ensure the teahouse can achieve profits. Furthermore, the teahouse uses measures such as offering coupons and discounts for members to attract customers, thereby increasing profits and boosting store sales.

In terms of channel strategy, in the current market competition, Y Tea House's sales channels mainly include online and offline channels. Firstly, Y Tea House is very cautious in selecting store locations, which is crucial for the teahouse's

future prospects. Therefore, the stores are located in prime locations with convenient transportation and high foot traffic, attracting customers to visit. Most customers consume through offline channels, directly visiting the stores. Secondly, Y Tea House keeps pace with the times and the development of the internet, cooperating with online platforms such as Meituan, Douyin, and Xiaohongshu to promote the Y brand, increasing its influence and attracting consumer interest and attention. Overall, Y Tea House sets different prices based on the specific location of each store and the consumption level of customers, implementing diversified pricing.

In terms of promotion strategy, firstly, Y Tea House publishes knowledge about tea culture on WeChat and Xiaohongshu, such as tea knowledge, tea tasting tips, and tea brewing precautions, to attract tea enthusiasts' attention. It also conducts lottery draws and offers Meituan coupons on Douyin to attract customers to experience consumption. Secondly, Y Tea House has established a membership system, providing exclusive discounts and benefits for members, such as discounts, points redemption, and member exclusives, greatly increasing customer loyalty. Lastly, Y Tea House regularly launches new products and tea drinks, accompanied by promotional activities such as limited-time discounts and buy-one-get-one-free offers. Through innovation, it meets the diverse needs of customers, attracting them to try the products, enhancing attractiveness and increasing sales.

4 RESEARCH RESULTS AND ANALYSIS

Through in-depth research on the Shanghai Y Tea House iAPM Mall Store, this paper identifies some key issues in its marketing strategies. These issues are concentrated in aspects such as product quality, cost performance, channel integration, and promotion modes. The following are the specific research results and analysis:

4.1 Product Quality Issues

Product quality is crucial to the success of a teahouse, but the Shanghai Y Tea House iAPM Mall Store has shortcomings in supply chain management and quality control, leading to fluctuations in tea product quality. The research reveals that the main problems include inadequate supply chain management, insufficient product quality control, and an imperfect customer feedback mechanism.

Firstly, the teahouse's supply chain management lacks a strict supplier evaluation and management mechanism, resulting in inconsistent tea quality. These issues not only affect the stability of the tea products but may also lead to a decline in the quality of certain batches, directly impacting customer experience and satisfaction. Secondly, product quality control is inadequately implemented in practice, with employees not strictly adhering to quality standards. This is evident in the failure to strictly control temperature and humidity during tea storage, leading to deterioration in tea quality. Additionally, the tea-making process also involves non-standard operations, further affecting the final quality of the tea products. Moreover, the current customer feedback mechanism fails to effectively collect and address customer opinions, resulting in some quality issues not being resolved in a timely manner. Although the teahouse has suggestion boxes and online feedback channels, these channels are underutilized, and customer feedback information does not promptly reach management.

4.2 Cost Performance Issues

Cost performance is a significant consideration for consumers when choosing a teahouse. However, the Shanghai Y Tea House iAPM Mall Store has several notable issues in this regard, affecting customer willingness to consume and loyalty. The specific problems are mainly concentrated in three areas: high prices, insufficient perceived product value, and lack of innovation in promotion strategies.

Firstly, the teahouse's high prices somewhat limit its target customer base. The research found that Y Tea House's pricing strategy primarily targets the high-end market, but its high prices do not fully reflect the actual value of the products and services. This mismatch between price and value leads some customers to perceive the teahouse's cost performance as low, affecting their consumption decisions. Secondly, customers have insufficient perceived value of the teahouse's products. Although the teahouse provides high-quality tea and an elegant environment, customers' perception of these added values is relatively limited. Some customers expressed that the teahouse's products and services did not fully meet their expectations, especially regarding the added services and experiences matching the prices. This indicates a deficiency in conveying the unique value of the teahouse's products and services. Moreover, the teahouse's promotion strategies lack innovation and diversity, failing to effectively enhance product cost performance. Currently, the teahouse's promotional activities are mainly focused on traditional discounts and gifts, which have limited appeal to modern consumers. Research points out that modern consumers are more inclined to participate in promotional activities with high interactivity and experiential value[7]. However, Y Tea House's investment and innovation in this area are insufficient, failing to effectively stimulate customer purchasing desire.

4.3 Channel Integration Issues

In the modern market, channel integration is an important means for companies to improve market coverage and customer satisfaction. However, the Shanghai Y Tea House iAPM Mall Store has significant shortcomings in channel integration, affecting its market performance. The specific problems are mainly concentrated in the insufficient

development and promotion of online channels, inadequate selection and management of offline channels, and weak integration of online and offline channels.

Firstly, the insufficient development and promotion of online channels limit the teahouse's market coverage. Although the teahouse has conducted online sales through its own website and social media platforms, its promotional efforts are clearly insufficient[8]. Utilizing search engine optimization (SEO), content marketing, and social media advertising can significantly enhance the visibility and traffic of online channels. However, Y Tea House lacks investment and strategies in this area, resulting in its online sales channels not achieving the desired effect. Secondly, the inadequate selection and management of offline channels affect customer experience and satisfaction. Although the Y Tea House iAPM Mall Store is located in a prime area with convenient transportation and high foot traffic, the store layout and environmental design have deficiencies. For example, some customers reported that the store's indoor lighting and seating comfort were not satisfactory, affecting their overall experience. Additionally, the teahouse faces issues with service efficiency and staff allocation during peak times, leading to long waiting times for customers and affecting their willingness to consume. Moreover, the weak integration of online and offline channels is another significant issue for the teahouse. Although the teahouse attempts to attract customers to offline consumption through online promotion, the interaction between online and offline efforts is not significant. A successful Online to Offline (O2O) strategy can effectively enhance customer engagement and loyalty[9]. Y Tea House lacks systematic strategies and execution plans in this area, failing to fully leverage the advantages of online channels to guide customers to visit the store.

4.4 Promotion Mode Issues

Promotion strategies play a crucial role in teahouse marketing, being important means to attract customers and boost sales. However, the promotion mode of the Shanghai Y Tea House iAPM Mall Store has significant issues, mainly manifesting in single promotion forms, lack of innovation and interactivity, and failure to effectively stimulate customers' purchasing desire.

