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## Foreign labor dynamics in Malaysia's construction industry: Policy impacts and economic consequences

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### Abstract

The Malaysian construction sector's reliance on foreign labor, especially in "3D" roles—dirty, dangerous, and difficult—has presented both economic advantages and socio-political challenges. This study investigates the impacts of Malaysia's foreign worker policies on the construction industry, exploring dependency patterns, policy effectiveness, and implications for workforce localization. Utilizing a qualitative approach, the research incorporates in-depth interviews with policymakers, construction managers, and labor union representatives, supported by document analysis of policy records and labor statistics. Findings indicate that foreign workers comprise 70–80% of the workforce, driven by local reluctance towards lower-wage, physically demanding positions. The analysis reveals that inconsistent policy enforcement and the COVID-19 pandemic have destabilized labor supply, heightened employer concerns, and underscored the socio-economic risks of foreign worker dependency, including wage suppression and limited skill transfer to local workers. The study recommends a tiered levy system and workforce development incentives as strategic solutions to balance immediate labor demands with sustainable localization goals. By addressing workforce challenges and leveraging policy insights, this research contributes to the discourse on sustainable labor management in developing economies heavily reliant on foreign workers.

**Keywords:** Construction sector, Economic impact, Foreign labor policy, Malaysia, Workforce dependency.

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**Transparency:** The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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## **1. Introduction**

Malaysia's policy on foreign workers is shaped by a complex interplay of economic needs, governance challenges, and international relations. The country relies heavily on foreign labor to fill gaps in sectors like construction, manufacturing, and agriculture due to local workforce shortages. This reliance has led to fluctuating governmental policies, including allowing foreign workers to switch employers to address labor shortages and disinterest from local workers in certain jobs [1]. The construction sector is integral to Malaysia's economic infrastructure, contributing significantly to the national GDP and serving as a foundation for urbanization and industrial growth [2]. Over recent decades, the sector has grown increasingly reliant on foreign labor, particularly in '3D' jobs—essential roles yet seen as undesirable by local workers due to their physically demanding, high-risk nature. Currently, foreign laborers account for 70–80% of the sector's workforce, underscoring the pivotal role of migrant workers in sustaining industry growth [3]. This dependency on foreign labor has arisen mainly due to a labor gap left by local workers' reluctance to fill certain types of positions. Local construction workers often seek higher wages and more secure job conditions, leading employers to turn to migrant workers who accept lower pay and can adapt to challenging conditions [4]. The Malaysian government has implemented a series of foreign worker policies to balance economic demands with workforce localization. These policies seek to reduce reliance on foreign labor by promoting skill development and increasing local participation in the construction industry [5].

However, recent shifts in policy enforcement—exacerbated by the COVID-19 pandemic—have exposed the sector's vulnerabilities. Lockdowns, travel restrictions, and disruptions in labor supply have highlighted the challenges posed by an overreliance on foreign workers, sparking a reassessment of Malaysia's labor policies. These policy adjustments, aimed at reducing dependency, have encountered implementation challenges, affecting both project timelines and cost structures in the construction industry [6].

### *1.1. Foreign Labor Trends in Malaysia's Construction Sector*

Malaysia's reliance on foreign workers has a colonial precedent. In that period, imported labor addressed workforce shortages in agriculture and infrastructure. Today, Malaysia's construction workforce primarily comprises workers from Indonesia, Bangladesh, Myanmar, and Nepal. This trend mirrors broader regional dynamics in Southeast Asia, where countries like Singapore and Thailand also depend on migrant labor to sustain growth in labor-intensive industries [7].

The influx of foreign workers has provided economic benefits, notably through reduced labor costs that allow competitive pricing and project affordability. However, the dependency also comes with socio-economic costs, such as wage suppression for local workers and limited career advancement opportunities within the sector. Furthermore, limited skill transfer within foreign-dominated roles perpetuates a segmented workforce, where opportunities for upward mobility and skill acquisition remain constrained for both foreign and local labor [8].

### *1.2. Policy Landscape: Balancing Growth with Workforce Localization*

Malaysia's foreign worker policies reflect a dual mandate of sustaining economic growth while promoting workforce localization. Key policies such as the Foreign Workers Reduction Plan and various guest worker programs aim to control migrant labor inflow, manage industry dependency, and encourage local employment through quotas and levies. However, studies reveal that inconsistent policy enforcement has created uncertainty, complicating workforce planning for employers [3].

Policy volatility, coupled with economic fluctuations, exacerbates these challenges. Economic downturns often lead to stricter regulations, while growth periods encourage more liberal policies. For example, the COVID-19 pandemic exposed regulatory gaps in Malaysia's foreign worker policies, highlighting the need for a flexible yet robust framework that supports workforce sustainability during crises [9].

### *1.3. Economic and Social Implications of Foreign Worker Dependency*

The economic and social impacts of Malaysia's reliance on foreign labor are multifaceted. Economically, the lower wage expectations among foreign workers enable the construction sector to maintain project affordability and boost profitability. However, this cost advantage frequently translates into wage suppression, disproportionately impacting local workers' income and contributing to inequality within the workforce [3]. Additionally, the widespread presence of foreign labor limits local job opportunities, creating a dual-labor market where foreign workers fill low-skilled roles while local workers seek higher-level positions [10].

Malaysia's dependency on foreign labor has introduced integration challenges on the social front. Communities often hold mixed views of foreign workers, viewing them as necessary for economic growth and as competitors for local jobs. This perception has led to social tensions and instances of discrimination, with migrant workers facing substandard living and working conditions that exacerbate socio-economic divides [3]. The absence of strong integration measures further alienates foreign laborers from local communities, reinforcing the segmentation within the workforce.

### *1.4. Research Aims and Objectives*

This study seeks to examine the impact of Malaysia's foreign worker policies on the construction sector, with a particular focus on workforce dynamics, productivity, and socio-economic implications. The research addresses two primary questions:

- a) How do foreign worker policies shape workforce structure and productivity in Malaysia's construction industry?
- b) What are the socio-economic effects of dependency on foreign labor within the construction sector?

Through this exploration, the study aims to inform the discourse on labor policy impacts in developing economies, mainly those where foreign workers are crucial to industrial growth. This research is especially relevant to the COVID-19

pandemic, which has underscored the risks associated with overreliance on foreign labor and the need for strategic policy adjustments.

