

RESEARCH ARTICLE

Cultural Intelligence, Cross-cultural Adjustment, and Work Productivity: A Case Study of Lao Migrant Workers in Agro-industry

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Abstract

This quantitative research aims to examine the effect of cultural intelligence on cross-cultural adjustment and work productivity. A questionnaire was used to collect data from a sample of 352 Lao migrant workers in the agro-industry in Thailand by convenience sampling method. The hypotheses were tested by structural equation modeling. The results showed that motivational and behavioral cultural intelligence had a positive direct effect on cross-cultural adjustment, but cognitive cultural intelligence had a negative direct effect on migrant workers' cross-cultural adjustment. It was also found that cultural intelligence had a significant indirect effect on work productivity through cross-cultural adjustment at

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the 0.01 level. The independent variables are able to predict work productivity at 75 percent ($R^2 = 0.75$).

This research empirically confirms that motivational, behavioral, and cognitive cultural intelligence, as well as cross-cultural adjustment, affect work productivity of migrant workers. Academically, this research provides in-depth results by analyzing the effect of each dimension of cultural intelligence and reveals the importance of intermediate variables of cross-cultural adjustment. Relevant government agencies and business operators importing migrant workers can use the results to develop appropriate training programs to prepare workers with cultural intelligence and to support the workers to work in different cultures.

Keywords: Cultural Intelligence, Cross-cultural Adjustment, Work Productivity, Lao Migrant Workers, Agro-industry

บทความวิจัย

ความฉลาดทางวัฒนธรรม การปรับตัวข้ามวัฒนธรรม และผลผลิตในงาน: กรณีศึกษาแรงงานต่างด้าวชาวลาว ในอุตสาหกรรมเกษตร

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บทคัดย่อ

การวิจัยนี้เป็นการวิจัยเชิงปริมาณ มีวัตถุประสงค์เพื่อทดสอบอิทธิพลของความฉลาดทางวัฒนธรรมต่อการปรับตัวข้ามวัฒนธรรมและผลผลิตในงาน โดยใช้แบบสอบถามในการเก็บรวบรวมข้อมูลจากกลุ่มตัวอย่าง คือ แรงงานต่างด้าวชาวลาวในอุตสาหกรรมเกษตรในประเทศไทย จำนวน 352 คน โดยการสุ่มตัวอย่างแบบง่าย ทดสอบสมมติฐานด้วยการวิเคราะห์ตัวแบบสมการเชิงโครงสร้าง ผลการวิจัยพบว่า ความฉลาดทางวัฒนธรรมด้านแรงจูงใจและด้านพฤติกรรมส่งผลทางตรงเชิงบวกต่อการปรับตัวข้ามวัฒนธรรม แต่ความฉลาดทางวัฒนธรรมด้านปัญญาส่งผลทางตรงเชิงลบต่อการปรับตัวข้ามวัฒนธรรมของแรงงานต่างด้าว นอกจากนี้ ยังพบว่าความฉลาดทางวัฒนธรรมส่งผลทางอ้อมต่อผลผลิตในงานผ่านตัวแปรการปรับตัวข้ามวัฒนธรรมอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.01 โดยตัวแปรอิสระสามารถร่วมกันพยากรณ์ผลผลิตในงานได้ร้อยละ 75 ($R^2 = 0.75$)

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ผลการวิจัยนี้ยืนยันเชิงประจักษ์ว่าความฉลาดทางวัฒนธรรมด้านแรงจูงใจ ด้านพฤติกรรม ด้านปัญญาและการปรับตัวข้ามวัฒนธรรมมีอิทธิพลต่อผลผลิตในงานของแรงงานข้ามชาติ ในเชิงวิชาการงานวิจัยนี้ให้ผลการวิจัยเชิงลึกด้วยการวิเคราะห์อิทธิพลของความฉลาดทางวัฒนธรรมแบบรายด้านและแสดงความสำคัญของตัวแปรคั่นกลางการปรับตัวข้ามวัฒนธรรม ทั้งนี้หน่วยงานภาครัฐที่เกี่ยวข้องและผู้ประกอบธุรกิจนำเข้าแรงงานข้ามชาติสามารถนำไปใช้เป็นข้อมูลในการพัฒนาหลักสูตรฝึกอบรมที่เหมาะสมเพื่อเตรียมความพร้อมด้านความฉลาดทางวัฒนธรรมให้กับแรงงาน และสร้างแนวทางในการส่งเสริมแรงงานให้สามารถทำงานในวัฒนธรรมที่แตกต่าง

