Cross-cultural management, cultural intelligence and global leadership: Basis for integrative leadership framework

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Abstract

Globally integrated leadership combines global vision, cultural adaptability and interdisciplinary collaboration, focusing on cross-cultural sensitivity and intelligence, global vision and strategic integration, innovation and adaptability, communication and collaboration, inclusiveness and employee empowerment. This kind of leadership helps companies gain advantages in international competition and enhance organizations' resilience and adaptability in the global market. As enterprises in the free trade port, experience in cross-cultural management is indispensable. However, since the Hainan Free Trade Port is in its early stages of construction, most Hainan companies are in their infancy, lacking experience in cross-cultural management. This leads to an inability to correctly perceive the differences between their own culture and those of other nations. In terms of management, this is manifested as a lack of globally integrated leadership among corporate leaders, that is, a deficiency in cross-cultural understanding, communication, and management skills, as well as a lack of a global perspective. Clearly, this will directly or indirectly affect the normal development of Hainan enterprises in international business. This study used descriptive research methods and 400 questionnaires as data collection sources. Statistical analysis was performed using regression analysis. The survey shows that cross-cultural management practices, cultural intelligence, global leadership are closely related to comprehensive leadership. When cross-cultural management improves, there is a significant correlation between cross-cultural communication, conflict resolution, teamwork and cross-cultural management. The stronger a leader's cross-cultural management capabilities, the stronger his/her overall leadership will be. There is an important relationship between cultural intelligence and cognitive cultural intelligence, motivational cultural intelligence and strategic cultural intelligence. The higher the cultural intelligence, the higher the overall leadership of a leader. When leader's global leadership is enhanced, there is an important relationship between cross-cultural capabilities, global thinking, global learning and development, and global leadership. The higher the level of global leadership, the more significant the overall leadership will be. Finally, a systematic framework for the development of integrated

leadership has been proposed, specifically tailored for enterprises within the Hainan Free Trade Port. Additionally, recommendations have been offered to enhance the capacity for integrated leadership.

Keywords: cross-cultural management practice, cultural intelligence, global leadership, integrative leadership, Hainan free trade port

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1. Introduction

With the in-depth development of economic globalization, global competition and transnational operations have become inevitable trends in the development of modern enterprises. In this process, cultural differences between different countries or regions have become one of the focuses of increasing attention of corporate leaders. The multicultural work environment has also brought new challenges to leadership. Inconsistency among team members in cultural values, behaviors, etc. can easily lead to team conflicts. For example, leaders cannot handle conflicts in a timely and proper manner. Will have a negative impact on team performance. The COVID-19 epidemic has caused increasingly changes in the international situation. China's companies have obvious late-oriented characteristics in their internationalization, but the Chinese government strongly supports reform and opening up and adheres to the combination of "bringing in" and "going out." At present, the scale of foreign direct investment in China has exceeded that of several major developed economies, and the role of private enterprises in foreign investment is becoming increasingly important. China's cumulative foreign direct investment business increased from less than US\$1 billion in 2000 to more than US\$1.8 trillion at the end of 2017. However, in the face of the current complex and turbulent international situation, multinational enterprises are increasingly becoming an influencing factor in the international situation parallel to the country. It is crucial for multinational enterprises to better adapt to this new situation for their future development.

To further expand its openness to the world, China has established free trade zones in coastal cities like Shanghai, Hangzhou, Guangzhou, and Qingdao, and these initiatives have yielded positive outcomes. In 2018 at the conference commemorating the 30th anniversary of Hainan Province's establishment, General Secretary Xi Jinping proposed the strategic vision to develop Hainan into a free trade port, marking a significant national development initiative. Hainan Province is located at the southernmost tip of China. With a main island of approximately 33900 square kilometers and a vast sea area of about 2 million square kilometers, Hainan play an important role in the connecting Chinese mainland with South Asia countries. In addition, Hainan province also play an important role in national defense and economy, because it is the only province completely located in the tropical region in China with special climate conditions, rich products, special geographical location and many excellent seaports. This is an important opportunity for Hainan's development. The construction of free trade port requires Hainan to rely on the special policies given by the central government, make full use of its own advantages, launch all-out efforts and develop rapidly.

The "Overall Plan for the Construction of Hainan Free Trade Port" clearly requires that the development goal of Hainan Free Trade Port is to initially establish a policy and institutional system focusing on trade and investment liberalization and facilitation by 2025 (Central People's Government Network, 2020). At present, Hainan Province takes advantage of its location and policy advantages to implement a more flexible and convenient tax system, create a Hainan investment environment that is more attractive to foreign investment, help overseas companies seize the opportunities of economic globalization, support corporate financing, and help international companies carry out cross-border business in Hainan Free Trade Port, actively guide enterprises to digitize and upgrade, and create advantageous and characteristic industries such as digital health, digital creative design, and key core components. According to statistics provided by the Hainan Province Department of Commerce in December 2023, from January to November 2023, Haikou added 978 new foreign-funded enterprises, a year-on-year increase of 24.59%. The actual foreign investment was US\$3.438 billion, a year-on-year increase of 108.41%. There were 210 new foreign investment registered enterprises, a year-on-year increase of 41.46%. However, Hainan's economy has a late start. In comparison with other coastal free trade zone cities, the majority of

multinational enterprises in Hainan Province are still in their infancy, with limited strength and scarce transnational experience. Concurrently, the Hainan Free Trade Port is grappling with a talent shortage during its construction phase. Financing risks and the challenges of industrial transformation, particularly the talent issue, are hindering the smooth progress of current developments.

