

# Enhancing Teamwork and Communication Efficiency through Cultural Intelligence Training among Foreign Workers in Malaysia's Manufacturing Industry

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## ABSTRACT

Effective communication and teamwork are essential for operational success in multicultural manufacturing environments. This study investigates the influence of Cultural Intelligence (CQ) training on enhancing communication and teamwork among foreign workers in Malaysia's manufacturing sector. Using a quantitative descriptive design, data were collected through a structured questionnaire from a sample of 377 foreign workers, selected using a stratified random sampling technique across manufacturing firms in Melaka. The study employed Pearson correlation and multiple regression analyses to evaluate relationships among CQ training, communication, and teamwork. Results showed that CQ training significantly improves communication ( $r = 0.692$ ,  $p < 0.01$ ) and teamwork ( $r = 0.677$ ,  $p < 0.01$ ), and together they account for 54.3% of the variance in CQ training outcomes ( $R^2 = 0.543$ ). Reliability testing using Cronbach's Alpha yielded acceptable values: Communication ( $\alpha = 0.755$ ), Teamwork ( $\alpha = 0.766$ ), and CQ Training ( $\alpha = 0.754$ ), confirming the internal consistency of the instruments. These findings reinforce the strategic importance of CQ training in improving interpersonal effectiveness and fostering collaborative work environments. The study offers practical guidance for human resource development in multicultural industrial settings and contributes context-specific evidence to the literature on cross-cultural workforce integration. Future research should consider longitudinal approaches and examine the role of organisational support and leadership in sustaining CQ training use.

**Keywords:** Teamwork, Communication, Cultural Intelligence Training, Foreign Workers and Manufacturing Sectors.

## INTRODUCTION

Globalisation has significantly reshaped labour markets, leading to increasingly multicultural workforces as nations strive to address local labour shortages and maintain industrial competitiveness. Malaysia has become a leading industrial hub in Southeast Asia, driven by its strategic reliance on foreign labour in key manufacturing, construction, and services sectors. This dependence is crucial in sustaining national productivity and economic growth by addressing workforce gaps (Karim & Said, 2024). However, despite their contributions, foreign workers often face challenges integrating into local teams, especially in roles that demand effective communication and collaborative problem-solving (Piazer et al., 2024).

Linguistic barriers, divergent communication styles, and variations in cultural norms and work ethics often hamper workplace interactions across different cultures. These challenges can result in misunderstandings, interpersonal conflicts, and decreased efficiency, affecting organisational performance. To address these

issues, navigating cultural differences effectively at the individual and organisational level has become a critical competency in diverse work environments.

A growing body of literature points to Cultural Intelligence (CQ) as a key factor in fostering effective cross-cultural interactions. CQ refers to an individual's capability to function and manage effectively in culturally diverse settings and comprises four core dimensions: cognitive, metacognitive, motivational, and behavioural (Al-Krenawi et al., 2025; Sternberg et al., 2022). CQ training is thus a structured approach designed to build these competencies, enabling individuals to understand, adapt to, and engage productively with people from different cultural backgrounds. Studies have shown that employees with high CQ are better equipped to build trust, communicate clearly, and collaborate effectively in multicultural teams (Gabel-Shemuely et al., 2019; Iskhakova & Ott, 2020; Yüksel Sakınç & Ergün, 2024).

Despite the acknowledged benefits of CQ in global organisational settings, empirical research remains limited on its specific impact in the Malaysian context, particularly among foreign workers in the manufacturing sector. While CQ training has gained traction as a tool for organisational development, few studies have investigated its influence on communication and teamwork, two critical aspects of workplace integration, within this demographically and culturally distinct labour segment. This lack of localised empirical evidence highlights a significant gap in the literature, especially considering the central role foreign workers play in Malaysia's industrial economy.

To address the lack of localised empirical evidence on CQ interventions, this study investigates the impact of CQ training on teamwork and communication skills among foreign workers in Malaysia's manufacturing sector. Specifically, it examines whether communication effectiveness mediates the relationship between CQ training and teamwork performance. By analysing data from 377 foreign workers using quantitative methods, the study provides targeted insights into how culturally responsive training can enhance interpersonal collaboration and team cohesion in industrial, multicultural workplaces.

The findings of this research are expected to inform human resource practices, training program design, and inclusive policy development aimed at improving the integration and performance of foreign workers. The study also contributes to the broader discourse on workforce diversity, intercultural competence, and global workforce management by analysing Malaysia's dynamic industrial landscape.

## **LITERATURE REVIEW**

### **Cultural Intelligence (CQ) and Its Organisational Relevance**

CQ is an individual's capability to function effectively in culturally diverse settings. As globalisation transforms workplace demographics, CQ has emerged as a critical competency for individuals and organisations (Sarvari et al., 2025). It explicitly addresses cross-cultural effectiveness and extends beyond the general cognitive ability or emotional intelligence. CQ is particularly relevant in multicultural societies like Malaysia, where foreign labour is integral to national economic performance. Understanding and managing cultural differences through CQ facilitates smoother interpersonal interactions and supports organisational objectives related to inclusion, productivity, and innovation.

