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Exploring Career Decisions and Employability Skills among Engineering Students in Vocational Colleges

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Abstract

Malaysia is committed to achieving sustainable growth along with fair and equitable distribution across income groups, ethnicities, regions, and supply chains. The commitment aims to enhance the nation's prosperity and be prepared with a sufficient skilled and semi-skilled workforce. However, there is a lack of proficiency and sensitivity of the technical and vocational graduates for the various career-enhancing programs organized by the government. The graduates do not have clear action plans and strategies to meet the needs of the industrial market. In addition, there is a concern from the industries about the graduates' job skills to succeed in their careers. Therefore, this study aimed to explore career decisions and the level of employability skills based on gender, academic achievement, and career exposure among engineering students in vocational colleges in Selangor, Malaysia. The researcher used a survey design and quantitative approach for this research. Respondents for this study are the first and second year of engineering students in Selangor vocational colleges. The findings show that the level of career decision and employability skills are at a moderate high level for most demographic groups. This study also serves as a reference to stakeholders to identify students' career decisions and employability skills in vocational colleges. Administrators and educators are recommended to play an active role in integrating career information and guidance in the learning process efficiently in order to improve students' career decisions and employability skills.

Keywords: Academic Achievement, Career Decision, Career Exposure, Employability Skills.

Introduction

One of the important national plans to guide Malaysia towards the new horizon in a balanced socio-politic and sustainable economy is Shared Prosperity Vision 2030. Shared Prosperity Vision 2030 is a commitment to the country to achieve sustainable growth along with fair and equitable distribution across income groups, ethnicities, regions, and supply chains. The commitment is focused on strengthening political stability, enhancing the nation's prosperity, and ensuring people are united while celebrating ethnic and cultural diversity as the foundation of nation-state. The vision aims to provide a decent standard of living to all Malaysians by 2030 (Prime Minister Office, 2020).

As outlined in the vision, there are three pillar objectives: a) restructuring the economy to be more progressive, knowledge-based, and high-valued with full community participation at all levels, b) addressing economic disparities across income groups, ethnicities, regions, and supply chains to protect and empower people in ensuring that no one left behind, and c) building the country as a united, prosperous, and dignified nation and subsequently becoming an economic center of Asia. From these objectives, eight key enablers of capabilities, resources, and catalysts contributing to the success of the vision. One of them is general education and technical and vocational education and training (TVET). TVET is seen as an essential platform to propel the country to a greater height by increasing skilled and highly-educated workforce, learning society, and outcome-based education. In order to achieve the vision, the country needs to be prepared students with sufficient skills before them entering the job market (Puad, 2015). Today, the important strategy in TVET is strengthening the graduates of TVET institutions, including vocational colleges.

Since the transformation of vocational colleges, thousands of TVET graduates have been produced to the labor market (National Policy Publishing Division, 2017). About 97 percent of vocational college graduates were awarded places in the workplace right after graduation (Jalil, 2019). Also, thousands of vocational college students can secure jobs before they graduated due to job match with industrial demands (Hanapi, 2015). Although vocational colleges produce a high number of graduates every year to the workforce, the number of skilled workers required by the industrial market is still insufficient.

Employability skills are essential for every graduate to secure and maintain employment in the competitive job market. The nation has to provide the knowledge and skills needed for vocational college graduates to adapt to the challenging world of work today. Internet of Things, Industrial Revolution 4.0, artificial intelligence, technology sustainability, globalization, and many other new developments require students to be prepared with not just technical skills but also employability skills needed by industry (Puad, 2020; Rashid, 2020). The lack of knowledge, skills, and attitudes among students in TVET institutions makes it difficult for employers in any field to hire them. Feedback and comments from employers mentioned that graduates lack employability skills needed in the workplace (Alavi, Sail, & Awang, 2013; Omar, Zahar, & Rashid, 2020; Rasul et al., 2012). The future of the country to achieve the vision shared with the development and progress of TVET, especially in producing the equipped graduates with high employability skills.

