Impact of Cross-Cultural Adaptation and Innovative Self-Efficacy on Innovative Behavior: A Case Study of Chinese Employees in Sino-Thai Joint Ventures

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Abstract

In the contemporary era, innovation has become the core competitive advantage for businesses, with employees' innovative capabilities directly impacting a company's innovation potential. The globalization of business operations has led to the international mobility of personnel, posing challenges related to both cross-cultural adaptation and innovation for expatriate employees. This study primarily employing quantitative research methods, focuses on employees in Chinese companies in Thailand and investigates the relationship between cross-cultural adaptation and innovation behavior, as well as the role of innovation self-efficacy. A random sampling method and utilizing an online questionnaire collection system were used and a total of 205 valid responses were received. The research findings reveal that cross-cultural adaptation has a positive impact on both employee innovation behavior and their innovation self-efficacy. Employee innovation self-efficacy positively influences innovation behavior, acting as a mediator between cross-cultural adaptation and innovation behavior. Building upon these findings, this paper presents specific recommendations for enhancing expatriate employees' cross-cultural adaptation abilities to bolster their innovation capabilities.

Keywords: Cross-Cultural Adaptation, Innovative Self-Efficacy, Employee Innovative Behavior, Chinese Enterprises in Thailand

1. Introduction

In today's rapidly changing technological landscape, businesses must navigate competitive market environments and evolving customer demands. Survival in this dynamic landscape necessitates a range of strategies. Enterprise competition now extends beyond traditional marketing tactics, with innovation in management and technology emerging as a key differentiator. The innovative capabilities of management and technology personnel directly impact a company's development. Enterprises find themselves driving enhanced management innovation to boost employee efficiency and promoting production innovation. This aligns with the two major components of overall corporate innovation: substantial breakthroughs in product processes and subtle improvements in workflow (Zhou & George, 2003).

In a globalized world marked by capital and personnel mobility, multinational corporations play a pivotal role in the global business. China and Thailand maintain a cordial and friendly relationship, sharing close cultural, geographical, and politico-economic ties.

Thailand's well-developed infrastructure, favorable business environment, and tax policies are significant factors attracting Chinese corporate investment. The 2019 annual report released by the Thailand Board of Investment (BOI) indicates that direct investment from China to Thailand reached 260 billion Thai Baht, surpassing Japan and making China the largest source of foreign direct investment (FDI) in Thailand. In 2022, China continued to be the largest foreign investor in Thailand, accounting for 18% of the total FDI in the country.Initially, Chinese enterprises entered Thailand through state-owned enterprises undertaking contracted projects. Around the year 2000, both state-owned and private Chinese manufacturing companies began to venture into Thailand. With the "Belt and Road" initiative, the scale of Chinese investments in Thailand has continuously expanded. In recent years, to diversify production capacities and circumvent U.S. trade sanctions, an increasing number of Chinese manufacturing firms have chosen to invest and establish factories in Thailand. As of the end of 2020, according to data from the Commercial Office of the Embassy of China in Thailand, the total number of Chinese investment companies in Thailand reached 488. These companies span a wide array of industries, ranging from infrastructure construction to high-tech sectors. The size of these enterprises varies, including large state-owned enterprises, as well as private and small to medium-sized enterprises. There are tens of thousands of expatriate managers from these Chinese enterprises in Thailand, playing a crucial role in the development of these companies in the country.

The Chinese employees dispatched to Thailand by Chinese companies play vital roles in technical and managerial positions within the organization, contributing significantly to the smooth operation of the company. They are also pivotal participants in the company's innovative endeavors. Compared to their regular counterparts, their innovative behavior holds greater sway over the company's development. At the same time, it's essential to acknowledge that these employees are working in an entirely unfamiliar social environment in a foreign land, presenting them with more challenges than they would face in their home country. Their ability to adapt effectively to the local social culture and way of life not only impacts their personal lives but also influences their performance at work, including their innovative behavior.

2. Literature Review

2.1 Cross Cultural Adaptation

Cross-cultural adaptation presents both challenges and complexity, especially for expatriates working in cross-cultural settings. These individuals not only need to acclimate to new roles within subsidiary companies but also adjust to various aspects of daily life in the host country, including climate, transportation, and dietary habits. Additionally, they must engage with local residents, actively participating in social activities (Black & Mendenhall, 1990). In this cross-cultural environment, expatriates encounter cultural disparities in customs and behavioral norms, leading to potential anxiety and discomfort as they strive to avoid cultural taboos or inappropriate actions. Nevertheless, expatriates can mitigate culture shock by practicing self-adjustment and gradually acclimating to their new cultural surroundings (Oberg, 1960). In the realm of expatriate research, cross-cultural adaptation refers to an individual's psychological comfort and behavioral adaptability in diverse cultural environments (Black, 1988; Lee & Van Vorst, 2010).