Firstly, the teahouse's promotional activities are mainly concentrated on traditional discounts and giveaways, lacking innovation. Y Tea House's promotional activities are relatively monotonous, primarily relying on discounts and giveaways. These traditional methods have limited appeal to consumers, especially in a competitive market environment, where they cannot effectively highlight the brand's characteristics and product advantages. Secondly, the promotional activities lack diversity and personalization, failing to meet the needs of different customer groups. Different consumer groups have different expectations and responses to promotional activities, and personalized promotion strategies can more effectively attract the attention and participation of specific groups[10]. However, Y Tea House's promotional activities do not fully consider the preferences and needs of different customers, leading to a lack of interest and participation enthusiasm among some customers. Furthermore, the promotion strategies lack interactivity and experiential value, failing to fully utilize social media and digital marketing tools to enhance customer engagement. Modern consumers not only pay attention to price discounts but also value the interactive experience during consumption. For example, hosting online tea culture knowledge competitions and new product launch events on social media platforms can increase brand exposure and customer participation. However, Y Tea House's investment and innovation in this area are insufficient, failing to fully leverage the advantages of digital marketing to enhance promotion effectiveness. Lastly, the effectiveness evaluation and feedback mechanism of promotional activities are inadequate, making it difficult to timely adjust and optimize promotion strategies. Effective promotional activities require continuous monitoring and evaluation to adjust based on market feedback. However, Y Tea House lacks a systematic promotional effectiveness evaluation mechanism, leading to an inability to timely understand the actual effects and customer feedback of promotional activities, thereby affecting the optimization and improvement of promotion strategies.

5 Marketing Strategy Optimization Suggestions

Based on the in-depth analysis of the marketing strategies of the Shanghai Y Tea House iAPM Mall Store, this paper proposes the following improvement suggestions to enhance the teahouse's market competitiveness and customer satisfaction.

5.1 Improving Product Quality

To improve product quality, the Shanghai Y Tea House iAPM Mall Store needs to strengthen supply chain management, enhance quality control, and improve the customer feedback mechanism. Firstly, a strict supplier evaluation and management mechanism should be established, with regular audits and evaluations to ensure the quality and stability of tea sources. Secondly, during the tea production and storage process, quality standards should be strictly implemented, and employee training should be increased to ensure that every employee understands and follows the quality control procedures, especially in temperature and humidity control, to ensure the freshness and quality of the tea. Additionally, the customer feedback mechanism should be improved by establishing an efficient system for collecting and handling customer feedback. Customers should be encouraged to provide opinions and suggestions through various channels (such as online feedback, social media, and in-store suggestion boxes), and feedback data should be regularly analyzed to promptly adjust and improve product quality.

5.2 Enhancing Cost Performance

To enhance cost performance, the Shanghai Y Tea House iAPM Mall Store should optimize its pricing strategy, increase added value, and innovate promotional activities. Firstly, a multi-tier pricing strategy should be formulated based on the needs and payment capabilities of different consumer groups. For example, affordable price packages for regular consumers should be introduced while maintaining the quality and service standards of high-end products to attract a broader customer base. Secondly, additional services and experiences, such as tea art performances and cultural lectures, should be provided to enhance the added value of the products, allowing customers to pay not only for the tea but also for unique experiences and services. Additionally, diverse and personalized promotional activities should be designed to meet the needs of different customers. Exclusive member discounts, new product launch events, and points rewards can increase customer participation and loyalty.

5.3 Strengthening Channel Integration

To strengthen channel integration, the Shanghai Y Tea House iAPM Mall Store should enhance online channel promotion, optimize offline channel management, and improve O2O (Online to Offline) interaction effects. Firstly, investment in online channels should be increased, using search engine optimization (SEO), content marketing, and social media advertising to enhance brand awareness and website traffic. E-commerce platforms and social media should be utilized to interact with customers and boost online sales. Secondly, the store environment and service quality should be improved to enhance customer experience. Through scientific site selection and meticulous store design, a comfortable and elegant tea-drinking environment should be created to attract more customers to visit. Lastly, a systematic O2O strategy should be formulated to guide customers to offline consumption through online activities. Online platforms should be used to publish offline event information and provide a service model combining online reservations with offline experiences to enhance customer interaction.

5.4 Innovating Promotion Modes

To innovate promotion modes, the Shanghai Y Tea House iAPM Mall Store should increase interactivity and experiential value, diversify promotional methods, and improve the promotion effectiveness evaluation mechanism. Firstly, interactive promotional activities, such as tea culture knowledge competitions, new product tasting events, and social media interactions, should be designed to actively engage customers and enhance brand influence. Secondly, digital marketing tools should be used to regularly push personalized promotional information and hold joint online and offline events, increasing the diversity and appeal of promotional activities. Lastly, a systematic promotion effectiveness evaluation system should be established to regularly analyze and summarize the actual effects and customer feedback of promotional activities, and timely adjust and optimize promotion strategies based on data to ensure the effectiveness and continuous improvement of promotional activities.

Through these improvement suggestions, the Shanghai Y Tea House iAPM Mall Store can effectively improve product quality, optimize cost performance, strengthen channel integration, and innovate promotion modes, thereby enhancing market competitiveness and customer satisfaction and achieving sustainable development.

6 Research Limitations and Future Research Directions

This study conducts an in-depth analysis of the marketing strategies of the Shanghai Y Tea House iAPM Mall Store, identifying the main problems in aspects such as product quality, cost performance, channel integration, and promotion modes, and proposes corresponding improvement suggestions. However, this study also has certain limitations.

Firstly, this study uses a single case study method. Although it deeply analyzes the specific situation of the Shanghai Y Tea House iAPM Mall Store, the generalizability of its conclusions and suggestions may be limited. The research results of a single case may not fully represent the entire teahouse industry, as other teahouses may face different problems and challenges. Secondly, the data in this study mainly come from interviews, observations, and literature review. The subjectivity and limitations of the data may affect the accuracy and comprehensiveness of the research results. The selection of interviewees and the subjectivity of their responses may lead to bias, and the choice of time and location for observations may also affect the representativeness of the results. Lastly, the time span of this study is limited, and it does not continuously track the long-term development and changes of the teahouse, making it impossible to fully assess the actual effects and sustainability of the improvement suggestions.

Therefore, future research can be expanded and deepened in the following aspects. Firstly, a multi-case study method can be adopted to conduct comparative research on teahouses of different types and sizes to enhance the generalizability and reliability of the research conclusions. By comparing the marketing strategies and practices of different teahouses, the study can reveal their successful experiences and lessons, providing more comprehensive references for the industry. Secondly, more quantitative research methods can be introduced, such as surveys and data analysis, to collect and analyze larger sample data, improving the accuracy and objectivity of the research results. For example, large-scale customer satisfaction surveys and market analyses can be conducted to gain deeper insights into consumer needs and behaviors. Lastly, future research can conduct long-term tracking studies to evaluate the actual effects and sustainability of the improvement suggestions. By continuously monitoring the operations and market performance of teahouses, the

study can analyze the actual impact of the improvement measures, providing scientific evidence for the continuous improvement of teahouses.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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ACTION MECHANISM OF BELT AND ROAD COOPERATION TO PROMOTE GLOBAL POVERTY REDUTION AND CHINA'S EXPERIENCE

