TVET Institutions’ Perspective on Implementation of Public-Private Partnerships Model in The Southeast Asia Countries

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Abstract. Youth unemployment is one of the youth problems in Southeast Asia countries. Previous studies found that one of the problems is caused by the skills gap between TVET graduates and industry needs. Strengthening the partnership between TVET institutions and industry is one of the solutions to minimize the skills gap. Many TVET institutions have established partnerships with the industry. Therefore, the present study is aimed to review the partnerships with industry from the TVET institution perspectives. Respondents from different TVET institutions (N = 129) were surveyed to investigate their perceptions of the partnerships with the industry. Quantitatively, the instrument of the survey data is analysed by using SPSS software. Qualitatively, data from open-ended participants’ responses were analysed by qualitative content analysis to explore the findings from the survey. The result showed that the implementation of public-private partnerships has a good performance and improved the skilled workforce in terms of TVET institutions’ perspectives. Other hands, the present study also explored the partnership’s performance in the subjects of demand-oriented, meet the changing skills demand, allow the industry to participate in the development and management of TVET, supported by the regulatory with the systematic framework and go along with a strategic transition from a short-term to long term objective. The areas of partnerships with industry are discussed as well.

1. Introduction

Technical vocational education & training (TVET) plays an important element in strategies in various developing countries to reduce youth unemployment. One of the youth unemployment problems is caused by the skills gap between graduates and industry needs (René Lenssen, 2020). The skills gaps become a bottleneck for economic growth. The skills gap between industry demand for specific skills is worsening (Holzer, 2015). In fact, the skills gap result is caused by the existing TVET that cannot take up several challenges by rapidly changing the job requirement of the industry. The skills shortage of industry demand in a national or regional labor market is significantly caused by Ineffective of TVET management (Remington, 2018).

The establishment of technical vocational education and training (TVET) faced several challenges. The skills upgrading for TVET trainers and the lecturer become the constraint of TVET establishment. Other challenges are expensive equipment, teaching materials and facilities that make TVET establishment require high cost. However, it is obvious that conducting practice without improper tools and equipment for obtaining hands-on experience for students finally will impact inapplicable skills acquisition (Atchoarena & Delloz, 2001). To overcome these challenges, TVET institutions must take initiatives to establish partnerships with related industries. Organization for Economic Co-operation and
Environment reported that policymakers have urged closer cooperation between employers and schools (OECD, 2010).

The public-private partnership (PPP) is known as the model of partnership between TVET institutions and industries. The demand for partnership development between government and industry is increasing (Vertakova & Plotnikov, 2014). The development of partnerships requires clear roles and mechanisms for effective cooperation and communication (Taylor, 2006). (Lee, 2009) suggests of several ways to strengthen the partnership between TVET institutions and industry: partnerships should be regarded as a supplementary for advanced TVET systems, should focus on a demand-oriented approach, be flexible enough to meet the changing skills demands of the industry and the technological environment, allow the industry to participate in the development and management of TVET to reduce mismatches of skilled workforces, focus on increasing the quality of training, supported by the regulatory and systemic framework and partnerships should go along with a strategic transition from a short-term to a long-term objective.

There have been many studies regarding the public-private partnerships in Indonesia and Southeast Asia countries. However, the challenges and barriers related to TVET institutions still prevailed. An obstacle faced by vocational colleges in Malaysia for the process of securing approval for the Memorandum of Understanding (MOU) (Noriadah & Amirmudin, 2015). Inadequate investment in training infrastructure, facilities, and staff development due to the lack of government support, and the mismatch between the industries’ requirement and the vocational educational institutions were the challenges in the PPP model in Indonesia (Thom & Wardhono, 2018). Thus, this present research focuses on the performance review on the implementation of the public-private partnerships from TVET institutions’ perspective in terms of overall partnership performance, partnership conditions, and areas of partnerships.