Within the context of corporate operations, cross-cultural adaptation signifies the process in which foreign enterprises and employees learn the behaviors, values, and attitudes of the host country's culture and merge them with their own. This process entails a two-way exchange where employees' original culture interacts with the culture of the host country. Berry's research (1997) delineates four potential outcomes in the cultural adaptation process: assimilation, integration, marginalization, and separation. In multinational enterprises, cross-cultural adaptation may exhibit varying degrees of assimilation, but most employees still retain elements of their original culture (Penaloza, 1994). Research underscores that employees with strong cultural adaptability can swiftly assimilate into their work environment, proactively adjust their psychological and behavioral aspects to align with work requirements and objectives. Furthermore, highly culturally adaptable employees demonstrate greater psychological adaptability to local cultural life, employing more positive cultural adaptation strategies (integration and assimilation) to integrate into local life effectively and alleviate work and life pressures in an unfamiliar cultural environment, ensuring the smooth and efficient execution of their work.

In the field of cross-cultural adaptation, scholars have categorized it into various dimensions. Mendenhall and Oddou (1985) proposed that cross-cultural adaptation comprises three components: emotions, behaviors, and cognitions. Searle and Ward (1990) suggested a division into two dimensions, social-cultural adaptation and psychological adaptation. Social-cultural adaptation refers to the ability to adapt to the local social and cultural environment, including effective interactions with local cultural group members. Furthermore, Black et al. (1991) introduced a three-dimensional model of cross-cultural adaptation, including general adaptation, interactional adaptation, and work adaptation. General adaptation pertains to an individual's adjustment to the general aspects of foreign life and culture, such as food, transportation, and climate. Work adaptation involves adapting to the new work environment and responsibilities, including tasks, responsibilities, and relationships with colleagues. Interactional adaptation relates to the ability of expatriates to engage in effective communication and interactions with local residents, both within and outside the workplace. In this study, the three-dimensional cross-cultural adaptation model by Black et al. (1991) was adopted due to its relevance to the research context.

The process of cross-cultural adaptation, which refers to the manner in which individuals or groups adapt to and understand different cultures, is highly individualized and variable. The duration of this process can vary significantly based on factors such as personal differences, cultural distance, and organizational support. Cross-cultural adaptation can be divided into several stages, including the initial culture shock, gradual adaptation, and ultimately, integration or bicultural adaptation. This process may take anywhere from several months to several years. It is crucial to recognize that cross-cultural adaptation is a dynamic and ongoing process that may evolve over time with the accumulation of experiences. Due to the constraints of research time and the researcher's resources, this study does not differentiate between the stages of cross-cultural adaptation. However, it excludes cases where individuals were completely unable to adapt to the cross-cultural environment, unable to function effectively in their roles, and either voluntarily requested repatriation or were repatriated by their companies.

2.2 Innovative Behavior

Innovation refers to the generation of novel and useful ideas, products, processes, services, or methods at an individual level and serves as a significant source of organizational innovation (Amabile, et al., 1993). Kanter (1988) posits that individual innovation behavior begins with

problem recognition, leading to the generation of innovative ideas, seeking collaboration from others for their implementation, and culminating in the quantified production of innovative products and services. Kleysen and Street (2001) define individual innovation behavior as "the initiative to generate and apply beneficial innovation by individual action at any level within an organization". Scott and Bruce (1994) outline three stages of personal innovation behavior: (1) problem recognition and concept or solution development, (2) seeking support for the concept, and (3) diffusion, mass production, and widespread use of the innovation. Research suggests that innovative behavior involves employees consciously proposing, introducing, and applying ideas that contribute to the performance of their work, teams, and organizations (De Jong & Den Hartog, 2010).

An increasing number of scholars have been actively exploring the impact of innovative behavior on privacy. Current research on the factors influencing individual innovative behavior primarily revolves around two aspects: individual factors and organizational environmental factors. Individual factors encompass knowledge capability, intrinsic motivation, and psychological factors. Organizational environmental factors involve human resource practices, leadership style, organizational innovation atmosphere, and social networks. There has been relatively limited research from the perspective of cross-cultural adaptation. Various methods have been employed to investigate innovative behavior. Early researchers often used scales such as Scott et al.'s Innovation Behavior Scale. Janssen et al., (2011) combined personal innovation processes with Scott et al.'s Innovation Behavior Scale to develop an Innovation Performance Scale, comprising three dimensions: innovation idea generation, promotion, and realization. Other researcher further revised this scale based on Katz and Kahn's (1978) role theory, creating a scale with three dimensions: innovation intention, action, and outcomes, which has been adopted by many domestic scholars. Kleysen and Street's (2001) model divided employee innovative behavior into two dimensions, namely, innovation idea generation and execution. From a workflow perspective, employee innovative behavior is defined as the behavioral manifestation of proposing innovative ideas or problem-solving solutions, implementing these ideas, and promoting their application within the organization, encompassing the dimensions of innovation idea generation and execution.

2.3 Innovative Self-Efficacy

Bandura (1977) introduced the concept of self-efficacy through an analysis and study of t he triadic reciprocal determinism model, which encompasses rationality and causal patterns i n human nature. Self-efficacy is viewed as a self-assessment of one's capability to interact wit h the environment. Individuals with high self-efficacy are more likely to show interest in and engage actively with new challenges, persistently striving to overcome difficulties, with self-e fficacy reinforcing and improving throughout this process. Conversely, those with low self-eff icacy tend to doubt their abilities, shrink back, and avoid challenges in the face of adversity. Building upon the integration of self-efficacy theory and creativity theory, Tierney and Farme r (2002) introduced the concept of creative self-efficacy, which pertains to an individual's beli ef in their capacity to innovate. Within this context, "innovation" primarily refers to an emplo yee's ability to generate novel and appropriate ideas and solutions in the workplace. Creative self-efficacy encompasses not only the belief in achieving innovation but also the confidence and faith in employing innovative methods during work processes. In summary, the essence o f creative self-efficacy lies in an individual's belief in their ability to demonstrate creativity in their work, and achieve creative outcomes, including creatively overcoming challenges, and confidently accomplishing tasks and work objectives.