Globalization has brought many opportunities to the development of enterprises, but it also brings huge challenges. Because of cultural differences, enterprises must use teams with different cultural backgrounds in the process of globalization to promote enterprise diversification (Janssens et al.,2006). When people from different cultural backgrounds combine to complete complex tasks of an enterprise, conflicts caused by cultural differences will inevitably exist. Therefore, enterprises need talents with high cultural intelligence with cross-cultural abilities. Earley et al. (2003) first proposed the concept of cultural intelligence, which is defined as a person's ability to perform his or her job in different cultural contexts. Confronted with a complex international social environment, it is especially crucial for managers to possess strong cultural intelligence for the success of cross-cultural teams.

International start-ups and multinational companies generally have insufficient inherent conditions, and established multinational companies have strong strength. However, the characteristics of such companies are often that they can control rather than have sufficient resources based on their specific and unique conditions, forming a "resource leverage effect." In this case, business leaders are extremely important in newly founded multinational companies. A leader's experience, international vision and motivation have a great impact on the development of an enterprise. Leaders 'education and life experience, overseas experience, and the experience they gain from other jobs at home and abroad will affect the company's development path. They adjust the thinking of entrepreneurs to a global mindset. The vision and global mindset of leaders create more opportunities for new companies and shorten the psychological distance from specific product markets (Jiang, 2013). The internal and external forms faced by multinational enterprises in Hainan Province are more complex. The cross-cultural capabilities and global leadership of corporate leaders are related to the success or failure of the company. Therefore, evaluating the cross-cultural management capabilities and global leadership of multinational enterprises and their leaders in Hainan Province is of great practical significance, and explore the significant relationship between cross-cultural management, cultural intelligence and global leadership.

Research by Yang et al. (2019) pointed out that over the years, the vast majority of Chinese scholars have been more inclined to verify Western constructs and theories, and few have proposed explanatory theoretical research on the problems faced by China companies and China's management phenomena. Therefore, enhancing the awareness of comparison in multiple contexts and fully exploring the huge potential of local research are feasible directions for China to contribute to world management research. Based on the complex and changeable time and space, the background of the accelerated development of the Hainan Province Free Trade Port, and based on the China situation, this research considers the cross-cultural capabilities and global leadership of the Hainan Province Free Trade Port multinational enterprises from the perspective of corporate employees, explores the problems existing in the management of multinational enterprises in Hainan Province Free Trade Port, and proposes specific strategies for leaders to cross-cultural management, providing reference significance for China enterprises to better "go global" in the future.

Objectives of the Study - This study aimed to assess the cross-cultural management practices, cultural intelligence and global leadership in Hainan Free Trade Port enterprises in China. Specifically, it aimed to determine cross-cultural management practices in terms of communication, conflict resolution, and teamwork and collaboration; Assess the cultural intelligence application in view of cognitive, motivational and strategic aspects; describe the global leadership in terms of cross-cultural competence, global mindset, and global learning and development; test the significant relationship among cross cultural management practice, cultural intelligence and global leadership; and develop an integrative leadership framework that can be applied in Hainan Free Trade Port enterprises.

2. Methods

Research Design - Based on existing research, this paper puts forward research hypotheses on the impact of cross-cultural management practices, cultural intelligence applications and global leadership on overall leadership of enterprises, and builds a theoretical model. In the model, cross-cultural management practices, cultural intelligence applications and global leadership are three independent variables, and the overall leadership of the enterprise is the dependent variable. Subsequently, a questionnaire was designed based on the independent variable theory and distributed to the interviewed employees through the questionnaire star platform. The reliability and validity of the questionnaire data were tested and analyzed by factor analysis. Finally, this study uses multiple regression analysis techniques to empirically test the correlation between cross-cultural management practices, application of cultural intelligence, global leadership and overall corporate leadership. This method aims to reveal the impact of three different dimensions on the overall leadership of the enterprise. Based on the data test results, this study proposes a series of targeted strategies and suggestions to provide theoretical and practical support for promoting the improvement of enterprises 'overall leadership.

Research Participants - This research distributed 400 questionnaires to employees of two large multinational enterprises in Hainan Free Trade Port through the Internet, which are mainly engaged in manufacturing. The interviewees were randomly selected from two companies. Each enterprise will randomly select 200 ordinary employees, enabling this study to describe the relevant factors of corporate leadership they perceive from the perspective of enterprise employees rather than enterprise leaders, to ensure a comprehensive understanding of topics related to cross-cultural management practices, cultural intelligence applications, and global leadership in an academic environment.

Data Gathering Instrument - This study mainly uses self-structured questionnaires as research tools. Based on the existing literature and the current situation of Hainan Free Trade Port enterprises, the author designed a questionnaire titled "Cross-cultural Management Practice, Cultural Intelligence Application and Global Leadership on Enterprises" from three dimensions: cross-cultural management practice, cultural intelligence application and global leadership. The first part of the questionnaire asked questions about cross-cultural management practices. Employees evaluate the company's current cross-cultural practices based on the company's actual situation and their own opinions. The second part mainly explores the influence of cultural intelligence on overall leadership. The third part mainly discusses the important role of global leadership in overall leadership. This method aims to reveal the extent to which three different dimensions affect the overall influence of the enterprise. This study analyzes the reasons for the data test results, and uses relevant literature to testify and analyze the conclusions. It proposes a series of targeted strategies and suggestions for the problems arising in the construction of the free trade port to provide theoretical and practical support for promoting the improvement of the overall leadership of enterprises. The questionnaire has passed expert review and verification, and the results are reliable and authentic. The questions in this questionnaire were answered using a four-level Likert scale, in which the number 4 represents "strongly agree", the number 3 represents "agree", the number 2 represents "disagree", and the number 1 represents "strongly disagree". The questionnaire content covers multiple dimensions and indicators related to cross-cultural management practices, application of cultural intelligence and global leadership. The specific status of each part of the questionnaire is as follows: The first part, "cross-cultural management practices" involves three aspects: communication, conflict Resolution and teamwork and collaboration. The second part "cultural intelligence applications" includes the three dimensions of cognitive aspect, motivational aspect and strategic aspect. The third part, "global leadership", is designed into three dimensions: cross cultural competence, global mindset and global learning and development.