## **2. Literature Review**

### *2.1. Historical Context and Foreign Labor Dependency in Southeast Asia*

The reliance on foreign labor within Malaysia's construction sector is part of a broader regional phenomenon in Southeast Asia, where countries facing labor shortages in low-wage, labor-intensive sectors rely on migrant workers from neighboring nations. During Malaysia's industrialization, the country began importing foreign labor to fulfill the growing demands of the construction, agriculture, and manufacturing sectors. Initially, this approach provided a solution to immediate labor needs; however, it established a pattern of dependency that continues to affect the construction sector [7].

Malaysia's foreign labor force, primarily sourced from Indonesia, Bangladesh, and Myanmar, fills approximately 70–80% of the construction workforce. This trend is driven by local workers' reluctance to engage in "3D" jobs—roles that are physically demanding, dangerous, and offer limited upward mobility. Scholars argue that foreign labor dependency is an economically viable short-term solution but comes with long-term costs, particularly for wage growth, job satisfaction, and socio-economic cohesion within the workforce. Furthermore, it perpetuates a segmented labor market where foreign workers dominate low-skill jobs, limiting skill transfer and local workforce development [3].

### *2.2. Evolution of Malaysia's Foreign Worker Policies*

Malaysia's foreign worker policy landscape has evolved in response to shifting economic priorities and labor market demands. Initially, the government adopted liberal policies that facilitated foreign worker inflows without significant restrictions to address labor shortages. However, as reliance grew, concerns about socio-economic impacts prompted a gradual shift towards more regulated policies, including quotas, sector-specific restrictions, and levies on employers hiring foreign labor [11].

Key policies, such as the Foreign Workers Reduction Plan, were introduced to control labor inflows while encouraging local employment. These measures aim to achieve a balanced workforce by regulating foreign worker dependency and fostering a local labor market. However, policy enforcement remains inconsistent, complicating labor supply stability and creating uncertainty among employers. As policymakers have sought to address these gaps, the COVID-19 pandemic revealed vulnerabilities within Malaysia's foreign labor policy framework, as lockdowns and travel restrictions resulted in labor shortages, disrupting the construction sector's productivity and raising costs [9, 12].

Studies indicate that policy inconsistencies weaken the effectiveness of Malaysia's foreign worker regulations. Employers face unpredictable policy shifts that hinder long-term planning. Critics argue that sustainable foreign worker policies should be coupled with complementary initiatives, such as local skill development programs. This would enable a gradual transition to a more self-reliant labor market and reduce dependency [13].

### *2.3. Economic Implications of Foreign Worker Dependency*

Foreign labor dependency has notable economic implications for Malaysia's construction sector. On the one hand, foreign workers provide cost advantages, as they are willing to work for lower wages, which helps companies maintain competitive project costs and support steady sectoral growth. This affordability has enabled Malaysia's construction sector to contribute significantly to GDP, promoting urban development and infrastructural advancements [14].

However, reliance on lower-cost foreign labor often leads to wage suppression, as employers may opt for foreign workers over local labor due to cost efficiency. Studies have observed this wage suppression effect, Awad and Yussof [4], which limits local workers' income growth and dampens the construction industry as a viable career path. According to De Siqueira [15], sectors with high concentrations of foreign labor tend to exhibit stagnant wage growth, creating barriers to social mobility and exacerbating income inequality.

Moreover, foreign labor dependency impacts the long-term economic resilience of Malaysia's construction sector. Employers prioritize foreign workers for immediate needs without substantial investment in local workforce development, resulting in limited skill acquisition and minimal training opportunities for both foreign and local employees. The absence of a skilled domestic labor pool ultimately hinders the sector's ability to innovate and adapt to technological advancements, impacting productivity and efficiency [5, 8].

### *2.4. Social and Workforce Implications*

The dependency on foreign labor in construction is also associated with complex social dynamics, particularly concerning workforce segmentation, local job opportunities, and socio-cultural integration. The labor market in Malaysia's construction sector is stratified, with foreign workers occupying the lower-skilled roles, reinforcing a hierarchy within the workforce that restricts social and economic mobility [3]. This segmentation is compounded by disparities in working conditions, with foreign laborers often facing inadequate safety measures and substandard living arrangements that further isolate them from the local workforce [8].

Public sentiment towards foreign workers in Malaysia is mixed, as communities recognize their contributions to economic growth but perceive them as competitors for resources and employment opportunities. Studies show that tensions arise in areas with high concentrations of foreign labor, where local workers feel their job prospects are limited by the availability of cheaper foreign labor [16]. Additionally, inadequate integration mechanisms exacerbate social divides, as foreign workers frequently lack access to the same rights, services, and community support as local employees. This social

divide impacts not only workforce dynamics but also broader community cohesion, posing challenges for policymakers seeking to foster inclusive growth [16].

### 2.5. Comparative Analysis: Foreign Worker Policies in Southeast Asia

Comparative studies indicate that Malaysia could benefit from examining foreign worker management systems in neighboring countries like Singapore and Thailand, where policies are more structured and consistently enforced. Singapore, for instance, employs a tiered levy system and dependency ratio ceiling to regulate foreign worker numbers, encouraging employers to optimize their workforce through productivity-enhancing measures and technology adoption [11]. This approach has allowed Singapore to manage foreign labor dependency while promoting workforce efficiency, aligning with the country's goal of becoming a high-skill, high-wage economy [17].

On the other hand, Thailand has implemented regularization programs and bilateral agreements with neighboring countries to formalize and manage migrant labor inflows, minimizing undocumented workers and ensuring better protections for foreign employees. By learning from these approaches, Malaysia could develop a more resilient policy framework that balances labor demand with socio-economic sustainability. Adopting a tiered levy system and enhancing local workforce training initiatives may enable Malaysia to gradually reduce its reliance on foreign labor, thus promoting stability and long-term economic growth [18].

### 2.6. Policy Recommendations for Reducing Dependency

A range of recommendations has been proposed to address Malaysia's construction sector's dependency on foreign labor. Strengthening policy enforcement is crucial, as inconsistent regulation application undermines policy effectiveness and creates compliance challenges for employers. Additionally, regular audits and regulatory oversight could enhance compliance, reduce reliance on foreign labor, and promote adherence to workforce localization objectives [3].