It may be perceived that employing 'Innovative Self-Efficacy' as a mediating variable could render the relationship overly direct, to the point where its verification might seem unnecessary. However, in reality, its theoretical significance is substantial, particularly in how cross-cultural adaptability can influence innovative self-efficacy. This approach has been previously adopted in scholarly research. For instance, the study The impact of organizational innovation climate on employee innovative behavior: Mediating role of innovation self-efficacy. (Gu, & Peng (2010). Nankai Management Review, exemplifies the use of Innovative Self-Efficacy as a mediating variable. Consequently, this research model also incorporates this variable, aligning with established academic precedents.

3. Research Hypotheses and Conceptual Framework

3.1 Cross-Cultural Adaptation and Innovation Behavior

According to a survey, in the context of multinational operations, 30% of the reasons contributing to business failure are related to resources, policies, and relevant technologies, while the remaining 70% are attributed to cultural differences. Expatriate employees play a crucial role at the forefront of cross-cultural challenges, which significantly impact the success or failure of a company's overseas ventures. For expatriates themselves, the inability to adjust and adapt to new environments is a key factor in expatriate assignment failure. Numerous researchers have explored the relationship between cross-cultural adaptation and employee innovative behavior. Kennedy (1998) examined the functions of different cultural networks at three levels: national, organizational, and classroom, highlighting their significance in influencing innovation. The researcher investigated the impact of Confucian thinking in Chinese traditional culture on inter-organizational team innovation performance. The study found that leadership's Confucian thinking had a significantly positive influence on team and employee innovation performance, with innovation support acting as a complete mediator. It is evident that innovative behavior is essential and significant for both organizations and individual employees. Cross-cultural adaptation has a comprehensive impact on expatriate employees. Based on this, the following hypotheses are proposed (Figure 1).

H1: Cross-cultural adaptation has a positive impact on the innovative behavior of expatriate employees.
H1a: Cross-cultural adaptation has a positive impact on the generation of innovative ideas among expatriate employees.
H1b: Cross-cultural adaptation has a positive impact on the execution of innovative ideas by expatriate employees.

3.2 Cross-Cultural Adaptation and Innovative Self-Efficacy

As a core concept in social cognitive theory, self-efficacy refers to an individual's confidence in their ability to achieve desired outcomes in a specific activity. The strength of self-efficacy determines an individual's behavior, patterns, and intensity, serving as an intrinsic driver for achieving desired expectations in cross-cultural contexts. The formation and development of self-efficacy primarily stem from four sources: mastery experiences, vicarious experiences, verbal or social encouragement, and a favorable psychological and physiological state. Previous research on cross-cultural adaptation and self-efficacy has often been situated in the field of education, predominantly focusing on the relationship between self-efficacy in learning and cross-cultural adaptation among international students. Both cross-cultural adaptation and self

-efficacy are significant topics in the management domain, but studies that combine these two areas are relatively scarce. Upon reviewing the literature, it has been noted that some scholars have identified personal self-efficacy as a key mechanism for the development of innovative capabilities (Liao, et al., 2010). Others (Harrison et al., 1996; Fenner & Selmer, 2008) have found associations between self-efficacy and cultural and psychological adaptation in multicultural environments, indicating the significant role of self-efficacy in diverse cultural settings. In light of the above, the following hypothesis is proposed (Figure 1).

H2: Cross-cultural adaptation positively influences the innovative self-efficacy of expatriate employees.

3.3 Innovative Self-Efficacy and Innovative Behavior

Since the introduction of the concept of innovative self-efficacy by Tierney and Farmer (2002), scholars have extensively researched its relationship with individual creativity. In the field of educational psychology, Choi (2004) empirically examined the relationship between college students' innovative self-efficacy and innovative behavior, as well as the moderating role of innovative self-efficacy in the relationship between creative personality, innovation capability, and innovative behavior. Some researchers (Lu et al., 2005) have emphasized the significance of self-efficacy as a key personality variable in its role within the context of the environment and creativity and creative self-efficacy is a critical factor influencing individual innovative behavior, a hypothesis validated through open-ended questionnaire surveys targeting college students. Additionally, some scholars have found that creative self-efficacy positively predicts creative performance (Hong & Lin, 2004). Research by Carmeli and Schaubroeck (2007) from a human resources perspective demonstrated that a potential possessed by employees is creative self-efficacy, which can positively enhance innovative behavior. In summary, researchers across various domains have validated the significant role of innovative self-efficacy in individual innovative behavior or creativity. Building upon this body of research, the following hypothesis is proposed (Figure 1).

H3: Innovative self-efficacy has a positive impact on the innovative behavior of expatriate employees.

