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Evaluating Industry-Academia Synergy and the Triple Helix Model for a Resilient Workforce in Malaysia

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Abstract

The phenomenon of skills mismatch has emerged as a critical structural challenge within Malaysia's contemporary labour market, intensified by the disruptions caused by the COVID-19 pandemic and the accelerating pace of digital transformation. Broadly defined as the divergence between an individual's educational qualifications, knowledge and competencies and the requirements of their employment, skills mismatch can take several forms. In Malaysia, it is commonly reflected in vertical mismatch, where highly educated individuals are employed in positions below their qualification levels, and horizontal mismatch, where graduates work outside their fields of study or lack the occupation-specific competencies required by employers. Recent data from the Department of Statistics Malaysia (2024b) highlight the severity of this issue, indicating that approximately 37.4% of degree holders are employed in occupations below their qualification levels. More concerningly, this proportion has remained persistently high over the past five years, suggesting that graduate underemployment is not merely a temporary consequence of economic disruption but a deeply rooted structural problem.

At the centre of this mismatch lies a widening gap between the competencies produced by higher education institutions and the evolving demands of industries. Although Malaysian graduates generally possess recognised academic qualifications, employers frequently report deficiencies in communication, teamwork, critical thinking, problem-solving, digital literacy and workplace adaptability. In addition, rapid technological changes have increased the demand for data-related, analytical and digital competencies, while simultaneously reducing the

relevance of certain traditional job functions. Consequently, academic qualifications alone may no longer guarantee effective labour-market integration, particularly when graduates are unable to demonstrate practical skills, technical agility and the capacity to apply theoretical knowledge in real workplace situations (World Bank, 2021; Low & Mah, 2024a, 2024b).

For employers, skills mismatch can increase recruitment and training costs, reduce workplace productivity and limit organisational capacity to innovate. Firms may struggle to fill skilled positions despite the presence of a large pool of university graduates, indicating that the problem is not simply a shortage of educated workers but a lack of workers with the appropriate combination of technical, cognitive and interpersonal competencies. This situation creates a labour-market paradox in which graduate unemployment and underemployment coexist with employers' difficulties in recruiting suitably skilled employees.

Given the persistence of skills mismatch in Malaysia, this study aims to examine the extent to which workers' educational qualifications and competencies correspond with the requirements of their current employment. Specifically, the study seeks to identify whether demographic characteristics, such as gender, are associated with workers' job-matching outcomes; and provide recommendations for higher education institutions, employers and policymakers to improve the alignment between graduates' competencies and labour-market requirements. By achieving these objectives, the study is expected to provide a clearer understanding of the individual and structural factors contributing to skills mismatch in Malaysia. The findings may also support the development of more responsive educational programmes, employment practices and labour-market policies aimed at improving the utilisation of Malaysia's human capital.

Malaysia's expansion of tertiary education has considerably increased the supply of educated labour. However, the growth in graduate numbers has not been accompanied by a proportional increase in high-skilled and professional employment. This imbalance has contributed to skill-related underemployment, whereby individuals with tertiary education work in semi-skilled or low-skilled occupations. DOSM defines skill-related underemployment as the employment of tertiary-educated individuals in jobs classified below the skilled occupational level under the Malaysia Standard Classification of Occupations.

Official statistics demonstrate the persistence of the problem. In 2023, approximately 1.54 million Malaysian graduates were employed below their qualification levels, equivalent to a graduate skill-related underemployment rate of 32.4%. Younger graduates were particularly exposed because they were more likely to accept jobs below their qualifications to obtain income and work experience or to establish an initial position in the labour market.

Low and Mah (2024a, 2024b) found that graduate skill-related underemployment increased substantially between 2017 and 2021, even as the overall graduate employability rate improved. Their analysis showed that the proportion of graduates employed in skilled positions declined from 75.5% in 2017 to 66.1% in 2021, while the number entering semi-skilled and low-skilled occupations increased. The study also demonstrated that more than half of the jobs available between 2019 and 2022 were concentrated in semi-skilled occupations. Therefore, Malaysia's mismatch problem cannot be attributed solely to deficiencies among graduates; it also reflects insufficient demand for highly educated labour and the limited creation of high-skilled employment opportunities.

This finding illustrates the difference between graduate employability and employment quality. A high employability rate may create the impression that graduates have successfully entered the labour market, but it does not indicate whether their jobs correspond with their

qualifications, fields of study or career expectations. Assessments based exclusively on employment status may therefore underestimate the extent of human-capital underutilisation. Labour-market outcomes should also be evaluated according to occupational level, job–field relevance, earnings, career prospects and the extent to which acquired competencies are applied.

This study employs a qualitative research design to address a significant "voice gap" in academic discourse, where the employer perspective has remained marginalized. By conducting in-depth interviews with 24 employers across diverse sectors—including manufacturing, services, and SMEs. This research investigates the specific policy expectations held toward the state. The methodology utilized purposive sampling to recruit decision-makers in hiring and human resource development, ensuring information-rich insights. Data were analyzed using Braun and Clarke's (2006) six-phase thematic analysis, identifying six primary themes: financial support and upskilling incentives; structural and institutional barriers; systemic educational misalignment; industry-academia synergy; policy and governance reform; and the cultivation of a national learning culture.

