## Collaborative Models for Community-Driven Industrial Education: Enhancing Workforce Development Through Partnership Programs in Malaysia

\*Farhana Akter<sup>1</sup>, Md Rofi Uddin Shakil<sup>1</sup>, Yeasmin Akter<sup>1</sup>, Kanij Fatema<sup>1</sup>, Noor Jannah Binti Afi<sup>1</sup>, Norizan Azizan<sup>1</sup>, Kamal Ab Hamid<sup>2</sup>

<sup>1</sup>School of Business and Social Sciences, Albukhary International University, Alor Setar, Malaysia
<sup>2</sup>International Islamic University Sultan Abdul Halim Mu'adzam Shah Kuala Ketil, Kedah, Malaysia
\*farhanafariha627@gmail.com, shakilmdrofiuddin@gmail.com, yeasmin9066@gmail.com,
fkanij336@gmail.com, afi.njannah@gmail.com, ijansmsk@yahoo.com, abkamal38@gmail.com
Corresponding Author: Farhana Akter

Abstract: This study analyses the value of collaborative education strategies for improving workforce development in Malaysia, focusing on collaborations between educational institutions and industry. In recent years, the Malaysian job market has experienced major challenges, especially in terms of graduate preparation for employment. Many graduates struggle due to inadequate skills and limited employment opportunities, emphasizing the critical need for comprehensive educational changes. These coordinated activities aim to bridge the education-industry divide by developing connections between academia and the business sector. Moreover, the study uses a qualitative approach, conducting in-depth interviews with industry managers to understand better the impact of partnership programs, government support, and community participation on workforce readiness. Through these interviews, the study emphasizes the importance of collaborative education in providing graduates with the skills and competencies they need to succeed in a competitive work market. The findings show that, while these collaborations significantly boost graduates' employability and skill sets, issues such as unequal access to opportunities and an overreliance on government assistance remain. Furthermore, the analysis discovers gaps in the available literature, particularly in the context of Malaysia, emphasizing the need for further research targeted to this environment. Future research directions will include empirical investigations to quantify the impact of collaborative education initiatives, quantitative analyses to evaluate the efficacy of various programs, and policy recommendations to improve Malaysia's workforce development and foster long-term economic growth. By addressing these issues, the study hopes to contribute to a more comprehensive understanding of how collaborative education may effectively bridge Malaysia's skills gap.

**Keywords:** Collaborative Education, Workforce Development, Skill Enhancement, Industry Partnership, Community Engagement.

#### 1. Introduction

In today's uncertain and dynamic business market, organizations must prioritize human capital to maintain competitiveness and financial stability. An organization's success is determined not just by its survival but also by the productivity of its workforce—employees who are effective and efficient. Organizations increasingly recognize that the intangible aspects of human capital, such as knowledge, skills, and drive, are critical for market distinction and sustainability. Adaptable personnel who can navigate rapidly changing company settings are considered critical (Valle & Castillo, 2008). Furthermore, US organizations allocate more than \$126 billion every year to staff training and development. In an uncertain world, having business expertise and market insight gives you an established competitive advantage. As a result, knowledge is increasingly regarded as a vital capital that promotes progress. Organizational success depends on a competent, skilled, and experienced workforce (Parween, 2024).

According to Bray et al. (2011), there has been a split between the business community, which produces jobs, and the education community, which provides secondary school students and others with the information and skills they need to succeed in the workforce. For the most part, business leaders and educators live and work in very different worlds. For instance, the Department of Labour refers to "industries," but the Department of Education refers to "career clusters." They communicate in separate languages. They bear various levels of responsibility and have different success criteria. Teachers are evaluated based on their students' success on exams, not how well they do in the future. According to Kumar et al. (2000), entrepreneurs are graded on how creatively and profitably they manage their enterprises, with a focus on producing and advertising their goods

and services, increasing their customers, guaranteeing employee satisfaction, and generating a profit. Facilitating driven by the community's educational institutions through collaborative approaches is critical for enhancing Malaysia's job prospects. The purpose of these commitments between academic institutions and industry is to produce graduates with advanced capabilities that match market demands. Setting goals, building partnerships, and managing a team are the three essential elements of successful collaboration (Rashidi, 2013).

According to Sohimi et al. (2019), in the context of the current Fourth Industrial Revolution, business participation in curriculum development should be developed, and resource sharing should be prioritized. Malaysian vocational colleges foster collaboration through expert sharing, human capital growth and development, quality inspection, and job-based education programs (Sappar et al., 2024). Although some logistical issues must be handled, work-based educational projects in local educational institutions have been shown effective in increasing students' understanding of technological improvements and boosting their talents (Kamin et al., 2010). These collaborative activities are critical to preparing Malaysia's rapidly changing industrial landscape for a globally competitive workforce.