3.4 The Mediating Role of Innovation Self-Efficacy

Tierney & Farmer (2004), through empirical analysis of 140 researchers, concluded that supervisors' anticipatory psychology and supportive behaviors towards employees' innovations promote employees' anticipation of innovations, which positively affects employees' innovations, and in this process, employees' creativity self-efficacy plays an intermediary role. Gong et al., (2009) conducted an empirical study of Taiwanese employees demonstrated the positive correlation between transformational leadership and employee innovation behavior, and the positive correlation between employee learning orientation and employee innovation behavior, and that creativity self-efficacy plays a mediating role in the relationship between transformational leadership, learning orientation and employee innovation behavior. Mathisen and Bronnick (2009) developed a creativity training programe based on social cognitive theory and conducted an experimental study with students, special education teachers and municipal civil servants. The results of the study showed that the programe could increase individuals' creativity self-efficacy, and consequently their creativity. Gu and Peng (2010) found that creativity self-efficacy mediates between organizational climate and generating innovative ideas, and creativity self-efficacy mediates between organizational climate and implementing innovative ideas. Based on the above study, the hypothesis is proposed.

H4: Expatriate employees' creativity self-efficacy mediates the relationship between their cross-cultural adaptation and innovative behavior;

H4a: Creative self-efficacy of expatriate employees mediates the relationship between th eir cross-cultural adaptation and the generation of innovative ideas;

H4b: The innovative self-efficacy of expatriate employees mediates the relationship betw een their cross-cultural adaptation and the implementation of innovative ideas.

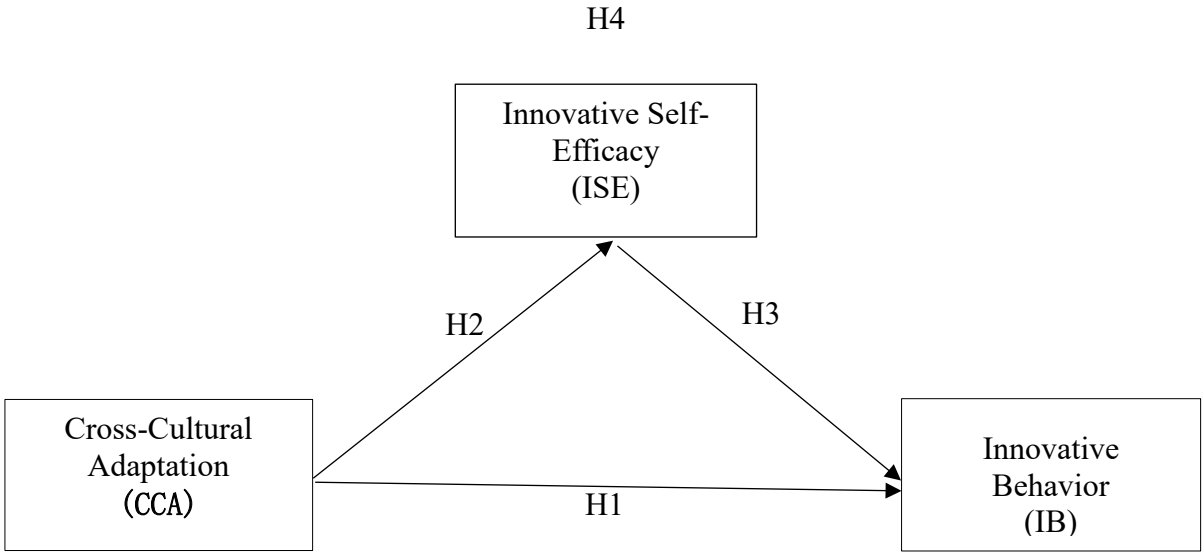

Figure 1
Conceptual Framework

4. Research Design

4.1 Data Collection

This study adopts the questionnaire survey method, the data comes from the employees and managers of some Chinese enterprises in Thailand, the questionnaire is distributed online, with the help of questionnaire star system and directly fill in the electronic questionnaire, etc., distributed in the official member groups of Shandong Chamber of Commerce in Thailand, Jilin Chamber of Commerce in Thailand, Jinjiang Chamber of Commerce in Quanzhou, Thailand, and entrusted to the friends of Rayong and Borthong Industries Estate to assist in distributing in the relevant groups in the park, etc., because only the real people of enterprises in Thailand can become members of these chambers, and the respondents are mostly the frontline employees or managers. Because only real business people in Thailand can become members of these chambers of commerce, and the two industrial parks are the most concentrated places for Chinese enterprises, and the respondents are mostly frontline employees or managers, so the respondents match the setting of the respondents of this study, and in addition, as incentives and rewards, the author also issued a certain amount of red packet rewards for the respondents.

Questionnaire distribution time for March 26, 2022-April 2, 2022, a total of 230 questionnaires were recovered, excluding the questionnaire of too short and too long a time to fill out the questionnaire, a total of 205 valid questionnaires remaining, the effective recovery

rate of 89.12%, after statistics.Statistical analysis of the survey respondents revealed that males comprised 54.1% and females 45.9%. The age distribution predominantly fell within the ranges of 18-25 years, 26-30 years, 31-40 years, and 41-50 years, accounting for 13.2%, 18.0%, 48.3%, and 15.6% respectively. In terms of educational qualifications, the majority consisted of 21% diploma holders, 47.3% bachelor's degree holders, and 24.4% master's degree holders. The tenure of expatriates working in Thailand primarily concentrated in less than one year (11.7%), 1-3 years (40.5%), 3-5 years (26.3%), and 5-8 years (14.1%).