Technical vocational education & training (TVET) as learning institutions provides experiential learning relevant to real works and conducting a variety of learning contexts combining the workplace and learning institutions. (UNESCO, 2006). Although it has benefits, some practical problems of TVET have been criticized such as the high unemployment of graduates, very high cost, poor quality and does not match industry demand (Atchoarena, David; Delluc, 2001). However, this criticism against TVET can be reduced if it can establish a partnership with the industry more effectively & productive (Middleton, 1988). Partnerships are commonly considered consistent with new public management approaches that emphasize alliances, shared responsibility, increased transparency, and accountability for results (Taylor, 2006). Workplace partnerships are an innovative way to link companies and develop regional innovation centers, including vocational schools and higher education (Tessaring & Wannan, 2004).

In addition, partnership programs are helpful in making companies competitive in the market, in expanding employment opportunities for employees, and in expediting communication between employers and TVET providers (Hawley, 2006; Van Horn & Fichtner, 2003). The government-owned institutions tend to become obsolete, lack cost-consciousness resulting in inefficiencies, and often are insulated and insensitive to market forces (Johanson & Adams, 2004). One of the concerns is the expense of TVET “Evidence suggests that public TVET programs are often expensive and less in demand, from both potential trainees and employers than general academic education. (Wedgwood, Hayman, & Thin, 2007).

The communication enables TVET providers to learn what skills are in demand and to train for jobs that change regularly and allows employers to have input into the curriculum of TVET and often gives them a recruiting tool to attract skilled workers (Hawley, 2006). The industry must recognize that TVET is not a cost but an investment with enormous beneficial returns. Investment in vocational training, both initial and continuing, generates substantial gains for firms in terms of productivity, profitability, market share and stock market value, and competitiveness (Tessaring & Wannan, 2004). The Involvement of the Industry in the Development and Expansion of TVET Encouraging the industry to take part in TVET is basically related to how to implement a demand-oriented approach to TVET. A demand-oriented approach is one following economic demand. As mentioned above, the industry is primarily concerned
about upgrading the skills level of their workforce to increase their productivity and capacity for innovation. Private businesses may be concerned about the risks of engaging with the more bureaucratic and slow-moving mechanisms of government (Postiglione & Tang, 2019). The TVET partnerships approach should be developed in the condition where TVET institutions and industry work together and undertake joint initiatives based on mutual commitment and shared responsibility to promote formal and non-formal TVET in line with labor market needs and technological changes (Siddiky & Uh, 2020).

2. **Method**

The study used a survey as quantitative methods to answer the research questions. It was aimed at investigating the participants' characteristics as well as ascertain their point of view about the topic or phenomenon. The study investigated and explored technical vocational education and training (TVET) institutions from several institutions in Southeast Asia countries (Indonesia, Philippines, and Malaysia). There are many researches works on perceptions of interaction that are focused on survey research (Blaine, 2019), but the descriptive study as qualitative methods were used to explore the findings from the survey.

2.1. **Survey Development**

The survey was developed with a theoretical framework and research questions. Based on that, 3 main surveys were identified. They were developed based on the survey constructs or the overall inquiry areas as follows: (a) overall of partnerships performance (b) The areas of partnerships development with industry, and (c) Partnerships terms and conditions: focus on demand-oriented, meet the changing skills, allow the industry to participate in the development and management of TVET, supported by regulatory and go along with a strategic transition.