Employability Skills Required by Industries

Zaharim et al. (2010a) proposed an engineering skills framework to be used as a framework for engineering graduates in the Malaysian context. The Malaysian Engineering Employability Skills (MEES) framework was developed for engineering job skills and to fulfill engineering accreditation requirements. The criteria for employability skills related to engineering are

included in the framework shown in Figure 1 below. The three main components of the MEES framework are (a) personality, (b) personal skills, and (c) knowledge. These three components are made up of ten practical skills: communication skills, teamwork, continuous learning, professionalism, problem-solving and decision-making skills, competency in applications and practices, knowledge of science and engineering principles, knowledge of contemporary issues, systems approach engineering, and competent in certain engineering disciplines (Yusoff et al., 2012; Zaharim et al., 2010b).

In the framework, the personality skills component is the soft skills needed to work effectively with colleagues, the public, and the surrounding community. Elements in personality skills are EES1, EES2, EES3, EES4, and EES5. The second key component is a personal attribute. These skills are the foundation for getting a job, maintaining a job, and succeeding in a job. Elements of the personal attribute are EES1, EES2, EES5, EES6, EES9, and EES10. The third major component is knowledge. Knowledge consists of EE3, EES5 EES7, EES 8, and EES 9. The knowledge component needs to understand the scientific and technological principles of getting a job, maintaining a job, and succeeding in that field (Zaharim et al., 2010a). Table 1 below explains details about the subcomponents in the MEES framework.