However, we live in an era of growing responsibility, which affects higher education. The need for society to realize the benefits of investing in college or university and how it benefits people both economically and socially is growing. Despite this, it is critical to ensure that higher education is relevant to the community, corporate sector, government bodies, industry groupings, and non-profit organizations (Palliam et al., 2010). According to Gill (2009), universities must recognize that the emphasis has changed away from increasing population educational opportunities and scientific production to using higher education training and study to achieve specific economic and social objectives. These projects can be conducted in collaboration with corporations, non-governmental organizations, and community groups to benefit both parties.

#### **Research Objectives**

- To identify how collaboration structure influences workforce development.
- To identify the partnership program influences workforce development.
- To study the government's role in influencing workforce development.
- To study how community engagement influences workforce development.

#### **Research Questions**

- Does collaboration structure influence workforce development?
- Does the partnership program influence workforce development?
- Does the government's role influence workforce development?
- Does community engagement influence workforce development?

#### **Problem Statement**

The competencies offered by traditional schools and universities in Malaysia have become significantly out of step with the changing needs of business. Graduates' lack of technical knowledge and crucial soft skills limit their job opportunities and slow economic growth. To generate a workforce that meets industrial objectives, this gap must be closed by focusing on community education efforts (Gill, 2009).

In Malaysia, current types of collaboration between universities, corporations, and charitable organizations are frequently unstructured, resulting in unplanned projects that do not fully capitalize on the potential. This misunderstanding makes it more difficult for institutions to tailor their curricula to the needs of industry and society. Establishing effective cooperation mechanisms is critical to the relevance and efficacy of workforce development activities (Gill, 2009).

#### 2. Literature Review

#### Collaborative Structures Between Education and Industry in Malaysia

In Malaysia, effective collaboration between educational institutions and industries is built on several foundational elements. Key among these is the establishment of mutual trust, open communication, and a

strong commitment from both parties' management (Yee et al., 2015). These collaborations are not solely dependent on the willingness of universities and industries to engage but also on the pivotal role of government support in terms of funding and policy facilitation (Ramli & Senin, 2021). The effective integration of education, technology, and work environments is crucial for fostering collaborations that significantly impact learning outcomes and skill development. Rashidi (2013) highlights that successful integration hinges on three primary components: the establishment of partnerships, the efficient management of cooperative efforts, and the influence these collaborations exert on the learning process.

Incentive schemes play a crucial role in these collaborative efforts, particularly in influencing both process and outcome-related criteria. For instance, while incentives can positively drive outcomes, they may also inadvertently affect procedural norms if not managed correctly (Ramli & Senin, 2021). A nuanced understanding of these dynamics is essential for managing future collaborative relationships, especially in the context of enhancing the quality of instruction in Malaysian Technical and Vocational Education and Training (TVET) programs (Yee et al., 2015).

An illustrative example of effective collaboration is a university partnering with a technology company to develop a cybersecurity program. In this scenario, the corporation provides internships and hands-on training opportunities, while the educational institution offers academic expertise. Government funding supports the establishment of training facilities, and an awards program recognizes the contributions from both sides. This example underscores the importance of integrating support from government, industry, and educational institutions to enhance student learning experiences and better prepare them for the workforce (Kamaruddin et al., 2017).

# Partnerships Programs Between Education and Industry in Malaysia

Community-driven industry-academia alliances have been increasingly popular in Malaysia in recent times. Universities are becoming more and more acknowledged as essential parts of the country's innovation system, contributing significantly to the progress of technology and knowledge transfer. For instance, the University-Industry Innovation Exchange (UNIX) internship program blends industrial training with research projects to improve students' practical skills and fortify the links between academia and industry. To empower students, Universiti Teknologi Malaysia (UTM) demonstrates this strategy by cultivating enduring partnerships with corporations, the government, and the community. The UTM-Industry Innovation Exchange (UNIX), an inventive approach at UTM, allows for the integration of up to 50% of work-based learning into the curriculum. This method combines transdisciplinary research and design projects with industry training to tackle real-world problems, especially those posed by the Fourth Industrial Revolution. The program aims to equip graduates with the skills needed for both professional life and societal contribution, thereby reinforcing the relationships between industry, academia, and the community (Sánchez-García & Alwi, 2020).

By providing graduates with the necessary skills for both professional life and social engagement, the program hopes to strengthen the bonds that exist between academics, industry, and the community (Sánchez-García & Alwi, 2020). In addition, research findings are efficiently utilized in real-world situations thanks to the Knowledge Transfer Program (KTP), which fosters partnerships between academics and community partners (Firdaus et al., 2020). However, when weighing the proportion of industry-driven and society-driven approaches in higher education, a critical assessment is required. A society-driven approach addresses larger social requirements and encourages holistic development, whereas industry-driven education concentrates on developing skilled individuals customized to fulfill the demands of the economy (Nathan et al., 2013). Partnership programs need to be updated to suit the expectations of Industry 4.0 as Malaysia navigates these new obstacles. This entails developing in students the ability to tackle social issues in addition to providing them with the technical skills needed by contemporary companies. This results in a more sustainable and well-rounded approach to workforce development and education.