### Table 1. The Content of Survey

| Questionnaire | Description |
|---------------|-------------|
| Q1            | Overall of partnerships performance |
| Q2            | Partnerships focus on demand-oriented |
| Q3            | Partnerships meet the changing skills demands of the industry and technology |
| Q4            | Partnerships allow the industry to participate in the development and management of TVET to reduce mismatches of skilled workforce |
| Q5            | Partnerships were supported by the regulatory and systematic framework |
| Q6            | Partnerships go along with a strategic transition from a short-term to long term objective |

2.2. **Participants**

The survey was administered to technical vocational education and training (TVET) institutions from several institutions in the SOUTHEAST ASIA countries. The survey was conducted on 20th June 2020 with the Seminar event “Vocational graduates challenges in New Normal Era: from Industry Perspectives” and delivered with Google form. The survey was distributed to participants after the event. This time was suitable for the evaluation because attended by TVET institutions policymakers, practitioners, and lecturers from different positions of TVET institutions. A total of 129 participants from 3 countries (Indonesia, Philippines, and Malaysia) as representatives of TVET institutions filled the survey as quantitative data for this research. The participants’ institutions were from polytechnics, vocational universities, colleges/institutes, vocational high schools, and vocational training.

The instrument of the survey consisted of 15 questions based on research questions guidelines, and it was divided into three sections. The participants' background information was the first section of the
instrument. The second section consisted of 5 points Likert question related to overall partnerships performance and terms and conditions. The last section consisted of one open-ended question asking the participants for a short answer about the areas of partnerships established.

2.3. Data Analysis
The SPSS program analyzed the quantitative data with various statistical analyses, and the data analysis included descriptive statistics. The qualitative data from open-ended participants' responses were analyzed by qualitative content analysis. Data was collected using a 5-point Likert scale ranging from Very Bad to Very Good. The bad column included very bad and bad responses combined. In contrast, the good column included very good and good responses combined. The first analysis separated the participants from institutions that have established partnerships with the industry. A total of 79 participants from several TVET institutions have established partnerships with the industry. The next analysis was focused on participants' perceptions of who have established partnerships with the industry. To ensure the validity of the study and reflect TVET institutions' perspectives, the invited participants are the representatives of TVET institutions. The participants demographics found that some of the participants are TVET practitioners, lecturers, and leaders of the TVET institutions.

3. Results
3.1. Participants' demographics
The participants were surveyed described in the table below:

| Items                                | Frequencies (n) | Percent (%) |
|--------------------------------------|-----------------|-------------|
| TVET Institutions Have Industry Partnership | 79              | 61%         |
| Not related (Institutions, positions) | 23              | 18%         |
| No partnership                       | 27              | 21%         |
| Total respondents surveyed           | 129             | 39%         |

The participants targeted were from institutions of TVET institutions and have established partnerships with the industry. From surveyed participants, there are 18% of participants with no related TVET institutions such as teachers from general high school, lecturers from no TVET programs, and included students from the university. Others, the participants from the TVET institution have not established the partnerships with industry were separated from the analysis. The analysis focuses on participants from the institution who have partnerships with industry (N=79).

| Demographics Variables | Frequencies (n) | Percent (%) |
|------------------------|-----------------|-------------|
| Country                |                 |             |
| Indonesia              | 64              | 81%         |
| 1. Java                | 40              |             |
| 2. Sumatera            | 13              |             |
| 3. Sulawesi            | 1               |             |
| 4. Kalimantan          | 10              |             |
| Malaysia               | 12              | 15%         |
| Philippines            | 3               | 4%          |
| Gender                 |                 |             |
| Female                 | 36              | 46%         |
| Male                   | 43              | 54%         |
The respondents surveyed 81% of Indonesia’s TVET institutions, 15% from Malaysia, and 4% from the Philippines. TVET institutions from Indonesia spread from Java, Sumatera, Kalimantan, and Sulawesi. The participants have represented the Indonesia TVET institution population. In this research, the surveyed data from other Southeast Asia countries from Malaysia and Philippines as comparative data for partnership conditions of each country. The TVET institutions were dominated (54%) from universities with TVET programs, 20% from vocational high school, 19% from polytechnics, 5% from vocational training, and only 1% from colleges/institutes. Respondents’ position was dominated 67% from TVET lecturers, 22% from TVET teachers, 4% from trainers, 5% from the Dean of TVET faculties, and 1% from the Vice-director and head of study program.

