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Measuring the Perception of Secondary School Students in Kedah Towards the Attractiveness of Technical and Vocational Education and Training: A Demographic Analysis

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Technical and Vocational Education and Training (TVET) is one of the ways to produce skilled workers who are crucial to drive the economic of our country. Despite several strategies made by the government, TVET still does not seem to be a popular choice among secondary school students when choosing their tertiary education pathway. Hence, this study aims to analyse the students' perception of TVET based on the demographic analysis of gender and current study stream in school in Kedah. The sole focus is on the students who are not enrolling in TVET so that more reasons why they are not likely to join TVET can be discovered. For the data collection process, 428 secondary school students from Kedah are chosen as the respondents. Descriptive analysis of the data is performed using Microsoft Excel and Google Data Studio. The results reveal that male and female students have positive perceptions of TVET even though they do not enrol in TVET. Furthermore, most students from various streams also show their interest in TVET. However, the majority of students are undecided about the assertions in the questionnaire due to unfamiliarity with this course. As a result, it is recommended that the government continue promoting TVET among secondary school students hence preparing them with specific skills that meet the current industrial requirement.

Keywords: Technical and vocational education and training; demographic analysis; perception; secondary school students

I. INTRODUCTION

According to the World Competitiveness Yearbook (WCY) year 2021, Malaysia is ranked 25th out of 64 countries in terms of government effectiveness, economic growth, business efficiency, and infrastructure (Malaysia rises to 25th place in World Competitiveness Yearbook, 2021). To become a high-ranking country, it is crucial to focus on technology and innovation which can enhance productivity in different fields. Therefore, a skilled worker is considered as the key driver for the country to become a high-income country (Sani, 2018). To achieve this, Technical and Vocational Education and Training (TVET) is one of the effective ways to produce skilled workers to meet the industrial demand (Abdul-Aziz *et al.,* 2020). It is an education system that comprises general knowledge, skills and attitudes for life competitiveness (Wong & Atan, 2021). In addition, TVET aims to equip students with the necessary knowledge and technical skills that are highly demanded in the industry (Zia *et. al.,* 2019; Ismail & Hassan, 2013).

To increase the enrolment of students into vocational education, our government has been implementing several strategies from different aspects (Aziz, 2019; Ismail &

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Hassan, 2013). In the financial aspect, the Malaysia government has increased the budget allocation for TVET to RM6 billion in Malaysia's Budget 2021 which has been boosted up compared to the budget appropriation in the year 2019 (Rajaendram, 2020). Apart from that, Esa and Rahman (2014) claim that the government has implemented several programmes in the private sector, such as the Human Resource Development Fund (HDRF), to allow companies to train their employees. The Seek-Find-Train paradigm is also utilised to ensure that students' abilities match the demands of enterprises, ensuring that there will be no conflict between employers and students (Esa & Rahman, 2014).

Despite the efforts, it is found that students nowadays are not likely to enrol in TVET, resulting in a low number of TVET students below market demand (Aziz, 2019). Several influential factors that affect TVET's attractiveness have been identified such as students' interest, parental influence, negative social perception, negative employers' perception, government's current policy, high education cost, inexperienced TVET instructors and poor infrastructure in TVET institutions (Hong *et. al.,* 2021; Wong & Atan, 2021; Abdul-Aziz *et al.,* 2020). Those factors typically affect the students' future education pathway. Hence, to gain more understanding about students' views towards TVET, this study aims to analyse the students' perception of TVET, especially those who are less interested based on their local demographic mainly gender and current streams in school.

The rest of this paper is organised as follows, Section 2 discusses literature reviews, Section 3 describes the methodology used in this study, Section 4 is related to the result and findings, and Section 5 discusses the conclusion and future works.

II. LITERATURE REVIEW

A. Overview of TVET

According to UNESCO (2003), TVET is a comprehensive educational procedure that includes general education, technological theory, pertinent disciplines, and practical skills, as well as economic and social behaviour and knowledge. Bakar (2011) discussed that different countries had different names for TVET such as Workplace Education (WE), Vocational Education, Technical-Vocational Education (TVE), Occupational Education (OE), Vocational Education and Training (VET), Career and Technical Education (CTE), Apprenticeship Training, Professional and Vocational Education (PVE), Workforce Education (WE), and Technical Education.

Germany has been recognised all around the world as the country that has effectively generated technical experts through the TVET system. The government from other countries have shown interest in implementing Germany's TVET dual-system concept in recent years. The programme was called dual because it involved corporations and vocational institutions in two forms of learning (Deissinger, 2015). The dual approach offers complete training that combines vocational training and workplace skills. In Germany, almost 53% of young people had taken part in a dual programme to expand their knowledge and skills for the future (Hippach-Schneider *et al.,* 2007).

There are several advantages of being a TVET graduate. Firstly, most TVET graduates can secure a job after they graduate from institutions. It could be seen that the average employment rate of TVET graduates was 96% in the industry (Ismail *et al.,* 2021). According to Balogun (2018), vocational and entrepreneurial skills were beneficial in tackling the issue of unemployment and have a positive influence on economic development. Furthermore, TVET not only ensured the employability of a graduate but also could convert the individual to be self-employed (Iseselo *et al.,* 2019). TVET could also equip students with the skills that were useful for them in their jobs (Sulaiman & Mohd Salleh, 2016). Karim (2018) discussed that students could learn specific skills for a specific job. For instance, students enrolled on an aircraft maintenance course could obtain knowledge regarding how to repair the aircraft. Despite the numerous advantages of being a TVET graduate, students were found still not attracted to enrol for a variety of reasons, which will be examined in further detail in the following section.

