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The Analysis of Critical Information of Cross-cultural Training for Foreign Workers in Taiwan

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Abstract: As a result of the rapid economic development that has led to changes in the industrial structure, Taiwan is facing an ever-increasing pressure of labor shortage, with the number of foreign workers increasing year by year. Industrialization has brought many foreign workers into a country, and this situation is an inevitable event. The inflow of foreign workers may help to resolve unnecessary vacancies rejected by local workers. However, the influx of foreign workers has actually brought many effects that affect the country's economic growth. With the booming economy in Taiwan, the industrial structure is undergoing more and more changes. Because foreign workers are different from our culture, education and training programs should be fully prepared. Therefore, while training foreign workers, there should be a concept of "intercultural training". Because data analysis is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense and recap, and evaluate data. Therefore, this study will focus on "intercultural training" for foreign workers. This study used relationship analysis, factor analysis and regression analysis as statistical tools. The research findings showed that national cultural differences and cross-cultural training had significant positive effects on the overseas adaptation of foreign workers. Furthermore, this study compared the results of analysis on foreign workers from Thailand to find out how many the workers from Thailand, will be affected by the national cultural differences and cross-cultural training.

Keywords: Data analysis; foreign workers; national culture differences; cross-cultural training; overseas adaptation; human resource.

1. Introduction

In Taiwan, the rapid economic growth led to the money worship and change of values, therefore causing the change in industrial structure, a growing labor shortage and young generations preferring leisure over work. On the other hand, the population growth rate in Taiwan is slowing down, the school enrolment rate for young people is increasing, together with the misconceptions of young people towards service industry, and the improvement of living standard, make Taiwanese people less willing to engage in the laborious or low-wage manufacturing industry. As a result, it is very difficult for the production lines of manufacturing industry to have the required labors. The factories are often shut down or closed. What's more, the major national construction projects are restricted in progress, which seriously shakes the economic foundation.

Today, international migration has become a global phenomenon. Most developed and developing countries rely heavily on foreign workers to work in their home countries, which leads to higher turnover rates of foreign workers in various countries. Due to several restrictions on national human resources, foreign workers need to solve the labor shortage problem.

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In order to assist the industrial circle to alleviate the problem of labor shortage, in 1989, the Council of Labor Affairs of Executive Yuan first introduced foreign workers from Philippines, Thailand, Indonesia, and Malaysia to help with the industrial and social development. More importantly, the 14 major construction projects and the six-year national development plan require a large number of construction workers. In order to facilitate the construction, a series of approvals have been given to introduce the foreign workers to supplement the shortage of elementary workforce in Taiwan.

By the end of 2002, the number of foreign workers in Taiwan had reached 303,684, accounting for 3.0% of the domestic workforce and 9.6% of the domestic elementary workforce (production related workers, mechanical equipment operators and physical workers), thanks to the continuous introduction of foreign workers by the government. According to the survey conducted by Executive Yuan in recent years, by the end of September 2005, the number of foreign workers in Taiwan has reached 315,537, an increase of 2.6% over the same period in 2004. The manufacturing industry led the way with 163,000 employees, of which 32,000 employees were in the electronic components industry and 24,000 in the textile industry, both together accounting for 34% of the manufacturing industry. The number of foreign workers in the social and personal service industry was 136,000, an increase of 8.4% over the same period of 2004, of which there were 134,000 caregivers, an increase of 9.7%, and more than half of them were Vietnamese. By the end of November 2007, the total number of foreign workers in Taiwan had reached 357,705, an increase of nearly 120 times that of the only 2999 approved at the beginning of the introduction of foreign workers. Over the past ten years, it has given Taiwan the opportunity to move from the traditional labor-intensive industry to the basic high-tech industry.

Foreign workers, also known as migrant workers, refer to persons authorized by legal documents to work in countries outside their country for a certain period of time [1]. However, many foreign workers illegally work outside their home country. Some researchers say that each foreign worker has different skills and productivity levels. They are divided into skilled and unskilled foreign workers. Skilled foreign workers are always receiving higher education, while non-skilled workers are less educated.

Since the foreign worker system is different in nationality, the nationality and culture are also different. In Hofstede's research, the socialization of foreign workers is based on the differences, and the family, school, and workplace are characterized by specific characteristics [2]. According to the research results of Hofstede, it can be seen that nationality and cultural facet are highly correlated.

In addition, Vance et al. conducted a survey of managers in Indonesia, Thailand and Malaysia in 1992 to understand the performance appraisal system implemented in these three countries [3]. It was found that due to the differences in national culture, the performance appraisal system implemented in three neighboring countries still has many contradictions. Therefore, this study will explore the cultural differences in the completion of foreign nationality with different nationalities, and the impact of the pre-admission training activities on their work adaptation, so as to provide a practical examination of the business community.

The rest of this paper is arranged as follows: Section 2 illustrates the related work of our research, including overseas adaptation and cross-cultural training. The study method is given in Section 3. The data analysis of our research is explained in Section 4. The case of Thailand’s foreign workers is given in Section 5. Finally, the conclusion is provided in Section 6.

2. Related Work

According to Arkoff, adaptation was defined as "the interaction between the individual and the environment, in which the individual not only seeks to meet his own needs, but also bears the pressure of the environment" [4]. Black [5] and Oberg [6] defined adaptation as how psychologically comfortable the individual feels in a new environment.