After approval from the graduate student supervision department, the author conducted a preliminary questionnaire survey. Table 1 is the reliability table of the questionnaire survey. The results in Table 1 show that the α values are communication (0.815), conflict resolution (0.744), teamwork and collaboration (0.847), cultural intelligence (0.821), cognitive aspect (0.904), strategy aspect (0.889), cross cultural competence (0.892), global mindset (0.844), global learning and development (0.855). By analyzing Cronbach's α coefficient, it was proved

that this study performed well in terms of internal consistency. In terms of internal consistency, the cross-cultural management practices, cultural intelligence, and global leadership dimensions involved in this study performed well. The good validation of all indicators confirms the effectiveness of questionnaire design and implementation. The analysis results provide good feedback for this study and provide guidance for subsequent analysis and improvement.

Table 1
Reliability Test Summary

Variables	No. of Items	α value	Interpretation
Cross-cultural Management	·	•	•
1A. Communication	5	0.815	Good
1B. Conflict resolution	5	0.744	Acceptable
1C. Teamwork and collaboration	5	0.847	Good
Overall	15		
Cultural Intelligence			
2A. Cognitive Aspect	5	0.831	Good
2B. Motivational Aspect	5	0.904	Excellent
2C. Strategy Aspect	5	0.889	Good
Overall	15		
Global Leadership			
3A. Cross cultural competence	5	0.892	Good
3B. Global Mindset	5	0.844	Good
3C. Global Learning and Development	5	0.855	Good
Overall	15	•	•

Data Gathering Procedure - Based on existing research and theory, this study puts forward research hypotheses on the impact of cross-cultural management practices, application of cultural intelligence and global leadership on overall leadership of enterprises. Anonymous questionnaires are distributed through the "Questionnaire Star" online platform to ensure the accuracy and confidentiality of survey results. A questionnaire survey was conducted among 400 ordinary employees of two multinational manufacturing companies in Hainan Free Trade Port. The content of the questionnaire and the comprehensive paper proposal require approval by the LPU-Batangas Graduate School before they can be distributed in accordance with the above method. This step is critical to initiating data collection in a modest sample of 30 to 100 participants. Before the survey began, the reliability and effectiveness of the questionnaire structure were initially evaluated using the initial sample to verify the accuracy and consistency of the questionnaire. Feedback from the initial sample distribution assessment prompted some adjustments to the questionnaire. These adjustments are critical to improving the effectiveness of the tool and ensuring the robustness of empirical analysis after widespread dissemination.

Data Analysis - Weighted mean and rank were used to determine cross-cultural management practices in terms of: communication, conflict resolution, and teamwork and collaboration; to assess the cultural intelligence application in view of cognitive, motivational and strategic aspects; and to describe the global leadership in terms of cross-cultural competence, global mindset, and global learning and development. The results of the Shapiro-Wilk test showed that the p-values were less than 0.05 for all variables, indicating that the data set did not conform to a normal distribution. Therefore, Spearman rho was used as part of a non-parametric test to determine significant relationships. All analyses were performed using SPSS version 28.

Ethical Consideration - Before starting the research, the LPU Batangas College and Graduate School reviewed and approved the conceptual framework and questionnaire. The participants in this study were fully informed and voluntarily filled out the questionnaire. During the survey, the researchers had sufficient communication with the leaders of two companies and obtained their agreement to allow employees to participate in this questionnaire survey. The questionnaire survey does not involve any aspect of discrimination and prejudice. During the survey, respondents do not need to fill in personal information such as name and position. No video or audio recording will be carried out throughout the survey process to ensure that the information fully protects the privacy of respondents. In addition, the study also ensured the transparency and

fairness of the investigation process, and respondents 'feedback was expressed independently and truthfully.

3. Results and discussion

Table 2
Summary Table on Cross-cultural Management Practices

Key Result Areas	Composite Mean	VI	Rank
Communication	2.99	Agree	1
Conflict Resolution	2.98	Agree	2
Teamwork and Collaboration	2.96	Agree	3
Grand Composite Mean	2.98	Agree	

Legend: 3.50-4.00 = Strongly Agree; 2.50-3.49 = Agree; 1.50-2.49 = Disagree; 1.00-1.49 = Strongly Disagree

Table 2 uses survey data to introduce the comprehensive impact of the three indicators of cross-cultural management practices on integrative leadership. The comprehensive average is 2.98, and the verbal explanations for the three indicators are "agree". This indicates that respondents believe that the three indicators of cross-cultural management practices have a positive impact on overall leadership in enterprises. This discovery is of great significance for understanding the importance of cross-cultural management practices in integrative leadership.

In the cross-cultural management practices evaluation system, the average value of "Communication" is 2.99, ranking first, indicating the importance of communication in promoting integrative leadership of enterprises. Chen (2022) believed that communication is conducive to improving the decisions made by individuals and groups, helping employees coordinate and effectively work, and helping managers encourage subordinates and create a positive interpersonal relationship and team atmosphere. Jiang (2024) believed that in multinational companies and international projects, team members may come from different countries, regions and cultural backgrounds. Differences in communication between cultures can lead to inaccuracies, misunderstandings and conflicts of information. Therefore, the purpose of managing cross-cultural communication is to promote understanding, cooperation and consensus among team members to ensure the smooth progress of the project.