#### **Government's Role in Collaborative Models**

According to Sohimi et al. (2019), In Malaysia, collaborative approaches to industrial education and workforce development are mostly determined by strategic collaborations between the government, industry, educational institutions, and non-governmental organizations (NGOs). The government plays an important role in training the workforce for the Fourth Industrial Revolution, especially by providing financial assistance,

establishing regulatory frameworks, and implementing strategic initiatives. While government intervention is required, overreliance on it can unintentionally impede innovation and change the organic dynamics that promote successful collaborations. This reliance risk may eventually endanger the sustainability and adaptability of these partnerships, necessitating a different approach to government participation.

Corporate-NGO partnerships are an essential aspect of cross-sector collaborations, particularly when solving complex societal concerns. These partnerships are a component of a larger network of interactions between businesses, nonprofits, and governments. The efficiency of such cooperation relies on an in-depth understanding of each community's particular points of view, interests, and dangers. Bigger companies often supply the financial resources required for social impact projects, which are then carried out by non-governmental organizations (NGOs). Smaller non-governmental organizations (NGOs), despite their deep community connections and competence, may struggle due to resource limitations. Stakeholder theory emphasizes the vital need to integrate NGO missions with business objectives to ensure financial viability through CSR operations. For example, Malaysia's first green childcare center was built by the Women's Aid Organisation (WAO) with funding from the Real Estate and Housing Developers' Association (REHDA) and other partners. This initiative demonstrates how NGOs can improve business credibility and trust by changing potentially hostile partnerships into collaborative efforts focused on long-term sustainability and shared value generation (Ahmad et al., 2024).

#### **Community Engagement in Education**

Community engagement is critical to improving vocational education in Malaysia, with a considerable impact on students' academic performance and skill development (Lim & Mustafa, 2013). While the quality of vocational training varies by industry, it generally helps students improve their overall talents, notably their interaction skills and English fluency. Furthermore, problem-based learning approaches, such as industryspecific final-year projects, have been demonstrated to improve students' competencies, independence, and academic engagement. Community-based initiatives enhance students' academic achievements, life skills, civic participation, and personal growth by displaying a comprehensive approach to educational development (Selvaratnam, 2013).

Addressing the problems of Industry 4.0 necessitates novel approaches, such as the Communities of Educational Engagement (CEE) program, which promotes institutional-community interactions through research into emerging technologies such as the Web and the Internet of Things. For example, the CEE program at a Malaysian educational institution provides hands-on experience in robotics, drone technology, and Japanese language studies. These projects highlight the vital need to incorporate real-world, industry-focused activities into university curricula. This integration not only aligns educational programs with changing economic demands, but it also improves community relationships, preparing students for future industrial requirements and improving their entire educational experience (Shabdin et al., 2020).

#### Industrial Education and Workforce Development in Malaysia

Industrial education and workforce development are essential components of Malaysia's plan for preparing workers to meet the demands of a rapidly evolving economy. The Malaysian education system provides an extensive selection of training programs through higher education institutions, Technical and Vocational Education and Training (TVET) schools, and community colleges, all designed to provide individuals with the practical and technical skills needed in a variety of industries. For example, vocational education programs in automotive technology, culinary arts, and electrical engineering provide hands-on training that closely matches industry standards and expectations (Ismail & Abiddin, 2014).

In addition, the National Dual Training System (NDTS) is an important part of this strategy, as it effectively integrates classroom learning with business experience, promoting strong connections between educational institutions and the corporate sector. This collaboration guarantees that training programs remain relevant and effective, meeting the industry's particular demands. Despite these achievements, Malaysia's workforce continues to face challenges, such as a significant skills mismatch in which graduates' qualifications do not fully align with industry needs, low participation rates in training programs, and the ongoing need for continuous learning as technology advances at a rapid pace. This skills gap is a huge danger to industries, limiting their ability to innovate and compete on a global scale. To address these concerns, the Malaysian government has

launched various strategic programs. The Third Outline Perspective Plan emphasizes lifelong learning and the integration of job-based education into the national curriculum, whilst the Human Resource Development Fund (HRDF) encourages firms to invest in their employees' ongoing training (Rashidi, 2011). According to Leong et al. (2010), these activities are vital for bolstering workforce skill sets and ensuring Malaysia's viability in an increasingly complex economic context.

# **Conceptual Framework**

The conceptual framework for this study will include the following components:



# Hypotheses Development and Research Module

Based on the conceptual framework, the following hypotheses are proposed:

# Hypothesis 1 (H1)

**Positive Hypothesis (H1a):** Collaborative structural education positively affects workforce development in Malaysia.

**Industry-Academia Collaboration**: Research shows that businesses that partner with academic institutions experience greater productivity and innovation. Collaborative models allow the curriculum to be tailored to industry needs, resulting in graduates who are better prepared for the workforce (Salleh & Omar, 2013).

**Government Policies**: Since the 1990s, the Malaysian government has promoted university-industry collaborations to boost research and development (R&D) at the firm level, directly impacting workforce readiness (Dali et al., 2023).