In different countries and regions, there are different rules, regulations, laws, and culture practices and customs. When in an unfamiliar environment, people can easily increase their psychological anxiety and discomfort due to the above differences, because they are afraid of violating taboos or behaving improperly [7]. However, when the uncertainty during the dispatching period is minimized, the adoptability of the expatriate to the culture of the host country can be determined. All kinds of adaptations to these different culture shocks can be called overseas adaptation [8].

The definition of overseas adaptation, national culture and cross-cultural training will be explained in this section.

2.1 Overseas Adaptation

Scholars believe that when people first enter a strange country, they will find that many behaviors can be accepted in the country, but it is not appropriate in the property owner country. Because people do not know which more appropriate behavior should be used to replace their original behavior, then people will have uncertainty. This uncertainty leads to anxiety, depression, and other signs that are collectively referred to as "Culture Shock" [6]. In addition, in the stage of cultural shock, some people can reduce the uncertainty and pressure generated by this externality to adapt to the new country, but some people cannot overcome it and lead to poor adaptability.

In the related literatures, many overseas adapted facets have been developed. For example, in Homans' research, adaptive conformation based on contact theory should include work adaptation, interaction adaptation and general adaptation [9]. In the study of Torbiorn, the overseas adaptive facets are divided into two categories, namely, life adaptation and family adaptation [10].

And, according to the research by Black & Mendengall [11] and Black & Stephans [5], the overseas adaptation of expatriate can be divided into three aspects:

(1) Work adaptation: refers to the adaptation in work tasks.
(2) Interaction adaptation: refers to the social and linguistic adaptation with the host country.
(3) General living adaptation: refers to the adaptation in general living functions.

The subject of this study is the adaptation of foreign workers in the work and living environment in Taiwan. Therefore, according to the above-mentioned literature, the definition of overseas adaptation is work adaptation, life adaptation and interaction adaptation. Therefore, this study takes the three aspects of work adaptation, life adaptation and interaction adaptation as the main facet of overseas adaptation of this study.

2.2 National Culture

In order for people to clearly understand the differences between different cultures, it is necessary to define the aspects of national culture. The discussion of nature culture will be based on Hofstede's viewpoints [12]. In Hofstede's research [12], Hofstede divides national cultural values into five aspects:

(1) Power distance: Power distance refers to the degree of respect and acceptance for the unequal distribution of power in a culture. Within or between organizations, the degree of power concentration and arbitrary leadership reflects the level of power distance. In a society with high degree of power distance, people are more likely to accept the fact that there is a significant power gap in organizations or groups.

(2) Uncertainty avoidance: In Hofstede's view, in a society with high degree of uncertainty avoidance, it is usually necessary to provide greater job stability, establish more formal rules, forbid derailed ideas and practices, ensure absolute truth, and acquire real technology to avoid uncertainty. On the contrary, in societies with low uncertainty avoidance, people tend to dislike rules, have less formalization and standardization.

(3) Male's style: This aspect is used to analyze the stereotyping degree of male and female roles in a specific society. Male's style refers to social values that emphasize wealth and the pursuit of visible achievements. It is characterized by arbitrariness, earning money and achieving goals without concern for other people or the quality of life. Hofstede believes that for the society with gender-role division, male will take more assertive and dominant roles, while female will take more service and caring roles. In highly masculine cultures, people tend to conform to the values of arbitrariness and money orientation rather than paying attention to or being willing to care for others, because they claim to be "rational". In highly masculine cultures, people tend to be more entrepreneurial or adventurous and will be particularly excited about the additional accomplishments.

(4) Individualism: Hofstede considers individualism or collectivism to be a good variable to describe national culture. This aspect reflects the degree to which an individual integrates into a group. Individualism means a loose social structure wherein people only purse the interests of their own or their immediate families. Therefore, such a society features weak culture integration. Collectivism, on the other hand, means that the social structure is so tight that people see themselves as part of a larger group; they must take responsibility for the interests of the group and have great loyalty to the group. Such society features strong culture integration.

(5) Long-term orientation/short-term orientation: According to Hofstede, one aspect that distinguishes cultural differences is people's different attitudes towards time. People who value time orientation see time as a limited resource and have less patience with time. On the other hand, people who ignore time orientation see time as an infinite and inexhaustible resource and are more patient.

2.3 Cross-Cultural Training

When foreign workers are employed in Taiwan, they are in a different country, different regions, have different regulations and different cultural practices, etc. When people are in an unfamiliar environment, they feel psychologically and physiologically anxious and uncomfortable because they are afraid of committing taboos or fearing their own misbehavior.

In addition, Winkelman [13] believes that the impact of culture, in addition to causing psychological discomfort, can also cause physiological reactions, and most of them are caused by unfamiliarity with the new cultural environment. In cross-cultural research, different countries are considered to have different attitudes, values and cognitive attitudes [2]. Therefore, effective cross-cultural training provided to outsiders can help the adaptation of outsiders, and cross-cultural training in international companies is often confirmed to be necessary [14]. Therefore, this study believes that cross-culture training is necessary for foreign workers to have their existence.