The average value of "Conflict Resolution" is 2.98, ranking second, the verbal interpretation is "agree". This shows that conflict resolution is also very important for cross-cultural management practices. In essence, cross-cultural conflict does not mean that there is a dilemma in business operations. Instead, it is the staff of various functional departments who adopt different measures and cognitive judgments in order to achieve work goals and complete work tasks. This is an important opportunity for the development of the company (Yu et al.,2022). The research of Chen et al. (2018) emphasized that the fusion of multicultural values such as Western and Eastern perspectives can turn conflicts into opportunities for cooperation. This approach to conflict resolution benefits organizations by promoting mutual understanding and common goals among employees, and ultimately supporting a stable and inclusive corporate culture.

Ranking third is Teamwork and Collaboration, scores of 2.96, and the verbal interpretation is "agree". Although the indicator of teamwork does not have as high a psychological value as the other two indicators among respondents, they also agree that teamwork plays an important role in integrative leadership. The research of Chen (2023) also confirmed this view: excellent synergy can make the overall role exceed the part, and the strength of the team exceeds the superposition of individual strength. Team development can help companies improve their own advantages, thereby providing qualitative changes to the construction of the company and enabling more outstanding talents to settle in for a long time. The viewpoint of Lu et al. (2022) is that only when companies value teamwork can they develop and grow. The development and growth of multinational companies is the result of teamwork.

In the process of enhancing integrated enterprise leadership, communication, conflict resolution, and teamwork are all vital components. Compared with traditional enterprises, Hainan Free Trade Port multinational

enterprises have significantly improved their cross-cultural practices, which has promoted the steady development of their integrative leadership. Therefore, companies should regard these key factors as important factors in their development when formulating future strategies to achieve sustainable growth of multinational companies. Future research can compare and analyze the cross-cultural management capabilities of Hainan Free Trade Port multinational enterprises with those of other large multinational enterprises, explore the advantages and disadvantages of Hainan Free Trade Port enterprises 'cross-cultural management practices, and thus provide guidance for enterprises to formulate more precise and sustainable strategies.

Table 3
Summary Table on Cultural Intelligence Application

Key Result Areas	Composite Mean	VI	Rank
Cognitive Aspect	2.99	Agree	1.5
Motivational Aspect	2.99	Agree	1.5
Strategic Aspect	2.97	Agree	3
Grand Composite Mean	2.98	Agree	

Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree

The data in Table 3 shows the comprehensive performance of the three indicators of cultural intelligence in integrative leadership. Through the analysis of three related indicators, it was found that the three indicators of cultural intelligence have different impacts on Integrative leadership. These indicators provide important references for enterprises to formulate cross-cultural development policies, company development plans, and strengthen team building. The overall average comprehensive value of cultural intelligence is 2.98, with verbal interpretation being "consistent". The survey results provide an overview of the current status of cultural intelligence and an overall assessment of the field. The findings indicate that respondents generally believe cultural intelligence is crucial for the sustainable development of multinational corporations. Additionally, there is a consensus that the cultural intelligence levels of both business leaders and employees need to be enhanced. The cultural intelligence of enterprise managers directly affects their cross-cultural competence and leadership. Enterprise leaders need to have sensitive cultural identification skills in the management process in order to formulate correct cultural development strategies. The research of Elenkov et al. (2019) found that high cultural intelligence positively influences the relationship between expatriate leadership and key outcomes such as adaptation, performance, and innovation.

In the cultural intelligence application, the average value of "Cognitive Aspect" and "Motivational Aspect" is 2.99, ranking first, indicating that the cognitive and motivational aspects of cultural intelligence play an important role in promoting integrative leadership in enterprises. Rockstuhl et al. (2008) suggested that cognitive cultural intelligence helps team members better understand cultural norms and behaviors, thereby improving credibility among team members from different cultural backgrounds. This cognitive component of cultural intelligence allows individuals to more accurately predict and interpret colleagues behavior, thereby minimizing misunderstandings and promoting a collaborative and trusting team environment. According to research by Van et al. (2018), motivational cultural intelligence can help leaders create inclusive and supportive environments where team members from diverse cultural backgrounds feel valued and understood. This leads to higher levels of engagement, job satisfaction and overall team performance.

Ranked third are Strategic Aspect, with scores of 2.97, and the verbal interpretation is "agree". The survey results illustrate the importance of strategic aspect in cultural intelligence application, which play an important role in Integrative Leadership. The development strategy of corporate culture plays a crucial role in the sustainable development of an enterprise, and can effectively promote the stable and healthy development of corporate culture. Meanwhile, due to the inherent correlation between culture, organization, and teamwork, the formulation and implementation of cultural development strategies directly affect the direction of organizational culture and team harmony in enterprises. Research by Mendenhall et al. (2018) suggested that leaders with high strategic cultural intelligence are better equipped to build trust and rapport with diverse teams, which enhances collaboration and employee engagement. This capability allows them to address cultural misunderstandings proactively, improving overall team performance. According to Khilji (2021), organizations that prioritize

strategic cultural intelligence in their leadership development programs can achieve a competitive edge by effectively responding to the complexities of global markets. These leaders can identify market opportunities and threats that may arise due to cultural differences, enabling more informed decision-making.