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Abstract: The Belt and Road Initiative is a concrete action expression of the concept of a community with a shared future for mankind. Poverty alleviation is one of the global development and governance problems that the Belt and Road is concerned with. This paper combines theoretical research and empirical analysis to explore the action mechanism of Belt and Road Cooperation to promote global poverty reduction, based on the current situation and problems of global poverty alleviation, especially those of the countries along the Belt and Road. We are committed to transforming the potential energy of Belt and Road cooperation into effective governance for global poverty reduction. Based on China's experience, the Belt and Road Initiative to promote global poverty reduction can start from six dimensions: government-led participation, rapid economic growth, individual capacity improvement, joint construction by social organizations, development shared by all, and the destiny of all mankind. Then, systematic and feasible strategies for breaking out of the "poverty trap", amplifying the "trickle-down effect", maintaining sustained income growth, realizing the diversity of the same direction, demonstrating the centrality of the people and gathering the strength of the community are clearly presented. This paper provides an action plan for high-quality jointly building the Belt and Road and accelerating global poverty alleviation.
Keywords: The Belt and Road Initiative; Poverty reduction; Action mechanism; Experience

Eliminating poverty is a common ideal for all countries around the world, and it is an important agenda that the whole human race cares about. The globalization since modern times has greatly promoted the integration of the world economy, but the global poverty problem has not been effectively alleviated as a result. The United Nations had no choice but to put "eradicating all forms of poverty in the world" at the top of the 2030 Agenda for Sustainable Development. The Belt and Road Initiative is a concrete expression of action in upholding the concept of a community with a shared future for mankind. The former not only embodies the community concept, but also implements specific agendas of the community, such as global poverty reduction and disease prevention and control. From the economic and social development levels and inequality conditions of countries around the world, the countries along the Belt and Road are generally in a low-income state, and the national poverty situation presents the characteristic of deep poverty, prolonged poverty, and more severe multi-dimensional poverty. China's experience in poverty reduction will bring important inspiration for global poverty reduction efforts under the framework of the Belt and Road Initiative.

1 INTRODUCTION

Since the initial proposal of the Belt and Road Initiative in 2013, it has become a hot research keyword for scholars both at home and abroad, and has gradually expanded from a single theme word to related areas such as poverty reduction and security. Chinese scholars have conducted initial research on how the Belt and Road can promote global poverty reduction and have built a solid research foundation: firstly, an interpretation and elaboration of the significance, connotation, goals, and pathways of the Belt and Road initiative. The Belt and Road initiative uses the historical symbol of the ancient Silk Road and raises the flag of peaceful development to actively develop economic partnerships with countries along the route and jointly build a community of shared interests, destiny, and responsibilities in terms of political mutual trust, economic integration, and cultural inclusiveness [2,3]. From the perspective of China's practice of its purpose, China adheres to the principle of joint consultation, joint construction, and shared benefits to promote the high-quality development of the Belt and Road Initiative through cooperation, with higher levels of cooperation, higher returns on investment, higher quality of supply, and higher resilience of development to achieve the shared goal of "high standards, sustainable, and people-centered" development. It has promoted a large number of cooperation projects that promote economic development, improve people's lives, and reduce poverty and promote shared prosperity in countries along the Belt and Road. It has turned the Belt and Road into a poverty alleviation and growth path, expressing China's desire to share its poverty reduction experience through deepening Belt and Road international cooperation and willingness to work with relevant parties to promote the development of global poverty reduction efforts. The second is an analysis of global poverty reduction, especially poverty reduction in countries along the Belt and Road, its current situation, influencing factors, and countermeasures. The global poverty reduction achieved since the new century is relatively significant, with the scale and incidence of extreme poverty in most regions gradually declining, but the problems of deep poverty and regional entrenchment are

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becoming increasingly prominent [4,5]. It is particularly noteworthy that poverty in developing countries along the Belt and Road is still quite prominent, and these countries generally have low economic development levels, poor infrastructure, uneven distribution of wealth, complex social conflicts, low levels of education among the public, and difficulties in effectively utilizing energy and resources. The base of the poor population is large, the duration of poverty is long, and there are fewer effective poverty alleviation schemes. The task of poverty alleviation is still quite arduous [6,7], and the poverty alleviation effects of development, employment, and trade are also clearly identified. The third is the research on the role, challenges, and pathways of poverty alleviation through jointly building the Belt and Road. Since the launch of the Belt and Road Initiative 9 years ago, the countries along the route have continuously improved their road and transportation facilities, obtained new investment for production, set up new enterprises to create job opportunities, and provided vocational training to improve the education level of workers. All of these countries have received direct or indirect help [8]. It is estimated that just the infrastructure construction alone can help 7.6 million people in the world escape extreme poverty and 32 million people escape moderate poverty by 2030 [9]. The spillover effects of investment, the sharing effects of technology, experience, and knowledge are quite significant [10]. The growth-driven development fostered by multi-party cooperation along the Belt and Road is more conducive to poverty alleviation. China's aid and investment have helped reduce poverty rates in "Belt and Road" countries with high poverty rates, high unemployment rates, large agricultural populations, and low per capita capital levels. The effect of poverty reduction in countries with lower per capita GDP is significantly stronger than that in countries with higher per capita GDP, and the poverty reduction effect of direct investment is slightly stronger than that of aid [11]. The core path of promoting global poverty reduction through the Belt and Road Initiative should focus on the five connectivity's of policy connectivity, infrastructure connectivity, trade connectivity, financial connectivity, and people-to-people connectivity, while combining real physical trade to carry out infrastructure construction, trade, capacity, and financial cooperation.

Foreign scholars pay more attention to the study of poverty reduction issues. One is the study of the main body, influencing factors, and strategies for global poverty reduction. Tomalin Emma [12] analyzed the positive impact of global economic organizations on global poverty reduction, Frank-Borge Wietzke [13] analyzed the contribution of population change to global poverty reduction and the inequality and poverty caused by fertility rate. Philippe Andre Orliange [14] and Salazar E.M. [15] believe that international development cooperation can solve the global challenge of poverty reduction. The latter takes the Philippines as an example to discuss the importance of government actions in global poverty reduction initiatives, including rural-urban transformation in the process of urbanization. It is demonstrated that rural poverty reduction is still more important than urban poverty reduction. The second is the study on the factors and measures to reduce poverty globally through the Belt and Road Initiative. Roland Berger Strategy Consultants, a US-based international consulting firm, conducted a special assessment of the Belt and Road Initiative's impact on global poverty reduction, and the results show that: through the cooperation framework of the Belt and Road Initiative, China's best way to help developing countries such as Pakistan along the route develop their economies is to effectively develop energy, provide sufficient employment opportunities, and introduce advanced technology, which will enable poor countries to become rich and will also make the poor countries along the Belt and Road better off. The Belt and Road Initiative provides a platform for developing countries along the route to ride the fast train of China's economic development, prosper their own economies, and improve people's livelihoods. Since the implementation of the Belt and Road Initiative, it has played a positive role in promoting regional connectivity and poverty reduction in cooperating countries [16,17].