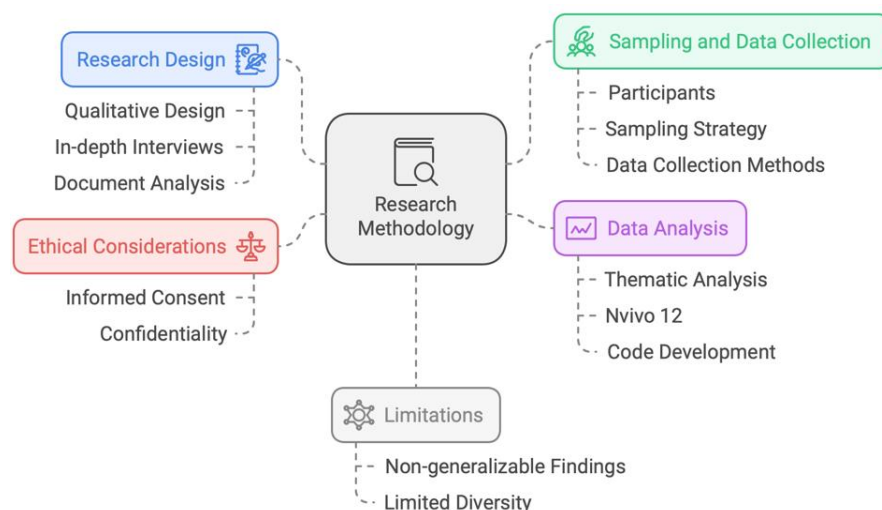
Another recommendation involves targeted skill development programs for local workers, enabling gradual workforce localization. By investing in skill-building initiatives and partnering with educational institutions, the government can create a pipeline of qualified local talent for the construction industry, gradually decreasing reliance on foreign workers [3]. Moreover, policies incentivizing automation and technology adoption in construction could offset the demand for foreign labor, supporting Malaysia's Industrial Revolution 4.0 goals and enhancing sectoral productivity [4].

## 3. Methodology

### 3.1. Research Design

This study employs a qualitative research design to explore the socio-economic and policy impacts of foreign labor dependency on Malaysia's construction sector. Qualitative research is particularly effective for analyzing complex social and policy dynamics, allowing in-depth exploration of human experiences, perceptions, and institutional influences [8]. Given the study's focus on subjective viewpoints—such as employer reliance on foreign labor, policy effects, and workforce dynamics—a qualitative approach enables a comprehensive understanding of these multi-faceted issues. This research design aligns with an interpretive paradigm, emphasizing the role of individual experiences and interactions within the socio-political context of foreign labor policies [3].

The study utilizes a case-study methodology, facilitating a focused examination of Malaysia's construction sector as a specific instance of foreign labor dependency in Southeast Asia. Case-study approaches are ideal for investigating phenomena within real-life contexts, offering insights into policy-driven labor dynamics, socio-economic consequences, and implications for workforce sustainability [3].



**Figure 1.**  
Conceptual Map of the Research Methodology Framework.

### 3.2. Sampling and Data Collection

#### 3.2.1. Participants and Sampling Strategy

Purposive sampling was applied to recruit participants directly involved with, or affected by, foreign worker policies in the construction sector. This sampling strategy ensures that only information-rich cases that align with the study's objectives are selected, thus enhancing data relevance and quality [19]. Three primary groups were targeted:

1. **Policymakers:** Representatives from the Ministry of Human Resources (MOHR) and the Department of Immigration contribute to formulating, enforcing, and evaluating foreign worker policies;
2. **Construction Industry Managers:** Project and human resources managers from G7-level construction companies that depend heavily on foreign labor, offering practical insights into policy implications and labor management challenges;
3. **Labor Union Leaders:** Representatives from construction-sector unions advocating for local workers, providing perspectives on the socio-economic impacts of foreign labor dependency and its effects on local workforce conditions;

Twenty participants were recruited: eight policymakers, seven construction managers, and five labor union leaders. This sample size was adequate to achieve data saturation, and no new themes emerged from additional data collection. Thus, the data collected fully represented the viewpoints across key stakeholder groups [20].

#### 3.2.2. Data Collection Methods

The primary data collection method was semi-structured interviews, which are well-suited for obtaining in-depth, nuanced insights while allowing flexibility for participants to elaborate on experiences relevant to the study's themes [21]. Each interview lasted between 45 and 60 minutes, conducted either in person or via secure online platforms, depending on participant availability and preferences.

The interview protocol was structured around three main areas:

- **Policy Effectiveness:** Questions addressed the perceived efficacy of current policies in achieving workforce localization and managing foreign worker dependency.
- **Economic and Social Impacts:** Participants discussed the perceived impacts of foreign worker dependency on wages, local job opportunities, and community social dynamics.
- **Future Strategies and Recommendations:** Open-ended questions encouraged participants to propose policy improvements and suggest practical strategies for balancing foreign labor dependency with workforce localization goals.

To maintain data accuracy, all interviews were recorded (with participant consent) and transcribed verbatim, capturing the nuances of each participant's insights [22]. Additionally, document analysis was conducted on relevant government publications, including the *Labor Market Review Report* and *Annual Immigration Report*, providing a quantitative context and supporting the qualitative findings [23].

### 3.3. Data Analysis

#### 3.3.1. Analytical Approach

Data analysis was conducted using thematic analysis, a qualitative method that identifies, examines, and reports patterns (themes) within data [24]. This approach is advantageous for analyzing complex, policy-oriented data as it facilitates categorizing recurring themes across stakeholder perspectives. NVivo 12 software was used to manage data coding and organization, ensuring systematic data handling and facilitating the retrieval of themes and sub-themes throughout the analysis process [25].

The analysis followed these key stages:

1. **Data Familiarization:** Researchers engaged in repeated readings of interview transcripts to gain an in-depth understanding of the dataset.
2. **Initial Coding:** Relevant data segments were labelled using an open-coding approach, with initial codes such as "dependency effects," "policy enforcement issues," and "local workforce barriers" emerging from the data.
3. **Theme Development:** Codes were grouped into broader themes aligned with the study's objectives, including "economic impact of foreign labor," "policy enforcement challenges," and "opportunities for workforce localization."
4. **Theme Review and Refinement:** Themes were reviewed and refined to ensure coherence and accuracy, ensuring they represented the data and were aligned with the study's research questions [26].

#### 3.3.2. Ensuring Data Credibility

To enhance credibility and rigor, multiple techniques were employed:

- **Triangulation:** Triangulation was achieved by comparing interview insights with document analysis findings. This process cross-validated themes and reinforced data robustness by integrating various sources of evidence [27].
- **Member Checking:** Participants were provided summaries of their interview responses to verify that the interpretations accurately represented their perspectives. This validation technique helped reduce misinterpretation and enhanced data trustworthiness [28]

- Peer Debriefing: Preliminary findings were presented to academic peers with expertise in labor policy, who provided feedback on the relevance and clarity of emerging themes. This process further minimized researcher bias and enhanced analytical rigor [29].

