Impact Of Situation, Organization Culture, And Mental Characteristics On The Migration Effectiveness Of Knowledge Sharing In Chinese-Foreign Cooperative Schools In Higher Education In Guangdong

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Abstract

This study aims to study the levels of situation, organization culture and mental characteristics, and the effectiveness of knowledge sharing in Chinese-foreign cooperative schools in higher education ;to identify the impact of situation, organization culture, and mental characteristics on the effectiveness of knowledge sharing in Chinese-foreign cooperative schools in higher education;to develop a model for increasing the effectiveness of knowledge sharing in Chinese-foreign cooperative schools in higher education. The research design employs both qualitative and quantitative methods to achieve the objectives and test the hypotheses. Questionnaires were distributed to teachers in Chinese-foreign cooperative universities, and participants were selected based on expertise, availability, convenience, and interest. Confirmatory factor analysis was used to test convergent and discriminant validity. The study focused on the situation, organization culture, mental characteristics, and effectiveness of knowledge sharing in Chinese-foreign cooperative schools in Guangdong Province, China. Confirmatory factor analysis was employed to test whether a factor and its observed variables conform to the theoretical relationships posited by the researchers. According to the hypothesis, the impact of situation on the effectiveness of knowledge sharing in Chinese-foreign cooperative universities was statistically significant. The influence of organization culture on the effectiveness of knowledge sharing in Chinese-foreign cooperative universities was statistically significant. The impact of mental characteristics on the effectiveness of knowledge sharing in Chinese-foreign cooperative universities was statistically significant.

Keywords: Situation, Organization Culture, Mental Characteristics, Effectiveness of Knowledge Sharing, Chinese-foreign Cooperative Schools

1. INTRODUCTION

The effectiveness of knowledge sharing in Chinese-foreign cooperative schools in higher education has long been a focal poin[1]t of researchers' attention. Although domestic studies typically focus on specific institutions or projects as case studies, these investigations tend to be overly detailed and lack comprehensive and systematic analysis. This paper aims to explore the challenges faced by Chinese-foreign cooperative schools in the introduction and utilization of high-quality knowledge resources. It focuses on addressing issues related

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to insufficient knowledge resources, challenges in effective utilization, and the disconnect between the introduction and utilization of knowledge resources. From the perspective of knowledge sharing, we will investigate the factors influencing the knowledge sharing effectiveness of university faculty in Chinese-foreign cooperative schools and their interrelationships, with the goal of establishing a knowledge sharing mechanism for Chinese-foreign cooperative schools in higher education.

2. **LITERATURE REVIEW**

This study will start with the existing literature on "Knowledge Sharing in Chinese-foreign Cooperative Schools" and make a comprehensive overview. When discussing research issues, the theoretical framework plays a key role, which represents the researcher's basic position on the issue and the guiding paradigm for problem analysis. Although there is no specific research theory on the issue of "knowledge sharing", there have been studies on this issue from different disciplines and using different theories. Hence, this study will develop the conceptual framework by summarizing existing research theories.

2.1 Situation

In the realm of knowledge sharing, situation encompasses support, innovation, and personal trust (Kim & Park, 2020). Support involves providing assistance, resources, encouragement, etc., to facilitate the dissemination and sharing of knowledge. Innovation entails introducing new methods, ideas, and technologies to enhance the value of the knowledge ecosystem. Personal trust is built on a foundation of trust in others sharing knowledge (Nguyen et al., 2019).

2.1.1 Support

Support can be expressed as providing assistance, cooperation, funding, resources, encouragement, or backing, with the aim of assisting others or organizations in achieving goals, addressing challenges, or overcoming difficulties (Hemalatha, 2021). In the field of knowledge sharing, the meaning of support typically involves offering various forms of assistance, resources, or conditions for the dissemination, sharing, and creation of knowledge to facilitate its transfer and sharing (Junaidi & Chih, 2020). The goals of support often include promoting the transfer of knowledge, fostering innovation and collaboration, thereby facilitating learning, research, innovation, and societal progress. This support can come from individuals, organizations, government, academic institutions, and communities, contributing to the establishment of a more open, collaborative, and sustainable knowledge-sharing ecosystem. Support is a key factor in driving the circulation of knowledge and collaboration, helping to eliminate barriers, enhance knowledge accessibility, promote innovation and problem-solving, ultimately benefiting a wider audience and advancing societal progress.

2.1.2 Innovation

According to Lam et al. (2021), in the field of knowledge sharing, innovation refers to the introduction of new methods, concepts, technologies, or means to facilitate the dissemination, utilization, and sharing of knowledge, thereby creating a higher-value and more efficient knowledge ecosystem. This type of innovation aims to improve the ways in which knowledge is managed, transferred, and communicated to better meet the knowledge needs of individuals, organizations, and society. As pointed out by Saunila (2020), innovation can involve establishing open knowledge-sharing platforms that accommodate knowledge and information from different sources and promote interdisciplinary knowledge sharing.Castaneda&Cuellar (2020) suggest that innovation can also encompass the development of new knowledge management tools and technologies to help individuals and organizations organize, store, access, and share knowledge more effectively. Innovation can also involve driving the development of a culture of knowledge sharing, advocating values of collaboration, reciprocity, and openness to promote knowledge

sharing and innovation (Moussa&El Arbi, 2020). These innovations contribute to expanding channels for the dissemination of knowledge, lowering barriers to knowledge acquisition, fostering interdisciplinary collaboration and innovation, thereby strengthening the sustainable development of a knowledge society.