B. Factors Affecting the Attractiveness of TVET

Malaysia produces around 255,000 graduates in the year 2020, with 86% of graduates coming from the non-vocational paths, and 14% of graduates are from the TVET programme. Besides, the number of students' enrolment into TVET showed a downward trend since the year 2017 (Ministry of

Higher Education, 2021). The current supply of TVET graduates was insufficient, according to the Deputy Education Minister, because demand was expected to rise to 8 million people in the next 30 years. As a result, it reflects that today's students are less likely to enrol in TVET.

Based on the previous studies, there were a variety of factors that influenced students' enrolment in TVET. For instance, students' awareness was the important contributor leading them into TVET (Hong *et. al.,* 2021; Abdul-Aziz *et al.,* 2020). When students had a high interest in doing the vocational-related job, they would have a higher tendency to enrol in TVET to learn the skills. Another factor is social perception. It was very common that society thought that TVET students were the students who are weak in academics. It was found that in many cases, the negative social perception will shift away students' interest since they did not want to be labelled as low achievers in school (Omar *et. al.,* 2020; Abdul-Aziz *et. al.,* 2020; Chan, 2018). Unfortunately, social perception would also influence parents' perceptions. This was because parents' perception was an important factor since students typically took their parents' advice and guidance into consideration when making decisions (Hussin *et. al.,* 2017; Koya, 2019). This always happens where employers in the workplace did not value TVET qualifications due to a poor social attitude (Cheong & Lee, 2016; Chan, 2018). Besides, students' tendencies were also affected by the presence of inexperienced TVET instructors in the vocational institutions. Some of them were lacking English proficiency and Information and Communication Technology (ICT) which resulted in a non-interactive teaching environment (Ismail & Hassan, 2013; Ismail *et al.,* 2017). Apart from that, poor infrastructure in the TVET institutions was another factor that affected students' enrolment in TVET. This was due to some classrooms were not air-conditioned and the space was small to occupy all the students (Amedorme & Fiagbe, 2013; Bakar, 2011). Finally, the cost of enrolment in TVET was another issue that had influenced students' decisions to enrol in TVET. Technical education had proven to be expensive due to rising inflation and operating costs at TVET colleges (Affero & Abiddin, 2014; Blinov & Esenina, 2019). This occurred as a result of the high maintenance costs of the machines and equipment. Students also might become confused because the Malaysian Qualification Agency (MQA) and the Department for Skill Development (DSD) were both responsible for accrediting TVET courses, according to Mohd Amin (2016).

In conclusion, a variety of factors influenced students' decision to enrol in TVET. Determining the influential factors which affected students' tendency to join TVET is important because it may be utilised to develop ways to address TVET enrolment challenges. Thus, research is needed to determine the factors that focus on school students being uninterested in TVET.

C. Demographic Analysis

Demographic background describes the characteristic of the respondents which allow the researchers to have a deeper understanding of respondents' background characteristics. The elements in the demographic background comprise the respondents' age, ethnicity, gender, marital status, income, level of education, and employment (Abdullahi, 2019; Gjonça & Calderwood, 2006). Previously, the researchers had widely carried out the research which included the analysis of demographic background in the TVET field. Omar *et al.* (2020) indicated that the demographic of 150 TVET instructors were analysed by using SPSS software. The researchers carried out descriptive analysis for the demographic characteristics such as gender, age, race, highest education level and teaching experiences of the TVET teachers. A high percentage of respondents were male, aged 41-51 years old, Malay race, had Bachelor's Degree and had teaching experiences which were more than 16 years and above. Furthermore, the researchers also analysed the relationship between students' socio-demographic background (gender) and their knowledge possession, interest and motivation related to TVET. The finding revealed that students' gender did not have any significance with their knowledge possession, interest and motivation (Omar *et al.,* 2020). The result also indicated that Malaysian were still having a negative perception towards TVET, which was similar to the results shown in studies by Hassan *et al.* (2019) and Cheong and Lee (2016). Finally, Abdul-Aziz *et al.* (2020) conducted a descriptive study by using Mann-Whitney-U Analysis before interpreting the factors that affect students' enrolment into TVET. There were hypotheses proposed to determine the significance of gender, socioeconomic level

and ethnics which influenced students' enrolment into TVET. For the push factors, the finding revealed that gender and socioeconomic level did not have a significant difference in career prospects, whereas ethnicity had a significant difference in career prospects.

However, the research that focuses on the students' perception of TVET based on their gender and the current study stream is still limited. Most of the previous studies were focusing on the general demographic analysis of respondents. As a result, this study can fill the gap in the literature by conducting a descriptive analysis of students' perceptions of TVET based on their demographic background. The findings can be utilised to determine students' attitudes toward TVET, further allowing the government to devise comprehensive initiatives to enhance students' attitudes toward TVET. Aside from that, this research could help the government to improve the quality of TVET and hence increase its popularity among students.