Cognitive cultural intelligence, motivational cultural intelligence, and strategic cultural intelligence all play crucial roles in enhancing the integrative leadership of enterprises. Leaders who demonstrate high cultural intelligence in these three indicators can promote sustainable development of the enterprise. Research by Hamidianpour et al. (2016) believes that cultural intelligence can have a positive impact on the success of business managers, and managers with high cultural intelligence are more capable of communicating with employees and customers. Therefore, when formulating future strategies, enterprises should reuse leaders with high cultural intelligence to achieve efficient development of cross-border business.

Table 4
Summary Table on Global Leadership

Key Result Areas	Composite Mean	VI	Rank
Cross Cultural Competence	2.95	Agree	3
Global Mindset	2.98	Agree	2
Global Learning and Development	2.99	Agree	1
Grand Composite Mean	2.97	Agree	

Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree

Table 4 is a summary table of "Global Leadership", which systematically evaluates the application of three key indicators: cross-cultural competence, global mindset, and global learning and development of Hainan Free Trade Port enterprises. This survey provides an in-depth understanding of the current global leadership situation of enterprises and provides important references for the future development of global leadership in enterprises. The overall comprehensive mean of the table is 2.97, which is verbally interpreted as "agree". This indicates that the respondents hold a positive attitude towards global leadership in enterprises, believing that global leadership can enhance the overall leadership ability of enterprises and is regarded as an important engine for improving integrative leadership. This assessment can help business managers gain a deeper understanding of the actual effects of global leadership and provide theoretical support for future integrative leadership development.

The indicator with the highest weighted average in this table is "Global Learning and Development," with a score of 2.99, which corresponds to a verbal interpretation of "agree" This suggests that the global leadership of enterprise managers positively and significantly impacts the overall leadership of the enterprise. This survey result reflects the extent to which the leadership of enterprise managers is acknowledged in the context of globalization within the organization. This also means that business leaders must pay attention to guiding the development and learning of the enterprise, and have a global mindset in order to more effectively promote the globalization of the enterprise. Ge (2016) built a theoretical model to discuss the role of cognitive and emotional team trust in the relationship between corporate learning orientation and corporate innovation performance. The results showed that a good corporate learning orientation and team trust atmosphere will help companies better. Achieve sustained competitive advantage and innovation performance.

Secondly, the weighted average of the global mindset indicator is 2.98, ranking second, with a verbal explanation of "agree", slightly lower than global learning and development. This indicates that global mindset has significant value in respecting and learning from different cultures, assessing economic forms, and formulating development strategies, which can effectively promote the enhancement of global leadership. Research of Mendenhall et al. (2018) shows that global mindset is critical to leadership improvement, and leaders with global thinking are more likely to promote inclusiveness, which is important for balancing and leveraging multicultural perspectives and responding to dynamic global markets.

In Table 4, the indicator with the lowest score is Cross Cultural Competence, with a weighted average of 2.95, ranking third, and the verbal interpretation is "agree". Although the weighted average ranking of this indicator is the lowest, it still demonstrates the positive role of cross-cultural competence in enhancing global

leadership, indicating that there is still room for improvement. This may require further strengthening of cross-cultural training to enhance the cross-cultural competence of enterprises. Wang et al. (2022) believed that Hainan leaders may be unwilling or difficult to adapt their leadership styles to different cultural backgrounds, which may affect their ability to lead diverse teams. Flexibility and the ability to modify methods based on cultural cues are critical to effective cross-cultural leadership. Cultivating cross-cultural competence, global mindset ability, and awareness of global learning and development in leaders is beneficial for enhancing the global leadership of enterprises. By enhancing their understanding and adaptability to different cultures, leaders can better manage diverse teams, promote teamwork, and work effectively on a global scale.

Table 5
Relationship Between Cross Cultural Management Practices and Cultural Intelligence Application

Variables	rho	p-value	Interpretation
Communication			
Cognitive Aspect	0.576**	<.001	Highly Significant
Motivational Aspect	0.561**	<.001	Highly Significant
Strategic Aspect	0.525**	<.001	Highly Significant
Conflict Resolution			
Cognitive Aspect	0.556**	<.001	Highly Significant
Motivational Aspect	0.492**	<.001	Highly Significant
Strategic Aspect	0.509**	<.001	Highly Significant
Teamwork and Collaboration			
Cognitive Aspect	0.503**	<.001	Highly Significant
Motivational Aspect	0.564**	<.001	Highly Significant
Strategic Aspect	0.512**	<.001	Highly Significant

^{**.} Correlation is significant at the 0.01 level

Table 5 presents the relationship between cross cultural management practices and cultural intelligence application. Based on the results indicate a significant and consistent positive relationship between cross-cultural management practices and the application of cultural intelligence across different dimensions (cognitive, motivational, and strategic). Specifically, higher levels of effective cross-cultural communication, conflict resolution, and teamwork and collaboration are associated with stronger cognitive, motivational, and strategic applications of cultural intelligence.

The rho values, which range from 0.503 to 0.576, suggest that the cognitive, motivational, and strategic aspects of cultural intelligence are moderately influenced by these cross-cultural management practices. The highly significant p-values (<0.001) indicate that these relationships are unlikely to occur by chance, reinforcing the importance of fostering strong cross-cultural management strategies to improve how individuals understand, motivate, and strategically engage with diverse cultural contexts. Earley et al. (2020) highlighted that leaders who consistently engage in cross-cultural management practices are better prepared to navigate complex cultural dynamics. Such engagement cultivates their cognitive, motivational, and behavioral cultural intelligence, allowing them to foster more inclusive teams, resolve misunderstandings, and effectively bridge cultural divides. By developing these cultural intelligence facets, leaders are equipped not only to recognize and respect diverse cultural perspectives but also to actively incorporate these perspectives to enhance team cohesion and collaboration.