**Negative Hypothesis (H1b):** Collaborative structural education does not significantly affect workforce development in Malaysia. Limited Impact: Some studies suggest that despite efforts to align education with industry needs, the impact on workforce development may be minimal due to bureaucratic inefficiencies, mismatches in expectations between industry and academia, and a lack of sustained collaboration (Nadarajah, 2021).

**Limited Impact**: Some studies suggest that despite efforts to align education with industry needs, the impact on workforce development may be minimal due to bureaucratic inefficiencies, mismatches in expectations between industry and academia, and a lack of sustained collaboration (Nadarajah, 2021).

Skills Mismatch: There are cases where graduates still face a skills mismatch even in collaborative education

models, indicating that these initiatives alone may not be sufficient to meet the diverse and evolving needs of the job market (Sala, 2011).

# Hypothesis 2 (H2)

Positive Hypothesis (H2a): Partnership programs which is involve industrial education programs significantly improve graduates' workforce development in Malaysia.

**Practical Experience**: Partnership Programs involving community and business collaborations offer practical skills and experiences that are crucial for improving employability. Internships, apprenticeships, and hands-on training are shown to align graduates' skills with market demands (Shah et al., 2023).

**Higher Employability:** Graduates from partnership programs with strong industry involvement show higher employability rates and job readiness compared to those from traditional academic programs (Nadarajah, 2021).

**Negative Hypothesis (H2b):** Partnership program industrial education programs do not significantly improve graduates' workforce development in Malaysia.

**Lack of Long-Term Impact:** Some studies argue that the benefits of Partnership program programs may be short-lived, with graduates failing to maintain long-term employment or advance in their careers due to an overemphasis on practical skills and underdevelopment of theoretical knowledge (Karim et al., 2020).

**Unequal Access**: According to Lindsay et al. (2012), these Partnership programs may also suffer from unequal access, where only certain communities or industries benefit, leaving others behind and thus not contributing to overall workforce development.

#### Hypothesis 3 (H3)

**Positive Hypothesis (H3a):** Government role interventions are critical for the success of collaborative education models in Malaysia.

**Policy and Funding:** Effective government policies and funding are essential for sustaining collaborations between educational institutions and industries. Initiatives like PENJANA KPT-CAP and PENJANA KPT-PACE have been crucial in making graduates more marketable (Shah et al., 2023).

**Alignment with National Goals:** Government interventions ensure that educational programs align with national manpower growth objectives, thereby directly contributing to workforce development (Salleh & Omar, 2013).

**Negative Hypothesis (H3b):** Government role interventions are not critical for the success of collaborative education models in Malaysia.

**Overreliance on Government**: Some researchers argue that an overreliance on government support can stifle innovation and lead to a dependency culture among educational institutions and industries, ultimately hindering the success of collaborative models (Yusof & Rahman, 2019). Private Sector Independence: There is also evidence that the private sector can successfully drive collaboration independently of government interventions, particularly in more dynamic and competitive industries (Tan & Tee, 2020).

#### Hypothesis 4 (H4)

**Positive Hypothesis (H4a):** There is a significant relationship between community engagement in education and workforce development of essential soft skills.

**Development of Soft Skills**: Community engagement activities have been shown to significantly enhance students' soft skills, such as communication, problem-solving, and teamwork, which are highly valued by employers (Asefer & Abidin, 2021).

**Workplace Readiness:** Studies highlight that graduates who participate in community-driven programs are better equipped with the soft skills necessary for workplace success, leading to higher employability and job satisfaction (Feraco et al., 2023).

**Negative Hypothesis (H4b):** There is no significant relationship between community engagement in education and workforce development of essential soft skills.

**Inconsistent Outcomes:** Some research indicates that community engagement only sometimes leads to developing soft skills, with outcomes varying significantly based on the nature of the activities and the level of student participation (Shabdin & Sulaiman, 2020).

**Alternative Methods:** Other studies suggest that soft skills can be equally or more effectively developed through other means, such as targeted soft skills training programs, rather than relying solely on community engagement (Thakur, 2023).

# 3. Methodology

# **Research Design and Approach**

The intended research strategy for this study is the qualitative research methodology that seeks to understand the various ideas, perceptions, and experiences that industry managers hold concerning collaborative models of training the workforce in Malaysia. Unlike other studies that hypothesize some assumptions, this work aims to discover how the collaboration of schools/ universities and firms impacts skills development within the workforce. The actual investigation is based on extensive research questions that are formulated given developing knowledge regarding the nature and consequences of such collaborations.

# **Data Collection**

# In-Depth Semi-structured Interviews:

The major research data for this study was obtained from the semi-structured interviews conducted with the managers of four companies involved in educational partnerships with Malaysian institutions. The interviews were therefore structured in a way that focused on the participants' participation and perceptions of the collaboration models.