Cross-cultural training is a tool that can effectively improve ability, reduce cultural shocks, and enhance cross-cultural adaptation. In international companies, it is necessary to provide this training course when the employees are out of the office. It can effectively improve the adaptability of non-skilled personnel [15].

Therefore, this study, through the knowledge of human resources intermediary, understands where the intermediary has training abroad, provides professional skills training and cross-cultural training, and uses this as a reference to evaluate foreign workers who are trained locally to work in Taiwan. The purpose of this discussion is to explore whether cross-cultural teaching can increase overseas adaptation and reduce cultural shocks.

Ashamalla & Crocitto [16] believes that the pre-deployment of these exhortations will reduce the chances of failure of overseas dispatch. Therefore, in order to reduce the emotional downturn caused by the cultural impact of foreign workers in Taiwan, the pre-existing and pre-employment training has a certain degree of importance. As for the part of the in-service training, since the foreign workers are employed in Taiwan, sometimes they need to work in accordance with various industries to be able to work actually on the production line. Most of the domestic practices will produce translated work instructions, in a contrasting manner. Perform in-service training and cooperate with the translators of the human resources agency to teach them.

3. The Research Method

In this section, the research structure and study hypothesis, the study objects, the questionnaire design and distribution, the research object and sampling method are given.

3.1 Research Structure and Study Hypothesis

This study will explore the relationship between national cultural adaptation and overseas adaptation, cross-cultural training and overseas adaptation, and define falsehoods based on two related characteristics. The structure of this study is shown in Figure 1.

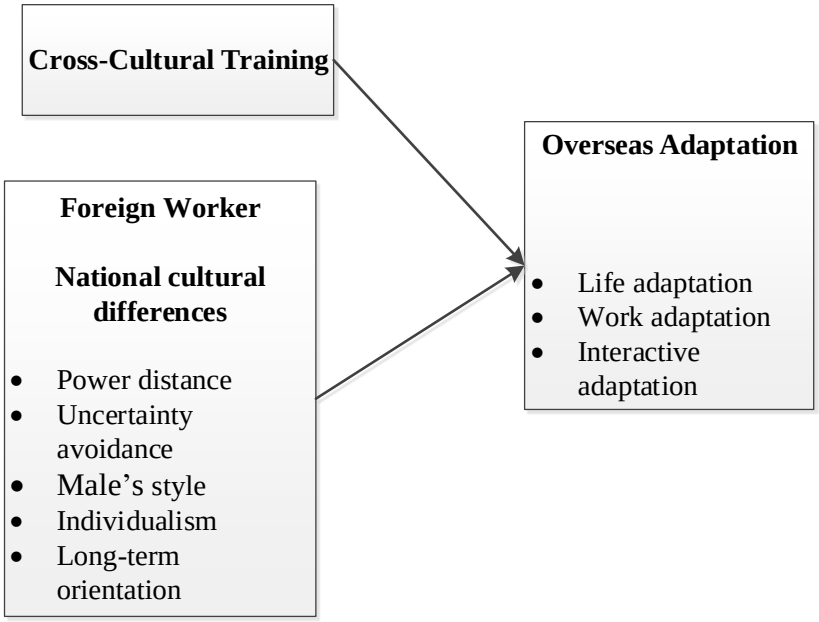

Figure 1. The structure of our research.

The hypothesis in this study is based on the integration of the objectives, literature research, and research framework of this study. The following hypotheses and explanations are proposed:

(1) The relationship between "national cultural adaptation" and "overseas adaptation": It is known from the above-mentioned literature that the greater the national cultural differences, the more obvious the cross-cultural impacts; the impacts caused by the challenges and unfamiliarity of the new cultural environment, in addition to causing psychological discomfort, will also cause physiologically various adverse reactions [13]. Cross-cultural adaptation is a challenge for overseas workers who must deal with the problems encountered in their daily lives [17]. Therefore, this study proposes the following hypothesis:

H1:National cultural differences have a significant impact on overseas adaptation to foreign workers.

(2) The relationship between "cross-cultural training" and "overseas adaptation": There are many multinational companies that offer cross-cultural training for expatriates. In practical operation, the goal of cross-cultural training is to assist expatriates to adapt the overseas environment and work quickly and smoothly to achieve the tasks delivered by the company under the impact of different cultures [18]. Forster's research also pointed out that pre-delivery and cross-cultural briefing can indeed help outsiders adapt to the life and work of the new environment [19]. Therefore, based on the literature [14], this study proposes the following hypotheses:

H2:Cross-cultural training has a significant positive impact on overseas adaptation.

3.2 Study Objects, Questionnaire Design and Distribution

According to the research structure of this study, the main aspects of this study are divided into three categories: "national culture differences," "overseas adaptation" and "cross-cultural training." In the questionnaire design, the measure of the question was measured by the Likert five-point scale. The interviewee responds to the question according to his or her personal attitude and gives a score of one to five points depending on the degree of agreement and disagreement.

National cultural differences include power distance, uncertainty avoidance, male's style, individualism, and long-term orientation. Cross-cultural training includes communication and training, understanding of local cultural training, work skills and training. Overseas adaptation facets include work adaptation, life adaptation, interaction and adaptation.