4.2 Variable Measurement

All variables involved in this study (cross-cultural adaptation, innovation self-efficacy and innovation behavior) were measured using scientifically validated and mature scales. Before the questionnaires were distributed, experts and employees were invited to give their opinions on the modification of the expressions in the questionnaires so that the subjects could understand the contents of the questionnaires correctly during the formal research. All scales were measured using Likert's 5-point scale,1 for "completely disagree", 2 for "disagree", 3 for "not sure", 4 for "agree", 5 for "agree", and 5 for "agree". "The overall reliability of the scale was 0.938, and the variables were as follows.

The cross-cultural adaptation scale mainly refers to Black et al.'s (1991) three-dimensional cross-cultural adaptation scale and combines items with similar meanings to form 12 items, which are items 8-19 in the scale, including "I am able to interact and co-operate effectively with Thai colleagues at work", "I am able to adapt and integrate into the recreational and leisure lifestyles of local Thai people", "I am able to communicate well and get along with Thai nationals in my daily life", and other specific items. ", "I am able to adapt and integrate into the recreational and leisure lifestyles of Thai locals", "I am able to communicate well and get along well with Thai nationals in my daily life", etc. The internal consistency coefficients of this part of the scale were 0.857, and the internal consistency coefficients of this part of the scale were 0.857 and 0.857, respectively. coefficient is 0.857, which has a good reliability.

The scale for examining employees' innovative self-efficacy mainly refers to the questionnaire developed by Carmeli & Schaubroeck (2007), which contains seven items located in questions 20-26 of the questionnaire, including "I will be able to achieve most of the goals I have set for myself in a creative way", "I believe that I will be able to accomplish many different tasks creatively" and other specific items, the internal consistency coefficient of this scale is 0.945,which has a good reliability.

The scale for examining employees' innovative behaviors is mainly based on the Employee Innovative Behavior Scale (EIBS) developed by Huang (2004) and modified from Kleysen & Street (2001), which measures the two dimensions of employees' innovative behaviors, namely, generation of innovative ideas and implementation of innovative ideas. It is totally has 11 items, and one of the items is borrowed from the scale of Han et al., (1996), "I am able to take the initiative to support the innovative ideas of the company's Thai employees or the parent company's employees" as a question item in the sub-dimension of "Implementation of Innovative Ideas", so that the total number of items in this section is 12, which is the 27-38 items in the questionnaire. The internal consistency coefficient of the scale is 0.926, which has a good reliability.

In addition, this after using independent samples t-test or ANOVA and other means of difference test found that there is no significant difference in gender, age, education, income level, position, but there are differences in the two variables of the number of years of expatriate experience and foreign language proficiency, so the latter two will be included in the analysis

as a control variable, so as to control the effect of its influence on the dependent variable of the model.

5. Result and Analysis

5.1 Homoscedasticity Test and Confirmatory Factor Analysis

The data of this survey came from many units, and the anonymous filling method was used to control the influence of homogeneous variance on data quality in the process of the survey, and the Harman one-way test was performed on all the items in the questionnaire, and the KMO value was 0.923, the significance of Bartlett's test was 0.000, and the degree of freedom was 465, and 6 factors were extracted from 24 items by the method of Principal Component Analysis. Six factors were extracted, and the variance contribution rate of the first -factor before rotation was 38.2%, which was lower than the 40% critical value, indicating that the problem of common method bias was not serious. The results of the validated factor analyses of the three-factor model, the four-factor model and the six-factor model using Mplus are shown in the following figures, which show that in the six-factor model, $\chi^2/df=1.708<3$, RMSEA=0.059<0.08, CFI=0.925＞0.9, TLI=0.917＞0.9, SRMR=0.059＜0.08 , whereas the three-factor model and four-factor model could not meet the requirements for validity, indicating that the model was better fitted than the other two, and that the discriminant validity between variables using the model was good (Table 1).

Table 1

Homoscedasticity Test and Confirmatory Factor Analysis

Model	Variable	x^2/df	RMAEA	CFI	TLI	SRMR
Three-factors	CCA1+CCA2+CCA3，ISE，IB1+IB2	2.406	0.083	0.847	0.835	0.097
Four-factors	CCA1+CCA2+CCA3，ISE，IB1，ICB2	2.305	0.080	0.860	0.848	0.096
Six-factors	CCA1，CCA2，CCA3，ISE，IB1，IB2	1.708	0.059	0.925	0.917	0.059

5.2 Result and Descriptive Statistics

From the descriptive statistics of the survey, it can be found that there are slightly more men than women in terms of gender of the respondents, the age of the respondents is dominated by strong and middle-aged people, the education level is dominated by bachelor's degree and master's degree, the position is dominated by the grassroots level or middle management, the time of the expatriation is dominated by the medium- and long-term expatriation (3-8 years), and the language of the expatriates in the middle of Thailand has a certain foundation of the local language, but it is not very high. The above information shows that the expatriates of Chinese enterprises are a group of middle and high education level, mainly grassroots and middle management or technicians, and mostly male, and their subsidiaries in Thailand are mainly for medium and long term expatriates, supplemented by short term expatriates, and they have a certain degree of English or Thai language foundation (Table 2).