2.1.3 Personal Trust

According to Paçacı (2019), in the context of knowledge sharing, personal trust refers to the trust relationship between individuals or entities, built on the foundation of trust in the ability of others or organizations to share knowledge, information, or experience. Some Chinese scholars define individual trust as the willingness of individuals to trust other individuals or organizations in sharing knowledge, experience, and information (Pınar & Ece, 2022). Stern et al. (2021) argue that trust is the foundation of collaboration. In the knowledge-sharing environment, personal trust contributes to establishing collaborative relationships and driving joint efforts among different individuals or organizations. Trusting that others will share knowledge responsibly and honestly, without misuse or improper use of shared information, motivates individuals to be willing to share their knowledge and experience, thereby facilitating the flow of knowledge within an organization or society (Al-Kurdi et al., 2020). Vasin et al. (2020) suggest that a trustful environment for knowledge sharing contributes to innovation. When individuals or organizations believe they can safely share knowledge, they are more motivated to seek new innovative solutions.

2.2 Organization Culture

Organization culture reflects the attitudes and practices of knowledge sharing within an organization and can encourage or discourage knowledge dissemination and sharing. Organization culture that affects the extent of knowledge sharing mainly includes factors such as clan culture, adhocracy culture, market culture and hierarchical culture (Tamsah et al.,2020).

2.2.1 Clan culture

Kokt & Makumbe (2020) argue that clan culture can be defined as a social and organizaional structure that views schools, teachers, and organizational members as a closely-knit group, akin to a family, playing a crucial role in knowledge transmission and sharing. Clan culture encourages members to pass down and share traditional knowledge, skills, and values to ensure the continuity of these valuable cultural elements across generations. Some scholars consider clan culture as a social structure centered on close relationships, with individuals playing significant roles in company and colleague relationships (Chang et al., 2021). This contributes to easier knowledge sharing among team members as they have greater trust and closeness. Perotti et al. (2022) define clan culture as a culture where leaders or employees share common traditions, values, and habits. This commonality aids in the transmission of knowledge and experience, maintaining the tradition of knowledge sharing.

2.2.2 Adhocracy Culture

Adhocracy Culture refers to an organization culture that emphasizes openness, innovation, flexibility, and autonomy within the organization (Rohim & Budhiasa, 2019). This culture encourages employees to demonstrate creativity in their work, providing them with greater freedom and flexibility to solve problems and take action. Kiziloglu (2021) suggests that in multicultural societies, adhocracy culture is often associated with a flatter organizational structure, reducing decision-making hierarchies and encouraging employees to autonomously innovate, propose ideas, and actively participate in the decision-making

process. Sawan (2021) believes that in organizational and work environments, "democratic culture" can imply a focus on employee autonomy, flexibility, and encouragement of innovation. This culture may involve fewer hierarchical structures, more autonomy, and advocacy for creative thinking. Certain social groups, such as professional communities, academic fields, specific interest groups, etc., may have their unique cultures and values, which can be considered as part of the free culture. In the context of knowledge sharing and intellectual property, "adhocracy culture" typically refers to a culture that encourages sharing, creative freedom, and open licensing of content.

2.2.3 Market Culture
Market culture is defined as a business-oriented culture that prioritizes marketing, sales, and profit maximization. It focuses on the competitiveness of businesses, customer orientation, and market-oriented business practices (Purwanto et al., 2021). From the perspective of knowledge sharing, this market culture may emphasize knowledge sharing between business organizations and enterprises, including knowledge sharing in areas such as market research, competitive intelligence, and market positioning. At the same time, this market culture may involve knowledge sharing among consumers, such as product reviews, shopping experiences, and market trends. Social media and consumer review platforms can become important channels for knowledge sharing. Market culture is defined as a culture that encourages innovation, competition, and market adaptability, emphasizing the importance of continuous improvement and meeting customer needs (Foss & Pedersen, 2019). From the perspective of knowledge sharing, this market culture may highlight internal knowledge sharing within organizations to promote innovation and competitiveness. Internal teams and employees within the organization may share innovative ideas, best practices, and market insights. Different definitions of market culture reflect its influence on economic, social, and cultural life, with knowledge sharing playing a crucial role in business competition, product consumption, innovation processes, and interactions between consumers and the market.