In the communication category, the strongest correlation is with cognitive aspect (rho=0.576), followed by motivational aspect (rho=0.561) and strategic aspect (rho=0.525), all of which are highly significant (p<0.001). This indicates that effective communication in cross-cultural environments greatly enhances cultural intelligence, particularly in terms of cognitive cultural intelligence. The research of Deng (2015) confirms that through cross-cultural communication, individuals can better understand the backgrounds, values and behavioral patterns of different cultures, thereby improving their cultural intelligence. This understanding is not limited to the language level, but also includes recognition and adaptation to cultural differences.

For conflict resolution, the correlations are similarly strong, with Cognitive Aspect showing the highest correlation again (rho=0.556), followed by Strategic Aspect (rho=0.509) and Motivational Aspect (rho=0.492).

This means that the ability to resolve conflicts in different cultural environments significantly affects the cognitive cultural intelligence of leaders, and also has a significant impact on strategic cultural intelligence. This also indicates that cognitive cultural intelligence plays a crucial role in the effectiveness of cross-cultural competence practice. Cao (2019) gave a conclusion through research on expatriates: When faced with internal conflicts among team members, people with high cultural and intellectual levels will take into account their own feelings and the other party's feelings at the same time, and fully consider the harmonious state of interpersonal relationships. Therefore, they will choose a cooperative conflict management method.

In the teamwork and collaboration category, Motivational Aspect has the strongest correlation (rho=0.564), followed by Strategic Aspect (rho=0.512) and Cognitive Aspect (rho=0.503), all of which are highly significant (p<0.001) indicating that good cross-cultural collaboration has a significant impact on motivational cultural intelligence. The metric with the highest weighted average is the correlation between Communication and Cognitive Aspect, with a rho value of 0.576. This suggests that there is a significant positive correlation between cross-cultural communication and cognitive cultural intelligence. Research has shown that as cross-cultural communication skills increase, so does cognitive cultural intelligence. Research by Li et al. (2021) shows that project managers spend 75%-90% of their time on communication. Therefore, improving communication efficiency is a key skill that every project manager must master. In the process of improving project management efficiency, the key is to deeply analyze various obstacles that affect effective communication, and rationally apply communication management strategies in project management practice, aiming to eliminate these obstacles, ensure unimpeded information and efficient collaboration between teams.

In the study, the relationship between conflict resolution in cross-cultural management and motivation in cultural intelligence scored the lowest, with a rho value of 0.492. Although their correlation is not as significant as other indicators, it still indicates a certain degree of positive correlation between conflict resolution in cross-cultural management and motivational aspects in cultural intelligence. This impact may be reflected in improving the company's cross-cultural conflict resolution ability by encouraging employees' cross-cultural communication behavior and providing planned training and exchange learning opportunities, thereby enhancing overall cross-cultural competence. The research of Cao (2019) proved that individuals with high motivational cultural intelligence can better adapt to and cope with cultural differences when faced with cross-cultural environments. This ability not only affects an individual's cross-cultural competence, but also directly affects his/her role in the team. In conflict management, individuals with high motivation, cultural intelligence are more inclined to adopt cooperative conflict management methods, which help promote communication and understanding among team members and reduce the negative impact of conflicts. Conversely, individuals with low motivation, cultural intelligence may prefer competitive conflict management methods, which may lead to tension and discord within the team.

Overall, the highly significant correlations (p<0.001) suggest that cross-cultural management practices, particularly in communication, conflict resolution, and collaboration, play a vital role in enhancing key aspects of cultural intelligence application, including cognitive aspect, motivational aspect and strategic aspect. Ye et al. (2018) pointed out that in cross-cultural management, we should have an in-depth understanding of cross-cultural management and fully understand the cultures of other countries to achieve cross-cultural integration and comply with relevant norms. In addition, choosing an appropriate cross-cultural management model and targeted coping strategies is also key. Only then can we ensure the smooth development of the company's international operations and the realization of the strategic goals of cross-cultural operations. Research by Zhao (2021) confirms that subordinates are more likely to respect leaders with high cultural intelligence. Because in the work environment, leaders with high levels of cultural intelligence are easier to communicate with subordinates, and ultimately have stronger judgment and decision-making abilities based on different cultures.

Table 6 shows a strong positive correlation between cross-cultural management practices and global leadership competencies, as reflected in cross-cultural competence, global mindset, and global learning and

development. The rho values range from 0.511 to 0.612, indicating moderate to strong relationships across all variables.

Table 6
Relationship Between Cross Cultural Management Practices and Global Leadership

Variables	rho	p-value	Interpretation
Communication	1110	p value	interpretation
Cross Cultural Competence	0.589**	<.001	Highly Significant
Global Mindset	0.533**	<.001	Highly Significant
Global Learning and Development	0.541**	<.001	Highly Significant
Conflict Resolution			<i>C</i> , <i>C</i>
Cross Cultural Competence	0.524**	<.001	Highly Significant
Global Mindset	0.545**	<.001	Highly Significant
Global Learning and Development	0.612**	<.001	Highly Significant
Teamwork and Collaboration			
Cross Cultural Competence	0.572**	<.001	Highly Significant
Global Mindset	0.511**	<.001	Highly Significant
Global Learning and Development	0.519**	<.001	Highly Significant

^{**.} Correlation is significant at the 0.01 level

In the communication category, the strongest correlation is with cross-cultural competence (rho=0.589), followed by global learning and development (rho=0.541) and global mindset (rho=0.533), all of which are highly significant (p<0.001). This suggests that effective communication in cross-cultural settings greatly enhances global leadership qualities, particularly in developing cross-cultural competence. Zhang (2023) research shows that in the operation of global business, the level of cross-cultural communication capabilities of practitioners is one of the important factors influencing the smooth flow of international cooperation. Only leaders with cross-cultural communication capabilities can they respond more flexibly and adjust the quality and efficiency of cross-cultural communication between people in different countries and regions in the world can they play an indispensable and important role in the process of global economic and trade development. Thereby improving the company's level of competition in the development of a global economy.