III. MATERIALS AND METHODS

A. Determination of Variables

The demographic analysis used in this study focuses on students' gender and study streams in secondary school. Students are required to rank their perception towards five variables as presented in Table 1. The given value is based on a 5-Point Likert scale, where 1 represents strongly disagree; 2 represents disagree; 3 represents not sure; 4 represents agree and 5 represents strongly agree. Table 1 shows the description for each of the variables.

Table 1. Description of variables

Variables	Description
AcademicSubjMoreImportant	Students' agreement towards the academic subject is more important than the vocational subject.
TVETBright	The level of agreement towards students who get a TVET certification, people will think that they have a bright future.
TVETStudHigherJobChance	The level of agreement towards TVET students will have a higher chance to get a job compared to those who don't.
TVETStudHighSalary	The level of agreement towards TVET students has a high salary.
VocationalCourseInteresting	The level of agreement towards vocational course is interesting.

B. Target Population

To select the respondents, stratified random sampling and simple random sampling are applied to ensure no bias during the data collection process. Stratified random sampling is used to categorise the state based on State Legislative Assembly and District Education Office, whereas simple random sampling is used to randomly choose the respondents after determining the District Education Office. Based on the students' enrolment data by the Ministry of Education (2018), the population of Form 4 and Form 5 students in Kedah state is 56519 students in the year 2018. The sample size can be calculated by using the sample size formula (Remesher, 2019). The formula is shown as Equation (1).

$$Sample\ size = \frac{(\frac{z^2 x\ p(1-p)}{e^2})}{1+(\frac{z^2 x\ p(1-p)}{e^2 N})}, \quad (1)$$

where

$N = Population\ size,$

$z = z - score,$

$e = Margin\ of\ error,$

$p = Standard\ deviation.$

Based on the calculation, the minimum sample size is 382 people with a 95% confidence level.

C. Data Collection Process

The data was collected through the physical distribution of questionnaires among secondary school students in Kedah, Malaysia. To obtain a non-bias data, the respondents were identified thru disproportionate stratified sampling with an equal allocation and simple random sampling. First of all, Kedah was categorised based on the Regional Education Office (REO) and State Legislative Assembly. The reason of utilising disproportionate stratified sampling with an equal allocation is because the proportion of students in each REO

is not publicly available. A total of 9 REO and 32 State Legislative Assembly were found in Kedah. Therefore, each REO will have 11.11% of being chosen. Since the calculated sample size is 382 students, some REO would contain 43 students whereas some would have 42 students. After choosing the locations for REO, a school in each REO would be randomly selected to distribute the questionnaires for the students. So, all the students in each REO had an equal probability of being chosen. Furthermore, all students are believed to share the same properties, such as academic level and academic achievement.

Before enrolling in secondary school, approval letters from the Ministry of Education and the Kedah State Education Department must be obtained first. Following approval from these two departments, appointments are established directly with schools to ensure that the time is suitable for both teachers and students. Before each student answers the questions, a brief explanation is given to ensure that they fully comprehend the questions.

D. Data Analysis

The collected responses from all respondents are compiled into Microsoft Excel. The information is then analysed using Pivot Table in Google Data Studio. This research focuses on the perceptions of students who do not tend to enrol in TVET to acquire useful insight into their perspectives to overcome this problem. Descriptive analysis is performed by examining the maximum number of students for each category.

IV. RESULTS AND DISCUSSION

To offer a clearer picture of the results, the respondents' answers on the 5-Point-Likert scale have been categorised into three groups of results as shown below.

1. Disagree with the statement-1st and 2nd options of the Likert scale
2. Indecisive towards the statement- 3rd option of the Likert scale
3. Agree with the statement- 4th and 5th options of the Likert scale

The total number of respondents in this research is 428 students, which is more than the expected number. Among them, a total of 138 students do not tend to enrol in TVET after secondary school. This study focuses solely on students who are not interested in enrolling in TVET so that we may learn more about the reasons why they are not interested in doing so. Figure 1 shows the number of students who are interested and not interested to enrol in TVET.

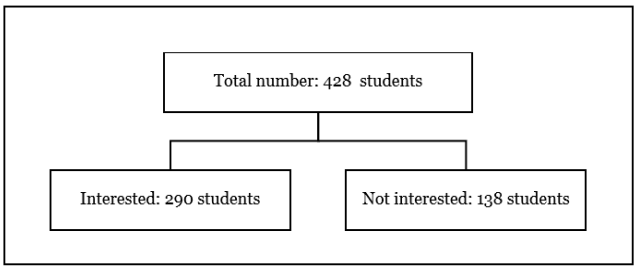

Figure 1. Number of students

The result was divided into two sections. The first section discusses the students' perception towards TVET based on their gender and the second section is based on their stream. A student's stream is a classification of students based on their academic skills and potential. The respondents can choose from a variety of streams, including arts, accounting, business, science, literature, ICT, technical, vocational, economics, and catering. The purpose of looking at the gender and stream of students is to differentiate their perceptions on TVET based on these two characteristics, so that the government may develop new approaches to promote TVET using this information.