The operational definition of the facet of national cultural is as follows:

(1) Power distance: refers to the degree of respect and acceptance of the inequality of power distribution in a culture.
(2) Uncertainty avoidance: refers to how a society responds to the uncertainty of the future. Because different countries and societies have different cultures, history, and traditional habits, their people have different attitudes toward uncertainty.
(3) Male's style: male's style means social value, emphasizing the achievements of getting rich and pursuing awkwardness. It is characterized by arbitrariness, in order to earn money and achieve goals, without caring about other people or the quality of life.
(4) Individualism: this reflects the extent to which individuals are integrated into the group. Individualism is too strong to mean that the social structure is loose and only pursues the self-interest of the individual or his or her immediate family.
(5) Long-term orientation: people who value time-oriented will regard time as a limited resource and have less patience with time; on the contrary, people who ignore time-oriented will regard time as an infinite and endless resource and more patience.

The questions are measured with the five-point Likert scale; respondents rate on a scale of 1 to 5 based on their personal attitudes, ranging from strongly disagree to strongly agree. In this study, the measurement of national culture is based on the scale developed by Hofstede for employees from different national cultural backgrounds [2]. There are a total of 24 questions, which are composed of the five aspects of national cultural values: "power distance", "uncertainty avoidance", "male's style", "individualism", and "long-term orientation". Among them, there are 4 questions about "power distance", 3 questions about "uncertainty avoidance", 6 questions about "male's style", 5 questions about "individualism", and 6 questions about "long-term orientation". All five aspects add up to 24 questions, and the five-point Likert scale is taken as the measurement of the respondents' answers. The scale ranges from "strongly disagree" to "strongly agree", and is assigned a score of 1 to 5 in order.

The operational definition of adapting overseas refers to the fact that the expatriate was tested at the time of the resident area, and the subjectively felt life satisfaction, degree of work competence and interaction with the local people. The interviewee responds to the question according to his or her personal attitude and gives a score of one to five points depending on the degree of agreement and disagreement.

The operational definition of cross-cultural training will be explored in this study. The cross-cultural exegesis of this study means that before the foreign workers were employed in Taiwan, they received various relevant instructions on the work of Taiwan, including language, writing, customs, work skills, and self-security protection. The interviewee responds to the question according to his or her personal attitude and gives a score of one to five points depending on the degree of agreement and disagreement.

3.3 Research Object and Sampling Method

This study is mainly aimed at foreign workers employed in Taiwan. The questionnaires prepared in this study had been translated into Thai, and formally distributed with the text in bilingual format, namely Chinese-Thai. The formal questionnaires were distributed to foreign workers during the interview by foreign worker counselors who are hired by the intermediary agency.

In this study, a random sampling method was used for the foreign worker counselors of a large intermediary agency to distribute questionnaires. Based on the daily-work demands of the counselors, the interviewed foreign workers were selected in a random manner. As for the definition of foreign worker counselors: according to the work content, this study defined a foreign worker counselor as "a person who mainly serves as a translator between the employer and foreign worker; if the employer was not satisfied with foreign worker, or the latter was not satisfied with the former, both sides could inform the counselor who could then gather facts about the matter, and both sides could make a request for the replacement of the employer or the foreign worker; the counselor is also responsible for the questionnaire survey so that the foreign workers and their employers can evaluate the advantages and disadvantages of the intermediary agency".

The sampling process of this study was carried out after the finalization of the questionnaire, through the agency and its foreign asylum counselors. In addition, the process of questionnaire survey is random.

4. Data Analysis

In our study, the narrative statistical analysis, reliability and validity analysis are used to discuss the data analysis.

4.1 Narrative Statistical Analysis

Narrative statistical analysis is performed on the basic data of valid samples. It includes the analysis of the distribution of original data such as gender, age, and educational background, and gives a further understanding of basic characteristics.

This study describes the user's "demographic change" and "use behavior change" by narrative statistical methods. "Density change" includes gender, age, education, and occupation, number of children, nationality, and marital status.

4.2 Reliability and Validity

In this study, SPSS version 22 statistics software are used as data analysis tools. Reliability is the measure of the degree of error and the consistency of the test results [20]. The reliability is based on the measured change. In questionnaire reliability testing, the most commonly used Cronbach's α value was used to verify the reliability of a scale and to measure internal consistency of each facet. The reliability of the scale is tested by using Cronbach's α value proposed by Hair et al. to measure the internal consistency of each facet [21]. If α is larger than 0.7, the scale had high reliability. The reliability of the questionnaire is acceptable.

To verify that there is consistency within the interior, it is generally better to have a good internal consistency with α is greater than 0.7. However, because this study is a measure of personality traits, the reliability of some facets is above 0.3 ($\alpha > 0.3$) and the content validity is acceptable.

In the relevant analysis, this study examines the correlation between the indicators, and if there are indicators with high correlation, combine them and conduct research. In addition, this study will examine the linear relationship between the indicators and further analyze the predictive relationship between the enthalpy variables. In the aspect of data analysis, the method of stepwise regression analysis is mainly used to select the self-change into the regression equation.

To check whether a scale possesses structural validity, the most commonly used method is factor analysis. In the same factor facet, the bigger the topic factor loading (more than 0.5), the more convergent the validity. If the topic in the questionnaire was not in the factor facet, the factor loading (less than 0.5) will be smaller and possess a higher differentiation in validity.