The conceptual foundation of CQ comprises four dimensions: cognitive, metacognitive, motivational, and behavioural intelligence (Al-Krenawi et al., 2025; Malay et al., 2024). Cognitive CQ refers to knowledge of cultural systems and practices, enabling individuals to navigate unfamiliar social norms. Metacognitive CQ emphasises awareness and control over cognitive processes during intercultural exchanges, promoting strategic thinking. Motivational CQ involves the willingness and drive to adapt to cultural differences, reflecting an individual's interest and confidence in cross-cultural situations. Behavioural CQ relates to the capacity to exhibit culturally appropriate verbal and non-verbal actions, which is essential in maintaining respectful and effective communication across cultural lines.

Each dimension contributes uniquely to successful intercultural interactions. For example, individuals with high motivational CQ are more likely to persist in challenging cross-cultural situations. At the same time, those

with strong behavioural CQ can effectively adjust their body language and tone to align with cultural expectations. These competencies are not innate; they can be developed through experience and structured training, making CQ a practical focus for organisational development initiatives. Furthermore, CQ has been linked to improved performance in international assignments, greater global leadership effectiveness, and smoother expatriate adjustment (Li et al., 2024).

In multicultural work environments such as Malaysia's manufacturing sector, where employees come from varied cultural and linguistic backgrounds, CQ serves as a bridge that connects diverse perspectives. It allows employees to engage more meaningfully with colleagues, reduces cultural friction, and builds mutual respect. As such, organisations that cultivate CQ within their workforce are better positioned to leverage cultural diversity as a strategic asset rather than a challenge.

### **Cultural Intelligence Training and Workforce Integration**

CQ training refers to systematic programs that enhance an individual's ability to function effectively in multicultural environments. These programs are increasingly recognised as essential in preparing employees, especially foreign workers, for culturally diverse workplaces. CQ training combines theoretical instruction with practical exercises such as role-playing, simulations, and reflective practices. The goal is to improve the four dimensions of CQ, thereby equipping participants with the tools to adapt cognitively, emotionally, and behaviourally in intercultural situations (Muhammad et al., 2024).

The significance of CQ training lies in its ability to reduce cultural misunderstandings and improve team interpersonal dynamics. Organisations that invest in CQ training often report improved employee morale, reduced conflict, and higher collaboration among diverse teams (AlMazrouei et al., 2024; Jurásek & Wawrosz, 2024). Through CQ training, employees learn to recognise cultural triggers, adjust their behaviour, and engage in more inclusive communication practices. This leads to more harmonious work environments and enhances overall organisational effectiveness.

In Malaysia, CQ training is particularly relevant, given the country's reliance on foreign labour. The manufacturing, construction, and hospitality sectors employ many workers from countries such as Indonesia, Bangladesh, Nepal, and the Philippines. Typically, foreign workers like this face integration challenges due to language barriers, unfamiliar social norms, and divergent work ethics (Iskhakova & Ott, 2020; Tomec & Gričar, 2024). Traditional onboarding programs focusing solely on technical skills fail to address these intercultural challenges. CQ training fills this gap by preparing foreign workers to navigate cultural expectations and collaborate more effectively with local colleagues.

Despite its proven benefits, CQ training remains underutilised in many Malaysian organisations. There is a tendency to view cultural adaptation as the responsibility of the employee rather than a shared organisational priority. This perspective limits the impact of diversity management strategies. More widespread adoption of CQ training, embedded within organisational development plans, could significantly improve workforce integration, reduce turnover, and enhance employee satisfaction. Tailoring training content to reflect local cultural dynamics and specific workplace scenarios would further increase its relevance and impact.

### **Cultural Intelligence and Teamwork Effectiveness**

Teamwork is essential to organisational success, yet in culturally diverse environments, it is often complicated by differing values, communication styles, and approaches to problem-solving. CQ enhances teamwork by equipping employees with the skills to interpret and adapt to these differences, thus promoting inclusivity and collaboration. High-CQ individuals are more likely to contribute to trust-building, shared leadership, and mutual understanding within multicultural teams (Wengel, 2023).

The relationship between CQ and teamwork has been well-established in cross-cultural management literature. Davaei and Gunkel (2024) found that teams with higher average CQ levels outperform those with lower CQ regarding decision-making quality and interpersonal harmony. Behavioural CQ is crucial in adjusting communication and work styles to fit team norms. Motivational CQ fosters engagement and reduces

withdrawal in challenging intercultural interactions, while metacognitive CQ supports strategic team behaviour through reflection and planning.

Cultural and linguistic barriers often undermine teamwork effectiveness among foreign workers, leading to frequent misunderstandings, stereotype-based conflicts, and exclusion from team activities. These challenges can lower trust, hinder collaboration, and reduce team cohesion. CQ training addresses these issues by equipping foreign workers with the skills to interpret subtle cultural cues, adjust their responses appropriately, and align their behaviours with team expectations. This improved cultural awareness helps reduce interpersonal conflict, foster inclusivity, and build a stronger sense of belonging, key factors in sustaining motivation and enhancing team performance.