A. Gender Differences Based on The Students' Perception Towards TVET

From 138 respondents who are not interested to enrol in TVET, 79 of them (57.20%) are female whereas 59 of them (42.80%) are male. Figure 2 shows the proportion of female and male students who are not interested in TVET.

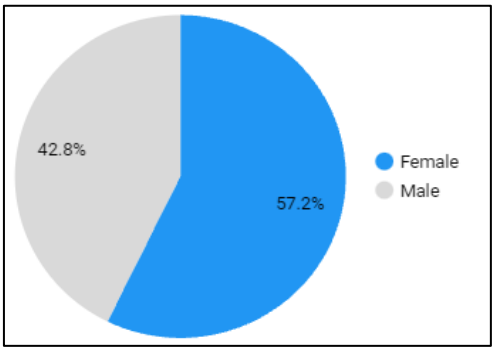

Figure 2. Proportion of gender

The first variable to consider is "AcademicSubjMoreImportant," which reflects students' perceptions that non-vocational subjects are more essential than vocational subjects. Table 2 shows the results based on the students' gender with their perception towards the academic subject is more important. Overall, the number of students who agree with this statement is about 60%. However, there is about 26.09% of students are indecisive about this statement. For the female students, most of them (68.35%) agree that academic subject is more important than vocational subject whereas 5.80% of them do not agree to this. For the male students, 49.15% agree with this statement and 18.64% do not agree with this.

Table 2. Gender and AcademicSubjMoreImportant

AcademicSubjMoreImportant					
Gender	1	2	3	4	5
Female	1	7	17	29	25
Male	1	10	19	17	12
Grand total	2	17	36	46	37

The second variable to consider is "TVETBright," which indicates students' perceptions of how TVET might help them have a bright future. Table 3 depicts the results of students' gender and their perceptions of TVET graduates' prospects. The percentage of students that agree with this statement is 52.17 % overall. However, about 40.58% of students are indecisive about this statement. The majority of female students (55.70%) feel that academic subjects are more important than vocational subjects, while 5.06% disagree. This statement is supported by 47.46% of male students and 10.17% of them not agree.

Table 3. Gender and TVETBright

TVETBright					
Gender	1	2	3	4	5
Female	1	3	31	34	10
Male	1	5	25	23	5
Grand total	2	8	56	57	15

The third variable is "TVETStudHighSalary," which measures the students' perceptions of TVET graduates being able to earn a high income once they begin working. Table 4 shows the students' gender with their perception towards TVET graduates can get a high salary. From the result in Table 4, the number of students who agree with this statement is 42.03%. However, there are more than half (53.62%) of students indecisive about this statement. This could be due to lacking clear explanations given to the respondents during filling in the form. When analysing from each gender, the 3rd option is still the most frequently selected option for this variable. There is 48.10% of female students agree that TVET students can get high salaries whereas 2.53% of students do not agree with this. For the male students, 33.90% agree with this statement whereas 6.78% of students do not agree with this. Table 4 shows the total number of category gender versus TVETStudHighSalary.

Table 4. Gender and TVETStudHighSalary

TVETStudHighSalary						
Gender		1	2	3	4	5
Female	-		2	39	24	14
Male		1	3	35	16	4
Grand total		1	5	74	40	18

The following variable is "TVETStudHigherJobChance", which the analysis of the result is presented in Table 5. The result indicates that 49.28% of students agree that TVET students can have a higher job chance after they graduate. 43.48% of students are indecisive about this variable so they put 3rd option for this statement. From the female students, it is found that 48.10% of students agree with this statement and 8.86% of students do not agree. Next, from the male students' perception, about half of the male students (50.85%) agree with this and 5.08% of them do not agree.

Table 5. Gender and TVETStudHigherJobChance

TVETStudHigherJobChance						
Gender		1	2	3	4	5
Female	-		7	34	25	13
Male		1	2	26	25	5
Grand total		1	9	60	50	18

The following variable, "VocationalCourseInteresting", indicates if the vocational course is interesting to the students. Table 6 displays the findings of a gender-based study of the "VocationalCourseInteresting" variable. The result highlighted that most of the students (57.97%) agree that a vocational course is an interesting course. However, 34.78% of students are unsure about this statement. Based on female students, approximately 69.62% of them agree that

vocational course is interesting whereas only 3.80% of them do not agree with this. For male students, 42.37% of them agree that a vocational course is an interesting course, and 11.86% of them do not agree with this statement.

Table 6. Gender and VocationalCourseInteresting

	VocationalCourseInteresting				
Gender	1	2	3	4	5
Female	-	3	21	41	14
Male	1	6	27	23	2
Grand total	1	9	48	64	16

Next, the comparison between gender for each of the variables are compiled in Figure 3. In summary, it can be concluded that most male and female students have a positive perception towards TVET because most of their responses tend to agree with the statement. However, there is a gender inequality issue when female students choose TVET, according to previous studies (Masud *et. al.,* 2018; Sulaiman *et al.,* 2015). Results from these studies found that the enrolment rate of female TVET students is lower than male students because of some factors such as employers feeling unconfident with their ability to carry out the daily job, and negative social perception towards them. Despite this, most of the current female students from vocational institutions claimed that they can perform their work and it will not be a barrier for them to choose TVET (Mustapha *et al.,* 2013). Besides, there is a high percentage of students who are indecisive with the statements "TVETBright", "TVETStudHighSalary", and "TVETStudHigherJobChance". Perhaps it is due to their understanding of the questions. There is just a small number of students having a negative perception of TVET.