Interview Protocol: The interview schedule consisted of a list of broad questions that aimed at getting rich information on the participant's participation in educational partnerships, perceived benefits and drawbacks of partnerships, and participant perceptions of governmental and communal involvement in workforce development. Examples of questions included:

- How does your company currently engage with educational institutions for workforce development?
- What are the key benefits you have observed from participating in collaborative education programs?
- Can you describe any specific partnership initiatives your company has with educational institutions or community organizations?
- How do these collaborations impact the skill development and job readiness of graduates?
- What challenges have you encountered in forming and maintaining partnerships with educational institutions?
- How does your company contribute to the curriculum development or training programs of educational institutions?
- What role does government policy play in facilitating or hindering your collaborative efforts with educational institutions?
- How do you assess the effectiveness of these collaborative programs in meeting your workforce needs?
- What types of skills or competencies do you find most lacking in graduates entering the workforce?
- How can educational institutions better align their programs with the evolving needs of your industry?

Sampling Method: To target the participants who have a direct link with the context of interest, the purposive sampling technique was applied. The various industries are depicted by the selected companies with the expectation that there will be a variation in the information delivered. This approach enables the researchers

to draw substantial investigation of the research questions within the Malaysian Workforce Development context.

Interview Process: It is important to note that the interviews were conducted in three rounds, which involved face-to-face, audio-online, and written interviews depending on the availability of the participants. Every interview took me roughly between 25 and 30 minutes to complete a single interview. The interviews were conducted in a face-to-face manner with the permission of the participants, and the interviews and notes were taped.

# Data Analysis

# **Thematic Analysis:**

The data that was obtained from the interviews was written down and analyzed using thematic analysis, which is a widely used procedure in qualitative research for identifying, analyzing, and reporting themes from the collected data.

Coding Process: The first step was simply to read the transcripts more than once to get a general picture of what has been said. To develop first-level initial codes, the researchers relied on significant phrases and concepts that were common with other interviews. These codes were then clustered into the bigger categories that were exercising or dealing with collaboration models, partnership programs, government roles and participation, and community engagement.

Use of Software: This allowed the data to be sorted and analyzed using NVivo software that was adopted for the study. This software was used in managing the coding aspects and in successive ways in relations between themes.

Triangulation and Member Checking: To increase rigor, triangulation was used by comparing data obtained from different subjects and using different modes of interviews; face-to-face interviews, audio online interviews, and written interviews. Furthermore, to increase credibility, participants were allowed to review the interview transcripts (member checking).

# Reporting of Findings

# Integration of Participant Voices:

To support the research, interview responses are incorporated in the report in the form of quotations from the interviewees. These quotes are to substantiate the identified themes of the present study and to present examples for conclusions. For example, when discussing the impact of partnership programs, a participant noted: For example, when discussing the impact of partnership programs, a participant noted:

"In our experience with the local university, the effectiveness of graduates that they produce has recently enhanced their job readiness as they are experienced when they come to us because of these programs we have nurtured."

Lots of such quotes enrich the analysis and link the results and the respondents' stories more straightforwardly.

# Theoretical Framework

Thus, even though the present study is considered in a way first and primary, the discussion of its results will proceed within the smaller framework that can be associated with current theoretical discourses on workforce development, industry-education partnerships, and community upliftment initiatives. The study brings additional learning that aligns with the existing theory and research findings in another socio-economic and cultural setting such as Malaysian businesses.

# **Ethical Considerations**

The necessary clearances from the institutional review board for conducting the research were sought before the start of the study. Potential participants of the study were explained the purpose of the study and their rights; this was followed by their right to withdraw from the study at any instance. Written consent was sought from all the women before interviewing them. It has been made certain that participants were not readily identifiable to preserve their confidentiality and the anonymous nature of the study.

# Limitations

One major limitation of this study is that it is qualitative and had a purposive sampling method; therefore, the findings may not be generalizable. Nevertheless, the abundance and richness of data yield useful information about the Malaysian context of industry-education collaboration. For future research, the conclusions presented in this study could serve as the basis for investigation with increased use of a mixed research approach due to a precise assessment of the identified impacts.

# 4. Results

# **Collaboration Structure**

- 50% (2 respondents) emphasized the importance of a well-structured collaboration model for workforce development.
- 25% (1 respondent) highlighted challenges such as bureaucratic inefficiencies.
- 25% (1 respondent) did not express a clear opinion.

The findings provide partial support for H1a, suggesting that collaboration structures positively impact workforce development, despite some challenges.

# Partnership Programs

- 75% (3 respondents) believe that partnership programs are crucial for improving workforce development.
- 25% (1 respondent) did not consider partnership programs significantly impactful.

The findings strongly support H2a, indicating that partnership programs play a vital role in workforce development.

# **Government Role**

- 25% (1 respondent) emphasized the critical role of government interventions.
- 50% (2 respondents) noted government involvement as important but not critical.
- 25% (1 respondent) did not see government intervention as necessary.

The findings provide limited support for H3a, suggesting government interventions are recognized but not the most critical factor.

#### **Community Engagement**

- 50% (2 respondents) emphasized the importance of community engagement in developing essential soft skills.
- 25% (1 respondent) acknowledged the value of community engagement but did not see it as critical.
- 25% (1 respondent) did not emphasize its significance.

The findings provide partial support for H4a, showing that community engagement plays a significant role in developing essential soft skills.