With its culturally diverse workforce, Malaysia's manufacturing sector offers a practical context for applying CQ training to enhance teamwork. In this environment, where employees often come from different linguistic and cultural backgrounds, effective collaboration depends on clear communication, mutual understanding, and respect. Incorporating CQ training into team development programs helps organisations strengthen interpersonal coordination, minimise cultural misunderstandings, and encourage meaningful participation from all team members. This strategy contributes to higher team productivity, promoting inclusion and cooperation across cultural lines.

### **Cultural Intelligence and Communication Competence**

Effective communication is a cornerstone of successful organisational functioning, yet differences in language, non-verbal cues, and contextual understanding often complicate it in multicultural settings. CQ enhances communication competence by enabling individuals to decode cultural signals, adapt their messaging, and engage in respectful dialogue. CQ-trained employees are better equipped to recognise the communication preferences of colleagues from different backgrounds, thus minimising misunderstandings (Puzzo et al., 2024).

Cognitive and metacognitive CQ contribute to accurate interpretation and strategic communication planning, while motivational CQ fosters continuous engagement during intercultural interactions. Behavioural CQ enables individuals to adapt verbal and nonverbal communication to align with diverse cultural norms. These four dimensions of cultural intelligence form an integrated framework that promotes inclusive, effective exchanges and strengthens workplace relationships (Tungtakanpoung & Prouska, 2024).

Recent empirical studies have demonstrated that employees with higher levels of CQ exhibit more effective communication behaviours in multicultural teams. For instance, Yue and Wei (2023) reported that individuals with elevated CQ are better at active listening, expressing empathy, and managing feedback with cultural sensitivity, contributing to improved team dynamics. Similarly, Chenyang (2022) posited that cross-cultural training programs significantly enhance CQ, leading to better adjustment, reduced miscommunication, and stronger job performance in diverse organisational settings. Clear communication is critical in high-stakes environments such as manufacturing, where operational safety and precision are essential. Erfan (2024) supports this by showing that CQ-oriented training in global teams reduces misunderstandings and enhances coordination, thereby improving productivity and minimising communication-related risks.

In Malaysia, the role of CQ in communication is especially salient. Foreign workers frequently interact with supervisors, peers, and clients from different cultural backgrounds. Without adequate intercultural communication skills, these interactions may result in frustration, inefficiency, or error. CQ training empowers foreign workers to communicate more clearly and confidently while encouraging local employees to adopt more inclusive communication practices. The result is a more cohesive and collaborative work environment that supports operational excellence.

### **Theoretical Framework**

This study adopts the Cultural Intelligence (CQ) Theory, introduced by Earley and Ang (2003). This theory defines CQ as an individual's capability to function effectively in culturally diverse environments. CQ comprises four interrelated dimensions: cognitive, metacognitive, motivational, and behavioural intelligence.



Each contributes to intercultural adaptability and performance. These dimensions are essential for communication and collaboration, especially in multicultural workplaces where diverse cultural norms and interaction styles may hinder cohesion.

The theory consists of four interrelated dimensions:

1. Cognitive CQ refers to knowledge about norms, practices, and conventions across different cultures.
2. Metacognitive CQ involves awareness and control over one's thought processes during intercultural interactions.
3. Motivational CQ reflects the interest and drive to adapt to cultural differences and engage with diverse groups.
4. Behavioural CQ is the ability to demonstrate appropriate verbal and non-verbal actions when interacting with people from various cultures.

These dimensions are not fixed traits but can be nurtured through structured interventions such as CQ training. Within organisations, particularly those with multicultural teams, these competencies contribute to more transparent communication, better collaboration, and improved workplace cohesion.

This study applies CQ Theory to investigate the impact of CQ training among foreign workers in Malaysia's manufacturing sector. In such labour-intensive environments where team-based operations are essential, the ability to work effectively across cultural boundaries is a critical determinant of operational success. The study is based on the theoretical premise that CQ training enhances employees' ability to navigate cultural differences, improving communication and teamwork performance.

Drawing from Moslehpour et al. (2024), this study further conceptualises communication effectiveness as a mediating variable. Communication is both an outcome of CQ development and a mechanism through which culturally intelligent behaviours are enacted in collaborative settings. Employees with higher CQ are likelier to communicate, listen empathetically, and avoid culturally inappropriate behaviours. These outcomes strengthen trust and mutual understanding, improving team performance in culturally diverse environments.

Given Malaysia's dependence on foreign labour in manufacturing, construction, and services industries, the application of CQ Theory is timely and contextually relevant. Despite the increasing workforce diversity, empirical studies on the impact of CQ training in Malaysia remain scarce. Therefore, this study addresses a critical gap using a well-established theoretical model to explore how CQ training influences communication and teamwork. The findings aim to support culturally inclusive human resource strategies and training programs that enhance organisational performance through improved team integration.

## **Research Objectives**

The following objectives guide this research:

1. To assess the direct impact of CQ training on communication effectiveness among foreign workers in Malaysia's manufacturing sector.
2. To evaluate the influence of communication effectiveness on teamwork performance in multicultural workplace settings.
3. To examine whether communication effectiveness mediates the relationship between CQ training and teamwork performance.
4. To provide evidence-based recommendations for implementing CQ training to support workplace integration and team collaboration in diverse industrial environments.