In this study, a Bartlett's Test is performed firstly. Furthermore, the Kaiser-Meyer-Olkin (KMO) test will be executed. This means that each question had a high common variance, and the variations were very low in uniqueness. The results had shown that the samples were suitable for explorative factor analysis. In this study, exploratory factor analysis was used. Principal component analysis was used for factor extract. The maximum variation method was used for axis rotation. According to the analysis results, the non-discriminatory questions or questions with factor loading of less than 0.5 were deleted.

In measuring scale construct validity, the most commonly used method is factor analysis. In the same factor facet, the higher the factor loading (more than 0.5 as standard) in each question, the better the convergent validity. If the questionnaire question was not in the factor facet, the factor loading (less than 0.5 as standard) would be smaller, and it would possess a higher differentiation in validity.

In factor analysis, the values factor scale of the National Cultural will be analyzed and confirmed in this study. When the KMO value is larger, the more common factors indicating the variables are more suitable for factor analysis. According to the scholar Kaiser's point of view, if the value of KMO is less than 0.5, it is less suitable for factor analysis [22]. Therefore, in the factor analysis, the KMO is used to confirm whether the factor analysis can be performed, and then the principal component analysis and the maximum variation rotation method in the factor analysis method are selected. The eigenvalue is greater than 1, and the absolute value of factor loading is greater than 0.5, and the difference between each enthalpy factor and other factors is greater than 0.3.

5. The Case of Thailand's Foreign Workers

This study is currently based on Thailand foreign workers, and an intermediary company in central of Taiwan is invited to assist in the issuance of the questionnaire. A total of 300 questionnaires were distributed and 267 questionnaires were collected. Among them, 267 valid questionnaires, the effective sample rate was 89%.

Among the respondents, the number of male (n=229, 85.8%) is more than that of female (n=38, 14.2%); most of them are married (n=194, 72.7%); they mostly have 1 child (n=108, 40.5%); the number of years in Taiwan mostly ranges from 3 to 4 years (n=104, 39.0%); in terms of the number of respondents by different industries, the manufacturing workers are the majority (n=263, 98.5%); the ages of workers are all above 23, with those aged between 33 and 42 being the majority (n=134, 50.2%); most of the respondents are secondary school graduates (n=116, 43.5%). As shown in Table 1.

Table 1. The sample structure of Thai workers.

Features	Feature segment	Number	Percentage (%)
Gender	Male	229	85.8
	Female	38	14.2
	Total	267	100.0
Marital Status	Married	194	72.7
	Unmarried	73	27.3
	Total	267	100.0
Children	0	85	31.8
	1	108	40.5
	2	64	24.0
	3	8	3.0
	≥4	2	0.7
	Total	267	100.0
Years of Working in Taiwan	1~2	47	17.6
	3~4	104	39.0
	5~6	60	22.5
	7~8	30	11.2
	≥8	26	9.7
	Total	267	100.0
Work Type	Caretaker/Maid	1	0.4
	Manufacturing	263	98.5
	Construction	3	1.1
	Care giver center	0	0
	Fisherman	0	0
	Total	267	100.0
Age	18～22	4	1.5
	23～27	29	10.9
	28～32	42	15.7
	33～37	68	25.5
	38～42	66	24.7
	≥43	58	21.7
	Total	267	100.0
Education Level	Primary	50	18.7
	Middle school	116	43.5
	High school	87	32.6
	Bachelor degrees (Faculty)	11	4.1
	Master degrees or better	3	1.1
	Total	267	100.0

(Summarized by the study)

5.1 Reliability Testing

When testing the reliability of questionnaires, this study adopts the Cronbach's α (proposed by Hair et al.) [21] to verify the scale reliability to measure the internal consistency of the various constructs. If α is greater than 0.7, it means that the scale has high reliability, and the reliability value of questionnaires is acceptable. Please see Table 2 for the criteria for reliability measurement. In this section, reliability testing will be conducted for the analysis of factors such as national cultural values, overseas adaptive facets, and cross-cultural training.

Table 2. The criteria for reliability measurement [21].

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

(1) Reliability Detection of National Cultural Values

National cultural values include power distance, uncertainty avoidance, male's style, individualism, and long-term orientation. There are 24 questions totally. The reliability of each facet for national cultural value is shown in Table 3. The overall reliability of the constructs is 0.931, and that of each sub-construct is greater than 0.3; of which, the reliability of power distance, uncertainty avoidance, male's type, individualism and long-term orientation is 0.848, 0.817, 0.671, 0.853 and 0.886 respectively. As can be seen, the reliability values are all very good.

Table 3. The reliability of the various constructs of the national cultural values.

National Cultural	Cronbac's α	The overall reliability
Power distance	0.848	0.931
Uncertainty avoidance	0.817	
Male's style	0.671	
Individualism	0.853	
Long-term orientation	0.886	

(Summarized by the study)

(2) Reliability Detection of Overseas Adaptive Facets

Oversea adaptation has a total of 24 questions involving three constructs: work adaptation, life adaptation and interaction adaptation. The overall reliability of the constructs is 0.924, and in terms of each sub-construct, the reliability of work adaptation, life adaptation and interaction adaptation is 0.839, 0.804 and 0.889 respectively. As can be seen, the reliability values are all very good. Table 4 shows the reliability of the various oversea adaptation constructs.

Table 4. The reliability of the various oversea adaptation constructs of Thai workers.