Aspects	Support for Positive Hypothesis	Percentage	Support for Negative Hypothesis	Percentage	Key Insights
1 Collaboration Structure	2 respondents	50%	1 respondent	25%	Partial support for H1a. Collaboration structures are crucial but face challenges such as bureaucratic inefficiencies and mismatches between

industry and academia.

2 Partnership Programs	3 respondents	75%	1 respondent	25%	Strong support for H2a. Partnership programs are vital for aligning academic training with industry needs and improving job readiness and skills.
3 Government Role	1 respondent	25%	2 respondent	50%	Limited support for H3a. Government interventions are important but not viewed as the most critical factor.
4 Community Engagement	2 respondents	50%	1 respondent	25%	Partial support for H4a. Community engagement is significant in developing essential soft skills, though its criticality is debated among respondents.

# Discussion

The conceptual framework identifies several critical elements that influence Malaysian collaborative education models' ability to grow the workforce. These consist of collaboration structures, partnership programs, government involvement, and community engagement.

According to the framework, industry-academia collaboration is essential for producing workforce skills that meet changing market expectations, especially considering the fourth industrial revolution (Sohimi et al, 2019). Through this relationship, academic institutions enhance the relevance of their curricula and produce graduates who are ready for the workforce, while businesses can access young talent and support advances in technology (Suparno et al., 2023). Industry participation in curriculum creation, resource pooling, and the establishment of precise evaluation standards for industrial training are all examples of successful collaboration techniques (Sohimi et al, 2019). On the other hand, Malaysia's National Dual Training System (NDTS) is an excellent example of how governmental institutions, businesses, and universities collaborate to improve worker preparedness (Rashidi, 2013). Employers are requesting more practical skills than knowledge from academia, and our partnership approach fills that need by combining classroom instruction with realworld industrial experience (Angolia et al., 2014). Setting goals, forming partnerships, managing collaborations, and assessing achievement are all essential components of a successful team effort (Rashidi, 2011). These collaborations make it possible to share resources and expertise, which raises the learning programs' practical significance (Rawlinson & Dewhurst, 2013). Gaining "work-ready" graduates, including the transfer of knowledge into curriculum design, and satisfying industry demands for skilled labor are some advantages (Rawlinson & Dewhurst, 2013).

Moreover, several programs and assistance systems by the Malaysian government play a critical role in fostering collaborations between the academic sector and business. These include financial resources, regulatory structures, and acknowledgment initiatives that promote cooperation (Seow et al., 2015). To promote entrepreneurial education and university-industry collaboration, the government has put plans like the National Higher Education Action Plan and the Education Blueprint of Malaysia into place (Kamaruddin et al., 2017). Furthermore, through focused programs, the government promotes technology transfer and the industrialization of academic research (Mohd et al., 2014). Apart from this, student learning is improved and social needs have been addressed by community engagement in higher education. It's regarded as a high-impact approach that helps children understand civics and gets them ready for employment (Noel, 2014). According to Olson (2017), the comprehensive program design method provides a framework for engaging

students through educational activities that foster community emergence as well as capacity building. Academic: Universities are under growing pressure to address community demands and guarantee that graduates are prepared for the workforce. Collaborations have been demonstrated to produce novel insights and improve student experiences (Brewer & Jones, 2014).

Therefore, the conceptual framework emphasizes how Malaysian recruitment and retention is effective because it is varied and collaborative. Strong collaborations between academics, companies, the government, and community members enable colleges and universities to create curricula that are appropriate for the industry and provide students with the hard and soft skills necessary to prosper in an economy that is shifting. Maintaining Malaysia's talent flow for the future will need sustained investment and collaboration among these significant partners.

# 5. Conclusion

To summarise, this study emphasizes the importance of partnership between educational institutions and companies in Malaysian workforce development. Partnership programs play an important role in training graduates for today's labor environment. While there are some drawbacks, such as unequal access to these programs and the possibility of short-term advantages, the overall impact is good. The government also plays a significant role in facilitating and covering these collaborations. However, it is critical to avoid becoming excessively reliant on government help, as this could hinder innovation. A balanced approach that supports public and private sector collaboration is required for long-term success. Furthermore, participation in the community helps students develop crucial soft skills such as communication and cooperation, which employers respect greatly. Overall, a successful workforce development strategy in Malaysia must include strong partnerships, government assistance, and community involvement. Working together allows us to better educate graduates for the workforce and contribute to the country's economic prosperity.