From the existing literature, the academic community has achieved many excellent results in researching how the Belt and Road Initiative contributes to global poverty reduction, laying a solid theoretical foundation for this study, but there is still considerable room for further exploration: firstly, in terms of research perspective, there have been mostly linear studies on either the Belt and Road or global poverty reduction, with fewer composite studies that combine the two. There is even less research on the mechanisms for transforming the co-construction potential of the Belt and Road into global poverty reduction governance effectiveness, which is not commensurate with China's deployment of the Belt and Road to promote global poverty reduction. Secondly, in terms of research content, most studies focus on the macroscopic situation of global poverty reduction and the macroscopic impact of the Belt and Road, ignoring the governance effectiveness released by the middle-level field of the Belt and Road promoting global poverty reduction. Although some studies have touched on the role of the Belt and Road in reducing global poverty, they are all case studies with scattered analysis, lacking a systematic analysis on how the Belt and Road acts, its functions, mechanisms, and effects. Reducing global poverty is an inherent requirement of the Belt and Road Initiative, and urgently needs a systematic theoretical response. Thirdly, in terms of research methods, mostly single-disciplinary analytical methods are used. From the standpoint of the theory of community of human destiny and anti-poverty theory, it is more urgent to use the interdisciplinary methods of development strategy, economics, politics, sociology and so on. In summary, the research of this topic is of great significance.

2 RESEARCH BASIS

2.1 Realistic Needs

Firstly, the situation of poverty reduction, especially in the countries along the Belt and Road, faces a great challenge Currently, most of the countries along the Belt and Road are developing countries with low economic and social

development levels. At the same time, they are facing the continuous spread of the COVID-19 pandemic, the global economic recession, and the challenges of the new stage of globalization. They urgently need a global public service platform that can Belt and Road about an increase in capital investment, the release of human resources dividends, and the transformation and upgrading of the economic structure, so that the construction of the Belt and Road can promote global poverty reduction.

Secondly, the existing problems in global poverty reduction, especially in countries along the Belt and Road. From the perspective of the main body (governments, social organizations, economic units, farmers, etc.), poverty reduction resources (industries, talents, capital, land, etc.), and poverty reduction conditions (infrastructure construction, flow of production factors, financial capital support, knowledge sharing, science and technology dissemination, etc.), the countries along the "Belt and Road" are faced with many constraints. It is extremely urgent to build the Belt and Road Initiative to boost the global poverty reduction action mechanism. Thirdly, the advantages of global poverty reduction, especially in the Belt and Road countries.

Anchoring the fundamental goal of the "Belt and Road" initiative and closely following the five connectivity's path of policy communication, infrastructure connectivity, unimpeded trade, financial integration, and people-to-people connection to promote global poverty reduction in the "Belt and Road", thus revealing the feasibility of building the Belt and Road to promote global poverty reduction action mechanism.

2.2 Theoretical Foundation

This section explores the theoretical foundation and definition of the shared advantage of global poverty reduction through the Belt and Road, providing theoretical support for the research. On the one hand, the "harmonious world" and the "self-improvement and helping others, benefiting all" of traditional Chinese culture embody the beautiful scene of a community with a shared future for mankind; Two is the definition of connotation, combined with the theory of human destiny community, globalization theory and international poverty governance, this paper analyzes the role dimensions, temporal relationships and correlation structures of global poverty reduction promoted by the Belt and Road Initiative, and points out that the process of global poverty reduction promoted by the Belt and Road is a process of building a mechanism for mobilizing, absorbing, integrating and utilizing various resources by leveraging the advantages of the Belt and Road Initiative, and taking targeted and differentiated approaches to poverty reduction through synergistic energy accumulation, targeted energy release and guarantee of energy security mechanisms. The safeguarding mechanism ensures the sustainable poverty reduction effect mainly in the areas of government cooperation, infrastructure construction jointly, cross-border flow of factors, financial support from the Asian Infrastructure Investment Bank, cross-border production and life, and cross-regional information management along the Belt and Road.

The second is to reveal the main functions of the Belt and Road in driving global poverty reduction efforts, in resource allocation, it is based on the three major priorities of poverty reduction development, construction and governance, and comprehensively gathers, activates and integrates poverty reduction resources; in targeted poverty reduction, it uses measures such as adapting to local conditions, categorizing, highlighting features to unblock poverty reduction bottlenecks that are suitable for the conditions of each country along the Belt and Road; in dynamic optimization, it adjusts strategies in a timely manner according to changes in the poverty reduction situation and problems.

The third is in the role mechanism, in the synergistic energy-concentrating mechanism, the government leads the way, solidifying the foundation for sustainable poverty reduction; enterprises (including economic units such as foreign trade) operate in the market, broadening the channels for sustainable poverty reduction; non-governmental organizations provide professional guidance, improving the quality and efficiency of sustainable poverty reduction; farmers are involved throughout the process, stimulating the driving force for sustainable poverty reduction. In the targeted energy-releasing mechanism, diagnose the bottlenecks of sustainable poverty reduction, target high-quality targets in a targeted manner, and build the chains of industry, talent, finance and logistics on the basis of creating value chains, and construct multi-mode poverty reduction models to release the energy of sustainable poverty reduction. In terms of ensuring the sustainability mechanism, the matching effects of cross-domain infrastructure, factor flow, financial support, and information management in poverty reduction are leveraged to solidify the global sustainable poverty reduction effectiveness.

3 ANALYSIS OF OPERATION EFFECTS

This section analyzes the operational effects of the global poverty reduction mechanism driven by the "Belt and Road" initiative based on the standard of "continuity" in global poverty reduction. First, a game theory analysis is conducted on the interests of the various forces involved in coordinated synergy mechanisms, with a focus on identifying the key factors that constrain synergy and studying the optimal cooperative conditions for fostering synergy and accumulating poverty reduction momentum. Second, based on regional surveys and multi-case analysis from different regions, key indicators are extracted from the dimensions of industry, talent, and finance to create a poverty reduction effectiveness factor map. Through the use of clustering analysis models, the optimal way to release sustained poverty reduction effectiveness is identified. Third, by using typical sample survey data from different regions as the research sample and employing the fuzzy set qualitative comparative analysis method, representative variables from the dimensions of infrastructure, factor flow, financial support, and information management are selected to explore the configuration of

conditions for ensuring sustainability and the pathways of action. Finally, a simulation model of the "three-in-one" mechanism for promoting global poverty reduction through synergistic energy accumulation, targeted energy release, and guaranteed energy security in the Belt and Road Initiative was established, analyzing the governance effectiveness of the synergistic energy accumulation, targeted energy release, and guaranteed energy security processes on global poverty reduction, providing useful reference for clarifying the governance priorities for sustained poverty reduction and formulating reasonable measures.