Oversea adaptation	Cronbac's α	The overall reliability
Work adaptation	0.839	0.924
Life adaptation	0.804	
Interaction adaptation	0.889	

(Summarized by the study)

(3) Reliability Detection of Cross-cultural Training

Cross-culture training has a total of 16 questions involving three constructs: language training, local culture training, professional work skill training and satisfaction of cross-culture training. The overall reliability of the constructs is 0.964, and that of each sub-construct is greater than 0.3; of which the reliability of life training, work-related professional training and language & cultural difference and safety training is 0.933, 0.856 and 0.920 respectively. As can be seen, the reliability values are all very good. Table 5 shows the reliability of the various cross-culture training constructs.

Table 5. The reliability of the various cross-culture training constructs of Thai workers.

Cross-culture training	Cronbac's α	The overall reliability
Life training	0.933	0.964
Work-related professional training	0.856	
Language & cultural difference and safety training	0.920	

(Summarized by the study)

5.2 Correlation Analysis, Regression Analysis and Hypotheses Verification for Thai Workers

The relevant analysis of this study is to find the relationship between national cultural differences and overseas adaptation, and the relationship between cross-cultural adaptation to overseas adaptation. This study used Pearson correlation to find correlations between each other. In this section, the correlation analysis, regression analysis and hypotheses verification on the variables of Thai workers will be elaborated.

As shown in Table 6, there is a positive correlation between "power distance" (one sub-construct of national cultural differences of Thai workers) and "oversea adaptation" (the correlation value is 0.556, $P<0.01$), indicating that the higher the power distance, the higher the oversea adaptation. "Uncertainty avoidance" is also positively correlated with "oversea adaptation" (the correlation value is 0.581, $P<0.01$), indicating that higher the uncertainty avoidance, the higher the oversea adaptation.

In terms of male's type, "male's type" is positively correlated with "oversea adaptation" (the correlation value is 0.576, $P<0.01$), indicating that the higher the male's type, the higher the oversea adaptation. "individualism" is positively correlated with "oversea adaptation" (the correlation value is 0.675, $P<0.01$), indicating that higher the individualism, the higher the oversea adaptation. "Long-term orientation" is positively correlated with "oversea adaptation" (the correlation value is 0.701, $P<0.01$), indicating that the higher the long-term orientation, the higher the oversea adaptation.

There is a significant positive correlation between "work adaptation" and "power distance" (the correlation value is 0.457, $P<0.01$), "life adaptation" and "power distance" (the correlation value is 0.484, $P<0.01$) as well as "interaction adaptation" and "power distance" (the correlation value is 0.547, $P<0.01$) respectively. However, the low correlation between them means that, in general life and interaction, Thai workers' adaptation is less likely to be affected by the level of power.

Table 6. Pearson correlation analysis on the national cultural differences and oversea adaptation of Thai worker.

	Power distance	Uncertainty avoidance	Male's type	Individualism	Long-term orientation	Work adaptation	Life adaptation	Interaction adaptation	Oversea adaptation
Power distance	1								
Uncertainty avoidance	0.619**	1							
Male's type	0.541**	0.627**	1						
Individualism	0.536**	0.646**	0.579**	1					
Long-term orientation	0.504**	0.620**	0.523**	0.617**	1				
Work adaptation	0.457**	0.550**	0.489**	0.611**	0.616**	1			
Life adaptation	0.484**	0.435**	0.526**	0.549**	0.618**	0.676**	1		
Interaction adaptation	0.547**	0.578**	0.518**	0.648**	0.634**	0.665**	0.704**	1	
Oversea adaptation	0.556**	0.581**	0.576**	0.675**	0.701**	0.878**	0.906**	0.878**	1
**** At a significant level of 0.01 (two-tailed), the correlation is significant**									

(Summarized by the study)

In addition, this study also identifies three sub-constructs of cross-cultural training through factor analysis. Please see Table 7 for the correlation analysis between these three subconstructs and oversea adaptation:

Table 7. Pearson correlation analysis on the cross-cultural training and oversea adaptation.

	Oversea adaptation	Work adaptation	Life adaptation	Interaction adaptation	Life training	Work-related professional training	Language & cultural difference and safety training
Oversea adaptation	1						
Work adaptation	0.878**	1					
Life adaptation	0.906**	0.676**	1				
Interaction adaptation	0.878**	0.665**	0.704**	1			
Life training	0.783**	0.657**	0.662**	0.779**	1		
Work-related professional training	0.758**	0.654**	0.629**	0.748**	0.830**	1	
Language & cultural difference and safety training	0.796**	0.656**	0.674**	0.805**	0.846**	0.818**	1
**** At a significant level of 0.01 (two-tailed), the correlation is significant**							

(Summarized by the study)

As shown in Table 7, there is a significant positive correlation between "cross-culture training" and "oversea adaptation" in this study. Table 7 is detailed as follows: there is a high positive correlation between "oversea adaptation" and "life training" (the correlation value is 0.783, P<0.01), indicating that the better the oversea adaptation, the better the life training; "oversea adaptation" is positively correlated with "work-related professional training" (the correlation value is 0.758, P<0.01), indicating that the better the oversea adaptation, the better the effect of work-related professional training; "overseas adaptation" is also positively correlated with "language & cultural differences and safety training" (the correlation value is 0.796, P<0.01), indicating that the better the oversea adaptation is, the less differences would be caused by language and culture.