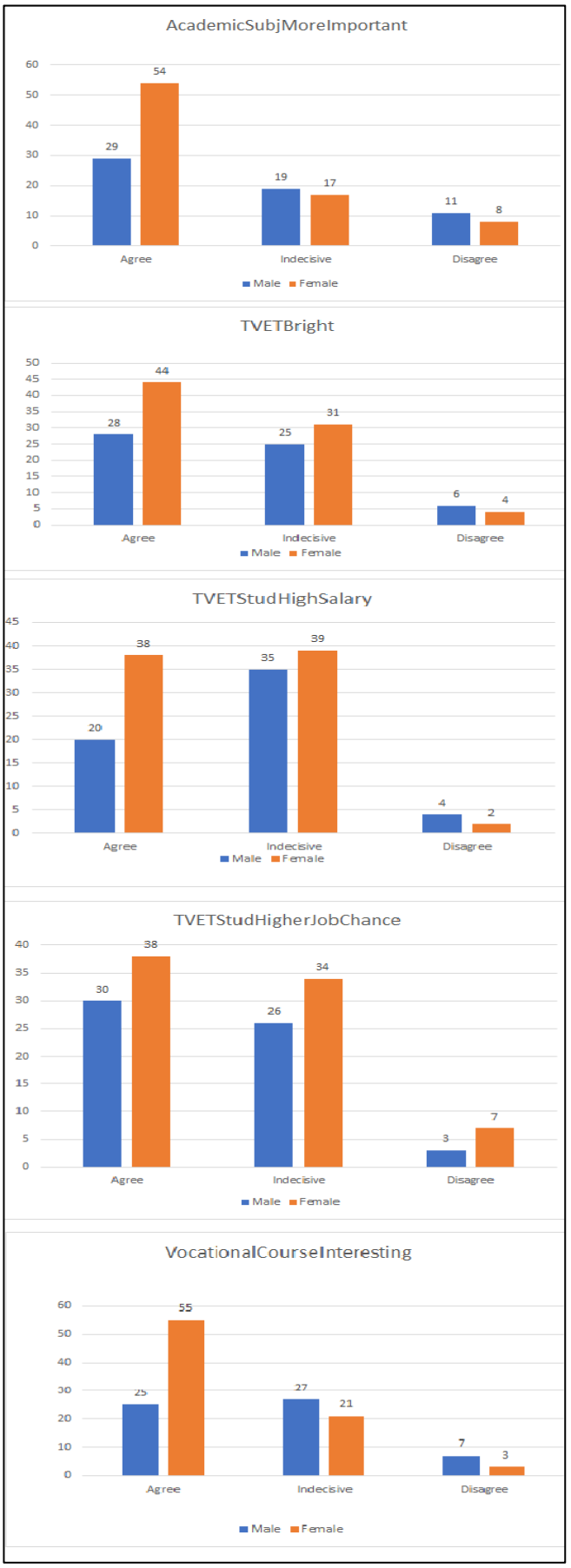

Figure 3. Comparison between gender and all variables

B. Stream Differences Based on Students' Perception Towards TVET

Among the 138 respondents who are not interested to enrol in TVET, most of them are from the Arts stream (25.4%), followed by the Account stream (24.6%), whereas the least are from the Catering stream (0.7%). Figure 4 shows the students' stream.

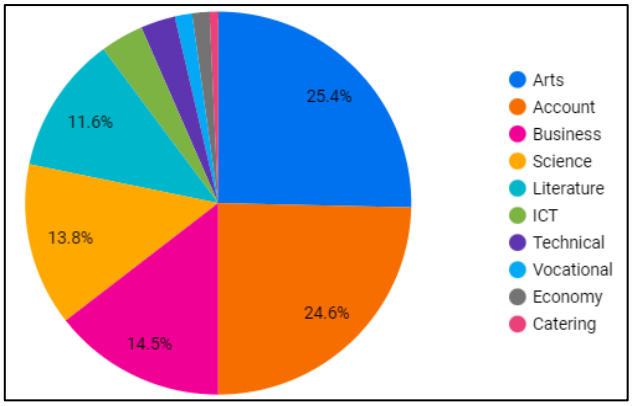

Figure 4. Streams in Education

The first variable is "AcademicSubjMoreImportant". The results, as shown in Table 7, suggest that students from most streams believe that academic subjects are more significant than vocational subjects. For instance, there are about 79.41% of students from the Account stream agree with this statement.

Table 7. Stream and AcademicSubjMoreImportant

	AcademicSubjMoreImportant					
Stream	1	2	3	4	5	Grand total
Vocational	1	-	-	1	-	2
Technical	-	-	-	4	-	4
Science	1	2	5	4	7	19
Literature	-	4	6	4	2	16
ICT	-	1	-	2	2	5
Economy	-	1	-	-	1	2
Catering	-	1	-	-	-	1
Business	-	3	4	3	10	20
Arts	-	4	15	14	2	35
Account	-	1	6	14	13	34
Grand total	2	17	36	46	37	138

The next variable is "TVETBright," and the result is depicted as in Table 8. Similar to the previous variable, most students feel that TVET graduates will have a great future. However, there is a high percentage of students from the Science stream (57.89%), Account stream (55.88%) and Business stream (50.00%) are indecisive about this statement.