2.2.4 Hierarchy Culture
Hierarchy culture typically refers to an organizational or societal culture that emphasizes the importance of hierarchical systems and authority structures (Rohim & Budhiasa, 2019). Islam et al. (2021) argue that in organizational culture, hierarchy culture is a cultural form that emphasizes the internal hierarchy and authority system of an organization. Ogunmokun (2020) suggests that from the perspective of knowledge sharing, hierarchy culture can be defined as an organizational culture that emphasizes internal hierarchical systems and authority structures. In this culture, authority relationships are explicit, and organization members are categorized into different ranks or levels, usually based on status, positions, and responsibilities. Hierarchy culture tends to favor vertical communication, where information and knowledge flow upward or downward between levels, with less emphasis on lateral or cross-level knowledge sharing. This may limit the flow of knowledge across departments or hierarchical levels.

2.3 Mental Characteristics
Mental characteristics refer to the unique attributes, traits, or tendencies of individuals at the mental level, influencing their thoughts, emotions, and behaviors. From the perspective of knowledge sharing, mental characteristics are often categorized into factors such as responsibility, compromise, and indefatigability (Michna & Kmieciak, 2020).

2.3.1 Responsibility
Responsibility is the inclination of individuals to willingly take on responsibilities, fulfill their obligations and commitments, and be accountable for their actions and decisions (Alfazzi, 2022). In daily life, a sense of responsibility plays a crucial role, affecting individuals' performance in decision-making, behavior, career choices, and family life.

Individuals with a high sense of responsibility are generally more likely to fulfill commitments and take responsibility for their actions, while those lacking a sense of responsibility may be more prone to avoiding responsibilities or neglecting obligations. Responsibility encompasses both social responsibility and moral responsibility, emphasizing the connection between a sense of responsibility and moral and ethical values. Individuals believe they have a responsibility to take action to help others or fulfill societal obligations. Social responsibility involves concern for social issues and a willingness to participate in activities aimed at societal improvement (Abbas, 2020). In other words, from a societal perspective, responsibility is also reflected in individuals' willingness to contribute to the development and improvement of society. They may engage in charity work, volunteer activities, or other forms of socially responsible actions to help address societal issues. Some scholars argue that responsibility is also evident in individuals' willingness to share their knowledge, experiences, and resources to assist others in growth and progress. This sharing can take the form of education, training, collaboration, or other means of knowledge transfer.

2.3.2 Compromise
Martins et al. (2021) point out that in the fields of open-source software development or knowledge sharing, compromise often involves collaboration and cooperation in sharing knowledge, technology, or creativity. This includes allowing others to use, modify, and redistribute intellectual property, usually subject to a set of specific licenses and constraints, such as knowledge sharing licenses. In the academic research field, compromise may involve collaboration and knowledge sharing among researchers, allowing research outcomes to be used and cited, while also requiring appropriate citation and acknowledgment of the sources of knowledge (Akers & Jennings, 2019). In the context of knowledge sharing, compromise may also include a series of restrictions on licensing and usage. For example, while protecting intellectual property, there may be a certain degree of allowance for use and sharing to strike a balance between the dissemination and protection of knowledge.

2.3.3 Tireless
"Tireless" implies extraordinary endurance and energy, allowing a person to maintain a high level of activity for extended periods without feeling fatigued. This trait is synonymous with perseverance and not easily giving up. This definition emphasizes an individual's persistence in the face of challenges or difficulties, resolutely pursuing goals without being affected by fatigue or setbacks. Hemalatha (2021) suggests that tireless can also represent sustained motivation and enthusiasm for a particular activity or goal. This means that individuals not only can work for extended periods but also are willing to continuously exert effort because they are passionate about what they are doing. From the perspective of knowledge sharing, tireless is often defined as individuals not feeling tired or giving up in the pursuit of knowledge sharing and learning, continuously investing time and energy to actively promote the transmission and sharing of knowledge (Alzoubi & Aziz, 2021). Chen et al. (2020) argue that in knowledge communities, collaborative projects, or open-source communities, tireless signifies community members or volunteers' willingness to participate continuously, irrespective of compensation or rewards, to maintain and expand knowledge resources, collaborative projects, or sharing platforms. This kind of tireless is crucial for the sustainable development of the community.

2.4 Effectiveness of Knowledge Sharing
The effectiveness of knowledge sharing refers to the tangible outcomes and impact generated through effective knowledge sharing activities. De et al. (2019) define the effectiveness of knowledge sharing as the ability of individuals from different fields to

share their knowledge and experiences through knowledge sharing, thereby driving the innovation process. In an open environment, more people have access to new knowledge and technologies, sparking more creativity and new ideas. This effectiveness is also reflected in open access to scientific research, making it easier for researchers to access the latest research progress, avoiding redundant work, saving time and resources, and advancing the development of scientific research.