### 3.4. Ethical Considerations

The study adhered to ethical guidelines stipulated by the University Research Ethics Board. Informed consent was obtained from each participant, ensuring they understood the study's objectives, the voluntary nature of their involvement, and their right to withdraw without penalty at any stage. To maintain confidentiality, all personal identifiers were removed from transcripts, with anonymized coding applied to ensure participants' privacy throughout the analysis and reporting processes [30]. Data security was maintained by storing digital transcripts on encrypted devices accessible only to authorized researchers in compliance with ethical standards for data protection [31].

### 3.5. Limitations of the Methodology

While the qualitative design enables an in-depth understanding of the impacts of foreign worker policies, limitations exist in generalizability. Findings are drawn from purposive sampling within a specific sector, meaning they may not represent experiences across all economic sectors dependent on foreign labor [32]. Additionally, qualitative data are inherently subjective, which may introduce participant bias; however, triangulation and member checking were employed to enhance data reliability and reduce potential biases [33]. Future studies could incorporate a mixed-methods approach to validate findings with quantitative data, increasing the generalizability and comprehensiveness of results [34].

## 4. Results and Discussion

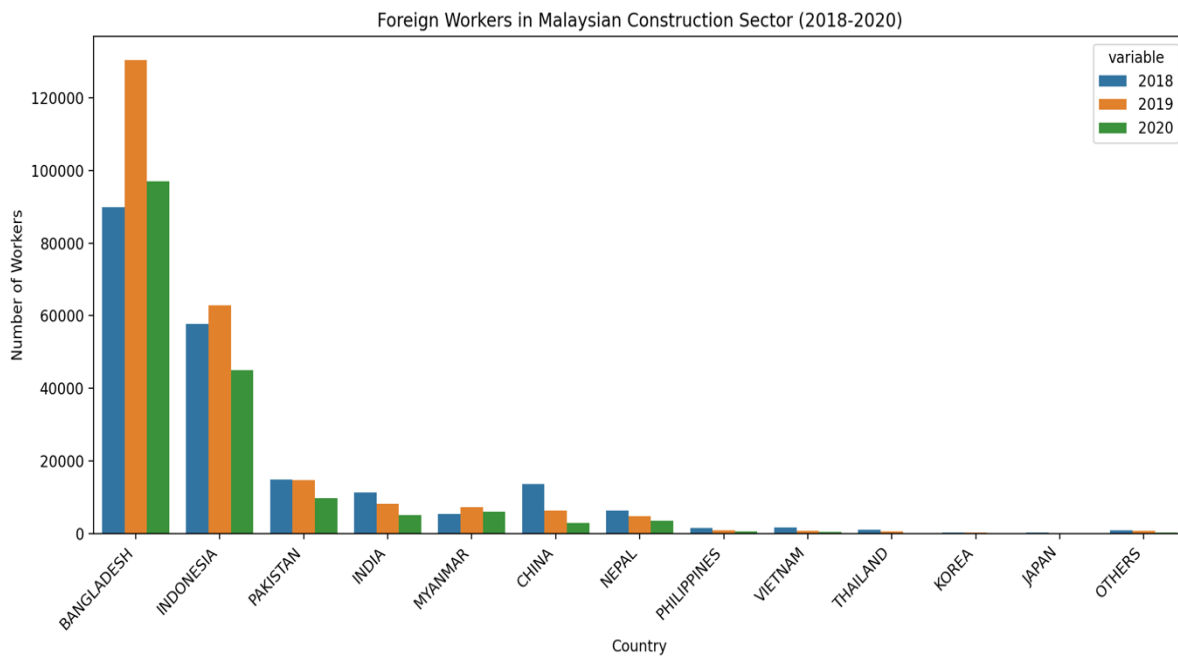
### 4.1. Analysis of Data on Foreign Workers in Malaysia's Construction Sector

#### 4.1.1. Data Overview sources from the Construction Industry of the Development Board Malaysia

**Table 1.**

Foreign workers in the construction sector by country of origin.

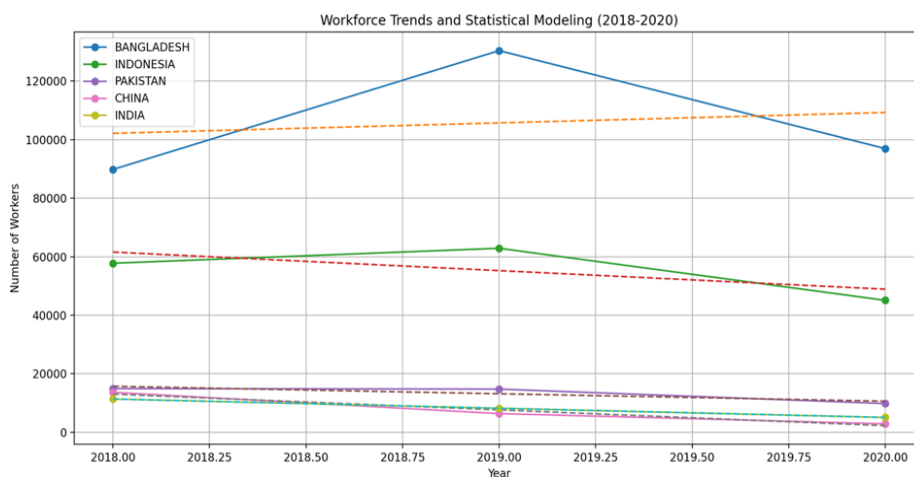
| BIL   | NEGARA      | YEAR    |         |         |
|-------|-------------|---------|---------|---------|
|       |             | 2018    | 2019    | 2020    |
| 1     | Bangladesh  | 89,806  | 130,403 | 96,925  |
| 2     | Indonesia   | 57,768  | 62,878  | 45,081  |
| 3     | Pakistan    | 14,937  | 14,768  | 9,825   |
| 4     | India       | 11,380  | 8,215   | 5,082   |
| 5     | Myanmar     | 5,448   | 7,311   | 6,069   |
| 6     | China       | 13,677  | 6,394   | 2,904   |
| 7     | Nepal       | 6,418   | 4,776   | 3,536   |
| 8     | Philippines | 1,624   | 941     | 626     |
| 9     | Vietnam     | 1,666   | 728     | 472     |
| 10    | Thailand    | 1,117   | 682     | 218     |
| 11    | Korea       | 387     | 283     | 191     |
| 12    | Japan       | 260     | 189     | 131     |
| 13    | Others      | 922     | 730     | 352     |
| TOTAL |             | 205,410 | 238,298 | 171,412 |