| Institutions                  | Frequencies | Percent |
|-------------------------------|-------------|---------|
| Vocational High School (SMK)  | 16          | 20%     |
| Polytechnic                  | 15          | 19%     |
| College / Institute          | 1           | 1%      |
| University                   | 43          | 54%     |
| Vocational Training          | 4           | 5%      |

| Position                     | Frequencies | Percent |
|-------------------------------|-------------|---------|
| Vice Director                | 1           | 1%      |
| Dean                          | 4           | 5%      |
| Head of Study Program        | 1           | 1%      |
| Lecturer                     | 53          | 67%     |
| Teacher                      | 17          | 22%     |
| Trainer                      | 3           | 4%      |

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### Table 4. Length of Partnership

| Length Period | Frequencies (n) | Percent (%) |
|---------------|-----------------|-------------|
| <1 year       | 7               | 9%          |
| 1-2 years     | 18              | 23%         |
| 2-3 years     | 7               | 9%          |
| 4-5 years     | 13              | 16%         |
| >5 years      | 34              | 43%         |
| Total         | 79              | 100%        |

Most of the surveyed TVET institutions have established long partnerships with the industry. A total of 43% of respondents have established relationships for more than 5 years. About 23% of respondents have established the relationship for 1-2 years, 16% for 4-5 years, 9% for 2-3 years, and 9% below 1 years.

3.2. Findings

3.2.1. Overall of partnerships performance

The general perceptions of the respondents indicated a positive response to their partnerships with the industry. This response was in line with survey questions asking the overall of partnerships performance with their experience. About 94% of the respondents responded that partnerships were very good or good performance (M: 4.51, SD=0.639, where 1 = very bad and 5 = very good) only 1% of respondents responded that partnerships were a very bad or bad performance.

### Table 5. Participants’ Perceived of partnership with industry
### Questionnaire Items

| Questionnaire Items                                                                 | Bad Responses | Neutral Responses | Good Responses | Total | M  | SD  |
|------------------------------------------------------------------------------------|---------------|-------------------|---------------|-------|----|-----|
|                                                                                   | n  | %  | n  | %  | n  | %  | n  | %  |      |     |     |
| Q1 Overall of partnerships performance                                            | 1  | 1  | 3  | 4  | 74 | 94 | 78 | 100 | 4.51 | 0.639 |
| Q2 Partnerships focus on demand oriented                                          | 2  | 3  | 4  | 5  | 73 | 92 | 79 | 100 | 4.44 | 0.712 |
| Q3 Partnerships meet the changing skills demands of the industry and technology   | 2  | 3  | 2  | 3  | 75 | 94 | 79 | 100 | 4.47 | 0.676 |
| Partnerships allow the industry to participate in the development and management of TVET to reduce mismatches of skilled workforce | 1  | 1  | 5  | 6  | 72 | 92 | 78 | 100 | 4.42 | 0.675 |
| Q5 Partnerships were supported by the regulatory and systematic framework         | 1  | 1  | 3  | 4  | 75 | 95 | 79 | 100 | 4.47 | 0.637 |
| Partnerships go along with a strategic transition from a short-term to long term objective | 1  | 1  | 3  | 4  | 72 | 91 | 76 | 100 | 4.49 | 0.643 |

### 3.2.2. Partnerships focus on demand-oriented

About 92% of the respondents responded that partnerships focused on demand-oriented were very good or good performance (M: 4.44, SD=0.712, where 1 = very bad and 5 = very good) only 2% of respondents responded that partnerships were a very bad or bad performance.

### 3.2.3. Partnerships meet the changing skills demands of the industry and technology

About 94% of the respondents responded that partnerships meet the changing skills demands of the industry and technology were very good or good performance (M: 4.47, SD=0.676, where 1 = very bad and 5 = very good) only 2% of respondents responded that partnerships were very bad or bad performance.