The regression analysis on national cultural differences and overseas adaptation consists of the variance analysis, regression analysis and national cultural differences vs. sub-constructs of oversea adaptation (work adaptation, life adaptation and interaction adaptation). The regression analysis on cross-culture training and oversea adaptation consists of the variance analysis and regression analysis.

Table 8 shows the variance analysis on the national cultural differences and oversea adaptation of Thai workers. According to the results of variance analysis, the value F of national cultural differences against oversea adaptation is 83.859, reaching the significance level of P<0.01, which shows a significant relationship between the national cultural differences and oversea adaptation.

Table 8. The variance analysis on the national cultural differences and oversea adaptation.

Analysis of Variance					
Source of variation	Sum of squares, SS	degree of freedom, df	Mean square, MS	F test	Significance
Regression	36.584	5	7.317	83.859	0.000^{***}
Residual	22.772	261	0.087		
Total	59.356	266			
*P<0.1, **P<0.01, ***P<0.001					

(Summarized by the study)

As shown in Table 9, R^2=0.616, adjusted R^2=0.609. This indicates that the total amount of variance explained by the model is 60.9%, which means the predictive power of national cultural differences for overseas adaptation is 0.609, and P<0.01, indicating significance.

Table 9. Regression analysis on the national cultural differences and oversea adaptation.

Dependent variable: oversea adaptation independent variable:	**Standardized regression coefficient Beta distribution**	**T value**	**Significance**
(Constant)		6.622	0.000^{***}
Power distance	0.143	2.782	0.006^{**}
Uncertainty avoidance	-0.029	-0.476	0.634
Male's type	0.142	2.680	0.008^{**}
Individualism	0.293	5.244	0.000^{***}
Long-term orientation	0.392	7.374	0.000^{***}
R=0.785; R^2=0.616; adjusted R^2=0.609			
*P<0.1, **P<0.01, ***P<0.001			

(Summarized by the study)

As shown in Table 9, the "long-term orientation" has a greater positive impact on "oversea adaptation", followed by "power distance", "individualism" and "male's type". Four of them all reach the significance level of P <0.01. This result shows that the Thai workers with more "long-term orientation" have better oversea adaptation.

Table 10 shows the results of regression analysis on the national cultural differences and work adaptation (one sub-construct of oversea adaptation) of Thai workers. According to the regression analysis on national cultural differences and work adaptation, R^2=0.480, and adjusted R^2=0.470. This indicates that the total amount of variance explained by the model is 47%, which means the predictive power of national cultural differences for work adaptation is 0.470, and P<0.01, indicating significance.

Table 10. Regression analysis on the national cultural differences and work adaptation.

Dependent variable: oversea adaptation independent variable:	**Standardized regression coefficient Beta distribution**	**T value**	**Significance**
(Constant)		5.930	0.000***
Power distance	0.046	0.769	0.443
Uncertainty avoidance	0.092	1.315	0.190
Male's type	0.072	1.169	0.243
Individualism	0.287	4.403	0.000***
Long-term orientation	0.321	5.189	0.000***
R=0.692; R^2=0.480; adjusted R^2=0.470			
*P<0.1, **P<0.01, ***P<0.001			

(Summarized by the study)

Table 11 shows the results of regression analysis on the national cultural differences and life adaptation (one sub-construct of oversea adaptation) of Thai workers. According to the regression analysis on the national cultural differences and work adaptation, of which R^2=0.480 and adjusted R^2=0.470. This indicates that the total amount of variance explained by the model is 47%, which means the predictive power of national cultural differences for life adaptation is 0.470, and P<0.01, indicating significance.

Table 11. Regression analysis on the national cultural differences and life adaptation.

Dependent variable: oversea adaptation independent variable:	**Standardized regression coefficient Beta distribution**	**T value**	**Significance**
(Constant)		6.981	0.000***
Power distance	0.167	2.795	0.006**
Uncertainty avoidance	-0.196	-2.800	0.005**
Male's type	0.226	3.673	0.000***
Individualism	0.201	3.085	0.002**
Long-term orientation	0.414	6.699	0.000***
R=0.693; R^2=0.480; adjusted R^2=0.470			
*P<0.1, **P<0.01, ***P<0.001			

(Summarized by the study)

Table 12 shows the results of regression analysis on the national cultural differences and interaction adaptation (one sub-construct of oversea adaptation) of Thai workers. According to the regression analysis on national cultural differences and interaction adaptation, R^2=0.540, and adjusted R^2=0.531. This indicates that the total amount of variance explained by the model is 53.1%, which means the predictive power of national cultural differences for interaction adaptation is 0.531, and P<0.01, indicating significance.

Table 12. Regression analysis on the national cultural differences and interaction adaptation.