4 STRATEGIES FOR PROMOTING

In line with the UN 2030 Agenda for Sustainable Development's poverty reduction targets, the main objectives of the mechanism for promoting global poverty reduction through the Belt and Road Initiative are to continuously advance global poverty reduction and build a community of shared future for mankind by clearly defining the roles of various stakeholders, promoting synergy among them, and enhancing their capacity to drive progress. The basic principles for achieving these objectives include market-led development and government regulation, and income growth and structural optimization going hand in hand. Based on this, by drawing on successful experiences in poverty reduction, particularly those from China, and grasping the focus of constructing the mechanism for promoting global poverty reduction through the Belt and Road Initiative, six dimensions of government-led participation, rapid economic growth, individual capacity enhancement, social organization co-construction, shared development for all, and a shared future for all humanity are proposed as targeted, systematic, and feasible strategies for constructing the mechanism for promoting global poverty reduction through the Belt and Road Initiative.

4.1 Path of Government-Led Participation: Escape from the "Poverty Trap"

On the individual level, it manifests in malnutrition caused by food shortages, poor physical strength, and inability to work due to poor physical strength, which further leads to inadequate work ability and income, and income inadequacy leads to poverty again. Naks also analyzes the "vicious cycle of poverty" from both supply and demand perspectives, pointing out from the supply side that developing countries have a vicious cycle of "low income - low savings ability - low capital formation - low productivity - low output - low income" in a cycle of endless repetition; from the demand side, the vicious cycle of poverty in developing countries is "low income - low purchasing power - low investment incentive - low capital formation - low productivity - low output - low income". To break this vicious cycle of poverty, it is necessary to curb the free flow of profit-seeking capital, and the government should take the lead role, organizing capital, talent, and various resources in the same direction and moving forward together. In China's poverty alleviation practice, breaking the constraints of the "poverty trap" first hit the nail on the head of the vicious cycle - grasping the main contradiction, not only gaining dominance in financial, investment and other fields, but also constantly breaking through the constraints of human development and resource constraints, such as meeting people's simple material and cultural needs from the supply side, deeply caring about people's diverse and diverse aspirations for a better life from the demand side, expressing the main contradiction of the new era's social development as "the contradiction between people's growing needs for a better life and the unbalanced and inadequate development of the country", clarifying the government's leading role in combating poverty and its main methodology, and guiding poverty alleviation practice with it.

4.2 Economic Growth Path: Amplifying the "Trickle-Down Effect"

Maintaining economic growth is the material basis guarantee for eliminating poverty. The reason why poverty arises is that there is relative scarcity of material wealth, and the ultimate expression of economic growth is the continuous increase of material wealth, thereby offsetting the poverty problem caused by material wealth scarcity. After the founding of the People's Republic of China, the CPC and the government have constantly liberated and developed social productive forces and adjusted production relations, with the aim of promoting rapid economic growth and creating more and richer material wealth to meet the objective needs of the people for consumption goods. When consumer goods are sufficient to meet the needs of the people's lives and production, poverty will be relatively reduced, while when consumer goods are scarce, poverty will be more prominent. Based on this, maintaining rapid economic growth to increase material wealth remains the main path to eliminate poverty. While maintaining rapid economic growth, the "trickle-down effect" brought about by economic growth will also be compensated on a large scale. The abundant flow of material wealth will flow freely from high consumption to low consumption to meet the objective needs of the poor population for consumer goods. If the total amount of material wealth created by the whole society is rich enough, the total consumption of non-poor people cannot include all the consumer goods, then at this time, the poor population will also receive consumer goods to some extent, and poverty alleviation will naturally be completed. After more than 70 years of economic development, especially after 40 years of rapid economic growth after the reform and opening up, the "trickle-down effect" of rapid economic growth has provided material support for eliminating absolute poverty. Such a large economic growth volume and efficiency provide the largest economic basis for the "trickle-down effect" to spread in China's efforts to eliminate absolute poverty.

4.3 Individual Ability Enhancement Path: Maintaining Sustained Income Growth

People are the creators of social material wealth and spiritual wealth, and are also the decisive force for social poverty and wealth changes. The fundamental difference between humans and animals lies in the fact that humans have subjective initiative, which is particularly evident in their production activities, where conscious subjective choices are made. The decisive role of the subject in the production of social wealth and its distribution is also highlighted. In recent years, a large number of domestic and foreign anti-poverty theories and empirical analyses have shown that, under consistent social production conditions, being poor or rich is the result of individual active or passive choices. The limitations of poverty-stricken population, such as outdated ideas, low level of education, lack of labor ability, and heavy family burdens, are the main factors that lead to poverty. Therefore, the individual ability enhancement is the main path to eliminate poverty, and only after the individual ability is enhanced can the economic income of the poor population be sustainably increased, enabling them to break free from the shackles of poverty. According to the statistical data from various government departments in China, in 2020, basic public services in education for the poor population were fully covered nationwide, and 1 million poor laborers were promoted to employment, thereby lifting 3 million people out of poverty. Especially from 2018 to 2020, China conducted government-subsidized vocational skills training for poor laborers on average 2.4 million times per year, of which 1.56 million were from the "Three Regions and Three States"; the national vocational schools enrolled 6.42 million poor family students on average per year, and provided vocational training for 149,400 poor laborers. Such public basic education and vocational skills training initiatives fully leverage the potential of individuals to improve their personal capabilities, and promote the positive role of vocational skills training in job creation and income growth. Only by continuously enhancing the ability of individuals to lift themselves out of poverty can we ensure sustained economic growth for the poor population and enable them to escape poverty sooner.

4.4 Path of Social Organizations Jointly Building Poverty Alleviation: Achieving Unity in Direction and Action

Poverty alleviation is a major task of governance in the current stage for all countries, and its success or failure directly affects whether modernization can be achieved. For example, the goal of building a comprehensive well-off society is the aspiration of all Chinese people, and China's well-off society is a well-off society that ensures that the broadest possible population, including the poor, can enjoy the fruits of reform and development. It is the result of joint efforts by the government, social organizations, enterprises, and individuals. If the government plays an important role in precision poverty alleviation and development work, being the guide, coordinator, and promoter of poverty alleviation work; then social organizations also occupy an important position in poverty alleviation work, being the cooperators, implementers, and drivers of poverty alleviation work, continuing to leverage their talent, industry, and resource advantages. In the past decade, the participation of social forces in poverty alleviation practice has become a major highlight of China's poverty alleviation policy innovation, and the role of social organizations has become increasingly prominent. Currently, there are over 700,000 poverty alleviation social organizations in China, which participate in poverty alleviation practices through different forms such as resource allocation, experience sharing, and policy advocacy, becoming a significant force in anti-poverty efforts. Based on this, in the transition period of consolidating and expanding the achievements of poverty alleviation, the social resources and forces represented by social organizations are still indispensable, including government procurement of poverty alleviation services and social organization charity poverty alleviation, further releasing the potential for poverty alleviation in the social field.