**Figure 2.**  
Foreign workers in the construction sector from 2018-2020.

Based on the comprehensive analysis of foreign worker data in Malaysia's construction sector from 2018 to 2020, several significant trends and structural changes emerged. The visualization based on Table 1 and Figure 2 illustrates the dynamic shifts in workforce composition, particularly among the top five source countries. Bangladesh has strengthened its position as the dominant source country, increasing its market share from 43.7% in 2018 to 56.5% in 2020, representing a positive growth of 7.9% despite the overall sector contraction. While maintaining its position as the second-largest source country, Indonesia experienced a decline in absolute numbers and market share, dropping from 28.1% to 26.3% of the total workforce, with a substantial decrease of 22.0% in worker numbers. The data reveals a significant concentration of the labor market, with the top two countries (Bangladesh and Indonesia) increasing their combined market share from 71.8% in 2018 to 82.8% in 2020, indicating a growing dependence on these primary source countries. This concentration trend is further emphasized by the sharp declines observed in other traditionally significant source countries, with China experiencing the most dramatic reduction (-78.8%), followed by India (-55.3%) and Pakistan (-34.2%). These shifts suggest a fundamental restructuring of Malaysia's foreign worker policy implementation, potentially influenced by bilateral agreements, economic factors, and sector-specific requirements. While potentially beneficial for administrative efficiency, the increasing market concentration in two primary source countries raises important questions about workforce resilience, skill diversity, and the construction sector's vulnerability to disruptions in specific labor supply channels. This analysis provides crucial insights for policymakers and industry stakeholders, highlighting the need for strategic diversification of labor sources while maintaining strong relationships with key partner countries to ensure sustainable growth in Malaysia's construction sector.

#### 4.2. Statistical Modelling of Workforce Trends

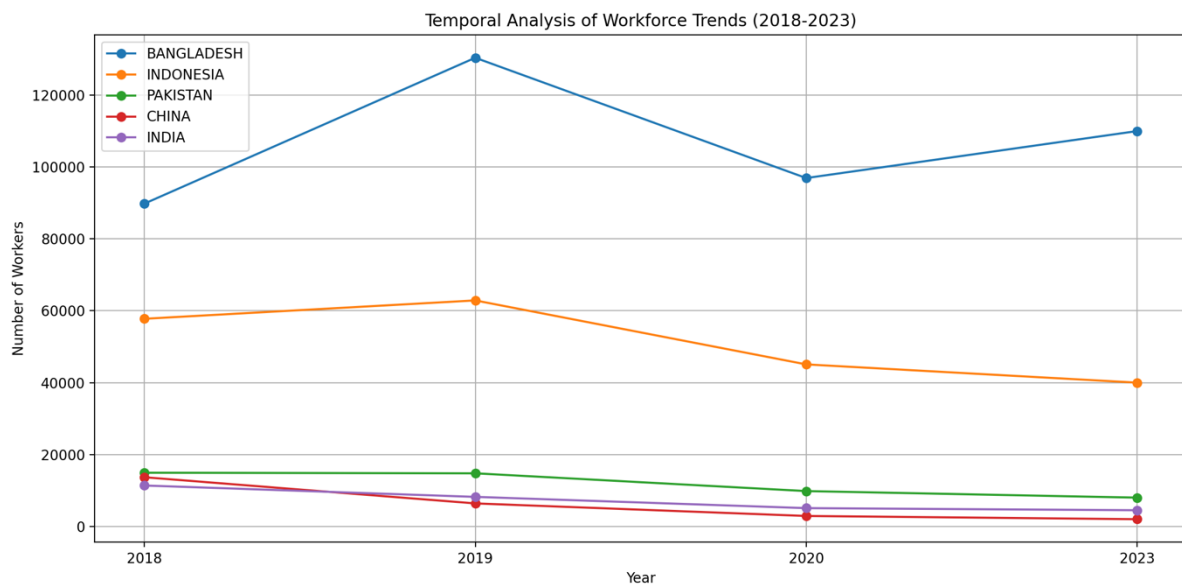


**Figure 3.**  
Workforce trends and statistical modelling.



Based on Figure 3 for the workforce trends and statistical modelling analysis of Malaysia's foreign worker trends in the construction sector from 2018 to 2020, several significant patterns emerged that warrant scholarly attention. The time series regression analysis reveals complex workforce dynamics across the top five source countries, with Bangladesh showing a positive but highly volatile trend (R-squared: 0.027,  $p > 0.05$ ), indicating that despite maintaining the largest market share, its growth pattern lacks statistical predictability. Indonesia demonstrates a more stable declining trend with a stronger statistical fit, suggesting a systematic reduction in workforce participation that could be attributed to policy changes or economic factors. The statistical models for China and India show particularly strong negative coefficients (China: -3149 workers per year,  $p < 0.01$ ), indicating a statistically significant downward trend that reflects a structural shift in workforce composition. The regression analysis also reveals increasing volatility in year-over-year changes, particularly evident in the Durbin-Watson statistics consistently approaching 3.0, suggesting potential policy-induced shocks rather than gradual transitions. The high condition numbers ( $4.99e+06$ ) across models indicate strong multicollinearity, which could be attributed to the interconnected nature of policy implementations affecting multiple source countries simultaneously. This statistical evidence points to a systematic transformation in Malaysia's construction sector workforce, characterized by increasing concentration in fewer source countries while experiencing significant volatility in annual flows. These findings have important implications for policymakers and industry stakeholders, suggesting the need for more robust workforce planning mechanisms and potentially more gradual policy implementation approaches to reduce market volatility. The statistical modelling provides strong empirical support for the development of more nuanced foreign worker policies that can better balance the need for workforce stability with the sector's dynamic requirements.