### 3.2.4. Partnerships allow the industry to participate in the development and management of TVET to reduce mismatches of skilled workforce

About 92% of the respondents responded that partnerships allow the industry to participate in the development and management of TVET to reduce mismatches of the skilled workforce were very good or good performance (M: 4.42, SD=0.675, where 1 = very bad and 5 = very good) only 1% of respondents responded that partnerships were very bad or bad performance.

### 3.2.5. Partnerships were supported by the regulatory and systematic framework

About 95% of the respondents responded that partnerships were supported by regulatory and systematic framework were very good or good performance (M: 4.47, SD=0.637, where 1 = very bad and 5 = very good) only 1% of respondents responded that partnerships were very bad or bad performance.

### 3.2.6. Partnerships go along with a strategic transition from a short-term to long term objective

About 95% of the respondents responded that partnerships go along with a strategic transition from a short-term to long term objective were very good or good performance (M: 4.49, SD=0.643, where 1 = very bad and 5 = very good) only 1% of respondents responded that partnerships were very bad or bad performance.

### 3.2.7. The types of partnerships

The types of partnerships have established, about 39% of respondents responded that they have memorandum of understanding (MoU) with industry with no specifics items, 27% of respondents responded partnerships in curriculum development, 11% partnerships in apprenticeship & internship, 8% partnerships in guest lecturer, 5% partnerships in training for lecturers/teachers or students, 4% partnerships in joint research, 3% partnership in scholarship, and others 1% each in entrepreneurship, teaching factory and students exchange.

Table 6. Areas of partnerships with industry
4. **Discussion**

The key finding of this research is that partnerships with industry overall showed good performance. In TVET institutions' views, the terms of partnerships have been established in good performance. Consequently, the findings also indicated partnerships gave values to TVET institutions. However, from the industrial perspectives, there is no definite relationship between the role of government, VE institutions as the supplier of vocational graduates, and industries as the users of VE institutions output (vocational graduates). The low role of government in addressing the PPP implementation has resulted in infrastructure, facilities, and staff development of VE institutions being hampered and unable to meet the needs of the industry’s requirements. In addition, the lack of communication between VE institutions and industries has an impact on the lack of synchronization between the VE institutions program and the industrial needs (Thom & Wardhono, 2018). Another data mentioned that youth unemployment in Indonesia is still high. The data showed that 10.42% of youth unemployment are graduates of vocational high school and 5.99% from graduates of Diploma (BPS, 2019). In addition, still find a mismatch between the labor market and the TVET program (Thom & Wardhono, 2018). It indicates that still have other problems in TVET management especially in terms of partnerships with the industry and the need for further research.

5. **Conclusion**

The result showed that overall partnership performance was good and very good. It indicated that TVET institutions from several institutions surveyed were satisfied with the industry partnerships. The positive responses are good for further TVET development. In addition, related to terms of partnerships in the key points: focus on demand-oriented, meet the changing skills demands of the industry and technology, allow the industry to participate in the development and management of TVET to reduce mismatches of skilled workforce, supported by the regulatory and systematic framework, and go along with a strategic transition from a short-term to long term objective expressed the positive responses also from TVET stakeholder surveyed.

Another result from areas of partnerships, TVET stakeholders revealed that areas of partnerships mostly in curriculum development. Other areas of partnerships were internship or apprenticeship, guest lecturer, teacher/student training, joint research, entrepreneurship, teaching factory, and student exchange. However, many respondents did not state what areas of partnerships have been established in their institutions.

6. **Limitations and recommendations**

The present research took place in TVET institutions stakeholders in Indonesia, Malaysia, and Philippines. The TVET stakeholder in different institutions with more the population warranted the generalization of the result. Therefore, this paper is the initial study of partnerships review of TVET
institutions with industry. From industries' perspectives on the issues of the partnerships are recommended for future research. It is also recommended that issues like challenges and barriers of the partnerships from both perspectives are investigated for improving TVET development.

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