4.5 Pathway of Shared Development: Showcasing People-centeredness

Shared development is a complete and rigorous concept, whose contribution to development lies not only in the value orientation it points out, but also in the basic principles it determines from the methodological perspective. Shared development itself constitutes a systematic method framework, with its core being people-centered shared development. The connotation of shared development includes shared by all, shared comprehensively, shared jointly, and shared gradually. From this perspective, China's targeted poverty alleviation provides an opportunity for the poor who have not benefited from reform and development - an opportunity to share the fruits of reform and development. However, if we want all citizens to fully share the fruits of reform and development, it is clear that relying solely on government efforts will not be an efficient way to achieve poverty alleviation goals. Therefore, achieving shared development requires that everyone contributes to and benefits from it. In order to achieve high-quality poverty reduction outcomes, we must always adhere to the people-centered philosophy in poverty alleviation efforts, regard the people as the main force for escaping poverty, and enable them to play a unique and decisive role in poverty reduction practices. To ensure that poverty-stricken people can high-quality rid themselves of poverty and prevent the resurgence of poverty, it is necessary to continuously innovate in practical work methods and theoretical innovation under the dynamic mechanism of poverty governance. We must always adhere to the value orientation of putting people first and rely on the broad masses of people to effectively utilize scientific theories and the wisdom of the people to realize the aspirations and pursuits of the people for a better life.

4.6 Facing the Common Future of Humanity: Consolidating Community Power

Firstly, China has provided poverty reduction projects for developing countries along the Belt and Road. China's poverty reduction cooperation with developing countries is carried out through project-based cooperation, with multiple poverty reduction projects co-built by China and developing countries. According to incomplete statistics, since 2010,

China has carried out poverty reduction aid cooperation projects with more than 20 developing countries, such as co-building poverty reduction demonstration projects with Southeast Asia and Africa, and building poverty reduction learning centers, cooperation centers, and healthcare projects. In these poverty reduction aid projects, China not only shares its recent poverty reduction experience and wisdom, but also promotes the exchange and cooperation between China's trade and those of developing countries, deepening the friendship of the community of shared future between China and developing countries as the intermediary. Secondly, China has trained a large number of poverty reduction talents for developing countries along the Belt and Road. After international cooperation in building poverty reduction projects, professional poverty reduction talents are needed to support the smooth implementation of the projects. Holding poverty reduction training courses is an indispensable measure of China's foreign poverty reduction aid. The international poverty reduction training courses aim to train talents suitable for local poverty reduction needs in developing countries and serve their poverty reduction cause. According to incomplete statistics, since the beginning of this century, the Ministry of Commerce, the Ministry of Civil Affairs, the China International Poverty Reduction Center and other departments have jointly held more than 100 poverty reduction training courses, training over 3,000 officials of various levels and categories from nearly 100 developing countries. Not only do they learn about China's poverty reduction experience and measures, but also visit China to study how to carry out industrial poverty reduction, science and technology poverty reduction, employment poverty reduction, education poverty reduction and ecological poverty reduction. Based on this, they recognize the common features of poverty reduction in developing countries, help them analyze the differentiated policy approaches that developing countries should take based on their own development conditions, and provide talent support and intellectual support for the governance of poverty in developing countries.

Thirdly, China has provided a large amount of direct aid to developing countries along the Belt and Road. Direct material, talent and equipment aid is another important way of China's foreign poverty reduction aid. Since the founding of the People's Republic of China, China has sent over 600,000 aid workers to 166 countries and international organizations, provided nearly 400 billion yuan in financial aid, provided medical assistance to 69 countries in five continents, and waived interest-free loans debts of debt-burdened developing countries and the least developed countries seven times without conditions, especially provided assistance to more than 120 developing countries in implementing the UN Millennium Development Goals on poverty reduction. In recent years, China has also put forward new measures to support developing countries in poverty alleviation and improving people's livelihoods, such as establishing a $1.2 billion South-South Cooperation Assistance Fund (with an initial $200 million and aiming to reach $1.2 billion by 2030) and waiving the debts of the least developed countries that have already matured. These measures have directly contributed to poverty alleviation in developing countries.

Fourth, China has promoted the continuous forward progress of global poverty reduction efforts in response to global emergencies. For example, the sudden outbreak of the epidemic disrupted the global poverty reduction pace, and the virus-induced medical expenses, information poverty caused by spatial physical isolation, and unemployment-induced poverty caused by cross-regional and cross-trade decline, have brought new risks and challenges to the thriving global poverty reduction efforts. The World Bank, the United Nations Development Programme (UNDP) and other international organizations have been releasing reports frequently, analyzing and calculating the negative impact of the COVID-19 pandemic on global poverty. The reports predict that by 2030, another 217 million people may fall into extreme poverty,Belt and Roadnging the total number of extremely poor people in the world to over 1 billion. Faced with such a difficult situation, China has continued to play the role of the world's factory, pushing for targeted out-of-poverty employment of poor people at home, not only without creating new poverty but also achieving the remarkable feat of eradicating absolute poverty in the crisis; internationally, it has promoted new economic forms such as online economy and digital economy, helping poor people in other developing countries turn their labor into value and confidently drive the global poverty reduction cause forward.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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THE EVOLUTION OF IBM'S CORE VALUES GUIDED BY STRATEGY: FROM HARDWARE GIANT TO SOLUTION INNOVATOR

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Abstract: This paper aims to explore the evolution of International Business Machines (IBM) core values and their key role in strategic transformation. Through historical review and case analysis, this study examines how IBM adjusted its core values at different stages of its development to adapt to the ever-changing business environment. Using literature analysis, this paper systematically reviews the cultural and strategic changes during the Watson era, the Gerstner period, and under the leadership of Palmisano, in conjunction with IBM's historical development and strategic decisions made by its leaders. The study finds that IBM's core values were continuously adjusted with the intensifying market competition, technological innovations, and leadership changes. These adjustments not only supported the company's strategic transformations at various stages but also contributed to IBM's leadership in the global IT industry. The conclusion highlights that cultural adaptability and leadership influence are crucial factors in driving strategic transformation, and to maintain competitiveness in a dynamic environment, companies must align the development of their corporate culture and strategy.
Keywords: IBM; Core values; Strategic transformation; Cultural adaptability; Leadership

1 INTRODUCTION

In today's rapidly changing business environment, the relationship between corporate strategy and culture has become increasingly important. The cultural school of strategic studies suggests that strategy formation is a collective cognitive process that depends on the shared beliefs and understandings among organizational members [1]. This theory emphasizes that culture not only helps maintain the stability of strategy but can also resist strategic changes. Analyzing the collective decision-making mechanism provides better insights into the construction of collective cognition in IBM's cultural evolution [2]. Therefore, to successfully implement strategic transformation, companies must undergo cultural change to ensure their core values are in alignment with their business strategies.