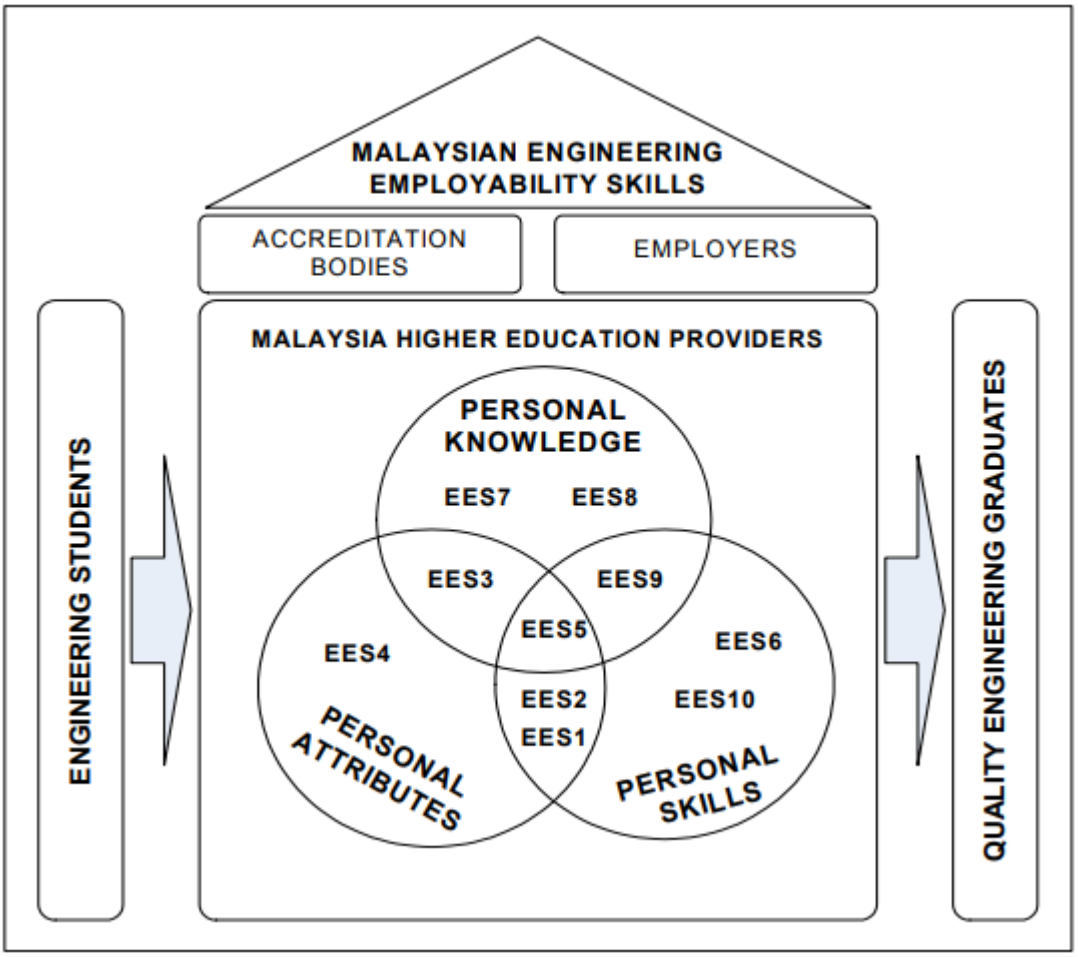

Figure 1: Malaysian Engineering Employability Skills Framework

The MEES framework was developed from researches on engineering employability skill issues and the requirement of the accreditation of the engineering program. The framework satisfies the criteria and in line with the requirements of the Accreditation Board for Engineering and Technology (ABET), the Engineering Accreditation Councils of Malaysia,

the Board of Engineers Malaysia, and the Malaysian Quality Assurance Department of the Ministry of Higher Education Malaysia, Washington Accord 1989. It also satisfies the qualification criteria of other professional bodies. The MEES framework is a recommended possible set of employability skills related to engineering fields. The skills will assist individuals who study and search for jobs in engineering as well as technical and vocational areas. More importantly, the framework sets out exactly what is meant by engineering employability, in clear and simple terms, and the framework suggests directions for interaction between the various criteria that being identified (Puad, 2015). These skills are vital to be equipped among students through their campus life (Kaushal, 2016).

Table 1
Subcomponents of the Malaysian Engineering Employability Skills Framework

Subcomponent	*Elements of Employability Skills*
EES1	*Communication skills (CS)*
EES2	*Teamwork (TS)*
EES3	*Lifelong learning (LL)*
EES4	*Professionalism (PR)*
EES5	*Problem-solving and decision-making skills (PS)*
EES6	*Competent in application and practice (CAP)*
EES7	*Knowledge of science and engineering principles (KSE)*
EES8	*Knowledge of contemporary issues (KCI)*
EES9	*Engineering system approach (ESA)*
EES10	*Competent in a scientific engineering discipline (CSE)*

Career Decision in Technical and Vocational Education and Training

A career decision is a situation where people carefully think about their interests, talents, abilities, and values. Usually, the areas that people good to indicate their career interests and decision. A career decision is a goal in shaping one's goals in choosing a compatible career with interest and approval. A career decision is an essential aspect of a student's life. It impacts not only the student's life but also the workforce. Initially, the career decision is made in childhood, but it evolves and develops over time as a lifelong decision-making process (Khalid, 2016; Patton & McMahon, 2006). There are various theories used to determine the certainty of an individual's career. Among the career-related theories are Islamic Career Theory, Trait and Factor Theory, Holland Theory, Anne Roe Theory, Bordin Psychomotor Theory, and Super Theory. Each of these career theories leads to different approaches and understandings in determining individual careers.

Yaacob and Ramli (2004) emphasize that Islamic Career Theory focuses on spiritual stability and knowledge as well as skills and experience in determining individual careers. Trait and Factor Theory largely influence Holland's theory. It classifies each personality into six RIASEC attributes: Realistic, Investigative, Artistic, Social, Enterprising, and Social. Each attribute gives a different personality in determining the individual's career (McDaniel & Snell, 1999). Anne Roe's theory focuses more on the formation of individuals from family backgrounds and the care received from parents when they were young. The accepted family factors of each individual will influence the formation of their career. Super theories, on the other hand, emphasize the concept of the individual self in the determination of respective careers (June & Pringle, 1977). There are three stages in determining the development of Super Career Theory from four years to twenty-four years (Khalid, 2006).

In general, individual influence has received more attention in career theory than contextual impact. Key theories that focus on career development content include the psychological approach to personality theory and personality. Table 2 shows career theory categories according to Patton and McMahon (2006). It is believed that practitioners in career and TVET areas require knowledge of research that may not emanate directly from these theories, or even from our discipline, but is nevertheless important to promoting fully informed practice (Brown & Lent, 2005).