The findings directly address the first research objective by identifying the forms of government support employers consider necessary for strengthening workforce skills and career adaptability. A strong consensus emerged regarding the need for greater state-led financial intervention. Participants generally perceived employee training as a shared socio-economic investment rather than the sole responsibility of individual firms. For example, R20 advocated for "grants and funding specifically tailored for SMEs," recognising that smaller firms often face financial constraints that limit their ability to provide continuous professional development. Similarly, R24 proposed personal "tax relief incentives" to encourage employees to participate voluntarily in training and upskilling programmes.

Nevertheless, participants emphasised that the availability of funding alone does not guarantee effective participation. Existing support mechanisms were perceived as administratively rigid and insufficiently responsive to differences among firms. R2 described the current "quota system" as restrictive because it limits employers' ability to develop talent proactively, while R1 highlighted "geographical limitations" that disadvantage firms located outside major urban areas. These findings indicate that employers expect financial assistance to be flexible, accessible and responsive to organisational size, location and industry-specific requirements. Therefore, the first objective is achieved by demonstrating that effective government support should combine targeted financial incentives with less restrictive and more inclusive implementation mechanisms.

The findings also address the second research objective by revealing employers' concerns regarding the alignment between the national education system and labour-market requirements. Participants perceived the existing skills deficit as originating before graduates enter the workplace. R19 argued that the "nurturing of future talents" should begin at the secondary-school level, suggesting that communication, problem-solving, digital competence and career awareness should be developed earlier in the education system. This perspective indicates that employers do not view graduate skills mismatch solely as a higher-education problem but as the cumulative outcome of weaknesses across different stages of education.

Employers also questioned the effectiveness of current internship structures. R2 observed that a "three-month internship" is often too brief for students to acquire meaningful occupational knowledge or demonstrate substantial competency development. Short placements may provide general exposure to the workplace but may not allow students to

participate in complex tasks, assume responsibilities or understand organisational processes in depth. Participants consequently advocated for longer, more structured and outcome-oriented internships.

To strengthen education–industry alignment, respondents supported closer collaboration among government, higher education institutions and employers. This reflects the Triple Helix Model, in which universities, industries and government jointly contribute to human-capital development. Participants suggested that industry professionals should serve as guest lecturers, mentors and curriculum advisers to ensure that educational content remains relevant to contemporary workplace requirements. R23 and R24 further recommended moving students "beyond the confines of the campus" through workplace projects, industry visits, practical assignments and experiential learning. Such initiatives may enable students to apply theoretical knowledge, develop professional confidence and gain a clearer understanding of employers' expectations (Harun et al., 2020; Low & Mah, 2024a, 2024b). The second objective is therefore achieved by identifying specific weaknesses in the education-to-employment transition and proposing practical mechanisms for improving the relevance of educational and internship experiences.

The third research objective is addressed through employers' demand for decentralised governance, regulatory agility and greater involvement in policy development. Participants expressed dissatisfaction with "top-down" policies that were perceived as being disconnected from the specific challenges faced by businesses. Rather than relying on standardised programmes, respondents advocated for a co-regulation approach in which government agencies, employers and industry associations jointly design, implement and evaluate workforce-development policies.

R19's recommendation that the government should "actively engage with employers" reflects a preference for Evidence-Based Policy Making. Under this approach, policies would be developed using current labour-market information, employer feedback and sector-specific evidence rather than broad administrative assumptions. Industry organisations such as the Malaysian Employers Federation and the Federation of Malaysian Manufacturers could serve as strategic intermediaries by communicating industry needs, identifying emerging skill shortages and evaluating the effectiveness of government programmes. Their involvement could help ensure that training policies remain responsive to technological changes and variations across industries.

The findings further demonstrate that effective upskilling requires the development of a broader national learning culture. R22 highlighted the importance of "government-led awareness campaigns" to reshape public attitudes towards lifelong learning and encourage individuals to view training as a continuous career responsibility rather than a remedial activity. R21 additionally proposed "collaborative partnerships with established companies," through which larger and more experienced organisations could share knowledge, technology and training resources with SMEs and younger enterprises. Such partnerships may reduce inequalities in access to expertise and strengthen the collective capacity of firms to respond to changing skill requirements.

In conclusion, this study highlights that current Malaysian government efforts are insufficiently coordinated and poorly aligned with the rapidly evolving needs of the labour market. The findings suggest that for workforce development policies to be truly responsive, they must be co-designed with the primary consumers of talent—the employers. This necessitates a strategic recalibration toward demand-driven policies, urgent reform in

curriculum design and internship structures, and the institutionalization of industry-academia partnerships. By drawing from international models like Singapore's SkillsFuture, Malaysia can foster a resilient workforce capable of navigating the volatility of the global economy through a transition from passive consultation to active partnership. Overall, the findings fulfil the research objectives by identifying three interconnected areas of employer expectation. First, employers require flexible and targeted financial assistance that recognises differences in organisational capacity and geographical location. Second, they expect education reform and stronger industry–academia collaboration to improve the relevance and practical application of graduates' competencies. Third, they advocate for participatory and evidence-based governance involving employers and industry associations in the development of workforce policies. Collectively, these findings show that addressing skills mismatch requires more than isolated training programmes. It requires an integrated human-capital development strategy combining financial support, educational reform, experiential learning, collaborative policymaking and the promotion of lifelong learning.

Keywords:
Skill mismatch; Graduate employability; Industry-Academia Synergy; Human Capital Development; Resilient workforce

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