Table 2

Descriptive Statistics

Variable	Mean	SD	Sample Size
Gender	1.46	0.499	205
Age	3.74	1.046	205
Degree	3.04	0.865	205
Length of assignment	2.65	1.091	205
Position	2.38	0.940	205
Language	3.00	0.942	205

5.3 Correlation Analysis

In order to investigate the correlation between cross-cultural adaptation and innovation self-efficacy and innovation behavior, the author used Pearson's correlation analysis to carry out the analysis. The results of the analysis are shown in the table, the six variables of cross-cultural general adaptation, interaction adaptation, work adaptation, innovation self-efficacy, innovation idea generation and innovation idea execution are positively correlated, which are generally shown to be species-land correlation. The correlation between cross-cultural general adaptation and interactive adaptation is strong, and the correlation between the two and work adaptation is low; innovation self-efficacy has a high correlation with work adaptation, but not with the first two cross-cultural adaptations; innovation self-efficacy has a high correlation with both dimensions of innovative behaviors; and innovative behaviors has a high correlation with work adaptation, and a low correlation with the first two cross-cultural adaptations (Table 3).

Table 3

Correlation Analysis

Correlation	1	2	3	4	5	6
Cross-cultural general adaptation	1					
Cross-cultural interactive adaptation	.665**	1				
Cross-cultural workplace adaptation	.323**	.453**	1			
Innovative self-efficacy	.238**	.357**	.532**	1		
Innovative generation	.247**	.314**	.475**	.681**	1	
Innovative execution	.292**	.373**	.556**	.641**	.509**	1

Note: *Indicates a significance level below 0.05 ($p < 0.05$), signifying a confidence level of 95%, commonly considered statistically significant; **Indicates a significance level below 0.01 ($p < 0.01$), signifying a confidence level of 99%, considered highly significant.

5.4 Hypothesis Testing

5.4.1 Relationship between Cross-Cultural Adaptation and Innovative Behavior

SPSS25.0 hierarchical regression analysis was used to test the hypotheses of the data, and the results showed that the Durbin-Watson coefficient was 2.019, which was in the range of 2-4, indicating that the six-factor model did not have the problem of excessive variable autocorrelation; all the values of VIF of the independent variables were less than 5, which indicated that there was no problem of multiple covariance in the variables; and the R^2=0.251, which indicated that the R^2=0.251, indicating that the fit of the regression model is fair, and

from the overall view of cross-cultural adaptation (β=0.491, p=0.000<0.001), it indicates that cross-cultural adaptation has a positive impact on the innovative behavior of expatriate employees, and to sum up, H1 "Cross-cultural adaptation has a positive impact on the innovative behavior of expatriate employees" is established (Table 4).

Similarly, the regression analyses were conducted with "generation of innovative ideas" and "implementation of innovative ideas" as dependent variables, "cross-cultural adaptation" as independent variable, and "length of assignment" and "foreign language proficiency" as control variables. The results show that in the regression results with "generation of innovative ideas" as the dependent variable, "cross-cultural adaptation" (β=0.5) and "foreign language proficiency" (β=0.5) are the most important variables. Adaptation (β=0.536, p=0.000<0.001), so H1a "Intercultural adaptation has a positive effect on the generation of innovative ideas of expatriate employees" is valid; in the regression results of "Implementation of innovative ideas", "Cross-cultural adaptation" is the most important variable. In the regression result with "implementation of innovative ideas" as the dependent variable, "cross-cultural adaptation" (β=0.400, p=0.000<0.001), so H1b "cross-cultural adaptation has a positive effect on the implementation of innovative ideas of expatriate employees" is established.

Table 4

Relationship between Cross-Cultural Adaptation and Innovative Behavior

Model			Unstandardized coefficient		Standardized coefficient	t	Significance	VIF
			B	Standard error	Beta			
Variable	(Constant)		1.910	0.316		6.035	0.000	
	Cross-cultural adaptation		0.491	0.077	0.473	6.389	0.000	1.427
Control variable	Length of assignment	Within 1 year	0.171	0.109	0.107	1.569	0.118	1.201
		3-5 years	0.152	0.082	0.130	1.847	0.066	1.283
		5-8 years	0.220	0.104	0.148	2.109	0.036	1.285
		More than 8 years	0.258	0.134	0.130	1.930	0.055	1.180
	Language	Poor	0.258	0.156	0.117	1.653	0.100	1.307
		relatively poor	0.159	0.099	0.129	1.613	0.108	1.670
		Average	0.090	0.085	0.085	1.051	0.295	1.711
		Good	-0.273	0.178	-0.102	-1.532	0.127	1.155
	Durbin-Watson						2.019	
	R^2						0.251	
	F						7.251	
	P						0.000＜0.001	

Dependent variable: innovation behavior of expatriate employees

Note: "Relatively good" in language and "1-3 years" for length of assignment are excluded from the control variables.