## Research Hypotheses

Based on the objectives, the study proposes the following hypotheses, as shown in Table 1:

Table 1. Research Hypothesis

Code	Hypothesis
H1	CQ training has a significant positive effect on communication effectiveness among foreign workers in Malaysia's manufacturing sector.
H2	Communication effectiveness has a significant positive effect on teamwork performance in multicultural workplace settings.
H3	CQ training has a significant positive effect on teamwork performance.
H4	Communication effectiveness significantly mediates the relationship between CQ training and teamwork performance.

## Conceptual Framework

Figure 1 illustrates the conceptual model underpinning this study, grounded in the CQ Theory introduced by Earley and Ang (2003). The framework is self-developed and informed by prior research on intercultural communication, workforce integration, and team performance in diverse organisational settings. It captures both the direct effects of CQ training on communication effectiveness and teamwork performance and the indirect (mediated) effect of communication effectiveness in the relationship between CQ training and teamwork outcomes.

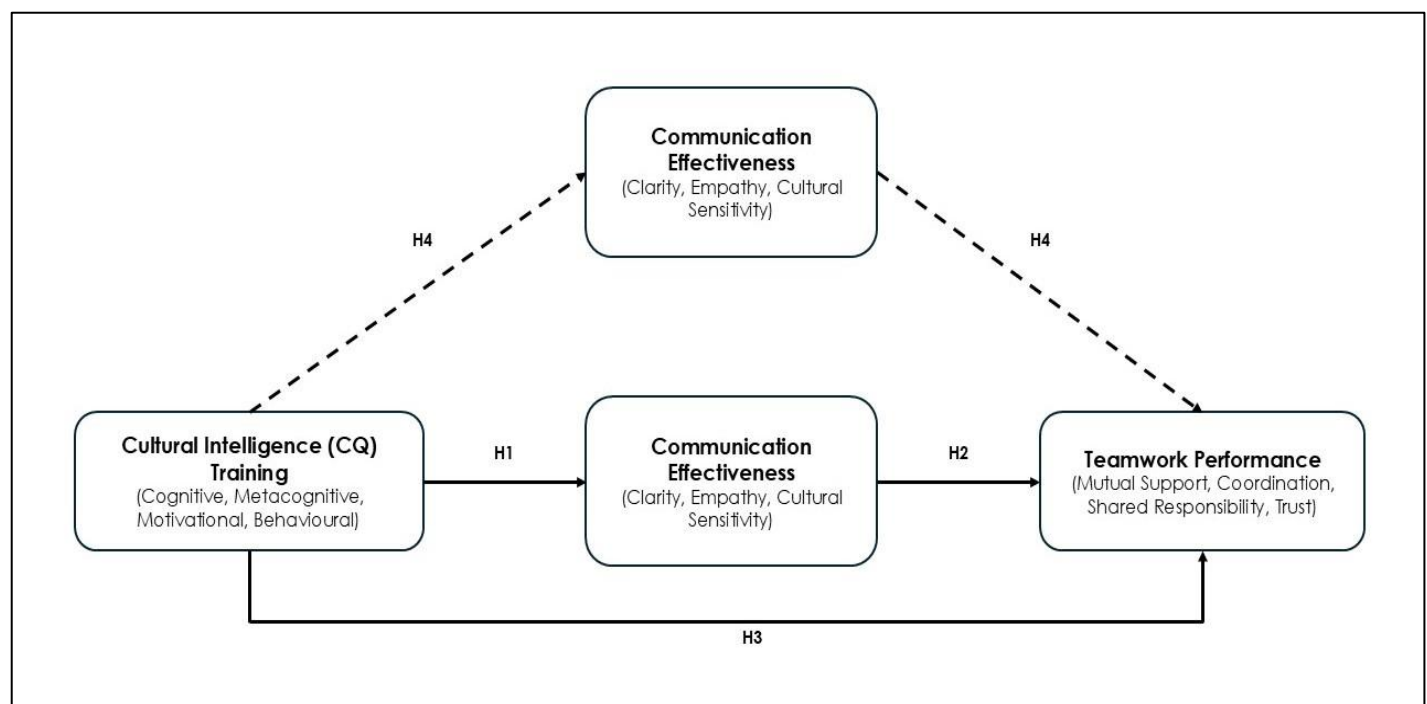


Figure 1. Conceptual Framework: CQ Training, Communication and Teamwork Performance

In this model, CQ training is conceptualised as a structured intervention designed to enhance four interrelated dimensions of CQ: cognitive (knowledge of cultural systems), metacognitive (awareness of cultural assumptions and thought processes), motivational (interest and effort to adapt to cultural diversity), and behavioural (the ability to enact culturally appropriate verbal and non-verbal behaviours). These components strengthen individuals' capacity to engage and adapt effectively in multicultural teams.

Communication effectiveness refers to how individuals exchange information empathetically and with cultural sensitivity. It is operationalised through indicators such as message clarity, active listening, and the ability to navigate diverse communication norms.

Teamwork performance reflects the degree to which multicultural teams collaborate efficiently toward shared goals. It is measured through mutual support, coordination, shared responsibility, and interpersonal trust.