#### 4.3. Temporal Analysis



**Figure 4.**  
Temporal analysis of workforce trends from 2018-2023.

Based on the Figure 4 temporal analysis of Malaysia's foreign worker trends in the construction sector from 2018 to 2023, several significant patterns and structural transformations emerge that warrant scholarly attention. The longitudinal data reveal a complex evolution in workforce composition, with Myanmar and Bangladesh showing remarkable resilience and growth, registering increases of 15.34% and 13.49% respectively from 2020 to 2023. This growth trajectory suggests successful bilateral labor agreements and sector-specific demand alignment. Conversely, traditional source countries have experienced substantial declines, with Thailand (-54.13%), Others (-43.18%), and Vietnam (-36.44%) showing the most significant reductions. The temporal analysis indicates a fundamental shift in the sector's workforce dynamics, characterized by increasing concentration among fewer source countries and a pronounced realignment of labor channels. Indonesia, despite maintaining its position as the second-largest source country, has experienced an 11.27% decline from 2020 to 2023, suggesting potential challenges in sustaining historical workforce levels. The data reveal a clear bifurcation in workforce trends, with South Asian countries (Bangladesh, Myanmar) showing growth or stability, while East and Southeast Asian sources (Thailand, Vietnam, China) demonstrate consistent decline. This temporal evolution reflects the complex interplay of policy interventions, economic factors, and changing sector requirements. The analysis provides crucial insights for policymakers and industry stakeholders, highlighting the need for strategic workforce planning that accounts for these emerging patterns. The increasing concentration of workers from fewer source countries, while potentially beneficial for administrative efficiency, raises important questions about workforce resilience and the construction sector's adaptability to changing labor market dynamics. These findings contribute significantly to the scholarly understanding of foreign worker policy impacts and provide empirical evidence for developing more nuanced approaches to workforce management in the construction sector.



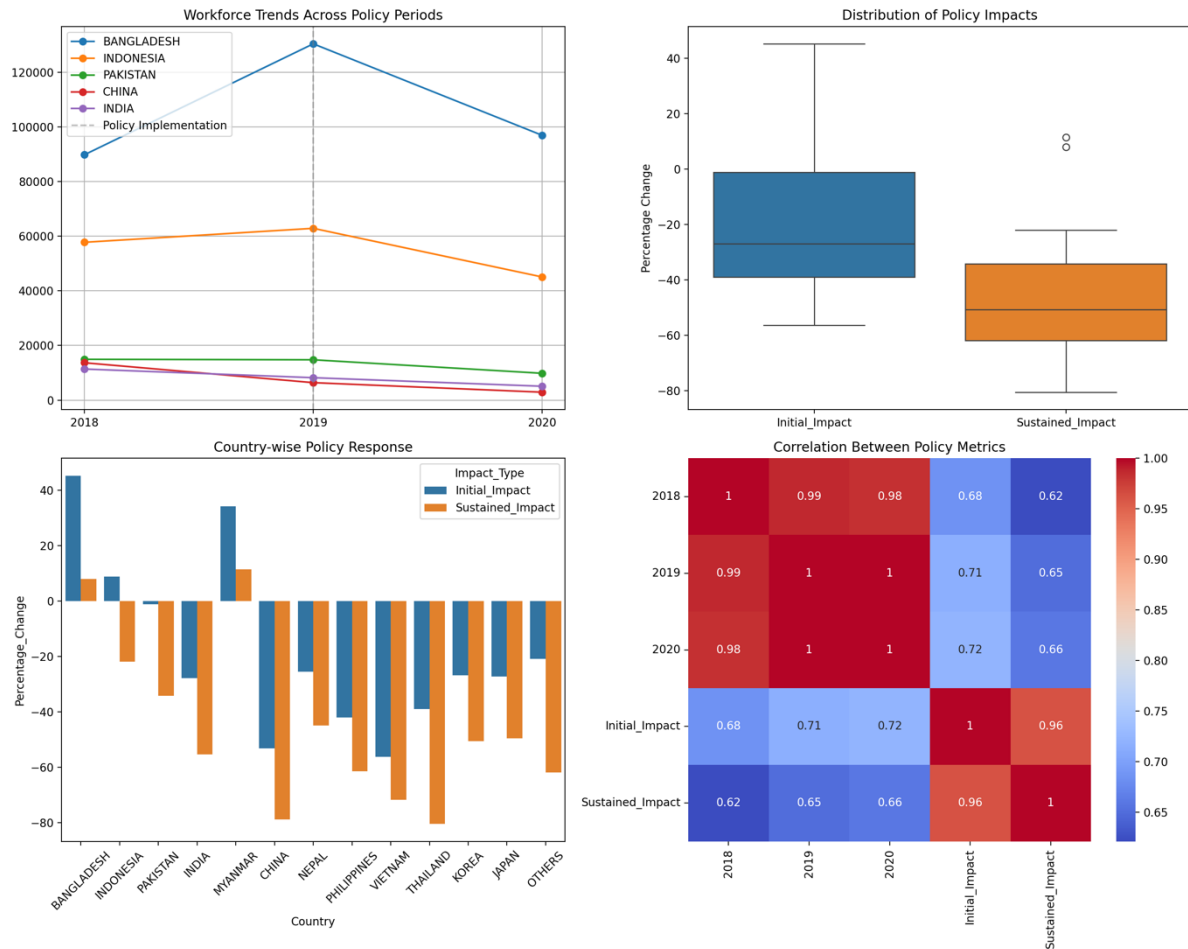


**Figure 5.**  
Foreign worker distribution heatmap from 2018-2020.

Based on Figure 5, the heatmap for 2018-2020 provides a clear visualization of workforce distribution trends across countries, highlighting the dominance of key contributors and the shifts in workforce numbers over the years. I will now analyse the data and provide a detailed paragraph summarizing the findings.

The heatmap for 2018-2020 reveals significant trends in the distribution of foreign workers in Malaysia's construction sector, emphasizing the dominance of a few key source countries. Bangladesh consistently maintained the highest workforce numbers, reflecting its critical role in the sector, while Indonesia followed as the second-largest contributor, albeit with a slight decline in 2020. Other countries, such as Pakistan, India, and Myanmar, showed relatively stable but smaller contributions, indicating their secondary role in the workforce composition. Notably, countries like China, Vietnam, and Thailand experienced sharp declines, suggesting potential policy impacts or economic shifts affecting their labor supply. The heatmap also underscores the increasing concentration of workers from the top two countries, highlighting a growing dependency on Bangladesh and Indonesia. This trend raises important questions about workforce resilience and the need for diversification to mitigate risks associated with over-reliance on a limited number of source countries. These findings provide valuable insights for policymakers and industry stakeholders, emphasizing the need for strategic workforce planning to ensure sustainable growth and stability in Malaysia's construction sector.