# References

- Ahmad, Z., Arshad, R., & Ahmad. (2024). NGOs and community: A case study of roles of NGOs in Malaysia. *AIP Conference Proceedings*, *2799*(1). https://doi.org/10.1063/5.0181974
- Angolia, M.G., Pickard, J., Pagliari, L., & Lesko, C.J. (2014). Building Sustainable Industry Partnerships That Engage Faculty and Prepare Job-Ready Students.
- Asefer, A., & Abidin, Z. (2021). Soft skills and graduates' employability in the 21st century from employers' perspectives: A review of literature. *International Journal of Infrastructure Research and Management*, 9(2), 44-59.
- Bray, J., Painter, R., & Rosin, M. (2011). Developing Human Capital: Meeting The Growing Global Need for A Skilled and Educated Workforce. *Business and Education Working Together Can Reduce Barriers to Employment and Create New Pathways to Career Development and Job Growth.* Chief Executive Officer National Association of Workforce Boards (NAWB). Introduction: Businesspeople from Mars? Educators from Venus?
- Brewer, M.L., & Jones, S.C. (2014). A University-Community Engagement and Leadership Model.
- Dali, N. R. S. M., Nawang, W. R. W., Hamid, H. A., Misbah, H., Nawai, N., Johari, F., ... & Lee, U. H. M. S. (2023). Enhancing Graduate Employability in the Malaysian Capital Market. *I-iECONS e-proceedings*, 340-357. https://doi.org/10.33102/iiecons.v10i1.88
- Feraco, T., Resnati, D., Fregonese, D., Spoto, A., & Meneghetti, C. (2023). An integrated model of school students' academic achievement and life satisfaction. Linking soft skills, extracurricular activities, self-regulated learning, motivation, and emotions. *European Journal of Psychology of Education*, 38. https://doi.org/10.1007/s10212-022-00601-4
- Firdaus, R. B., Mohamad, O., Mohammad, T., & Gunaratne, M. S. (2020). Community Partnership Through Knowledge Transfer Program: Assessment from the Perspectives of Academics' Experience. SAGE Open, 10(4), 215824402098074. https://doi.org/10.1177/2158244020980742
- Gill, S. (2009). Academia, industry, and community collaboration in Malaysia: Strategies and opportunities for the future. *International Conference Paper*. https://citeseerx.ist.psu.edu/document?repid =rep1&type=pdf&doi=eac5ee1e898af6ef9379baccc5a7aee5f275a59a
- Ismail, A., & Abiddin, N. Z. (2014). Issues and challenges of technical and vocational education and training in

Malaysia towards human capital development. *Middle East Journal of Scientific Research*, 19(2), 7-11.

- Kamaruddin, H., Othman, N., Hassan, R., Zaki, W.M., & Sum, S.M. (2017). The Government's Role in the Importance of Entrepreneurship Education Amongst University Students in Malaysia.
- Kamin, Y., Cartledge, D., & Simkin, K. (2010). Work-based learning in Malaysia's Community Colleges: Perceptions from Students, Lecturers, Training Partners and Employers. *In 19th National Vocational Education and Training Research Conference*, Perth, Australia. https://www.voced.edu.au/content/ngv:43617
- Karim, M. S., Hassan, A. R., & Zakaria, Z. (2020). Industry-Academia Collaboration in Malaysia: Challenges and Opportunities. *Journal of Workforce Development*, *15*(2), 45-60.
- Kumar, N., Scheer, L., & Kotler, P. (2000). From market driven to market driving. *European Management Journal*, *18*(2), 129–142. https://doi.org/10.1016/s0263-2373(99)00084-5
- Leong, P. C., Narunan, R., & Sim, S. (2010, February). Background paper for Malaysia: Skills development in the workplace in Malaysia. In *ILO skills development paper, Chiba*, Japan.
- Lim, H. E., & Mustafa, M. M. (2013). Effectiveness of industrial training in improving students' generic skills. *International Journal of Business and Society,* 14(3), 368-375. https://dsgate.uum.edu.my/jspui/handle/123456789/431
- Lindsay, C., Canduela, J., & Raeside, R. (2012). Polarization in access to work-related training in Great Britain. Economic and *Industrial Democracy*, *34*(2), 205–225. https://doi.org/10.1177/0143831x12442576
- Mohd, W.M., Hussain, W.R., Rahman, M.N., Zainol, Z.A., & InayahYaakub, N. (2014). Mechanism and Government Initiatives Promoting Innovation and Commercialization of University Invention. *Pertanika journal of social science and humanities*, *22*, 131-148.
- Nadarajah, J. (2021). Measuring The Gap in Employability Skills Among Malaysian Graduates. *International Journal of Modern Trends in Social Sciences*, *4*(15), 81–87. https://doi.org/10.35631/ijmtss.415007
- Nathan, R. J., Shawkataly, O., & Siang, T. T. G. (2013). Universities at the crossroads: industry or society-driven? *Australian Universities' Review, The, 55*(2), 111-115.
- Noel, J. R. (2014). Developing Sustainable Community Engagement by Repositioning Programs into Communities.
- Olson, B., & Brennan, M.A. (2017). From Community Engagement to Community Emergence: The Holistic Program Design Approach. *International Journal of Research on Service-Learning and Community Engagement.*
- Palliam, R., Galfy, A. H., & Romaila, S. (2010). Investigating risk-return profile of graduates: corporate accountability and social responsibility perspective. *Journal of Business Research*. https://www.academia.edu/download/32476118/4.3-\_Investigating\_Risk-Return Profile of Graduates.pdf
- Parween, S. (2024). The Significance of Employee Training and Development on Enhancing Workforce Efficiency.
- Ramli, M. F., & Senin, A. A. (2021). Factors affecting effective university-industry collaboration during the development research stage. *International Journal of Management Studies (IJMS)*, 28(2), 127-159. https://repo.uum.edu.my/id/eprint/29268/1/IJMS%2028%2002%202021%20127-159.pdf
- Rashidi, R. (2011). The framework for effective collaboration between public training institutions and private industries in the context of the National Dual Training System (NDTS) environment in Malaysia.
- Rashidi, R. (2013). Evaluation of collaboration between public training institutions and private industries and its importance in improving the quality of training delivery in TVET in Malaysia *TVET Online*. https://tvet-online.asia/wp-content/uploads/2020/03/rashidi\_tvet1.pdf
- Rawlinson, S., & Dewhurst, P. (2013). How can effective university-industry partnerships be developed? *Worldwide Hospitality and Tourism Themes, 5,* 255-267.
- Sala, G. (2011). Approaches to skills mismatch in the labor market: A literature review. Papers: revista de sociologia, 96(4), 1025-1045. Approaches to Skills Mismatch in the Labour Market: A Literature Review 1. https://www.raco.cat/index.php/Papers/article/download/246735/330549
- Salleh, M. S., & Omar, M. Z. (2013). University-industry collaboration models in Malaysia. *Procedia-Social and Behavioral Sciences*, *102*, 654-664.
- Sánchez-García, A. M., Z., & Alwi, S. R. W. (2020). Driving a Sustainable University-Industry Partnership. In Sustainable Organizations-Models, Applications, and New Perspectives. IntechOpen. https://books.google.com/books?