Chen et al. (2020) point out that in Chinese-foreign cooperative schools in higher education, the effectiveness of knowledge sharing manifests as mutual sharing of knowledge and experiences, achieving the complementation and cooperation of educational resources, thereby enhancing the quality of education, promoting academic exchanges, and driving educational innovation. Some scholars argue that the effectiveness of knowledge sharing also includes Chinese-foreign cooperative education enabling Chinese universities to engage in academic exchanges with internationally renowned universities or educational institutions. Through faculty exchanges, academic collaboration, and other means, both parties share their academic achievements and experiences, contributing to interdisciplinary integration, elevating academic standards, and cultivating talent with international perspectives and competitiveness.

The effectiveness of knowledge sharing is evident in Chinese-foreign cooperative education programs introducing advanced teaching methods and concepts from foreign universities, prompting Chinese universities to undertake teaching reforms and innovations. Foreign universities typically possess rich teaching experience and advanced teaching technologies, allowing them to introduce and promote these methods to Chinese universities, thereby enhancing the quality of education in China. This reciprocal knowledge sharing encourages educational systems to better adapt to the rapidly evolving knowledge society, laying a solid foundation for cultivating talent with innovative thinking and global competitiveness.

2.5 Relevant Theories

2.5.1 Social Capital Theory

According to social capital theory, human behavior is a dynamic, reciprocal, and interactive process among individuals, behaviors, and social networks. In personal or organizational relationship networks, social capital is the sum of existing or potential resources, including network advantages and resources (Swanson et al., 2020). Social capital typically includes three main dimensions: structural social capital, relational social capital, and cognitive social capital. Social capital theory provides two perspectives on knowledge sharing. Social capital provides material and emotional support to individuals or organizations, increasing the depth, breadth, and efficiency of knowledge flow, thereby influencing knowledge sharing. Social capital theory suggests that people and organizations work, learn, and share knowledge in social networks. Effective social relationships contribute to the creativity and performance of organizations. Members bring their knowledge and skills, as well as their social connections.

2.5.2 Social Capital Theory

Muhammed & Zaim (2020) argue that social relationships and social networks provide opportunities for knowledge sharing and collaboration. Innovation often involves knowledge and expertise from different domains. Through social networks, individuals and organizations can access knowledge from different fields, facilitating innovation. Social capital theory emphasizes information flow and resource sharing in social networks. Innovators can obtain information about market trends, technological developments, and competitors through social relationships (Saunila, 2020). This information helps innovators better understand the external environment and make better decisions for innovation. Trust and support are crucial in the innovation process. Social capital theory suggests that trust and reciprocal relationships contribute to building positive social relationships, which are

essential for innovation collaboration and joint efforts. Through social networks, innovators can gain knowledge, resources, and support, promoting interdisciplinary collaboration and information sharing.

2.5.3 Social Cognitive Theory

Central to social cognitive theory is the concept of psychological theory, which refers to individuals' inferences about others' internal psychological states (such as beliefs, intentions, desires). Individuals try to understand why others' behaviors occur and what reactions they might have. Social cognitive theory emphasizes the importance of social support, which can aid in emotional management and alleviate fatigue (Purwanto et al., 2021). Establishing close relationships with others, sharing emotional experiences, and receiving support from friends or family can help individuals cope with stress and fatigue, enhancing a sense of tireless. If individuals observe positive displays of responsibility from others, they may be motivated to emulate such behavior. Individuals typically consider trust and reputation with others when making commitments. If an individual is perceived as unreliable or dishonest, others may be skeptical of their commitments. Thus, social cognitive theory emphasizes the importance of trust and reputation in commitments. In compromise, individuals' views and behaviors may be influenced by others or the social environment, so this social influence also affects their behavior in the compromise process.
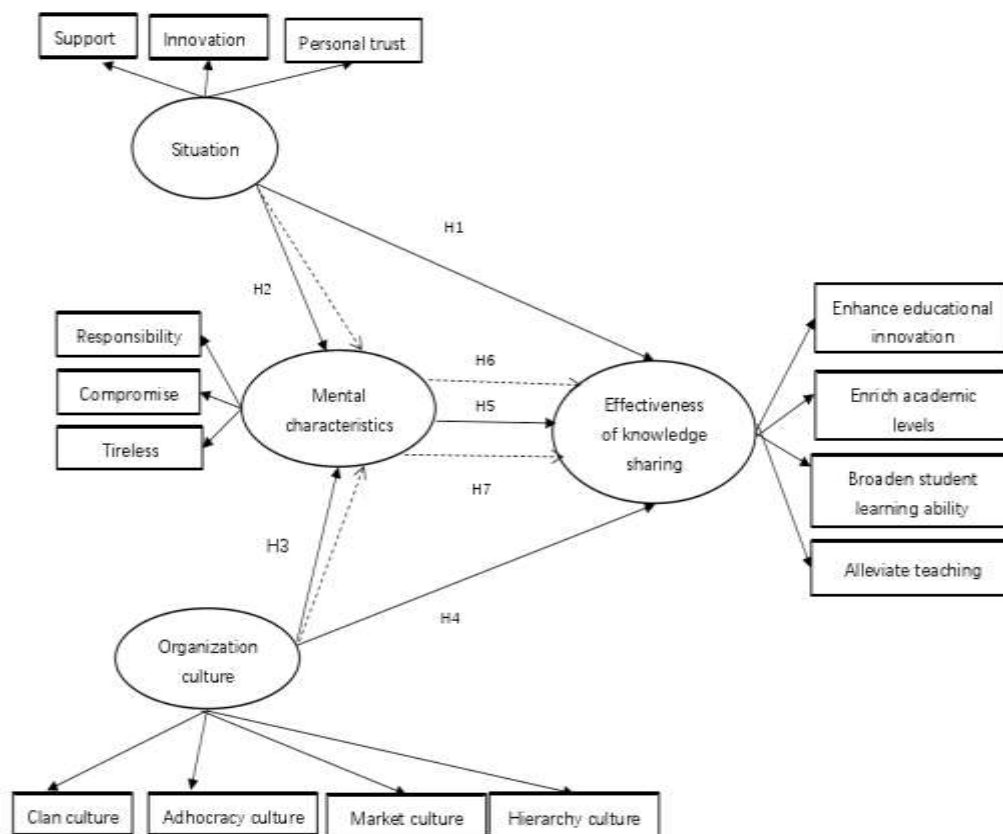
2.6 Conceptual Framework