Dependent variable: oversea adaptation independent variable:	**Standardized regression coefficient Beta distribution**	**T value**	**Significance**
(Constant)		1.790	0.075*
Power distance	0.167	2.961	0.003**
Uncertainty avoidance	0.056	0.854	0.394
Male's type	0.061	1.056	0.292
Individualism	0.305	4.986	0.000***
Long-term orientation	0.295	5.077	0.000***
R=0.735; R^2=0.540; adjusted R^2=0.531			
*P<0.1, **P<0.01, ***P<0.001			

(Summarized by the study)

According to the regression analysis on the national cultural differences and oversea adaptation, the "power distance", "individualism" and "long-term orientation" all reach the significance level, of which, "long-term orientation" ranks first in terms of influential power, with "individualism" and "power distance" coming in second and third respectively; three of them all show the significant positive effect, therefore conforming to the hypotheses of this study respectively. This result means people with more "long-term orientation" have better work adaptation. When working in Taiwan, most of the Thai workers will try hard to achieve their goals, avoid offensive behaviors and often respect others; therefore, this study's Hypothesis 1 "the national cultural differences have a significant impact on oversea adaptation" is correct for Thai workers.

Table 13 shows the variance analysis on the cross-culture training and oversea adaptation of Thai workers. According to the results of variance analysis, the value F of cross-culture training against oversea adaptation is 192.250, reaching the significance level of P<0.01, which shows a significant relationship between the cross-culture training and oversea adaptation.

Table 13. The variance analysis on the cross-culture training and oversea adaptation.

Analysis of Variance					
Source of variation	Sum of squares, SS	degree of freedom, df	Mean square, MS	F test	Significance
Regression	40.766	3	13.589	192.250	0.000***
Residual	18.590	263	0.071		
Total	59.356	266			
*P<0.1, **P<0.01, ***P<0.001					

(Summarized by the study)

Table 14 shows the regression analysis on the cross-culture training and oversea adaptation of Thai workers, of which, R^2=0.687, and adjusted R^2=0.683. This indicates that the total amount of variance explained by the model is 68.3%, which means the predictive power of cross-culture training for oversea adaptation is 0.683, and P<0.01, indicating significance.

Table 14. Regression analysis on the cross-culture training and oversea adaptation.

Dependent variable: oversea adaptation independent variable:	**Standardized regression coefficient Beta distribution**	**T value**	**Significance**
(Constant)		12.082	0.000***
Life training	0.286	3.949	0.000***
Work-related professional training	0.201	2.987	0.003**
Language & cultural difference and safety training	0.390	5.558	0.000***
R=0.829; R^2=0.687; adjusted R^2=0.683			
*P<0.1, **P<0.01, ***P<0.001			

(Summarized by the study)

As shown in Table 14, "language & cultural differences and safety training" has a greater positive impact on "oversea adaptation", followed by "life training" and "work-related professional training". Three of them all reach the significance level of P <0.01. This result shows that the foreign workers with better "language & cultural differences and safety training" have better oversea adaptation.

As shown in the above empirical results, the cross-culture training has a significant positive impact on oversea adaptation, which is in line with the hypotheses of this study. Among them, the regression coefficient of "language & cultural differences and safety training" is 0.390, coming first in terms of influential power; the regression coefficient of "life training" is 0.286, coming in second; the regression coefficient of "work-related professional training" is 0.201, coming in third. These three constructs all reach the significance level of P<0.01, and the explanatory power of the overall regression model is R^2=0.683, that is, the total amount of variance explained is 68.3%. In other words, all of the cross-culture training courses (life training, work-related professional training, language & cultural differences and safety training) can effectively affect the oversea adaptation; therefore, the cross-culture training courses received by Thai workers in their home country are very conducive to their adaptation in Taiwan. Therefore, this study's Hypothesis 2 "the cross-culture training has a significant impact on oversea adaptation" is also correct.

6. Conclusions and Future Works

Data analysis is a process of examining, cleaning, transforming, and modelling data to discover useful information, inform conclusions, and support decisions. Data analysis has multiple aspects and methods, covering a variety of technologies under various names, and is used in different fields of business, science, and social sciences. In today's business world, data analytics plays an important role in making decisions more scientific and helping companies operate more efficiently.

This study explores the use of cross-cultural training to improve the overseas adaptation of foreign workers through national cultural differences, cross-cultural training, and overseas adaptation. The national cultural differences are used as a foreign-invested project in Taiwan before the screening project was completed to enhance its overseas adaptability.

In the analysis of the foreign cultural adaptation of foreign workers in Thailand, the degree of correlation between national cultural differences and overseas adaptability is significantly correlated. National cultural differences, such as power distance, uncertainty avoidance, male's style, individualism, and long-term orientation, are significantly positively correlated with overseas adaptation.

In the analysis of the cross-cultural training and overseas adaptation of Thailand foreign workers, the "life training", "work-related professional training" and "language cultural differences and safety training" in cross-cultural training are significantly positive. It means that the better the foreigner's acceptance of cross-cultural training, the better the overseas adaptation, and the more adaptable to work and living environment after Taiwan.

In the regression analysis of the national cultural differences and overseas adaptation of Thailand foreign workers, this study analyzes the national cultural differences that may affect overseas adaptation. This study analyzes the national cultural differences and understands that national cultural differences have significant explanatory powers for overseas adaptation. Among them, "long-term orientation" has a significant positive impact on overseas adaptation, which means that the longer-term guidance is completed, the better its overseas adaptability. The "male's style" also has a positive impact on overseas adaptation. It means that the more obvious the male style is, the better its overseas adaptability. "Individualism" has a positive influence on overseas adaptation, which means that individualists adapt to overseas adaptation better.

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