คำสำคัญ: ความฉลาดทางวัฒนธรรม การปรับตัวข้ามวัฒนธรรม ผลผลิตในงานแรงงานต่างด้าวชาวลาว อุตสาหกรรมเกษตร

Introduction

Thailand's primary income is from the export of agricultural products. As the agricultural industry progresses, the demand for labor increases. However, the values and attitudes of Thai workers have changed. Young people choose to leave the agricultural sector (Chantarat, 2020). In addition, the population is aging, and there are fewer percentage of workers in the population. As a result, migrant workers then contribute to Thai employment and economic output. At the end of September 2022, Thailand hosted 2.6 million registered migrant workers, comprising at least 7.6 percent of the workforce. These migrant workers are hired mainly in the agricultural business (Ministry of Labor, 2022). One of the countries with a large number of migrant workers in Thailand is Laos. Laos is a neighboring country with a similar language and ethnic group as the people of northeastern Thailand (Moonsathan, 2011). However, it is interesting that Lao and Thai workers still experience cultural conflicts, such as class discrimination and contempt in their working lives. The cultural differences among migrant workers may also lead to low productivity (Tanaphansuk, 2019).

Understanding the different cultures of each individual is an essential factor in reducing discrepancies in interpersonal communication and the behavior of individuals in the company. Such abilities are called cultural intelligence or Cultural Quotient

(CQ). CQ measures the level of skills, knowledge, and ability to understand and accept different cultures (Earley & Peterson, 2004), leading to cross-cultural adjustment (CCA). CCA makes it possible to live with people of different cultures peacefully and without conflict (Wu & Ang, 2011). Prior research also suggested that CCA mediates the relationship between CQ and work performance. Cultural intelligence components indirectly (through a cross-cultural adjustment at work) affect worker's performance (e.g., Jyoti & Kour, 2017; Nunes, Felix, & Prates, 2017; Ramalu, Rose, Uli, & Kumar, 2012).

However, the empirical evidence on the role played by work CCA in mediating the relationship between specific CQ dimensions and work-related tasks has been relatively limited in the international labor literature (Nunes et al., 2017). In addition, existing studies on CQ are highly focused on the context of individuals working in cross-cultural environments. Research that investigates the role of CQ within the context of foreign migrant workers who compose an organization's ethnic minority group is very limited. In their related study, Sharma and Hussain (2019) find that the CQ of a culturally indigenous minority group in India supports their sociocultural adjustment to the majority group. However, this research does not study CQ within the workplace context. Hence, the research on CQ is still sparse, and further exploration is needed on its antecedents and outcomes (Huff,

Song, & Gresch, 2014). In addition, prior studies have emphasized the effect of overall CQ on CCA (e.g., Jurásek & Wawrosz, 2021; Lin, Chen, & Song, 2012; Sri Ramalu, Che Rose, Kumar, & Uli, 2010). There has been limited examination of CQ's dimensions and their influence on work productivity.

Objective

Responding to the need mentioned earlier, this study aims to advance Early and Ang's (2003) theoretical discussion of CQ and extend the empirical research on CCA by examining the role of CQ and its dimensions on CCA and work productivity of Lao migrant workers in agro-industry in Thailand. Secondly, it aims to propose suggestions for organizations involved in providing cultural orientation programs for Lao migrant workers.