Table 8. Stream and TVETBright

	TVETBright					
Stream	1	2	3	4	5	Grand total
Vocational	-	-	-	-	2	2
Technical	-	-	1	2	1	4
Science	-	-	11	7	1	19
Literature	-	1	7	6	2	16
ICT	1	-	-	3	1	5
Economy	-	-	-	2	-	2
Catering	-	-	-	1	-	1
Business	-	2	10	7	1	20
Arts	-	2	8	20	5	35
Account	1	3	19	9	2	34
Grand total	2	8	56	57	15	138

As indicated in Table 9, the next variable to be explored is "TVETStudHighSalary". The number of students that choose the third choice (53.62%) is the highest for this variable. More than half of the students (61.76%) from the Account stream are unsure whether this statement is correct. For every stream category, the number of students who agree with this statement is more than students who do not agree.

Table 9. Stream and TVETStudHighSalary

	TVETStudHighSalary					
Stream	1	2	3	4	5	Grand total
Vocational	-	-	1	-	1	2
Technical	-	-	3	1	-	4
Science	1	2	12	3	2	20
Literature	-	1	8	5	2	16
ICT	-	-	2	1	1	4
Economy	-	-	1	1	-	2
Catering	-	-	-	-	1	1
Business	-	-	9	6	5	20
Arts	-	-	17	13	5	35
Account	-	2	21	10	1	34
Grand total	1	5	74	40	18	138

In the following section, the variable "TVETStudHigherJobChance" will be discussed. The result is indicated in Table 10. Overall, students from all streams

perceive that TVET students have a better chance of getting a job. However, there is about 51.43% of students from the Arts stream and 50% of students of the Business stream vacillate about this statement.

Table 10. Stream and TVETStudHigherJobChance

TVETStudHigherJobChance						
Stream	1	2	3	4	5	Grand total
Vocational	-	-	-	1	1	2
Technical	-	-	2	2	-	4
Science	-	3	9	4	3	19
Literature	-	1	4	6	5	16
ICT	-	-	3	2	-	5
Economy	-	-	-	-	2	2
Catering	-	-	-	-	1	1
Business	1	2	10	5	2	20
Arts	-	1	18	15	1	35
Account	-	2	14	15	3	34
Grand total	1	9	60	50	18	138

"VocationalCourseInteresting," as illustrated in Table 11, is the last variable to consider. A vocational course is an interesting course, according to students from all streams. However, there is a high percentage of students from Science (52.63%) and Account stream (47.06%), are indecisive about this statement.

Table 11. Stream and VocationalCourseInteresting

VocationalCourseInteresting						
Stream	1	2	3	4	5	Grand total
Vocational	-	-	-	2	-	2
Technical	-	-	2	2	-	4
Science	-	-	10	7	2	19
Literature	1	1	5	6	3	16
ICT	-	1	-	2	2	5
Economy	-	-	1	1	-	2
Catering	-	-	-	-	1	1
Business	-	3	6	9	2	20
Arts	-	3	8	19	5	35
Account	-	1	16	16	1	34
Grand total	1	9	48	64	16	138

Figure 5 shows the results of the compilation by comparing the stream to each variable. In summary, it is found that even though they do not tend to enrol in TVET, most students have a positive perception about TVET, regardless of which stream they come from. According to a prior study by Hong *et al.* (2021), students' stream is the most important factor that influenced their decision to enrol in TVET. Students in the Arts, Business, Information Technology, Literature, and Vocational streams are more likely to enrol in TVET after completing their secondary school. As a result, the findings in this study that students from those streams have a favourable impression of TVET can be supported. Bakar and Mahmud (2020) also mentioned that 12% of Science stream students pursue vocational education for their tertiary education. Furthermore, the number of indecisive students is almost equal to the number of students who agree in most of the statements such as “TVETStudHighSalary”, TVETBright”, and “TVETStudHigherJobChance”.