This framework posits that CQ training enhances communication effectiveness (H1), contributing to higher teamwork performance (H2). It also provides a direct pathway between CQ training and teamwork (H3). Communication is proposed as a mediating variable in this relationship (H4), functioning as the mechanism through which culturally intelligent behaviours translate into improved collaborative outcomes.

## **RESEARCH METHODS**

### **Research Design**

This study employs a quantitative research design to examine the effects of CQ training on teamwork and communication among foreign workers in Malaysia. A descriptive research approach was chosen for its capacity to systematically explore and interpret real-world relationships among CQ training, communication, and teamwork. This design facilitates the identification of prevailing patterns and supports generalizability to similar multicultural labour environments. In Malaysia's increasingly globalised and diverse workforce, this approach is well-suited to evaluate how CQ training can contribute to enhanced operational efficiency, team cohesion, and cross-cultural communication.

### **Sampling Strategy**

The target population for this study consists of foreign workers employed in the manufacturing sector in the Malaysian state of Melaka. According to official statistics from the Department of Labour and relevant industrial bodies, Melaka employs approximately 10,000 foreign workers in manufacturing, making it an ideal setting for investigating intercultural dynamics in operational environments. The manufacturing sector was selected due to its high dependency on migrant labour and its operational reliance on team-based collaboration, where communication and cultural adaptation are critical to productivity and workplace harmony.

A proportionate stratified random sampling technique was employed to ensure representative data collection. The population was stratified according to key demographic characteristics, including nationality (Indonesian, Bangladeshi, Nepali, and Filipino), job role (e.g., production operator, supervisor), and length of employment. Participants were randomly selected from each subgroup based on their proportional presence in the total workforce. This method increases the precision of estimates and ensures that all relevant subgroups are appropriately represented, thereby enhancing the study's external validity.

Based on the Krejcie and Morgan (1970) sample size determination formula, a minimum of 377 respondents was required to achieve statistical power and generalisability. This sample size was met and validated through on-site coordination with human resource departments and supervisors across selected factories.

To accommodate linguistic diversity and minimise response bias, the survey instrument was translated into the native or preferred languages of participants, including Bengali, Nepali, Hindi, and Urdu. These translations were verified through back-translation and pilot-tested with a small group of foreign workers to ensure clarity and cultural appropriateness. This measure helped improve comprehension, response accuracy, and overall data reliability.

### **Data Collection and Instruments**

Data were collected using a structured questionnaire administered online and in person across selected manufacturing firms in Melaka. The questionnaire collected demographic information and assessed workers' perceptions of CQ training, communication effectiveness, and workplace teamwork dynamics. A 5-point Likert scale (Table 2) was used to capture the degree of agreement with various statements, facilitating quantifiable analysis of attitudes and behaviours. Table 3 indicates the structure of the questionnaire for this study.

Table 2. Mean Range of Likert Scales

No	Description	Mean Range	Scale	Interpretation
1	Strongly Disagree	1.00 – 1.79	1	Very Low
2	Disagree	1.80 – 2.59	2	Low
3	Uncertain	2.60 – 3.39	3	Moderate
4	Agree	3.40 – 4.19	4	High
5	Strongly Agree	4.20 – 5.00	5	Very High

Table 3. Structure of Questionnaire

Section	Questionnaire
A	Demographics (age, gender, nationality, role and experience)
B	Communication Skills (Clarity, understanding and Language Proficiency)
C	Teamwork and Collaboration (Cooperation, Conflict Resolution)
D	Cultural Intelligence (CQ) Training (Perceived Impact on Performance)

### Data Analysis

A pilot study involving 20 foreign workers evaluated the questionnaire's clarity, reliability, and internal consistency. Cronbach's Alpha was used as the measure of internal reliability, with thresholds set at 0.70 or higher for established constructs and 0.50 or higher for exploratory research, following the guideline proposed by Nunnally (1978). The reliability analysis, as presented in Table 4, indicated high internal consistency for all measured constructs: Communication Skills ( $\alpha = 0.755$ ), Teamwork and Collaboration ( $\alpha = 0.766$ ), and CQ Training ( $\alpha = 0.754$ ). These results confirmed that the instrument was sufficiently robust for full-scale data collection.

Data was analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics summarised the demographic and response data, including means, standard deviations, and frequency distributions. Inferential statistical techniques were employed to test the study's hypotheses. Specifically, Pearson correlation analysis was used to examine the strength and direction of relationships between variables. In contrast, multiple regression analysis was applied to identify significant predictors of communication effectiveness and teamwork performance. These analyses provided empirical evidence to support the proposed relationships within the conceptual framework.

Table 4. Reliability Statistics for Each Variable

Factors	Number of Items	Cronbach's Alpha Coefficient ( $\alpha$ )	Interpretation
Communication Skills	5	0.755	Acceptable Reliability
Teamwork and Collaboration	5	0.766	Acceptable Reliability
Cultural Intelligence (CQ) Training	5	0.74	Acceptable Reliability

### Ethical Considerations

Ethical standards were rigorously upheld throughout the study. Participants were informed of the study's purpose, assured of their right to withdraw at any time, and asked to provide informed consent. No personally identifiable information was collected to maintain confidentiality and anonymity. All data were used solely for academic purposes and were handled in compliance with ethical guidelines.