Literature Review

1. Cultural Intelligence

Cultural intelligence (Cultural Quotient: CQ) refers to an individual's capability to function and manage effectively in culturally diverse situations and settings (Van Dyne et al., 2012). CQ helps individuals to adapt effectively to foreign environments and work with members of other nationalities and cultures through a repertoire of cognitive, behavioral, and motivational abilities. Early and Ang (2003) stated that cultural intelligence has four

components. First, Cognitive CQ refers to an individual's general knowledge of norms, practices, and conventions in foreign countries gained from personal experiences and education (Ang & Van Dyne, 2008). Second, the meta-cognitive component refers to an individual's higher cognitive process (Ang & Van Dyne, 2015). Relevant capabilities required for this component include critical thinking, logic, evaluating, as well as creative planning (Flavell, 1979). Diella and Ardiansyah (2017) found that meta-cognition has a positive correlation with critical thinking skills. Motivational CQ refers to an individual's ability to direct attention and energy toward adapting to new cultures. Finally, behavioral CQ refers to the extent to which individuals possess a wide repertoire of behavioral skills and can appropriately enact verbal and non-verbal behaviors in new cultural settings (Ang & Van Dyne, 2008).

This research adapted the theory of cultural intelligence of Early and Ang (2003) as the theory is the origin of research on cultural intelligence has been widely applied in cross-cultural research, e.g. Charoensukmongkol (2014); Sharma and Hussain (2019); Subramaniam, Ramalu, Wei, and Rose (2011). However, meta-cognitive CQ involves higher-order cognitive processes that require critical and logical thinking (Flavell, 1979). Lao migrant workers have only basic primary and lower secondary education (Hirosato & Kitamura, 2009). It is difficult for them to possess the

skills required. To fit this research's context, three components, which are cognitive, motivational, and behavioral CQ, were applied.

2. Cross-cultural Adjustment

Cross-cultural adjustment (CCA) is the degree of comfort the individual feels in their new role and the degree to which they feel adjusted to the role requirements in a different culture (Black & Stephens, 1989). Among literature related to CCA, Black's (1988) model has been by far the popular conceptualization and measurement of adjustment among management researchers (Huff et al., 2014). The three dimensions of Black's model are general adjustment, interaction adjustment, and work adjustment. General adjustment involves those factors that affect the expatriate's daily life. Interaction adjustment encompasses the level of comfort that individuals experience when socializing with host nationals in both work and non-work environments. Finally, work adjustment is defined as the level at which individuals adjust to their work roles, job requirements, and work environment. This study applies Black's theory of cross-cultural adjustment because the theory has been applied in many studies e.g., Huff et al. (2014); Kraimer, Wayne, and Jaworski (2001); Nicholson and Imaizumi (1993).

3. Work Productivity

According to Bain (1982), productivity measures how efficiently the organization uses its resources by their human or capital. It measures both quantitative and qualitative factors such

as goal attainment and work accomplished. Productivity is a measure of how well resources are combined and utilized to achieve specific results. Work productivity (WP) is a multidimensional construct. It is assessed by its effectiveness, which is the organization's performance with quality and achievement of goals, and efficiency, which is the use of human resources, equipment, and tools available for economical, cost-effective, and maximized benefits.

4. Relationships among Cultural Intelligence, Cross-cultural Adjustment, and Work Productivity

Recent studies indicate that CQ is related to CCA. For example, Ang and Van Dyne (2008) found that CQ positively related to CCA among Midwestern USA and Singapore undergraduate students. Huff et al. (2014) found that motivational CQ was significantly related to all three types of adjustment among expatriates in Japan. Templer, Tay, and Chandrasekar (2006) also found positive relationships between motivational CQ and CCA of global professionals in Singapore. In addition, previous studies found that CCA mediates the relationship between CQ and workers' performance. For example, the study of Ramalu et al. (2012) found that CQ predicts work performance of expatriates in Malaysia while CCA mediates its relationship. Jyoti and Kour (2017) examine the mediating role of CCA in the relationship between CQ and job performance among managers in India. The results also

reveal that CCA mediates the relationship between CQ and job performance. Nunes et al. (2017) also investigated the relationship between CQ, CCA, and work performance of foreign employees in Brazil. The results reveal positive relationships between CQ and CCA, and CCA with performance. However, the direct effect of CQ on work performance was not significant.

Research Conceptual Model

From the literature mentioned, the following hypotheses were made in accordance with the conceptual model in Figure 1:

H1: Cognitive CQ (H1a), motivational CQ (H1b), and behavioral CQ (H1c) have direct positive effect on cross-cultural adjustment.