5.4.2 Relationship between Cross-Cultural Adaptation and Innovation Self-Efficacy

SPSS25.0 hierarchical regression analysis was used to test the hypotheses of the data, and the results showed that the Durbin-Watson coefficient was 1.795, which was in the range of 2-4, indicating that the six-factor model did not have the problem of too high autocorrelation of the variables; the VIF values of the independent variables were all less than 1.427, which indicated that there was no problem of multiple covariation in the variables; R^2 = 0.271 , the fit of the regression model is good, and the results show that cross-cultural adaptation (β=0.685, p=0.000<0.001) has a positive effect on the innovation self-efficacy of expatriate employees,

and in summary, H2 “cross-cultural adaptation positively affects the innovation self-efficacy of expatriate employees” is valid (Table 5).

Table 5

Relationship between Cross-Cultural Adaptation and Innovation Self-Efficacy

Model			Unstandardized coefficient		Standardized coefficient	t	Significance	VIF
			B	Standard error	Beta			
Variable	(Constant)		1.209	0.391	0	3.093	0.002	0
	Cross-cultural adaptation		0.685	0.095	0.528	7.231	0.000	1.427
Control variable	Length assignment	Within 1 year	-0.169	0.135	-0.084	-1.253	0.212	1.201
		3-5 years	0.086	0.102	0.059	0.847	0.398	1.283
		5-8 years	-0.109	0.129	-0.058	-0.844	0.400	1.285
		More than 8 years	0.190	0.165	0.076	1.150	0.252	1.180
	Language	Poor	0.346	0.193	0.126	1.796	0.074	1.307
		Relatively poor	0.320	0.122	0.208	2.631	0.009	1.670
		Average	0.200	0.105	0.152	1.897	0.059	1.711
		Good	-0.171	0.220	-0.051	-0.779	0.437	1.155
	Durbin-Watson					1.795		
	R2					0.271		
	F					8.067		
	P					0.000＜0.001		

Dependent variable: innovation behavior of expatriates

Note: "Relatively good" in language and "1-3 years" in the length of assignment are excluded from the control variables.

5.4.3 Relationship between Innovation Self-Efficacy and Innovation Behavior

SPSS25.0 hierarchical regression analysis was used to test the hypotheses of the data, and the results showed that the Durbin-Watson coefficient was 2.038, which was in the range of 2-4, indicating that the six-factor model did not have the problem of too high autocorrelation of the variables; the VIF values of the independent variables were all less than 1.082, which indicated that there was no problem of multiple covariation in the variables; R^2=0.471 ＞ R^2=0.471, the fit of the regression model is good, and the results show that innovation self-efficacy (β=0.510, p=0.000<0.001) has a positive influence on the innovation behavior of expatriate employees. In conclusion, H3 "Innovation self-efficacy has a positive influence on the innovation behavior of expatriate employees" is valid (Table 6).

Similarly, the regression analyses were conducted with “generation of innovative ideas” and “implementation of innovative ideas” as dependent variables, “innovative self-efficacy” as independent variable, “length of assignment” and “foreign language proficiency” as control variables. The regression analyses were carried out with “length of time in the field” and “foreign language proficiency” as control variables. The results show that according to the regression results of “innovation self-efficacy” (β=0.575, p=0.000<0.001) with “generation of innovative ideas” as the dependent variable, H3a “innovation self-efficacy” (β=0.575, p=0.000<0.001) is the most important variable in the regression analyses. “Self-efficacy has a positive effect on the generation of innovative ideas of expatriate employees” is established. According to the regression results with “implementation of innovative ideas” as the dependent

variable, "innovative self-efficacy" (β=0.380, p=0.000<0.001) is shown. 0.000 < 0.001), so H3b "innovation self-efficacy has a positive effect on the implementation of innovative ideas of expatriate employees" is established.

Table 6

Relationship between Innovation Self-Efficacy and Innovation Behavior

	Model		Unstandardized coefficient		Standardized coefficient	t	Significance	VIF
			B	Standard error	Beta			
Variable	(Constant)		1.802	0.179		10.094	0.000	
	Innovative self-efficacy		0.510	0.043	0.638	11.780	0.000	1.082
Control variable	Length of assignment	Within 1 year	0.220	0.091	0.137	2.404	0.017	1.192
		3-5 years	0.130	0.069	0.111	1.882	0.061	1.275
		5-8 years	0.330	0.084	0.222	3.914	0.000	1.188
		More than 8 years	0.175	0.113	0.088	1.552	0.122	1.188
	Language	Poor	0.047	0.120	0.021	0.390	0.697	1.090
		Relatively poor	-0.011	0.073	-0.009	-0.153	0.878	1.279
		Average	0.055	0.069	0.046	0.790	0.430	1.272
		Good	-0.117	0.147	-0.044	-0.800	0.424	1.109
		Durbin-Watson				2.038		
		R2				0.471		
		F				19.264		
		P				0.000＜0.001		

Dependent variable: innovation behavior of expatriates

Note: "Relatively good" in language and "1-3 years" in the length of assignment are excluded from the control variables.

5.4.4 Mediating Role of Innovation Self-Efficacy between Cross-Cultural Adaptation and Innovation Behavior

The regression results completed earlier have shown that cross-cultural adaptation (β=0.491, p=0.000<0.001) has a positive effect on the innovative behavior of expatriate employees; cross-cultural adaptation (β=0.685, p=0.000<0.001) also has a positive effect on the innovative self-efficacy of expatriate employees. In this section, we will focus on testing the changes in the relationship between cross-cultural adaptation and innovative behavior after introducing innovative self-efficacy as a mediating variable (Table 7).