International Business Machines (IBM), as one of the pioneers in the information technology industry, was founded in 1911 and is the only century-old company in the IT sector. IBM's history is not only one of technological innovation but also a history closely tied to the development of corporate culture and core values. The company's core values have played a crucial role in its development, driving strategic transformations and market expansion in different periods. Under different leaders, IBM's core values have undergone significant changes. Leadership is not only a key factor in decision-making but also profoundly influences adjustments to corporate culture and employee behavior patterns. This provides strong support for understanding how IBM adjusts its culture when leadership changes [3]. Particularly under Thomas J. Watson Sr.'s leadership, IBM established a unique corporate culture foundation, and these values supported the company's growth, helping it successfully navigate challenges such as the Great Depression and World War II.

Watson's core principles, such as integrity, thinking, and customer service, not only shaped IBM's corporate image but also laid the foundation for the company's position in the global market. However, with the intensification of market competition and rapid technological changes, IBM's core values have continuously adjusted to adapt to the new business environment and customer needs. The evolution of these values reflects the company's leaders' keen insight and forward-thinking in responding to external pressures.

This paper aims to review IBM's history, analyze the evolution of its core values at different stages of development, explore their key role in strategic transformation, and demonstrate how IBM has maintained its leadership position in the industry through the adjustment of corporate culture and strategy. The study will focus on value changes during the Watson era, the Gerstner era, and the Palmisano leadership period, analyzing how the company has achieved synergistic development of culture and strategy in a dynamic environment.

2 THEORETICAL FRAMEWORK

In exploring the relationship between corporate culture and strategy, relevant theories provide an important perspective for understanding the evolution of IBM's core values. The cultural school emphasizes that corporate strategy is not merely a rational selection process but rather a collective cognitive result influenced by organizational culture [4]. Culture not only determines the formation and implementation of strategy but also affects a company's ability to adapt to changes in the market. Organizational culture is defined as "the shared basic assumptions and values of organizational members," and it significantly shapes decision-making processes, management models, and operational practices [5]. For many companies, cultural adaptability plays a key role in responding to external challenges. The adaptability of organizational culture can significantly influence a company's ability to cope with changes in the external environment, particularly in decision-making and regulating employee emotions [6].

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For IBM, its corporate culture has been one of the key factors enabling successful transformations at various historical stages. First, culture has greatly influenced employees' behaviors and attitudes, thereby shaping the company's ability to execute its strategy in practice. The core values of integrity, thinking, and customer service established during the Watson era created a highly loyal and mission-driven workforce. This cultural atmosphere allowed employees to maintain their alignment with and commitment to the company's goals during times of crisis and change.

Second, the flexibility of corporate culture is crucial for strategic adjustments. Successful companies are often able to adapt quickly to changing market conditions, and the foundation for this adaptability lies in the resilience of their corporate culture [7]. During the Gerstner and Palmisano eras, IBM demonstrated how its cultural adaptability drove strategic transformation through a reevaluation and adjustment of its core values. These changes not only helped IBM respond to rapid technological shifts but also ensured that the company remained a leader in a competitive market.

Therefore, understanding the interaction between IBM's core values and strategic adjustments requires an in-depth analysis through the framework of organizational culture theory. This paper will explore how, under different leadership, culture has supported strategic transformation and provided sustainable momentum for IBM's success in the global market.

3 EVOLUTION OF IBM'S CORE VALUES

3.1 The Watson Era

IBM's core values can be traced back to the leadership of Thomas J. Watson Sr. He joined the Computing-Tabulating-Recording Company (CTR), which later became IBM, in 1914, and in 1924, he renamed the company International Business Machines, marking the beginning of its century-long legacy. Under Watson's leadership, IBM made significant breakthroughs in technological innovation and, through a unique management style and core values, shaped its corporate culture.

Watson's advocated core values included integrity, thinking, and customer service, which laid a solid foundation for IBM in the early 20th century. Watson believed that integrity was the cornerstone of long-term business success, and he consistently emphasized the importance of high ethical standards and honest business dealings. Additionally, the "Think" philosophy not only became IBM's iconic slogan but also encouraged employees to maintain innovative and critical thinking in their work. This emphasis on thinking created an innovative work environment at IBM, fostering both technological and managerial advancement.

During the Watson era, IBM also developed a unique corporate culture model that emphasized discipline and employee involvement. Frequent internal meetings, awards, celebrations, collective singing, and speeches were important components of the company culture. This not only strengthened employee loyalty but also created a highly cohesive corporate atmosphere [8]. Watson also implemented strict dress codes and behavior guidelines to ensure the unity and professionalism of the company image.

Under Watson's leadership, IBM gradually expanded globally. With the global economic recovery after World War II, the demand for IBM products grew significantly, especially in the mainframe computer market, where the company nearly monopolized the market share [9]. This global expansion not only allowed IBM to maintain its core values but also laid the foundation for its success in new markets. Watson's values became a key pillar in maintaining IBM's competitiveness in uncertain environments.

During this phase, IBM's core values not only shaped the company's internal management systems but also established a strong brand image in external markets, laying the groundwork for subsequent strategic transformations.

3.2 The Gerstner Era

In 1993, Lou Gerstner became IBM's CEO, marking a significant turning point in the company's history. During his tenure, IBM faced unprecedented market challenges, particularly in the context of increasingly fierce competition in the PC and server markets. During this time, the company's core values also underwent profound adjustments.

First came the adjustment of core values. Gerstner's arrival brought the necessary changes. He recognized that IBM needed to shift from being a hardware-centric company to becoming a customer-focused solutions provider. This strategic transformation involved not only product line adjustments but also a fundamental change in corporate culture. Gerstner advocated making "customer-first" the new core value, emphasizing the importance of service and solutions. He encouraged employees to shift their focus from internal processes to customer needs and promoted cross-departmental collaboration to better meet the dynamic changes in the market.

During this period, IBM broke down bureaucratic barriers and departmental silos, and a new work culture gradually took shape. Gerstner implemented a series of measures to strengthen the company's customer orientation and flexibility, encouraged employee participation in decision-making, and promoted innovative thinking [10]. This cultural shift enabled IBM to quickly adapt to market changes, improve relationships with customers, and enhance the company's competitiveness.

Then came the strategic implementation. Under Gerstner's leadership, IBM not only adjusted its core values but also actively implemented a series of strategic initiatives to drive the company's transformation towards a service-oriented business. He introduced the concept of "solutions," encouraging teams to innovate products and services around customers' actual needs. This shift not only enhanced IBM's market responsiveness but also strengthened the company's profitability.

In addition, Gerstner emphasized the importance of external partnerships and adopted an open innovation model. Through mergers and strategic alliances, he strengthened IBM's overall capabilities in high-tech fields. The strategic and cultural changes during this period enabled IBM to successfully transition from a hardware manufacturer to a global leader in IT services and solutions, reversing the company's downturn.