H2: Cross-cultural adjustment has direct positive effect on work productivity

H3: Cognitive CQ, motivational CQ, and behavioral CQ have indirect positive effect on work productivity, as mediated by cross-cultural adjustment

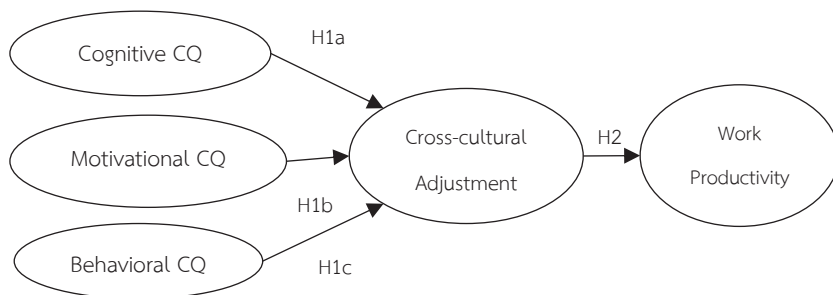


Figure 1. Conceptual Model

Note: Indirect effect was not shown in the figure

Research Methodology

The population of this study is Lao migrant workers in the agro-industry in Thailand. A questionnaire survey was developed to test the proposed hypotheses. An expert panel consisting of two Thai academics and a Lao academic is used to evaluate its content validity using the Index of Item Objective Congruence (IOC). The original questionnaire was developed in Thai with five sections, collectively consisting of 36 questions, with the screening question that the respondent has been working in Agro-business in Thailand for at least one year. The survey was conducted by interviewing method by staff in foreign labor recruitment companies and agro-industry businesses. A pilot study was performed to assess the reliability of the scales among 30 Lao migrant workers in the household industry. The initial Cronbach's alpha coefficients were not satisfactory. Then, the questionnaire was refined into 28

questions (see detail in Table 2). After an adjustment, the Cronbach's alphas coefficient of the five constructs ranges between 0.715-0.903, above 0.70, the acceptable value suggested by Hair, Black, Babin, Anderson, and Tatham (2006). Using the convenience sampling method, a non-probability sampling technique, 352 samples were collected from Lao migrant workers in the agro-industry in Thailand.

Data Analysis

Following an analysis of respondent characteristics, a two-step approach to structural equation modeling (SEM), as suggested by Anderson and Gerbing (1988), is applied by AMOS 24.0. In the first step, confirmatory factor analysis (CFA) is performed to check and improve the reliability, convergent validity, and discriminant validity of the measurement items using composite reliability, average variance extracted (AVE), fit indices (CFI, GFI, and RMSEA), and the chi-square test (Bagozzi & Yi, 1988). CFA was performed on the items that compose the cross-cultural adjustment scales to simplify further analysis through data reduction. In the second step, the initial structural model is estimated with all hypothesized relationships. The improved model is estimated to test the hypothesized relationships in the full model.

Results

The total sample comprised 352 Laos migrant workers. Approximately equal as many women (54.3%) and men (45.7%) participated in the research. Respondents were dominated by the 18 to 30 years (52.3%) and 31 to 40 years (36.6%) age groups, with the remainder between 41 and 50 years (10.8%) or more than 50 (0.30%). Most of the respondents had completed a primary school education (44.0%), followed by those uneducated (32.1%) and those with secondary school (22.4%). The demographic profile shows that the sample is generally distributed among groups. Hence, there is no bias in the sample selection.

1. Evaluation of the Measurement Model

First, the correlation coefficient between the observed variables was between 0.097 and 0.686. It was also found that the value of χ^2 was significant (7739.642, $df = 595$, $p < 0.001$) while the Kaiser-Meyer-Olkin (KMO) value was 0.946 approaches 1. Hence, there are relationships among the variables. Then, CFA was carried out to confirm and evaluate the validity of the study in the scales of CQ, CCA, and work productivity. The composite reliability (CR) values ranged from 0.749 to 0.889, considerably above the recommended level of 0.60 (Bagozzi & Yi, 1988). Average variance extract (AVE) values range from 0.500-0.667, which meet the stipulated criterion of 0.5 (Hair et al., 2006).