For conflict resolution, the correlations are similarly strong, with global learning and development showing the highest correlation (rho=0.612), followed by global mindset (rho=0.545) and cross-cultural competence (rho=0.524). This implies that the ability to resolve conflicts in diverse cultural environments significantly impacts leaders' global learning and development. This suggests a significant positive correlation between conflict resolution and global learning and development. This view is consistent with the view of Earley et al. (2020), who believe that through effective conflict resolution, leaders can turn challenges into learning opportunities, thereby strengthening global learning motivation within organizations. By promoting open communication and respecting diverse cultural perspectives, leaders promote a more inclusive environment that enhances team cohesion and organizational effectiveness.

In the teamwork and collaboration category, cross-cultural competence again has the strongest correlation (rho=0.572), indicating that collaborative efforts across cultures are crucial for developing leadership competencies in a global context. In the study, the relationship between Teamwork and Collaboration and Global Mindset in cross-cultural management scored the lowest, with a rho value of 0.511. Although their correlation is not as significant as other indicators, it shows that there is a certain degree of positive correlation between Teamwork and Collaboration in cross-cultural management and Global Mindset. Effective cooperation among team members is the key to improving team performance, while efficient team cooperation depends on mutual recognition among members. Team identification increases team members' enthusiasm and initiative to participate in work, and are more willing to fight for the overall welfare of the team (Lin et al., 2017).

Overall, the highly significant correlations (p<0.001) suggest that cross-cultural management practices, particularly in communication, conflict resolution, and collaboration, play a vital role in enhancing key aspects of global leadership, including cross-cultural competence, a global mindset, and continuous learning in a globalized environment. Cross-cultural management and global leadership are integral parts of modern

organizations. Effective global leaders not only need to master the principles of cross-cultural management, but also integrate them into daily management practices to achieve long-term success and sustainable development of their organization. By effectively combining the two, organizations can stand out in the global competition. Yan et al. (2017) highlighted that cross-cultural management can strengthen the cooperation and cohesion among employees from diverse cultural backgrounds, thus enhancing the operational and managerial efficiency of an enterprise. To reduce business risks, enterprises should prioritize cross-cultural management and implement proactive reconciliation strategies.

Table 7
Relationship Between Cultural Intelligence Application and Global Leadership

Variables	rho	p-value	Interpretation
Cognitive Aspect			
Cross Cultural Competence	0.567**	<.001	Highly Significant
Global Mindset	0.550**	<.001	Highly Significant
Global Learning and Development	0.572**	<.001	Highly Significant
Motivational Aspect			
Cross Cultural Competence	0.555**	<.001	Highly Significant
Global Mindset	0.587**	<.001	Highly Significant
Global Learning and Development	0.555**	<.001	Highly Significant
Strategic Aspect			
Cross Cultural Competence	0.495**	<.001	Highly Significant
Global Mindset	0.530**	<.001	Highly Significant
Global Learning and Development	0.531**	<.001	Highly Significant

^{**.} Correlation is significant at the 0.01 level

Table 7 demonstrates a strong positive relationship between the application of cultural intelligence and global leadership competencies, specifically in the areas of cross-cultural competence, global mindset, and global learning and development. The rho values range from 0.495 to 0.587, indicating moderate correlations across the cognitive, motivational, and strategic aspects of cultural intelligence. For the cognitive aspect, global learning and development has the strongest correlation (rho=0.572), followed by cross-cultural competence (rho=0.567) and global mindset (rho=0.550), all of which are highly significant (p<0.001). This suggests that a well-developed cognitive understanding of cultural differences enhances leaders' abilities to navigate diverse global environments, fostering both competence and learning. Johnson (2019) believe that cognitive cultural intelligence enables leaders to actively recognize and adapt to cultural differences, which is critical to creating a supportive environment in which individuals feel valued and understood. This inclusive atmosphere is seen as key to organizational growth because it promotes continuous learning and adaptability in culturally diverse environments.

In the motivational aspect, global mindset shows the strongest correlation (rho=0.587), followed by cross-cultural competence and global learning and development (both at rho=0.555). This highlights the importance of intrinsic motivation in enhancing global leadership qualities, particularly in fostering a global mindset. The metric with the highest weighted average in the study is the correlation between the motivational aspect and global mindset, with a rho value of 0.587. This indicates a significant positive correlation between the motivational aspect and global mindset, suggesting that individuals with strong motivation are more likely to develop a global mindset. Research by Earley et al. (2020) shows that motivational cultural intelligence can develop proactive curiosity and adaptability in leaders, which directly supports the global mindset needed to cope with the complexity of international and multicultural work environments. This adaptability, rooted in motivational cultural intelligence, is crucial for leaders to build trust, reduce misunderstandings, and strengthen cross-cultural cooperation.

The strategic aspect shows slightly lower but still highly significant correlations. The strongest correlation is with global learning and development (rho=0.531), followed by global mindset (rho=0.530) and cross-cultural competence (rho=0.495). This indicates that the strategic application of cultural intelligence also supports the development of global leadership competencies, though slightly less strongly than the cognitive and motivational

aspects. The relationship between the strategic aspect and cross-cultural competence had the lowest score, with a Spearman's rho value of 0.495. Although this correlation is not as strong as other indicators, it still demonstrates a positive relationship between the strategic aspect and cross-cultural competence. Cen et al. (2019) found that strategic cultural intelligence significantly influences cross-cultural adaptation. Zhu (2019) argued that strategic leadership plays a crucial role in an enterprise's overall decision-making process, influencing key areas such as core competitiveness, resource allocation, and decision-making direction. This leadership ultimately drives strategic transformation and supports the achievement of sustainable development.