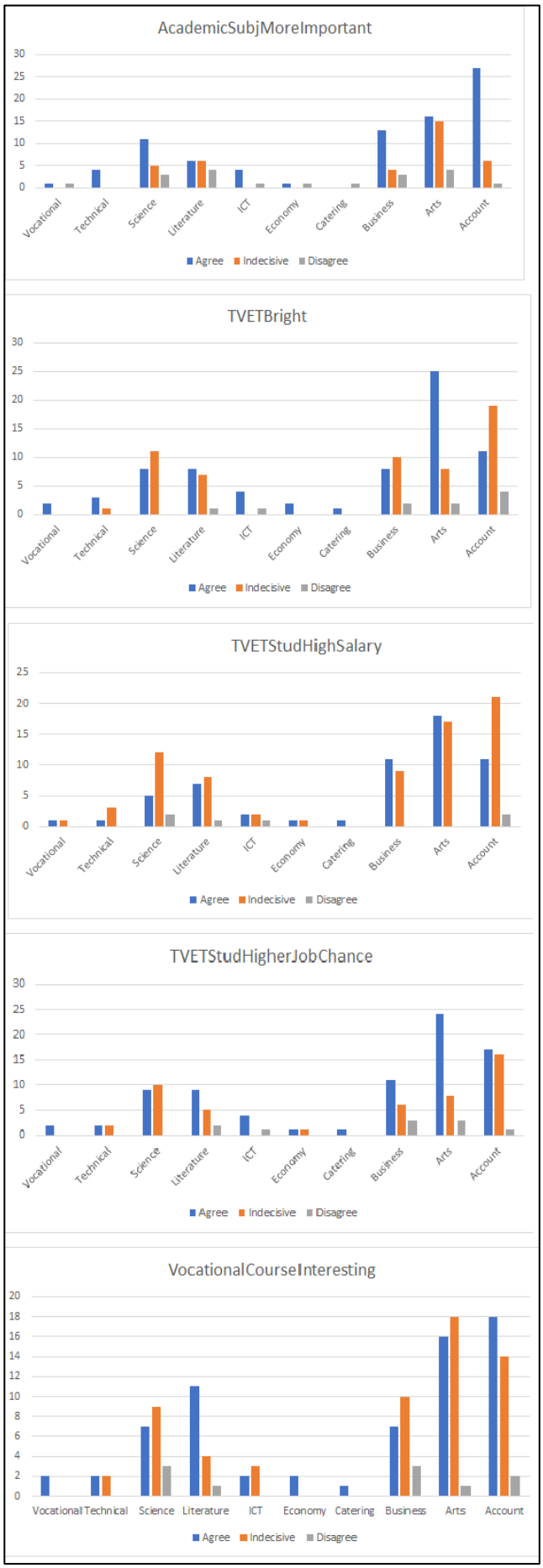

Figure 5. Comparison between streams and all variables

V. CONCLUSION AND FUTURE WORKS

This study focuses on the perception of students based on their demographic analysis of gender and study stream. This study focuses solely on students who are not interested in enrolling in TVET so that we may learn more about the reasons why they are not interested in TVET. From the aspect of gender and stream, most students have a positive perception even though they do not tend to enrol in vocational education. It might be due to other reasons such as peer influence, household factors, and institutional factors. In solving this, it is recommended that the government should always instil the information of TVET among students so that they can fully understand it and make their decision to enrol in TVET when choosing their tertiary education pathway. Furthermore, the government should cooperate with parents and teachers to carry out some effective plans to increase the students' enrolment into TVET.

Following that, future research should look into this topic by employing a correlation test to investigate the relationship between each variable. Throughout this test, Pearson's Correlation Coefficient can be used to measure how strong the relationship between two variables is. In addition, respondents from all states should be considered, as Kedah cannot reflect the views of all Malaysians. Other than that, most of the data in this study is based on quantitative data. Therefore, qualitative data will be included in future research.

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VII. REFERENCES

Abdul-Aziz, SN, Zulkifli, N, Nashir & Karim, NAH 2020, 'Pull and push factors of students' enrolment in the TVET programme at community colleges in Malaysia', Journal of Technical Education and Training, vol. 12, no. 1, pp. 68-75.

Abdullahi, KB 2019, 'Socio-Demographic status: Theory, methods and applications', Preprints.

Affero, I & Abiddin, NZ 2014, 'Issues and challenges of technical and vocational education and training in Malaysia towards human capital development', Middle-East Journal of Scientific Research, vol. 19, pp. 7-11.

Amedorme, S & Fiagbe, Y 2013, 'Challenges facing technical and vocational education in Ghana', International Journal of Scientific & Technology Research, vol. 2, no. 6, pp. 253-255.

Aziz, A 2019, 'Govt struggles to overcome vocational education misconception', The Malaysian Reserved.

Bakar, AR 2011, Preparing Malaysian youths for the world of work: roles of technical and vocational education and training (TVET), Penerbit Universiti Putra Malaysia, Serdang, Selangor, Malaysia.

Bakar, AYB & Mahmud, MI 2020, ' The profiling of aspiration and interest towards stem and tvet careers among Malaysian school students', Journal for the Education of Gifted Young Scientist, vol. 8, no. 1, pp. 489-500.

Balogun, A 2018, 'We are going to join millions of unemployed graduates', Modern Africa: Politics, History and Society, vol. 6, no. 1, pp. 85-106.

Blinov, V & Esenina, E 2019, 'Dual vet in Russia: Progress, problems and perspectives', TVET @ Asia, vol. 13, pp. 1-15.

Chan, YS 2018, 'We need to change perception of TVET', The Star Online.

Cheong, K & Lee, K 2016, 'Malaysia's education crisis-Can TVET help?', Malaysian Journal of Economic Studies, vol. 53, no. 1, pp. 115-134.

Deissinger, T 2015, 'The German dual vocational education and training system as "good practice"?', Local Economy, vol. 30, no. 5, pp. 557–567.

Esa, A & Rahman, JA 2014, 'TVET and strategies helping student providers into market', Journal of Education and Human Development, vol. 3, no. 2, pp. 743-751.