Table 7

Mediating Role of Innovation Self-Efficacy between Cross-Cultural Adaptation and Innovation Behavior

	Model		Unstandardized coefficient		Standardized coefficient	t	Significance	VIF
			B	Standard error	Beta			
Variable	(Constant)		1.360	0.269		5.058	0.000	
	Intercultural adaptation in general		0.179	0.072	0.172	2.492	0.014	1.809
Mediator	Innovative self-efficacy		0.455	0.048	0.569	9.454	0.000	1.372
Control variable	Length of Assignment	With in 1 year	0.248	0.091	0.154	2.729	0.007	1.211
		3-5 years	0.113	0.069	0.096	1.650	0.101	1.288
		5-8 years	0.269	0.087	0.181	3.108	0.002	1.289
		More than 8 years	0.172	0.111	0.086	1.543	0.124	1.188
	Language	Poor	0.101	0.131	0.046	0.771	0.442	1.329
		Relatively Poor	0.013	0.083	0.011	0.160	0.873	1.729
		Average	-0.001	0.071	-0.001	-0.017	0.986	1.743
		Good	-0.195	0.148	-0.073	-1.317	0.189	1.159
		Durbin-Watson				2.034		
		R2				0.487		
		F				18.422		
		P				0.000＜0.001		

Dependent variable: innovation behavior of expatriate employees; Mediating variable: innovation self-efficacy;
Note: "Better" in the foreign language description and "1-3 years" in the length of assignment were excluded from the control variables.

SPSS25.0 hierarchical regression analysis was used to test the hypotheses of the data, and the results showed that the Durbin-Watson coefficient was 2.034, which was in the range of 2-4, indicating that the model did not have the problem of excessive variable autocorrelation; the VIF values of the independent variables were all less than 1.809, indicating that there was no problem of multiple covariation in the variables; R^2=0.487＞ 0.4, the fit of the regression model is good, and the results show that cross-cultural adaptation (β=0.179, p=0.000<0.001) still has a positive influence on the innovation behavior of expatriate employees, but the effect is weakened, in summary, H4 "The mediating role of innovation self-efficacy between cross-cultural adaptation and innovation behavior " is established.

Similarly, the regression analyses were conducted with “Generation of Innovative Ideas” and “Implementation of Innovative Ideas” as the dependent variables, “Cross-cultural Effect” as the independent variable, and “Innovation Self-efficacy” and “Foreign Language Proficiency” as the control variables. “Innovation self-efficacy” as the independent variable, “length of time sent” and “foreign language proficiency” as the control variables, and regression analyses were conducted respectively. The results showed that according to the regression results of “innovation self-efficacy” (β=0.179, p=0.000<0.001) with “generation of innovative ideas” as the dependent variable, H4a “innovation self-efficacy” (β=0.179, p=0.000<0.001), “innovation self-efficacy” (β=0.179, p=0.000<0.001), and “foreign language

proficiency" as the control variables. Self-efficacy in the mediation between cross-cultural adaptation and the emergence of innovative behaviors" is Established. According to the regression results with "implementation of innovative ideas" as the dependent variable, "innovation self-efficacy" (β=0.177, p=0.000<0.001) was found to be the most important indicator of innovation self-efficacy. 0.177, p=0.000<0.001), so H4a "The mediating role of innovation self-efficacy between cross-cultural adaptation and the implementation of innovative behaviors" is valid.

6. Conclusion and Discussion

Through empirical analysis of the research data, this study discusses the impact of differences in the cross-cultural adaptation of expatriate employees in Thai Chinese companies on their innovative behavior, and the mechanism of the role of employees' innovative self-efficacy in the impact of different cross-cultural adaptation situations on the innovative behavior of R&D personnel. Through the study, the following conclusions were obtained.

First, the results of the study show that cross-cultural adaptation has a positive effect on employees' innovative behavior and employees' innovative self-efficacy; employees' innovative self-efficacy has a positive effect on innovative behavior, and innovative self-efficacy plays a mediating role between cross-cultural adaptation and innovative behavior. Second, based on the findings of the study, the author suggests that Chinese companies in Thailand should pay attention to the cross-cultural adaptation of expatriate employees, and should support and help expatriate employees in terms of culture, language, and lifestyle in order to improve their cross-cultural adaptation. Third, the study also found that the relationship between expatriates' innovation self-efficacy and innovation behavior is much stronger than the impact of cross-cultural adaptation on employees' innovation behavior. Therefore, it is also recommended that the company should strengthen on-the-job training, actively carry out group building, and enhance work incentives to improve expatriates' innovation self-efficacy. Fourth, in general, corporate managers should provide more soft support and humanistic care for expatriate employees to help them better adapt to the local living and working environments, enhance their innovative self-efficacy, promote their innovative behaviors, and improve their competitiveness.

This study enriches the research results in the field of cross-cultural adaptation and innovative behavior in terms of theory, and also reflects the concept of "human-centred". However, due to the author's limited research ability and the time constraint for the completion of the study, this paper is too simple and hasty and needs further polishing and improvement.

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