Overall, the highly significant correlations (p<0.001) across all aspects reinforce the critical role that the application of cultural intelligence—whether cognitive, motivational, or strategic—plays in enhancing global leadership capabilities. Leadership is an important factor in the success or failure of international operations. As a sociocultural motivator, cultural intelligence possesses unique attributes that set it apart from other forms of intelligence, forging a strong link with leadership. In recent years, managers who demonstrate high levels of cultural literacy and intelligence have been recognized as effective leaders (Solomon et al.,2017).

Effective leadership can improve an enterprise's global competitiveness. Enterprises should give full play to their leadership role in cross-cultural operations. Leadership is an important factor influencing group and organizational performance. Leadership can provide a vision and direction of action for the organization. At the same time, situations in which leadership plays a vital role are important. To improve cross-cultural leadership, we must establish cross-cultural training programs and innovative talent development methods as systematic approaches to cultivate global cross-cultural leaders. Enhance the platform for building a talent pool aimed at "going global," implement multi-channel and diverse cross-cultural training mechanisms, and encourage collaboration between the government, globally expanding enterprises, and universities to jointly develop outward-oriented, multifaceted cross-cultural leadership talent.

Framework of Integrative Leadership

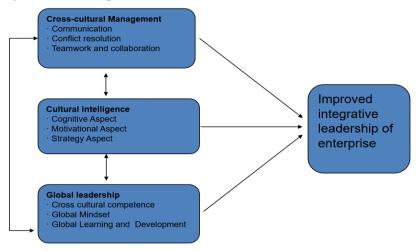


Figure 1. Improved Integrative Leadership Framework

This paper starts from the three key variables of cross-cultural management practice, application of cultural intelligence, and global leadership to explore their interrelationships and promote the development of integrative leadership in enterprises. In the current context of deepening corporate globalization and complex and changeable international forms, corporate leaders have cross-cultural communication skills, global mindset, teamwork and collaboration capabilities, and cultural adaptability have become indispensable factors in integrated leadership. Integrative leadership can not only solve complex challenges across departments, cultures, or agencies, but also integrate different resources and forces to ensure that companies achieve broader goals in the development process, while improving the overall effectiveness and innovation capabilities of the organization. Exploring the interaction between cross-cultural management practices, the application of cultural

intelligence and global leadership and finding a balance point are core issues to improve integrative leadership.

Figure 1 is a schematic diagram of the enterprise integrative leadership development model. The diagram illustrates how strengthening three key areas can lead to improved integrative leadership within an enterprise. In the model diagram built, cross-cultural management practices are the foundation. Provide more support for the improvement of integrative leadership in enterprises by improving communication, conflict resolution, and teamwork and collaboration capabilities. The improvement of cross-cultural management practices can enable business leaders to improve their capabilities in communication, cooperation and strategic decision-making, thereby better guiding the development of the company. In terms of the application of cultural intelligence, a model is built from the aspects of cognition, motivation and strategy of leaders 'cultural intelligence. The improvement of these three aspects enhances the integration and inclusiveness of leadership, helps leaders integrate resources and promote collaboration on a global scale, and achieve long-term sustainable development of the company. Global leadership is very important in the process of improving enterprise integrative leadership. This article builds a model from cross-cultural capabilities, global thinking and three learning and development dimensions to better reflect global leadership. Improve the cross-cultural management capabilities of corporate leaders, enhance cultural intelligence, cultivate global leadership, and directly promote the improvement of corporate integrative leadership. The diagram emphasizes the importance of cross-cultural management practices, cultural intelligence, and global leadership. These three indicators interact and promote each other, and together constitute a powerful mechanism to promote integrative leadership among enterprises. Provide favorable guarantee for the global development of enterprises. By enhancing these areas, organizations can improve communication, conflict resolution, teamwork, and strategic decision-making. This integrated approach can lead to greater inclusivity, resource integration, and long-term sustainable development.

The analytical model demonstrates how cross-cultural management practices, cultural intelligence applications and global leadership interact in integrative leadership of enterprises to jointly promote the improvement of integrative leadership of enterprises. This comprehensive understanding can help companies make smarter decisions when promoting integrated leadership.

4. Conclusions and recommendations

Respondents generally agreed with the company's cross-cultural management practices, application of cultural intelligence and global leadership. Respondents generally agreed on the cultural intelligence in terms of cognitive, motivational, and strategic aspect. Respondents generally agreed on the global leadership in terms of cross-cultural competence, global mindset, inclusive leadership and global learning and development. There is highly significant relationship among cross cultural management practices, cultural intelligence and global leadership. An integrative leadership framework was developed that can be applied in Hainan Free Trade Port enterprises. The enterprise may focus on fostering a positive team culture by improving communication skills, enhancing problem-solving skills, addressing conflict effectively, and leveraging technology. The enterprise may conduct regular risk assessments, tailor communication strategies, and build strong relationships with diverse stakeholders. The enterprise may conduct thorough cultural due diligence, localize strategies, provide cross-cultural training, and collaborate with local experts. The trade port enterprises may consider an integrative leadership framework for adoption. Future researchers may conduct similar studies to verify the authenticity of the current research and further enrich its findings and may also concentrate on corporate policies at the Hainan Free Trade Port that can genuinely support and enhance the global development of enterprises.

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