As suggested by Hair et al. (2006), the Goodness-of-fit Index (GFI), Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), and Chi-square test were used to indicate the degree to which the measurement model fit the data are reported. An acceptable fit for the GFI and CFI requires values over 0.9, and an acceptable fit for the RMSEA requires a value lower than 0.07 (Kline, 2015).

The fit indices of the initial model were not satisfactory, as the CFI and GFI values were below the recommended level ($\chi^2 = 1647.2$, $df = 539$; $p = 0.00$; $GFI = 0.760$; $CFI = 0.851$; $RMSEA = 0.077$). Using the modification indices and standardized residuals as guides, the items with weak factor loadings were deleted (Anderson & Gerbing, 1988). Specifically, two items in Cognitive CQ, Motivational CQ, and Behavioral CQ, and work productivity were excluded from further analysis, as shown in Table 1. After the adjustment, the CFA results present an acceptable fit ($\chi^2 = 452.7$, $df = 200$; $p = 0.00$; $GFI = 0.903$; $CFI = 0.950$; $RMSEA = 0.060$).

Table 1

CFA results: Measurement model

Constructs	Cronbach's alpha	No. of item	AVE	CR
Cognitive CQ ^a	0.752	4	0.563	0.794
Motivational CQ ^a	0.751	4	0.500	0.749
Behavioral CQ ^a	0.741	3	0.503	0.751
Cross-cultural Adjustment				
General CCA ^a	0.803	3	0.621	0.831
Interactive CCA ^a	0.788	3	0.573	0.800
Work CCA ^a	0.879	5	0.661	0.886
Work Productivity ^b	0.890	6	0.667	0.889

^a Reported as factors., ^b Reported as items.

2. Structural Model and Hypothesis Testing

After assessing the measurement models' reliability and validity, structural model testing was conducted. The fit of the structural model was examined using the maximum likelihood method. The results of goodness-of-fit indices suggested that the structural model had an adequate fit ($\chi^2 = 437.3$, $df = 213$; $p = 0.00$; GFI = 0.902; CFI = 0.953; RMSEA = 0.055).

Table 2

Results of the structural equation model

Hypothesized path	Standardized Coefficients path	<i>t</i> statistics	<i>p</i> -value
CCQ --> CCA	-0.18***	-2.700	0.007
MCQ --> CCA	0.62***	4.280	0.000
BCQ--> CCA	0.48***	3.489	0.000
CCA --> WP	0.86***	13.834	0.000

Note ¹: *** $p < 0.01$

Note ²: The indirect effect of CCQ on WP = -0.15; MCQ on WP = 0.54;
BCQ on WP = 0.41

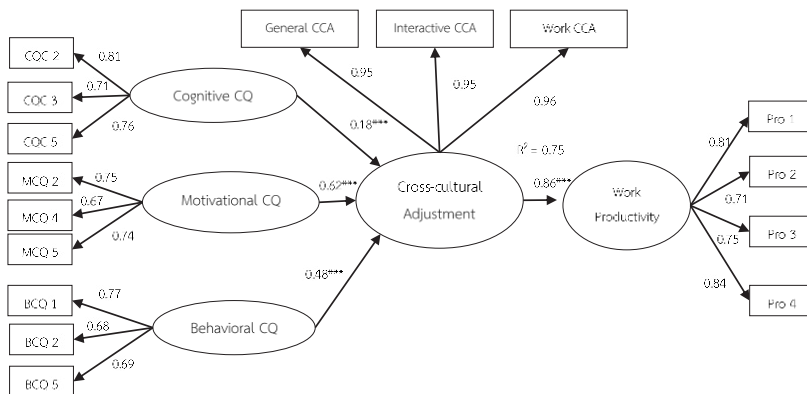


Figure 2. Structural Equation Model Results

It is first noted that motivational CQ ($\beta = 0.62$, $p < 0.01$) has the strongest positive direct effect on CCA, followed by behavioral CQ ($\beta = 0.48$, $p < 0.01$). Hence, H1b and H1c are supported.