Gjonça, E & Calderwood, L 2006, 'Socio-demographic characteristics', in The Socio-Demographic Characteristics of the ELSA Population, Institute for Fiscal Studies, London, United Kingdom, pp. 15–32.

Hassan, R, Foong, LM, Ismail, AA & Background, D 2019, Vocational education and training in ASEAN member states. Springer, Singapore.

Hippach-Schneider, U, Krause, M & Woll, C 2007, Vocational education and training in Germany-Short description. European Centre for the Development of Vocational Training, Germany.

Hong, CM, Ch'ng, CK & Roslan, TRN 2021, 'Students' tendencies in choosing technical and vocational education and training (TVET): Analysis of the influential factors using analytic hierarchy process', Turkish Journal of Computer and Mathematics Education, vol. 12, no. 3, pp. 2608–2615.

Hussin, A, Mohamad, M, Hassan, R & Omar, A 2017, 'Technical vocational education training branding from perspective of stakeholder (parent) in Malaysia', Advanced Science Letters, vol. 23, no. 2, pp. 1216-1219.

Iseselo, MK, Mosha, IH, Killewo, J, Sekei, LH, Outwater, AH 2019, 'Can training interventions in entrepreneurship, beekeeping, and health change the mind-set of vulnerable young adults toward self-employment? A qualitative study from urban Tanzania', PLoS One, vol. 14, no. 8, pp. 1–18.

Ismail, A & Hassan, R 2013, 'Issues and challenges of technical and vocational education & training in Malaysia for knowledge worker driven', in National Conference on Engineering Technology, Shah Alam, 1st & 2nd July 2013, Ministry of Human Resource.

Ismail, K, Nopiah, Z, Rasul, M & Leong, P 2017, 'Malaysian teachers' competency in technical vocational education and training: A review', in Proceedings of the 4th UPI International Conference on Technical and Vocational Education and Training, Bandung, Indonesia, 15th & 16th November 2016.

Koya, Z 2019, 'TVET courses are not for those who are academically weak, Kula tells parents', The Star Online.

Malaysia rises to 25th place in World Competitiveness Yearbook 2021, Malaysian Investment Development Authority, <https://www.mida.gov.my/mida-news/malaysia-rises-to-25th-place-in-world-competitiveness-yearbook-2021/>.

Masud, R, Mutalib, AA & Ismail, I 2018, 'Gender inequality: A comparative study of participation in technical courses', Journal of Counseling and Educational Technology, vol. 1, no. 1, pp. 10-13.

Ministry of Education 2018, Enrolmen peringkat menengah di sekolah kerajaan dan bantuan kerajaan di Kedah seperti pada 30 Jun 2018. Portal Data Terbuka Malaysia, <https://www.data.gov.my/data/en_US/dataset/enrolmen-sm-kedah/resource/419a6ede-5bc1-435c-b118-ce6465195cb3>.

Ministry of Higher Education Malaysia 2021, 'Tvet in numbers', Penang Monthly.

Mustapha, R, Zaharim, A, Long, NL & Mohd, F 2013, Women and skills training: Gender imparity in in technical field, <https://pdfs.semanticscholar.org/7d5a/384c25ddc0508260f7725dd948596317d0d6.pdf?_ga=2.232860894.1187447388.1577185222-1804894930.1577046983>.

Omar, MK, Rauf, MA, Ismail, N, Rashid, AM, Mohd Puad, MH & Zakaria, A 2020, 'Factors on deciding TVET for first choice educational journey among pre-secondary school student', European Journal of Molecular & Clinical Medicine, vol. 7, no. 3, pp. 609-627.

Omar, MK, Zahar, FN & Rashid, AM 2020, 'Knowledge, skills, and attitudes as predictors in determining teachers' competency in Malaysian TVET institutions', Universal Journal of Educational Research, vol. 8, no. 3C, pp. 95-104.

Rajaendram, R 2020, 'Budget 2021: Association welcomes bigger allocation for TVET sector', The Star Online.

Remesher, AN 2019, Calculating your sample size in 2021. Remesh, <https://blog.remesh.ai/how-to-calculate-sample-size>.

Sani, R 2018, 'Skills-based pathway to a high-income nation', New Straits Times.

Sulaiman, NL & Mohd Salleh, K 2016, 'The development of technical and vocational education and training (tvet) profiling for workforce management in Malaysia: Ensuring the validity and reliability of TVET data', Man in India, vol. 96, pp. 2825-2835.

Sulaiman, NL, Mohd Salleh, K, Mohamad, MM & Lai, CS 2015, 'Technical and vocational education in Malaysia: Policy, leadership, and professional growth on Malaysia women', Asian Social Science, vol. 11, no. 24, pp. 153-161.

UNESCO 2003, Technical and vocational education and training for the twenty-first century: UNESCO recommendations, Paris: UNESCO.

Wong, WZ & Atan, SA 2021, Factors influencing students' attitudes towards technical and vocational education and training (TVET), Research in Management of Technology and Business, vol. 2, no. 1, pp. 335-348.

Zia, A, Tan, PL & Subramaniam, G 2019, 'Criteria and priorities of secondary school students in choosing their educational pathway: A selection process by analytic hierarchy process', Malaysian Journal of Consumer and Family Economics, vol. 22, no. 2, pp. 233-247.