### Limitations of the Study

While this study offers significant insights into the role of CQ training in enhancing communication and teamwork among foreign workers, several limitations must be noted. The cross-sectional design does not capture changes over time. Although stratified random sampling was used, the study was limited to the



manufacturing sector in Melaka, which may restrict the generalizability of findings to other regions or industries. Moreover, self-reported data may be influenced by social desirability or respondent bias. Future research could adopt longitudinal designs, expand to other sectors, and incorporate qualitative methods to gain deeper insights into the experiences of foreign workers.

## RESULTS

### Demographic Profile of Respondents

This study involved 377 foreign workers from the manufacturing sector in Melaka, Malaysia. The demographic characteristics analysed include age, gender, nationality, current job role, and working experience. These characteristics offer essential contextual insights into the study population and inform the interpretation of CQ training, communication, and teamwork results. The results are shown in Table 5.

Table 5. Demographic Profile

Demographic	Variable	Frequency	Percentage (%)
Age	18-25	172	45.6
	26-35	186	49.3
	36-45	15	4.0
	46 and above	4	1.1
Gender	Female	18	4.8
	Male	359	95.2
Nationality	Bangladeshi	192	50.9
	Indian	38	10.1
	Nepali	103	27.3
	Pakistani	17	4.5
	Others	27	7.2
Current Role	Entry-level	351	93.1
	Mid-level	26	6.9
	High-level	0	0
Working Experience	1–3 years	226	59.9
	4–6 years	119	31.6
	Less than 1 year	6	1.6
	More than 6 years	26	6.9

Most respondents were relatively young, with 49.3% aged between 26 and 35 and 45.6% between 18 and 25, collectively accounting for nearly 95% of the sample. This indicates a predominantly youthful workforce generally more adaptable to new technologies and training initiatives such as CQ development programs. The minimal representation of workers aged 36 and above suggests limited longevity or late-career entry among foreign labourers in this sector.

The data also reveal a substantial gender disparity, with 95.2% of respondents identified as male. This reflects the male-dominated nature of the manufacturing sector in Malaysia, especially among foreign workers. The underrepresentation of women may point to structural barriers, gender-specific job placements, or cultural norms that influence employment patterns. This gender imbalance should be considered when designing inclusive CQ training modules.

In terms of nationality, the most significant proportion of respondents were Bangladeshi (50.9%), followed by Nepali (27.3%), Indian (10.1%), and Pakistani (4.5%) nationals, with 7.2% representing other countries. Ethnic and cultural diversity support the relevance and urgency of CQ training as a strategic intervention to enhance intercultural collaboration and reduce workplace misunderstandings. Multinational labour dynamics demand culturally adaptive communication strategies, making CQ an essential workforce competency.

Regarding job roles, 93.1% of respondents held entry-level positions, only 6.9% were in mid-level roles, and

none occupied high-level or managerial positions. This trend underscores the concentration of foreign workers in lower-tier positions, where they are more likely to experience upward mobility and integration challenges. CQ training at this level can be critical in improving workplace interactions and boosting morale among entry-level workers.

Concerning working experience, 59.9% of participants had between 1 and 3 years of experience, while 31.6% had 4 to 6 years of experience. Only a small fraction had been employed for less than 1 year (1.6%) or more than 6 years (6.9%). This distribution indicates a relatively experienced workforce yet not deeply entrenched, suggesting that workers are still forming communication habits and team dynamics. As such, they stand to benefit significantly from CQ training aimed at early integration and behavioural adaptation in multicultural environments.

Overall, the demographic profile affirms the relevance of this study's focus on CQ as a tool to enhance communication and teamwork within a highly diverse, male-dominated, entry-level foreign workforce. The insights from these demographics contextualise subsequent findings and offer a practical foundation for designing targeted and culturally responsive training interventions.

### Correlation Analysis

The Pearson product-moment correlation coefficient was employed to examine the strength and direction of the relationships among Teamwork and Collaboration, Communication Skills, and CQ Training. The results of the correlation analysis are presented in Table 6.

Table 6. The result of the Pearson Correlation

Correlations				
		Teamwork and Collaboration	Communication Skills	Cultural Intelligence (CQ) Training
Teamwork and Collaboration	Pearson Correlation	1	.725**	.677**
	Sig. (2-tailed)		.000	.000
	N	377	377	377
Communication Skills	Pearson Correlation	.725**	1	.692**
	Sig. (2-tailed)	.000		.000
	N	377	377	377
Cultural Intelligence (CQ) Training	Pearson Correlation	.677**	.692**	1
	Sig. (2-tailed)	.000	.000	
	N	377	377	377

\*\*. Correlation is significant at the 0.01 level (2-tailed).