Figure2. 1 Conceptual framework

2.7 Research Hypothesis

H1:Situation has an effect on the effectiveness of knowledge sharing in Chinese-foreign cooperative schools in higher education.

H2:Situation has an effect on mental characteristics in Chinese-foreign cooperative schools in higher education.

H3:Organization culture has an effect on mental characteristics in Chinese-foreign cooperative schools in higher education.

H4:Organization culture has an effect on the effectiveness of knowledge sharing in Chinese-foreign cooperative schools in higher education.

H5:Mental characteristics have an effect on the effectiveness of knowledge sharing in Chinese-foreign cooperative schools in higher education.

H6:Mental characteristics have a mediating effect on the impact of situation on the effectiveness of knowledge sharing in Chinese and foreign cooperative schools in higher education.

H7:Mental characteristics have a mediating effect on the impact of organization culture on the effectiveness of knowledge sharing in Chinese and foreign cooperative schools in higher education.

3. METHODOLOGY

The research employs a quantitative approach through the formulation, validation, and surveying of hypotheses. Additionally, qualitative research is conducted through interviews and the collection of textual data. The integration of qualitative and quantitative research methods is employed to provide a comprehensive understanding of the impact of knowledge sharing in the context of Chinese-foreign cooperative schools in higher education.

3.1 Quantitative Research Methodology

Based on the research design, this study commenced with quantitative research as its initial phase. The subsequent section provides an overview of the quantitative research component.

3.1.1 Population and Sample

(1) Population

The population for this study was the undergraduate faculty working at Chinese-foreign cooperative universities in four cities (Guangzhou, Shenzhen, Dongguan, and Foshan) in Guangdong Province, China. By the end of 2022, the total number of undergraduate faculty members at Chinese-foreign cooperative universities in these four cities was 2,945, (Ministry of Education of China, 2022).

1) Unit of analysis

The unit of analysis is an individual.

2) Sampling Frame

In this study, samples will be selected from the teachers of the undergraduate institutions of Chinese and foreign cooperative schools in four cities in Guangdong in China.

(2) Sample

1) Sample size

The research uses PLS-SEM for data analysis.Therefore, the number of dimensions will be considered in the size of the sample. There are 12 dimensions in the conceptual framework, and the sample size should be 12*20 = 240 units.

2) Sampling technique

The teacher sample for this study is distributed among eight Chinese-foreign cooperative universities in four cities in Guangdong Province, China (Shenzhen, Guangzhou, Foshan,

Dongguan). Sampling was conducted based on the type of schools. These eight Chinese-foreign cooperative universities can be categorized into four types: Management, Science and Engineering, Social Sciences, and Finance. The specific stages are outlined as follows.The particular distribution is shown in Table 3.1.

Table3. 1 Multistage sampling

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Universities in Shenzhen, Guangzhou, Foshan, Shantou, and Dongguan in Guangdong in China	Four types of universities	Universities	Number of undergraduate teachers	Number of samples
8 Chinese and foreign cooperative universities	Management	Shenzhen University	353	69
	Science and Engineering	South China Normal University	526	64
	Finance	Guangdong Israel Institute of Technology	652	57
	Sociology	Jinan University	328	50
Total	4	4	1859	240

3.1.2 Data Collection and Analysis
After validating the effectiveness and reliability of the questionnaire responses, researchers will further organize and edit the questionnaires. Subsequently, electronic questionnaires will be sent to the samples, and their responses will be obtained two weeks later. After the specified deadline, the collection of survey questionnaires will commence promptly. Once a sufficient number of questionnaires are collected, it is necessary to consolidate all the gathered data.

3.2 Qualitative Methodology Approach
Upon completion of the quantitative analysis phase, the subsequent step is the qualitative analysis phase.