Table 2
Category of Career Theories

Author	Category
Crites (1969)	Theory of psychology, Theory of non-psychology
Osipow and Gold (1968)	Traits and Factors, Sociology and career choice, Self-concept theory, Theory of choice and the theory of personality
Herr and Cramer (1992)	Traits and Factors, Actuarial or equivalent, The decision, Situation or sociology, Psychology, and development
Gati, Krausz and Osipow (1996)	Traits and Factors, Association and career choice, Development / Self-concept, Vocational selection and personality
Osipow (1990)	Development, Trait-oriented, Personality centered
Patton and McMahon (2006)	Content theory, Process theory, Content theory, Process theory, Content theory and processes, Broader explanation

Career decision and employability skills are important variables to be studied in career and technical education (Luzzo, 1993). Career decision-making in a TVET provides work-based learning experiences and a pathway linking school, community college, vocational college, university, and workplace. Career decision provides experiences not only to adolescents but also to young students in primary and secondary schools to explore and envision a dream career (June & Pringle, 1977; Ryken, 2006).

Furthermore, choosing a career is often a challenge, especially in new professional contexts, as seen today TVET area. Students require not only technical and academic skills but also employability skills in making decisions in complex situations and environments. Higher educational institutions must embrace the reality of career decision making from the beginning of their curriculum as it affects employability skills. They must be self-aware of their weaknesses, their personal qualities to improve, and the strengths that will allow them to face with tremendous success a world / professional environment that is increasingly volatile, uncertain, complex, and ambiguous (Chelin et al., 2019; Rasit & Tahar, 2017). Therefore, this study aimed to explore career decisions and employability skills based on gender, academic achievement, and career exposure among engineering students in vocational colleges in Selangor.

Methods

This study was a quantitative study that examined career decisions and employability skills based on demographic groups. The population of this study was the first and second years engineering students in vocational colleges in the state of Selangor, Malaysia. The study was conducted in the state of Selangor because it reflected and represented the whole demographic groups of vocational colleges nationwide. Six vocational colleges offer

engineering technology, namely Kolej Vokasional Sungai Buloh offers seven engineering technology courses. Kolej Vokasional Klang offers eight engineering technology courses, Kolej Vokasional Shah Alam, Kolej Vokasional Kajang, Kolej Vokasional Sepang, and Kolej Vokasional Sultan Abdul Samad offer two engineering technology courses. The respondents were selected through stratified random sampling and the proportional method. The overall sample size was 303 from the overall study population of 1427.

The study utilized a questionnaire to capture respondents' feedback. The questionnaire was in the Malay language. There are three parts in the questionnaire; Part A, B, and C. Part A measures the level of employability skills on a Likert scale of five. Part B consists of career decision questions, and Part C asks about demographic information of respondents. The questions were developed by previous research in employability skills (Puad, 2015) and career decisions (Osipow, 1990). Researchers then analyzed the data by using IBM SPSS Statistics software. In this study, the descriptive statistics involved mean and standard deviation in describing the variable characteristics used in this study. Meanwhile, inference statistics used t-test and ANOVA analysis to explore the differences within demographic groups.

Results and Discussions

Demography

The respondents in this study were 303 engineering students in vocational colleges of Selangor; 243 men and 40 women. According to Table 3, about 146 students (48.2%) had an average Vocational Cumulative Grade Rating (PNGKV) between 3.50 to 4.00. Meanwhile, 143 students (47.2%) had PNGKV from 3.00 to 3.49. Only a few students had PNGKV below 3.00 which were 10 (3.3%) students had PNGKV 2.50 to 2.99, 3 (1.0%) students had 2.00 to 2.49 and one below 2.00 (0.3%). The results of the analysis found that the performance of the first year and second year diploma vocational college students in the area of vocational fields are excellent and satisfactory. On average, their technical skills were on the level that the institutions want them to be.

A finding from the source of career exposure shows that 60% of respondents rarely got career exposure from counselors at their colleges. Regarding career exposure from course advisors, about half of the respondents always received career guidance from their advisors. Most of the students rarely learn about their career exposures from a book. Moreover, most of the respondents either rarely or always received career exposure from their social media and newspaper. About 69.3% and 60.1% of respondents agreed that they received career exposures from their friends and family members. These findings show that vocational colleges depend on sources outside of their educational institutions to get early career exposures for their lives.