As shown in Table 6, all variables exhibit strong, positive, and statistically significant relationships. A significant positive correlation was observed between Teamwork and Collaboration and CQ Training ( $r = 0.677$ ,  $p < 0.01$ ), which revealed that individuals who undergo CQ training are likelier to demonstrate stronger teamwork capabilities. This finding aligns with prior literature emphasising that CQ enhances individuals' ability to collaborate effectively in culturally diverse teams by promoting empathy, mutual understanding, and conflict resolution (Jose & Navdeep, 2024; Moslehpour et al., 2024).

CQ training develops the cultural sensitivity and behavioural flexibility needed to navigate diverse interpersonal interactions, essential for cohesive teamwork. Tungtakanpoung and Prouska (2024) posited that CQ employees contribute to a more harmonious workplace by adjusting their behaviours to accommodate varying cultural norms, ultimately improving team synergy and performance.

### Communication Skills and CQ Training

The correlation between Communication Skills and CQ Training was also substantial ( $r = 0.692$ ,  $p < 0.01$ ). This finding reinforces that CQ training enhances communication competence, particularly in multicultural environments where misunderstandings may arise due to differing cultural expectations and language barriers (Puzzo et al., 2024).

Prior research by Liu et al. (2025) indicates that CQ is a key predictor of effective cross-cultural communication. It enables individuals to interpret non-verbal cues, adapt their messaging, and engage in more meaningful dialogue. The current study supports this, highlighting that workers who receive CQ training are better equipped to interact constructively across cultures, contributing to workplace inclusion and efficiency.

### Multiple Regression Analysis

A multiple regression analysis was conducted to evaluate the extent to which Communication Skills, teamwork, and Collaboration predict the effectiveness of CQ Training among foreign workers. This analysis was essential to test the explanatory power of interpersonal competencies in shaping CQ development. The results are summarised in Table 7.

Table 7. Multiple Regression Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.737 <sup>a</sup>	.543	.541	.28632
a. Predictors: (Constant), Communication Skills, Teamwork and Collaboration				

The model demonstrated a strong fit, with an  $R^2$  value of 0.543, indicating that Communication Skills and Teamwork and Collaboration can explain 54.3% of the variance in CQ Training. The adjusted  $R^2$  value of 0.541 suggests minimal model overfitting, confirming the model's robustness. The standard error of the estimate (0.28632) reflects moderate unexplained variance, implying that additional variables such as leadership style or prior intercultural exposure may be worth exploring in future studies.

An analysis of variance (ANOVA) was performed as part of the regression procedure to assess the overall significance of the model. This step tested whether the predictors, taken together, significantly improved the prediction of CQ Training outcomes. The ANOVA results are presented in Table 8.

Table 8. ANOVA Summary

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.443	2	18.222	222.266	.000 <sup>b</sup>
	Residual	30.661	374	.082		
	Total	67.104	376			
a. Dependent Variable: Cultural Intelligence (CQ) Training						
b. Predictors: (Constant), Communication Skills, Teamwork and Collaboration						

The model yielded an F-statistic of 222.27 ( $p < 0.001$ ), indicating that the combined influence of Communication Skills and Teamwork is statistically significant. These results reinforce the role of interpersonal competencies as key contributors to successful CQ development.

The standardised regression coefficients in Table 9 confirm that both predictors are individually significant. Communication Skills ( $\beta = 0.458$ ,  $p < 0.001$ ) emerged as a stronger predictor than Teamwork and Collaboration ( $\beta = 0.412$ ,  $p < 0.001$ ), suggesting that the ability to communicate effectively across cultures is particularly influential in shaping culturally intelligent behaviour.

Table 9. Standardised Coefficients (Beta)

Predictor	Beta ( $\beta$ )	t	Sig.
Communication Skills	0.458	9.842	0.000**
Teamwork and Collaboration	0.412	8.849	0.000**

Note:  $p < 0.01$

These findings are consistent with prior studies, such as Alifuddin and Widodo (2022) and Liu et al. (2025), which emphasised the importance of interpersonal skills in enhancing CQ. The high beta coefficients observed

in this study highlight the practical value of integrating communication and teamwork development into CQ training programs, especially in multicultural industrial settings.

The regression and ANOVA results support the hypothesis that communication and collaboration significantly predict CQ training effectiveness. This affirms the study's theoretical framework and offers practical insights for organisations seeking to strengthen workplace integration and cross-cultural performance among foreign workers.

## DISCUSSIONS

The results of this study provide strong empirical support for the effectiveness of CQ training in improving workplace outcomes, particularly among foreign workers employed in Malaysia's manufacturing sector. The demographic findings reveal that most participants are early-career individuals, with 49.3 per cent aged between 26 and 35 and 45.6 per cent between 18 and 25. This age distribution suggests that a younger workforce is generally more open to learning-based interventions and behaviour-focused training (Pennington et al., 2024; Rentea et al., 2025). Introducing CQ training during the early stages of employment, especially as part of onboarding programs, enables organisations to build intercultural competence from the outset.

The sample was overwhelmingly male, with 95.2 per cent of respondents identifying as male, which reflects broader trends in the labour-intensive manufacturing sector. This gender composition has implications for workplace dynamics and communication, as studies have shown that gender may influence how intercultural collaboration occurs (Randazzo-Davis et al., 2023). Furthermore, the national composition of the sample, which includes mainly Bangladeshi, Nepali, and Indian workers, illustrates the multicultural nature of the manufacturing workforce. These workers often bring differing cultural norms, language abilities, and communication styles, reinforcing the importance of CQ training in reducing miscommunication and promoting integration (Pacheco, 2024).