3.2.1 Participants and Informants
(1) Participants
Individuals possessing the necessary characteristics are eligible to participate in the qualitative methodology's target population. The population in this study is the same as that in the quantitative research.

(2) Informants

A purposive sampling method will be employed to select 23 informants who meet the requirements of the quantitative study. Detailed selection criteria will be established to ensure adequate representation of each sociolect-demographic variable, considering the lowest, middle, and highest scores of the independent variables.As shown in the table3.3 and table3.4.

Table 3.3 The Types and Number of Samples

Background	Sample			
Gender	Female=1	Male=1		
Grade	Grade1=1	Grade2=1	Grade3=1	
School	Jinan University=1	New York University in Shanghai=1	South China Normal University=1	Shenzhen University=1
Subject	Social sciences=1	Management=1	Science and engineering=1	Finance=1
Total number	12			

Table3. 2 The Questionnaires Scores for Variables

Variable	The lowest	The middle	The highest
Situation	1	1	1
Organization culture	1	1	1
Mental characteristics	1	1	1
Outliers	1	0	1
Total scores	11		

3.2.2 Data Collection and Analysis

In in-depth interviews, rich qualitative data can be obtained through one-on-one in-depth conversations with research subjects. This approach allows researchers to gain a deep understanding of participants' thoughts, experiences, attitudes, and perspectives. Subsequently, in group discussions, a set of participants is invited to discuss specific topics collectively. This method can reveal interactions and collective viewpoints among different participants, providing more comprehensive information. The collected information and data from interviews will be synthesized and analyzed.

4. **RESEARCH RESULTS**

4.1 Hypothesis Testing

In this study, we used Smart-PLS to execute the PLS algorithm and obtained R, which represents the proportion of the dependent variable explained in the model. We conducted main effects analysis on 290 samples using bootstrapping.

As shown in Table 4.1 and Figure 4.1. Based on these findings, the study concludes:Situation has a significantly positive impact on knowledge sharing effectiveness (0.316, $p<0.001$).Situation has a significantly positive impact on spiritual traits (0.165, $p<0.001$).Organization culture has a significantly positive impact on spiritual traits (0.384,

p<0.001).Organization culture has a significantly positive impact on knowledge sharing effectiveness (0.195, p<0.001).Mental characteristics have a significantly positive impact on knowledge sharing effectiveness (0.165, p<0.001).

Table4. 1 Hypothesis Testing-Direct Effects

| Direct Effects of Hypothesis Testing					
Hypothesis	Relationship	Original sample (O)	Standard deviation (STDEV)	T statistics (IO/STDEV|)	P values
H1	Situation→Effectiveness of knowledge sharing	0.316	0.319	0.051	0.000
H2	Situation→Mental characteristics	0.165	0.164	0.052	0.001
H3	Organization culture→Mental characteristics	0.384	0.385	0.052	0.000
H4	Organization culture→Effectiveness of knowledge sharing	0.195	0.193	0.061	0.001
H5	Mental characteristics→Effectiveness of knowledge sharing	0.165	0.166	0.055	0.003
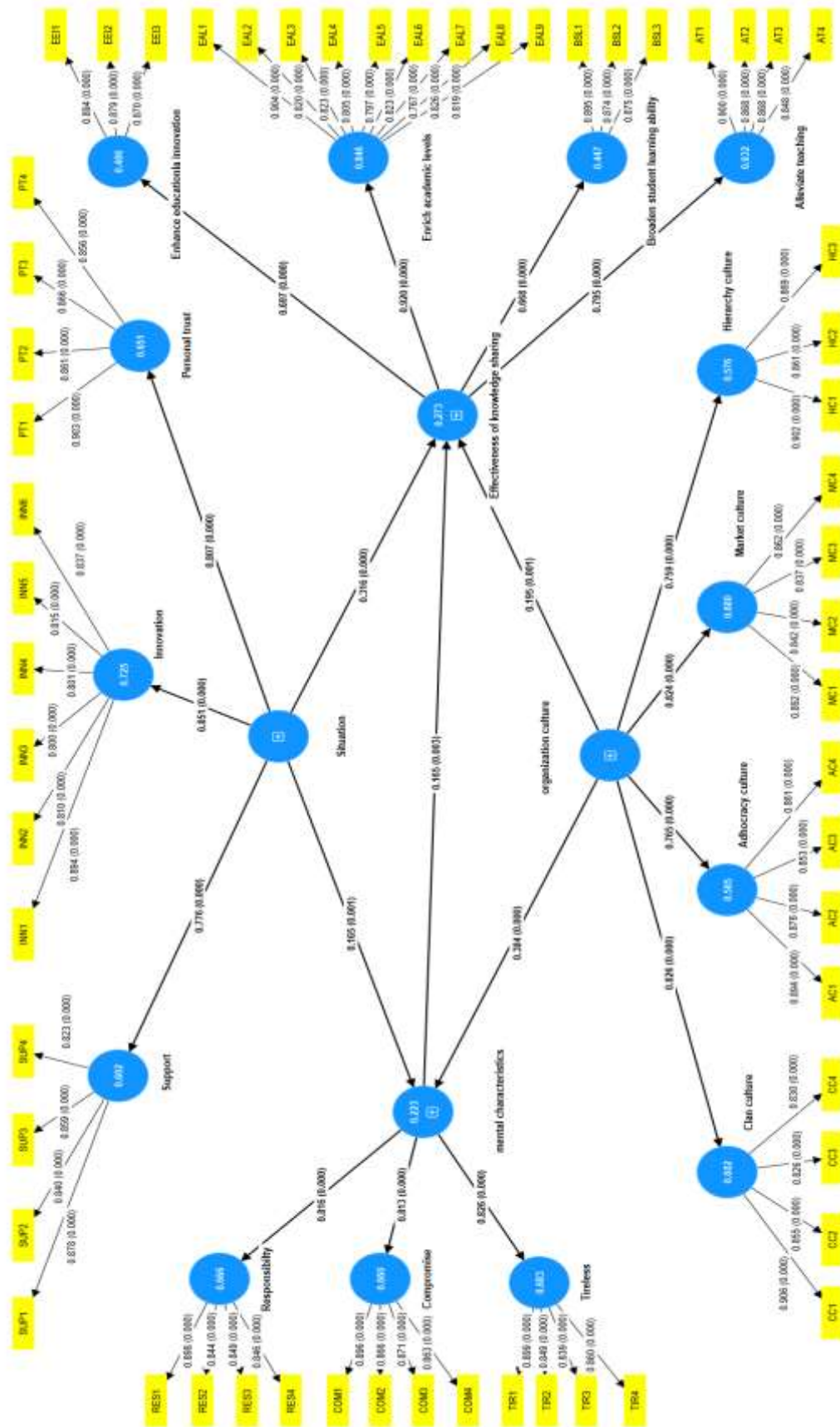
Figure4. 1 Results of the conceptual framework using Smart PLS