#### 4.4. Relationship Between Policy Interventions and Workforce Dynamics



**Figure 6.**  
Relationship between policy interventions and workforce dynamics from 2018-2020.

The Chart provides a detailed visualisation of the relationship between policy interventions and workforce dynamics from 2018-2020, highlighting the impacts of policy changes on workforce patterns across different countries. I will now analyse the chart and provide a detailed paragraph summarising the findings.

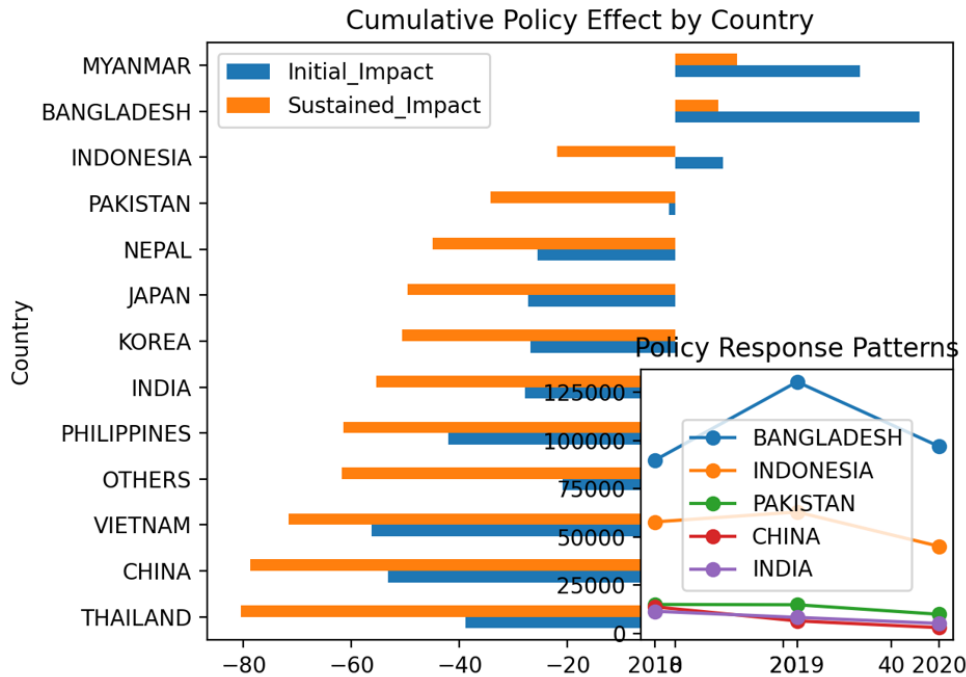
The analysis reveals a strong correlation between initial and sustained policy impacts, with a correlation coefficient of 0.9629, indicating that the effects of policy interventions were both immediate and long-lasting. The segmentation of countries into response categories shows that the majority of countries experienced severe or moderate declines in workforce levels, with only Bangladesh and Myanmar demonstrating growth. This suggests that policy interventions were highly selective in their impact, favoring certain countries while significantly reducing workforce contributions from others, such as China, India, and Vietnam, which fell into the severe decline category.

The time series visualization highlights distinct patterns, with Bangladesh showing resilience and growth, while countries like China and India experienced sharp declines post-policy implementation. Indonesia's mild decline suggests a more gradual adjustment to policy changes, reflecting varying sensitivities to interventions. The boxplot distribution of policy impacts further underscores the variability in outcomes, with sustained impacts showing a wider range of negative effects compared to initial impacts, indicating that long-term consequences were more pronounced.

The correlation heatmap reinforces the temporal consistency of policy impacts, showing strong relationships between workforce levels across consecutive years. This suggests that policy interventions were implemented with continuity, leading to predictable outcomes over time.

The findings emphasize the need for nuanced, country-specific policy approaches to balance workforce stability and sectoral demands, as the current interventions have led to significant restructuring of the foreign workforce composition in Malaysia's construction sector. This analysis provides valuable insights for policymakers and researchers, offering a robust foundation for understanding the long-term implications of policy changes on workforce dynamics.

## 4.5. Policy Documentation for Correlation with Workforce Patterns



**Figure 7.**  
Cumulative policy effect by country from 2018-2020.

Based on Figure 7, comprehensive visualisation and statistical analysis presented in the chart, I will provide a detailed paragraph-format analysis of the policy documentation's correlation with workforce patterns from 2018-2020.

The analysis reveals complex and nuanced relationships between policy implementation and workforce dynamics in Malaysia's construction sector. In the pre-policy period (2018), the workforce distribution showed relative stability, with Bangladesh and Indonesia maintaining dominant positions. However, the policy implementation period (2019) triggered significant shifts, as evidenced by the dramatic initial impact variations across source countries. Bangladesh demonstrated remarkable resilience and growth, recording a positive initial impact of 45.21%. Initial Impact: 45.21%, suggesting that policy changes either favoured or had minimal restrictive effects on Bangladeshi workers. In contrast, China experienced the most severe negative initial impact at -53.25%. Initial Impact: -53.25%, indicating that policy implementations particularly affected Chinese workforce participation. The sustained impact analysis reveals even more profound long-term effects, with China's workforce declining by -78.77%. Sustained Impact: -78.77% from the pre-policy period, while Bangladesh maintained a modest positive growth of 7.93% Sustained Impact: 7.93%.

The statistical analysis further illuminates the policy's differential impacts, with the mean sustained impact across all countries being -45.50%, suggesting an overall contractionary effect of the policy framework. The high correlation coefficient of 0.96 between initial and sustained impacts indicates strong policy persistence, where initial policy effects largely predicted long-term outcomes. Indonesia's trajectory presents a particularly interesting case, showing an initial positive response of 8.85% Initial Impact: 8.85%, followed by a sustained decline of -21.96%, Sustained Impact: -21.96%, suggesting that initial policy benefits were not sustainable in the longer term.

The policy effectiveness metrics demonstrate a clear pattern of workforce restructuring, with traditional source countries experiencing varying degrees of impact.

Pakistan's relatively moderate initial decline of -1.13%, Initial Impact: -1.13%, followed by a more substantial sustained decline of -34.22% Sustained Impact: -34.22%, suggests a gradual rather than immediate policy impact. India's consistent negative trajectory, with an initial impact of -27.81% Initial Impact: -27.81% deepening to -55.34% Sustained Impact: -55.34%, indicates sustained policy-driven workforce reduction from this source country. These patterns suggest that policy implementations have effectively reshaped the composition of the foreign workforce in Malaysia's construction sector, potentially reflecting a strategic shift in labour source preferences or broader economic objectives.