Table 3
Demographic Information (N=303)

Demography		**Frequency (f)**	**Percentage (%)**
Gender			
Men		263	86.8
Women		40	13.2
Academic achievement (PNGKV)			
< 2.99		14	4.6
3.00 – 3.49		143	47.2
3.50 – 4.00		146	48.2
Source of career exposure	**Never (%)**	**Rarely (%)**	**Always (%)**
Counseling	26.4%	60.4%	13.2%
Course advisor	5.6%	38.9 %	55.4%
Book	7.9%	61.1%	31.0%
Social media	5.6%	49.8%	44.5%
Newspapers	14.2%	62.0%	23.8%
Friends	2.6%	28.1%	69.3%
Family members	3.3%	36.6%	60.1%

Career Decision Based on Gender, Academic Achievement, Career Exposure Factors

According to Table 4, the mean values of career decisions for all demographic groups are at a moderately high, except for women and high PNGKV groups. Both groups are at moderate-low, which is M=3.31 and M=3.28, respectively. This result shows that career decisions among engineering students in Selangor vocational colleges are at a moderate level. Students have chosen to study at vocational colleges. However, their career pathways are still unclear. Some of them are not confident with their career pathways even though they provide concrete career guidance and target for students over their study years.

Furthermore, Table 5 shows the mean differences in the level of career decision. Based on the table, the career decision level is significantly different between groups of academic achievement (PNGKV) with $F(4,298) = 4.77$, $p = 0.01$. This result means that the mean of career decision for academic achievement PNGKV of below 2.99 (M = 3.40, SP = 0.59), from 3.00 to 3.49 (M = 3.58, SP = 0.59) from 3.50 to 4.00 (M =3.28, SP = 0.61) in Table 4 is significantly different among PNGKV groups. The group PNGKV 3.50 to 4.00 is recorded moderate high and different from other groups. Also, there is a significant difference in the mean of career decision for the source of career exposure; course advisor (M= 3.39, SP=0.58) and newspaper (M=3.43, SP=0.61). The F-test of the course advisor and newspaper are $F(4,298) = 6.37$, $p = 0.02$ and $F(4,298) = 5.21$, $p = 0.01$. The means of these two groups of the source of income are different in their scales who responded never, rarely, and always.

Table 4
Mean of Career Decision (N=303)

Demography	Mean (M)	Standard Deviation (SD)	Interpretation
Gender			
Men	3.45	0.62	Moderate high
Women	3.31	0.55	Moderate low
Academic achievement (PNGKV)			
< 2.99	3.40	0.59	Moderate high
3.00 – 3.49	3.58	0.59	Moderate high
3.50 – 4.00	3.28	0.61	Moderate low
Source of career exposure			
Counseling	3.47	0.63	Moderate high
Course advisor	3.39	0.58	Moderate high
Book	3.41	0.49	Moderate high
Social media	3.63	0.55	Moderate high
Newspapers	3.43	0.61	Moderate high
Friends	3.32	0.53	Moderate high
Family members	3.63	0.58	Moderate high

*Significant at confidence level 0.05

Table 5
Mean Differences in Career Decision (N=303)

Demography	statistics	df	p-value
Gender	t = 1.29	301	0.20
Academic Achievement (PNGKV)	F = 4.77	298	0.01*
Source of career exposure			
Counseling	F = 1.51	298	0.22
Course advisor	F = 6.37	298	0.02*
Book	F = 2.11	298	0.12
Social media	F = 1.27	298	0.28
Newspapers	F = 5.21	298	0.01*
Friends	F = 1.74	298	0.18
Family members	F = 1.70	298	0.19

*Significant at confidence level 0.05

Employability Skills Based on Gender, Academic Achievement, and Career Exposure Factors
The results of the study show that most means of elements of employability skills are at a moderately high level. However, a few demographic groups are recorded a moderate low in employability skills (Table 6). Based on Table 6, students with PNGKV below 2.99 possess moderate-low communication skills (M = 3.41). This pattern is followed by students who attain information about career exposure from course advisor (M = 3.71), social media (M = 3.70), friends (M = 3.62), and family members (M = 3.70). This pattern shows that students with low achievement in technical and vocational skills also had similar communication skills. Whether these findings have an empirical relationship or cause-effect explanation, further studies should be conducted beyond the scope of this study to prove any claims. Similarly, for competent in application and practice element, a few demographic groups presents

moderate low means of employability skills. Students who have low academic achievement PNGKV (M = 3.71) and students who gained career exposure from social media (M = 3.45) and family members (M = 3.68) are recorded moderate-low level of competence in application and practice.