However, cognitive CQ ($\beta = 0.22, p < 0.01$) has direct negative effect on CCA. Hence, H1a was not supported. In turn, CCA then has a positive direct effect on work productivity ($\beta = 0.86, p < 0.001$). Hence, H2 is supported. Accordingly, H3 is supported as there is an indirect effect exerted from CQ on WP through CCA (see Table 2 and Figure 2).

Conclusion and Discussion

The SEM analysis indicates that the three dimensions of CQ significantly affect CCA. The results imply that to ensure success in hiring migrant workers and endure less conflict in the workplace, employers should be aware of the importance of cultural intelligence as it affects workers' ability to adjust to different cultures. In line with the present finding, previous studies found that individuals with a high level of cultural intelligence have a higher ability to adapt to new environments and are better adjusted to the work and social demands of foreign assignments (e.g. Ang & Van Dyne, 2008; Huff et al., 2014; Jyoti & Kour, 2017).

In detail, the current study illustrates that motivational CQ has the strongest direct effect on CCA. This implies that, for Lao migrant workers, the ability to manage and utilize their emotions in communication with others will improve their psychological and social adaptation to a different culture. Behavioral CQ also serves as a significant antecedent to CCA. The result indicates that Lao

migrant workers who regulate their social behaviors in intercultural encounters will adjust better. Hence, minimize misperception and misattribution in different cultures. Contrary to what was expected based on Akhal and Liu (2019), the finding shows that cognitive CQ has a negative effect on CCA. The findings imply that prior knowledge about the host country makes Lao migrant workers encounter difficulties in adjusting to a different culture. The possible explanation is that people rely on kin-based information in Lao society. They received information from informal, loose networks of extended kin and acquaintances (Bouté & Pholsena, 2017). In addition, Laos is considered a high uncertainty avoidance and short-term orientation culture. They hold rigid codes of beliefs. The Laos are also not considered to be flexible in their beliefs. If a plan is made according to prior knowledge, a change to an accepted practice may not be implemented (Hofstede, 2001). It could be concluded that CQ is a complex concept and varies among cultures. To explain a particular cultural phenomenon, other sociocultural concepts may have to be considered.

Furthermore, cross-cultural adjustment directly affects work productivity, which supports the finding on the concept of adjustment by Black (1988). Hence, the worker's adjustment level can determine work performance level. Lastly, the current study illustrates that CCA mediates the relationship between CQ and work productivity. That is, Lao workers with higher cultural

intelligence will have greater work productivity. Culturally intelligent workers are likely to minimize cultural blunders and meet role expectations, which, in turn, reduces the likelihood of misunderstandings and conflict. Hence, it increases their work performance (Moynihan, Peterson, & Earley, 2006). Moreover, they can successfully adjust to the new workplace, which enables them to channel their energies to improve their performance (Setti, Sommovigo, & Argentero, 2022).

Contribution

1. Theoretical Contribution

Several findings emerged from this research that make a meaningful contribution to the existing literature on cultural intelligence. First, it is among the few empirical studies that provide a deeper understanding of the dimensionality of CQ by treating each dimension as a separate predictor. This approach unveiled the particular importance of the motivational CQ dimension, which allowed further detailed recommendations. Second, this study extends the validity of CCA as a mediator between CQ and work productivity. It extends the body of knowledge in the field of cross-cultural labor management, specifically on how CQ can lead to a better CCA and, in turn, can increase work productivity.

2. Managerial Contribution

This study also has significant managerial implications for international labor organizations or authorities as well as companies employing migrant workers. First, labor authorities should evaluate workers' cultural intelligence before dispatching them to a company. Second, in line with our results, companies with migrant workers should pay special attention to training programs or assignments to enhance and nurture workers' cultural intelligence and improve their cross-cultural adjustment and work productivity. Finally, employers should encourage migrant workers to interact with people from different cultures to decrease misunderstandings or stress from experiencing an unfamiliar culture.

Limitation and Recommendation

The current study followed a cross-sectional design, which limits the findings to a specific point in time, rather than a longitudinal design that has the potential to provide richer details on the progress of cross-cultural adjustment. Accordingly, future studies can follow a longitudinal research design to avoid situational factors and shed richer light on the relationships among variables.

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