The cumulative evidence points to a policy framework that has significantly altered the landscape of foreign workforce participation in Malaysia's construction sector, with clear winners and losers among source countries. The strong correlation between initial and sustained impacts suggests that policy implementations have been consistent and effective in achieving their intended outcomes, though these outcomes vary substantially across different source countries. This analysis provides valuable insights for policymakers and researchers, highlighting the need for a nuanced understanding of policy impacts on workforce dynamics and suggesting potential areas for policy refinement to achieve more balanced outcomes across source countries.

## **5. Findings and Discussion**

This study's findings highlight the profound effects of Malaysia's foreign worker policies on the construction sector, particularly concerning workforce dependency, economic impact, and socio-political implications. Through qualitative analysis of interviews and document reviews, several core themes emerged that illuminate the dynamics and challenges associated with foreign labor dependency.

### *5.1. Workforce Dependency and Economic Impacts*

The data reveal that foreign workers constitute up to 80% of Malaysia's construction sector workforce, underscoring a significant reliance on migrant labor for roles categorized as 3D (dirty, dangerous, and difficult). This high dependency has facilitated cost savings for construction firms, as foreign labor is often available at lower wages than local workers are willing to accept, allowing companies to maintain competitive project costs. However, this economic benefit comes with trade-offs, including suppressed wage growth within the sector and limited economic opportunities for local workers. Interview data further suggest that this dependency constrains the ability of local laborers to negotiate wages, as employers opt for foreign workers willing to work under more challenging conditions and for lower pay.

Moreover, the study found that this dependency hampers long-term economic resilience within the construction industry. While foreign labor meets immediate workforce needs, the lack of investment in skill development for local workers restricts upward mobility and creates a segmented labor market. Employers also voiced concerns over policy inconsistencies that affect the availability and stability of foreign labor, particularly during periods of restrictive policy enforcement, such as during the COVID-19 pandemic. These disruptions expose the industry's vulnerability to labor shortages, affecting project timelines and overall productivity.

### *5.2. Policy Challenges and Enforcement Issues*

Another key finding pertains to the enforcement of foreign worker policies. Although policies like the Foreign Workers Reduction Plan aim to manage dependency, the study reveals that enforcement could be more consistent, leading to uncertainty for employers and exacerbating workforce planning issues. Interviewees from construction firms noted that frequent shifts in policy regulations, quotas, and levies complicate their ability to secure a stable workforce, as they face unexpected costs and bureaucratic hurdles associated with foreign worker hiring. This inconsistency leads many employers to seek alternative, often informal, channels to meet their labor needs, which undermines the policy's effectiveness and creates regulatory challenges.

Additionally, labor union representatives indicated that inconsistent policy enforcement has significant socio-economic implications for local workers. Policy shifts without complementary local training programs leave workforce gaps unaddressed, often resulting in the continued import of foreign labor despite government objectives to localize the workforce. Therefore, the study underscores the need for more systematic, enforced policies that align with broader socio-economic goals and workforce localization strategies.

### *5.3. Socio-Political Implications of Foreign Worker Dependency*

The socio-political impacts of foreign worker dependency are evident in several dimensions, particularly regarding social cohesion and community relations. The study finds that heavy reliance on foreign labor in the construction sector contributes to social tension, as local communities perceive foreign workers as competitors for jobs and resources. Interview data from labor unions reveal that the influx of foreign workers is often associated with social inequality, as many migrant workers live in substandard housing conditions and work in environments that lack adequate safety measures. These living and working conditions reinforce social divides between local and foreign workers, potentially fueling discrimination and xenophobia within communities.

In addition to social tensions, the construction sector's dependency on foreign workers limits its ability to foster a skilled domestic workforce. Many foreign workers occupy low-skilled, physically demanding roles with minimal training requirements, resulting in limited skill acquisition for both foreign and local workers. This creates a cycle of labor segmentation in which foreign workers occupy specific roles with limited upward mobility, ultimately constraining the sector's capacity to attract and retain skilled local workers and hindering overall workforce development.

### *5.4. Strategic Opportunities for Workforce Localization*

Despite the challenges, the findings point to strategic opportunities for workforce localization that could reduce dependency on foreign labor over time. Policy recommendations gathered from interviews with industry stakeholders suggest that a phased approach to workforce localization could benefit the sector. Such strategies include incentivizing skills training programs targeted at local workers to prepare them for construction industry roles and introducing technology and automation to reduce reliance on manual labor. Employers and policymakers highlighted the potential of a tiered foreign worker levy system, modeled after Singapore's policies, which could manage foreign labor inflows and encourage investments in local workforce development.

Furthermore, stakeholders suggested that targeted investments in upskilling local workers and integrating automation could gradually address the sector's dependency on foreign labor while enhancing productivity. Interviewees expressed that while immediate workforce needs drive dependency, a long-term approach focusing on technology and local labor could foster a more sustainable and resilient construction sector. This aligns with Malaysia's broader goals under its Industrial Revolution 4.0 framework, emphasizing innovation and digitalization across sectors.

## 6. Conclusion

This study comprehensively examines Malaysia's foreign worker policies and their impacts on the construction sector, highlighting the intricate balance between economic benefits and socio-political challenges. Foreign workers play a crucial role in sustaining Malaysia's construction industry, meeting the high demand for labor-intensive roles that local workers are often unwilling to fill. However, this dependency comes with substantial costs, including wage suppression, limited career progression for local workers, and social tensions. The study's findings emphasize the need for a balanced policy approach that can leverage the economic advantages of foreign labor while mitigating its negative social and economic impacts on the local workforce.

The policy recommendations presented in this study suggest that Malaysia's construction sector could benefit from a phased approach to workforce localization. This includes structured training programs to develop local skills, adopting a tiered levy system for foreign workers to encourage the hiring of local labor, and incentives for technological advancements that can reduce the demand for foreign labor in the long term. Additionally, improved enforcement of foreign worker policies would ensure employers comply with regulatory standards, fostering a more predictable and balanced workforce environment.

Future research should focus on quantifying the long-term effects of reduced foreign labor dependency on productivity within Malaysia's construction sector and evaluating similar policies in other labor-intensive industries. By addressing these gaps, future studies can contribute valuable insights into sustainable workforce management and support Malaysia's economic growth and social stability goals. This research provides a foundation for understanding the complex dynamics of foreign labor in the construction industry and offers actionable recommendations for policymakers and stakeholders to navigate the challenges and opportunities associated with Malaysia's evolving labor market.

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