The correlation analysis demonstrated significant positive relationships between CQ training, teamwork performance, and communication effectiveness. Specifically, CQ training showed a strong correlation with teamwork ( $r = 0.677$ ,  $p < 0.01$ ) and communication skills ( $r = 0.692$ ,  $p < 0.01$ ). These findings align with previous work by (Moslehpour et al., 2024), who emphasised that CQ plays a central role in building mutual understanding and reducing interpersonal conflict in diverse teams. Employees who participate in CQ training are better equipped to interpret verbal and non-verbal cues, manage language differences, and adjust their communication to suit multicultural team settings.

The multiple regression analysis confirmed that teamwork and communication significantly predict CQ training outcomes. The model explained 54.3 per cent of the variance in CQ development ( $R^2 = 0.543$ ), indicating a strong explanatory power level. An Analysis of Variance (ANOVA) test was used to evaluate the overall model significance as part of the regression process. The test produced a statistically significant F-value ( $F = 222.27$ ,  $p < 0.001$ ), confirming that the independent variables jointly contribute to the variation observed in CQ training outcomes. This result supports earlier findings by Baratipour et al. (2021), who emphasised that interpersonal skills and communication proficiency are foundational for developing CQ.

The standardised beta coefficients further reveal that communication skills ( $\beta = 0.458$ ) have a slightly greater impact on CQ training effectiveness than teamwork ( $\beta = 0.412$ ). This underscores the critical role of effective communication in intercultural settings. These results also reinforce the view that CQ is not an innate personality trait but rather a trainable skill that can be developed through targeted programs. Research by Teixeira and Klein (2024) demonstrates that experiential learning in culturally diverse environments significantly enhances CQ. Sakina et al. (2024) posited that daily exposure to cultural diversity within the workplace contributes to sustained CQ growth.

These findings highlight the importance of incorporating CQ training into onboarding initiatives, ongoing staff development, and team-building activities. Early and continuous exposure to CQ principles equips workers to navigate cultural complexities with greater confidence and competence in a manufacturing sector that depends heavily on foreign labour. This leads to stronger team relationships, more effective communication, and improved productivity.

Future research should expand on these findings by exploring potential moderating and mediating variables such as leadership behaviour, organisational culture, and prior intercultural experience. Longitudinal studies would also be valuable in assessing the long-term impact of CQ training on employee retention, job satisfaction, and organisational engagement. As global workforces grow in diversity, CQ will remain an essential competency for sustaining inclusion, innovation, and performance in complex organisational environments.

## **CONCLUSION**

This study has contributed valuable empirical insights into the role of CQ training in enhancing communication effectiveness and teamwork performance among foreign workers in Malaysia's manufacturing sector. The findings affirm that CQ, a dynamic and learnable competency developed through structured training, significantly improves how employees interact and collaborate in multicultural environments.

The results also establish communication effectiveness as a mediating factor between CQ training and teamwork performance. This highlights communication as a skill that can be developed through CQ training and a channel through which CQ behaviour is enacted. The strength of the statistical relationships observed in this study indicates that communication and teamwork are outcomes of CQ training and essential pathways to building inclusive and cohesive workplace cultures.

The study further emphasises the importance of addressing cultural diversity in workforce development strategies. The sample, comprising predominantly young male foreign workers from Bangladesh, Nepal, and India, reflects the demographic realities of Malaysia's manufacturing sector. The findings provide context-specific evidence that CQ training can support better integration, collaboration, and operational performance in such environments.

These contributions are significant for both academic and practical purposes. Theoretically, the study supports applying CQ theory in workforce research and validates communication as a meaningful mediator. From a practical viewpoint, it informs human resource policies by demonstrating that investing in CQ training can yield tangible improvements in team dynamics and employee outcomes in culturally diverse workplaces.

## **RECOMMENDATIONS**

Organisations are encouraged to integrate experiential learning approaches to enhance the effectiveness of CQ training. Intercultural simulations, role-playing, and scenario-based exercises promote behavioural adaptability and facilitate the practical application of cultural knowledge in real-world settings.

Furthermore, training content should be linguistically and culturally accessible. Offering materials in employees' native or preferred languages and tailoring content to reflect their cultural backgrounds can significantly improve engagement, comprehension, and inclusivity.

Incorporating CQ training into onboarding programs is also essential. Early exposure to intercultural concepts helps new employees acclimate more smoothly to diverse work environments and minimises potential communication barriers from the outset.

Organisations should establish systematic mechanisms for monitoring and evaluation to ensure the ongoing relevance and impact of such training. These may include feedback surveys, post-training assessments, and periodic reviews to assess learning outcomes and identify areas for improvement.

Finally, organisations should cultivate a sustained culture of intercultural learning. Initiatives such as mentorship programs, cross-cultural peer collaborations, and team-based projects can reinforce CQ development beyond formal training and embed intercultural competence into daily organisational practices.

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