In the same way for problem-solving and decision-making skills, more demographic groups demonstrate a moderately low level of skills. For example, female engineering students have a moderately low level of problem-solving and decision-making skills with a mean, M = 3.69. Similarly, with the previous pattern, low achiever students have a mean of problem-solving and decision-making skills, M = 3.58. Other demographic groups such as the source of career exposure from a book (M = 3.70), social media (M = 3.66), and family members (M = 3.60) also record a moderately low level of problem-solving and decision-making skills.

Table 6
Mean of Employability Skills (N=303)

Demography	Mean (M)									
	CS	TS	LL	PR	PS	CAP	KSE	KCI	ESA	CSE
Gender										
Men	3.75	3.95	3.98	4.02	3.75	4.04	3.90	4.03	3.99	4.00
Women	3.94	4.01	4.15	4.23	3.69	4.15	3.96	4.04	3.98	4.04
Academic achievement (PNGKV)										
< 2.99	3.41	3.86	3.82	3.83	3.58	3.71	3.77	3.84	3.82	3.92
3.00 – 3.49	3.78	3.95	3.98	4.02	3.73	4.05	3.92	4.03	4.03	4.03
3.50 – 4.00	3.81	3.97	4.04	4.10	3.78	4.10	3.93	4.05	3.97	4.00
Source of career exposure										
Counseling	3.82	3.98	4.02	4.06	3.79	4.07	4.04	4.02	4.02	4.03
Course advisor	3.71	3.87	3.94	3.96	3.79	3.98	3.84	3.98	3.94	3.93
Book	3.75	3.91	3.98	4.02	3.70	4.01	3.85	4.02	3.94	3.94
Social media	3.70	3.86	3.88	3.92	3.66	3.45	3.88	3.95	3.86	3.90
Newspapers	3.78	3.94	3.96	4.04	3.77	4.06	3.92	4.03	3.99	4.01
Friends	3.62	3.82	3.85	3.95	3.60	3.92	3.84	3.98	3.94	3.90
Family members	3.70	3.91	3.93	3.93	3.99	3.68	3.88	4.00	3.95	3.95

Table 7 shows the mean differences of the level for all elements of employability skills. According to the findings, the level of communication skills ($t(301) = -2.45$, $p = 0.02$), professionalism ($t(301) = -2.81$, $p = 0.01$) and lifelong learning ($t(301) = -2.39$, $p = 0.02$) are found to be different significantly between male and female engineering students. Other group means are not significantly different. The mean of communication skills for male students (M = 3.75) and female students (M = 3.94) are different significantly. Female engineering students perceive better communication skills compared to male engineering students. This pattern is exactly followed by lifelong learning (men, M = 3.98 and female, M = 4.15) and professionalism (men, M = 4.02 and female, M = 4.23). Female engineering vocational college students seem to perceive better non-technical skills as compare to male engineering students. This finding has similar results with other research findings related to comparing employability skills among male and female students (Irwin, Nordmann & Simms, 2019; Omar et al., 2012; Darwish & Abdeldayem, 2019).

Table 7
Mean Differences in Employability Skills (N=303)