4.2 Mediation Effect Testing

As shown in Table 4.2, Situation→Mental characteristics→ Effectiveness of knowledge sharing (β=0.027, P<0.05), indicating that mental characteristics mediate the impact of the situation on the effectiveness of knowledge sharing,supporting Hypothesis H6.

Organization culture→Mental characteristics→Effectiveness of knowledge sharing (β=0.058, P<0.05), suggesting that mental characteristics mediate the influence of organizational culture on the effectiveness of knowledge sharing, supporting Hypothesis H7.

Table4. 2 Hypothesis testing for indirect effects

Hypothesis testing of indirect effects					
Hypothesis	Relationship	Original sample (O)	Standard deviation (STDEV)	T statistics (IO/STDEV|)	P values
H6	Situation→Mental characteristics→Effectiveness of knowledge sharing	0.027	0.027	0.012	0.023
H7	Organization culture→ Mental characteristics→ Effectiveness of knowledge sharing	0.058	0.059	0.022	0.008

4.3 Quantitative Analysis Conclusions

In the quantitative analysis section, statistical analysis software such as SPSS 24.0 and Smart-PLS were used for descriptive statistics, reliability analysis, factor analysis, testing the direct and mediating effects of the model, and predicting the model's fit based on 361 valid sample data obtained through a questionnaire survey. As shown in the analysis results in Table 4.3, seven hypotheses were validated.

Table4. 3 Summary of Hypothesis Testing Results

Hypothesis NO.	Hypothesis	Results
H1	Situation→Effectiveness of knowledge sharing	Supported
H2	Situation→Mental characteristic	Supported
H3	Organization culture→Mental characteristic	Supported
H4	Organization culture→Effectiveness of knowledge sharing	Supported

H5	Mental characteristic→Effectiveness of knowledge sharing	Supported
H6	Situation→Mental characteristic→Effectiveness of knowledge sharing	Supported
H7	Organization culture→Mental characteristic→ Effectiveness of knowledge sharing	Supported

4.4 Results

4.4.1 The Impact of Situation on the Effectiveness of Knowledge Sharing
Through hypothesis testing, we found a significant positive correlation (0.316, $p < 0.001$) between situation and knowledge sharing effectiveness, indicating that context can effectively promote the generation of knowledge sharing effectiveness. The importance of knowledge sharing effectiveness is widely recognized in society, and there is considerable research on its influencing factors. Currently, both domestic and foreign studies confirm that support, innovation, and personal trust are conducive to promoting knowledge sharing effectiveness.In these contexts, support, innovation, and personal trust intertwine, collectively driving the knowledge sharing effectiveness of Chinese-foreign cooperative schools in higher education.