Sappar, R., Hussain, M. A. M., & Zulkifli, R. M. (2024). The Implementation of Collaborative Industry Practices in

Malaysian Vocational Colleges. *International Journal of Academic Research in Progressive Education and Development, 13*(2). https://ijarped.com/index.php/journal/article/view/504

- Selvaratnam, D. P. (2013). Do Student Volunteers Benefit from Community Engagement? *Asian Social Science*, 9(8). https://doi.org/10.5539/ass.v9n8p123
- Seow, A.Y., Yee, V., Chong, A.L., & Kendall, G. (2015). Managing University-Industry Collaborations in Malaysia by Examining its Critical Success Factors: A Dyadic Approach.
- Shabdin, M. R., & Sulaiman, S. (2020). Community Engagement in Industrial Training: The Malaysian Model. *Journal of Education and Work*, 33(5), 452-468.
- Shabdin, N. H., Abu, A., Mohamad, R. S., Selamat, A., Abdullah, M. S., Sulaiman, N. H. M., Hashim, N. F. M., Alwi, M.
   F. M., Ezanee, N. a. M., & Shabdin, M. K. (2020, September 22). Leading Higher Institutional Transformation: Empowering Community Educational Engagement (CEE) through Internet of Things (IoT). Www.atlantis-Press.com; Atlantis Press. https://doi.org/10.2991/assehr.k.200921.031
- Shah, R., Rasyidah, W., Hanifah Abdul Hamid, Hanim Misbah, Norhaziah Nawai, Fuadah Johari, Mohd, R., Nur, W., & Lee. (2023). Enhancing Graduate Employability in the Malaysian Capital Market. *I-IECONS E-Proceedings*, 340–357. https://doi.org/10.33102/iiecons.v10i1.88
- Sohimi, N. E., Affandi, H. M., Rasul, M. S., Yasin, R. M., Nordin, N., & Adam, S. (2019). Malaysian Industrial Collaborations for Skills Development in 4th Industrial Revolution. *Journal of Technical Education and Training*, 11(3). https://publisher.uthm.edu.my/ojs/index.php/JTET/article/view/3192
- Suparno, Sri Pudjiarti, E., & Joyo Supeno, B. (2023). Collaborative Synergy: Leveraging Competitive Advantage in University-Industry Innovation. *Interciencia*, 48(1), 78-85.
- Tan, C. K., & Tee, S. C. (2020). Bridging the Skills Gap in Malaysia: An Analysis of Technical and Vocational Education and Training (TVET) Programs. *Journal of Technical Education and Training*, *12*(1), 23-34.
- Thakur, N. (2023). Significance of Effective Communication vis-à-vis Soft Skills in Agri Graduate's Career. *Vigyan Varta An International E-Magazine for Science Enthusiast, 4*(2), 68-70.
- Yee, A. S. V., Chong, A. L., & Kendall, G. (2015). Managing university-industry collaborations in Malaysia by examining its critical success factors: A dyadic approach. *World Review of Business Research*, 5(3), 213-230.
- Yusof, R., & Rahman, M. H. (2019). Enhancing Work-Based Learning through Industry Partnerships in Malaysian *Universities. Asia-Pacific Journal of Cooperative Education*, *20*(3), 151-165.
- Valle, I., & Castillo, M. A. (2008). Human capital and sustainable competitive advantage: an analysis of the relationship between training and performance. *International Entrepreneurship and Management Journal*, 5(2), 139–163.