Gerstner's success lies in his recognition of the importance of technological change and the emphasis he placed on the synergy between culture and strategy. His leadership style and value adjustments laid a solid foundation for IBM's revival, demonstrating how companies can achieve rebirth and development in a turbulent market environment.

3.3 The Palmisano Era

In 2002, Samuel Palmisano succeeded Lou Gerstner as IBM's CEO, leading the company into a new phase of development. Palmisano's leadership style and strategic vision further deepened the evolution of IBM's culture and core values, especially in the context of globalization and innovation. He focused on transforming IBM into a more flexible, customer-centric company.

On one hand, it was the globalization of culture and innovation. During his tenure, Palmisano emphasized the integration of globalization with corporate culture. He introduced the "Smarter Planet" vision, urging IBM to not only focus on technological innovation but also on how technology could improve the efficiency of global societal operations [11]. This vision not only reflected IBM's leadership in technology but also marked the evolution of its core values, shifting the company's focus from traditional hardware and software to solution-oriented integrated services.

To achieve this goal, Palmisano drove further changes in the company's internal culture, emphasizing the importance of diversity and inclusiveness. He believed that the success of globalization relied not only on technology but also on the integration of diverse cultures and perspectives within the company. Under Palmisano's leadership, IBM built a more diverse work environment, encouraging employees from different backgrounds and perspectives to participate in the innovation process. This shift enabled IBM to better meet the needs of global customers and maintain its competitive edge.

On the other hand, it was the continued adjustment of strategy. During Palmisano's era, IBM continued to adjust its business strategy, focusing on high-value services and solutions. This strategic shift enabled IBM to rapidly emerge in new fields such as cloud computing, artificial intelligence, and data analytics [12]. Under Palmisano's leadership, IBM actively invested in acquisitions, collaborations, and research and development, ensuring the company remained competitive at the technological forefront.

In addition, Palmisano placed significant emphasis on corporate social responsibility, integrating sustainability into the company's core strategy. He recognized that modern business success must consider not only economic benefits but also social and environmental impacts. This idea was further reflected in IBM's corporate culture, as employees actively engaged in social responsibility initiatives while pursuing business success, enhancing the company's social image.

Palmisano's tenure marked IBM's maturity and confidence in responding to market changes. His leadership style, alongside the company's evolving culture, allowed IBM to maintain continuous innovation and industry leadership in a rapidly changing technological era.

4 STRATEGIC TRANSFORMATION AND MARKET ADAPTATION

4.1 Transformation from a Hardware Manufacturer to a Solutions Provider

IBM's successful transformation from a hardware manufacturer to a comprehensive solutions provider vividly reflects the interaction between its strategy and culture. Since the end of the 20th century, the global information technology industry has rapidly developed, and customer demands have gradually shifted from simple hardware products to more complex systems and service solutions. In this context, IBM realized that relying solely on hardware sales could no longer maintain its market position, and a fundamental strategic adjustment was necessary.

Under Gerstner's leadership, IBM began to focus on the innovation of services and solutions. By concentrating resources and efforts on customer needs, the company launched a series of solution-based products. This strategy not only involved product diversification but also encouraged enhanced collaboration between departments within the company. IBM's "solution" philosophy required close cooperation among technology, marketing, and service teams to provide integrated solutions for customers. This transformation not only improved customer satisfaction but also helped IBM establish a new revenue model, gradually shifting towards a service-oriented business structure.

During the Palmisano era, IBM further increased its investment in emerging fields such as cloud computing and artificial intelligence. This strategic shift not only allowed IBM to adapt to the fast-changing market but also positioned the company as a leader in industry development trends. Through collaborations with various enterprises and institutions, IBM focused on deeply integrating its technology with customer needs to provide tailor-made solutions. This ability to adapt and respond flexibly enabled IBM to maintain its leadership position in an increasingly competitive environment [13].

4.2 Examples of the Interaction Between Culture and Strategy

Throughout IBM's strategic transformation, the interaction between culture and strategy has been ever-present. For example, during the cultural changes led by Gerstner, his "customer-first" value not only guided strategy formulation but also influenced the company's internal work methods. To cultivate a customer-centric corporate culture, Gerstner eliminated many traditional bureaucratic processes and encouraged employees to proactively communicate with customers and respond promptly to market feedback [14]. This cultural change fostered innovation and efficiency within the company, providing a solid foundation for strategic implementation.

Moreover, Palmisano's "Smarter Planet" vision is another example of the interaction between culture and strategy. This vision not only reflected the company's pursuit of technological innovation but also demonstrated IBM's commitment to global social responsibility. By combining sustainability with technological innovation, IBM not only met customer needs but also built a positive corporate image [15]. Employees, under this cultural context, actively participated in sustainable development projects, which increased job satisfaction and further propelled the company's innovative capabilities.

In summary, IBM's strategic transformation and market adaptation are the result of a highly interactive relationship between culture and strategy. During different historical stages, the evolution of corporate culture not only provided a guiding framework for strategy but also laid a solid foundation for the company's continued success.

5 CONCLUSION

This paper explores the evolution of IBM's core values since its founding and how these changes have profoundly influenced the company's strategic transformation and ability to adapt to the market. Through analysis of various historical stages, we find that IBM's core values have consistently been one of the key factors in its successful transformations. Particularly when facing rapidly changing market environments and technological advancements, the flexibility and adaptability of corporate culture have provided IBM with a sustained competitive advantage.

First, the core values of integrity, thinking, and customer service, established during the Watson era, created a solid cultural foundation for IBM. Under the leadership of Gerstner and Palmisano, IBM's core values underwent significant adjustments to better respond to market demands and customer expectations. This process involved not only cultural changes within the company but also the corresponding strategic adjustments, ensuring a high level of alignment between culture and strategy. By strengthening customer orientation and solution-based thinking, IBM successfully transitioned from a hardware manufacturer to a comprehensive solutions provider, showcasing the exemplary interaction between culture and strategy.

Second, this study emphasizes the importance of continuously updating core values and aligning them with business strategy during corporate transformation. As market environments continuously evolve, companies must be flexible and responsive, adjusting their core values to remain in harmony with the external environment. IBM's practice demonstrates that corporate culture is not only the foundation for strategic implementation but also an essential driving force for sustained innovation and market adaptation.

For future research, we suggest further exploration of the cultural evolution in other companies undergoing strategic transformations, especially case studies from different industry backgrounds, to understand how culture influences strategic choices and implementation. Additionally, research should focus on the impact of cultural diversity and inclusiveness on innovation capacity, shedding light on the success factors of modern companies in a globalized context. Given the accelerating pace of digital transformation, exploring how core values align with digital strategies will provide new perspectives and directions for business development.

Through the analysis of IBM's case, we hope to provide insights for both academia and practice, highlighting the importance of core values in achieving strategic success. The deep integration of culture and strategy will provide companies with a solid foundation to thrive in the complex and ever-changing market environment.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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