4.4.2 The Impact of organization culture on the Effectiveness of Knowledge Sharing
Through hypothesis testing, we found a significant positive correlation (0.384, $p < 0.001$) between organization culture and knowledge sharing effectiveness, indicating that organization culture can effectively promote the generation of knowledge sharing effectiveness. The importance of knowledge sharing effectiveness is widely recognized in society, and there is considerable research on its influencing factors. Currently, both domestic and foreign studies confirm that clan culture,adhocracy culture, market culture, and hierarchical culture are conducive to promoting knowledge sharing effectiveness.In practice, organizations may promote effective knowledge sharing and discussion by creating a culture that encourages open communication, builds trust, and provides appropriate incentives.

4.4.3 The Mediating Role of Mental Characteristics
In this study, the relationships between situation and organization culture, as well as psychological characteristics and knowledge sharing effectiveness, were examined, and the mediating role of psychological characteristics was tested. The results indicated that the data supported all three hypotheses related to mental characteristics, and qualitative interviews also supported this conclusion. Situation, organization culture, and mental characteristics are crucial factors influencing knowledge sharing effectiveness, and there are complex interrelationships among them.Throughout the knowledge sharing process, situation, organization culture, and mental characteristics intertwine, collectively shaping an organization's learning and innovation capabilities.

4.4.4 Situation, Mental Characteristics, and the Effectiveness of Knowledge Sharing Effectiveness
Mental characteristics play an intermediary role in the impact of the situation of international collaboration in higher education on knowledge sharing effectiveness, indicating that individual mental characteristics play a crucial mediating and connecting role in organizational cooperation.Firstly, trust and a positive mindset within mental characteristics have a direct and significant impact on the effectiveness of knowledge

sharing.Secondly, mental characteristics can mediate the impact of situation on knowledge sharing effectiveness.Finally, individual mental characteristics can also influence their attitudes and behaviors towards knowledge sharing.Therefore, mental characteristics play a mediating role between situation and knowledge sharing.

4.4.5 Organization culture, Mental Characteristics, and the Effectiveness of Knowledge Sharing Effectiveness
In higher education institutions engaged in international collaboration, mental characteristics play an intermediary role in the impact of organization culture on the effectiveness of knowledge sharing.Firstly,mental characteristics, including compromise, responsibility, and tirelessness, directly influence whether individuals are willing to share knowledge, engage in collaboration, and embrace new concepts.Secondly, organization culture, as the fundamental background for school operations, directly shapes the school's values, behavioral norms, and work atmosphere.Therefore, for higher education institutions engaged in international collaboration to enhance the effectiveness of knowledge sharing, attention should not only be given to the development of organizational culture but also to the cultivation of individual mental characteristics.

5. **Conclusion**
This study, based on a mixed research method, conducted standardized quantitative analysis and in-depth qualitative analysis through interviews. It combined text mining technology with management research using modern technical tools, achieving the following theoretical findings.

Firstly, situation and organization culture are two key factors influencing knowledge-sharing effectiveness. The interaction between them plays a crucial role in determining the knowledge-sharing outcomes within an organization. In practical applications, optimal knowledge-sharing effectiveness is often achieved in a supportive, innovative scenario combined with an organizational culture that embraces multiculturalism. A supportive situation lays the foundation for knowledge sharing, an innovative situation propels continuous progress within the organization, and a multicultural organization culture encourages the exchange and integration of different viewpoints.

Secondly, quantitative analysis indicates that scenarios significantly contribute to promoting knowledge-sharing effectiveness. Through in-depth data analysis, situation not only effectively predict the actual outcomes of knowledge sharing but also have a significant positive impact at various levels. Furthermore, qualitative analysis reveals that detailed textual information obtained during interviews further validates this trend. Participants unanimously acknowledge the positive role of situation in driving knowledge-sharing effectiveness, emphasizing the importance of situation in forming a positive sharing culture within the organization.

Thirdly, the study finds that organization culture has a positive driving effect on knowledge-sharing effectiveness through quantitative analysis. The data shows that organization culture has a significant effect in promoting the efficiency of knowledge sharing. Additionally, in-depth qualitative analysis reveals that research subjects universally recognize the positive impact of organizational culture on knowledge-sharing effectiveness. Participants unanimously believe that the advocacy and cultivation of organization culture have an inspiring effect on knowledge transfer and cooperation. This qualitative perception further confirms the critical role played by organizational culture in fostering a positive knowledge-sharing atmosphere.

Fourthly, the research results indicate that situation, organization culture, and mental characteristics play a positive role in knowledge-sharing effectiveness. Additionally, qualitative analysis reveals profound influences of situation, organization

culture, and mental characteristics on knowledge-sharing effectiveness. The consistent conclusions drawn from these two different research methods emphasize the synergistic effects of situation, organization culture, and mental characteristics in promoting knowledge-sharing effectiveness. This indicates that establishing a supportive situation, a positive organization culture, and cultivating healthy mental characteristics are key elements in enhancing knowledge-sharing effectiveness.

Fifthly, quantitative results indicate that mental characteristics play a mediating role between situation, organization culture, and knowledge-sharing effectiveness. Interviews indicate that effective knowledge sharing requires the support of mental characteristics, adaptive situation, and beneficial organization culture.

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