	Statistics	df	p-value
Gender			
Communication skill (CS)	t = -2.45	301	0.02*
Teamwork skills (TS)	t = -0.92	301	0.36
Lifelong Learning (LL)	t = -2.39	301	0.02*
Professionalism (PR)	t = -2.81	301	0.01*
Problem solving and decision-making skills (PS)	t = 0.78	301	0.44
Competent in application and practice (CAP)	t = -1.32	301	0.19
Knowledge of science and engineering principles (KSE)	t = -0.69	301	0.49
Knowledge of contemporary issues (KCI)	t = -0.10	301	0.92
Engineering system approach (ESA)	t = 0.17	301	0.87
Competent in specific engineering disciplines (CSE)	t = -0.46	301	0.65
Academic Achievement PNGKV			
Communication skill (CS)	F = 3.68	302	0.01*
Teamwork skills (TS)	F = 0.65	302	0.63
Lifelong Learning (LL)	F = 1.76	302	0.14
Professionalism (PR)	F = 1.38	302	0.24
Problem-solving and decision-making skills (PS)	F = 1.48	302	0.21
Competent in application and practice (CAP)	F = 3.45	302	0.01*
Knowledge of science and engineering principles (KSE)	F = 1.49	302	0.20
Knowledge of contemporary issues (KCI)	F = 0.91	302	0.46
Engineering system approach (ESA)	F = 1.34	302	0.26
Competent in specific engineering disciplines (CSE)	F = 0.31	302	0.87
Source of career exposure			
Communication skill (CS)	F = 3.57	302	0.03*
Teamwork skills (TS)	F = 2.89	302	0.06
Lifelong Learning (LL)	F = 3.22	302	0.04*
Professionalism (PR)	F = 2.32	302	0.10
Problem-solving and decision-making skills (PS)	F = 2.37	302	0.10
Competent in application and practice (CAP)	F = 3.03	302	0.05*
Knowledge of science and engineering principles (KSE)	F = 2.35	302	0.10
Knowledge of contemporary issues (KCI)	F = 1.49	302	0.23
Engineering system approach (ESA)	F = 1.09	302	0.34
Competent in specific engineering disciplines (CSE)	F = 3.34	302	0.04*

*Significant at confidence level 0.05

Referring to academic achievement PNGKV, communication skills (F(4,302) = 3.68, p = 0.01) and competent in application and practice (F(4,302) = 3.45, p = 0.01) are different among PNGKV groups. Their means reported in Table 6 are significantly different among each

PNGKV groups. Similarly, the level of communication skills ($F(4,302) = 3.57$, $p = 0.03$), lifelong learning ($F(4,302) = 3.22$, $p = 0.04$), competent in application and practice ($F(4,302) = 3.03$, $p = 0.05$), and competent in specific engineering disciplines ($F(4,302) = 3.34$, $p = 0.04$) are different significantly for each scale source of career exposure. The mean agreements of these four sources of career exposure are different who responded never, rarely, and always.

Conclusions and Recommendations

In conclusion, a career decision for engineering students in vocational college is mostly at a moderately high level. There are a few demographic groups of engineering students that demonstrate career decision is at a moderately low level, such as academic achievement PNGKV. The highest PNGKV group exhibits a moderately low level of career decision significantly. This finding sparks questions among researchers and practitioners in Technical and Vocational Education and Training, whether high achiever students are clear with their career pathways or still unconfident with their choice of study in vocational colleges. The vocational college has a clear objective and purpose of addressing the country's need for skilled workers. Students who enroll in vocational college should have a clear career pathway that reflects the institution's program and objective.

In employability skills, most skills framework elements are at a moderately high level except in a few engineering students' demographic groups. Communication skill, one of the elements in the Malaysian Engineering Employability Skills Framework, is at a moderately low level in many demographic groups, such as male students and lower academic achiever students. Moreover, communication skills and competence in application and practice are also found to be at a moderate level significantly among PNGKV groups, obviously in the low PNGKV group. There might be some relationship or effect between achievement and employability skills. However, this claim needs to be supported by further research.

The Division of Technical and Vocational Education Training, Ministry of Higher Education Malaysia needs to take more initiative by establishing relationships with the industry to align with industrial needs. Vocational college students need to be given more career exposure to their career pathways and guidance in the workforce by addressing the nation's needs for skilled workers. Vocational colleges can take the initiative by creating a working environment in college. Industrial culture for students can motivate and encourage students to fulfill their role in the labor market. Career education programs and activities are highly recommended for vocational colleges to expose them to the world of work.

Furthermore, educators in vocational colleges are encouraged to be more creative in teaching and learning. Educators can emphasize non-technical skill development, such as employability skills listed in the MEES framework. These skills will be an added value for students in securing jobs in the industry in the future. The vocational college curriculum also needs to be revised frequently and embedded with current issues and needs in the industry today. The development and updates are, in the real-world able to open up students' minds and catalyze their interest to learn and gain employability skills while studying in vocational colleges.

In the future, further research should be conduct by widening the scope of respondents, programs, institutions, and locality to get better evidence and explanation in TVET. This study should assist researchers, practitioners, and stakeholders in TVET about the current situation in the area. This study also serves as a reference to stakeholders to identify students' career decisions and employability skills in vocational colleges. Administrators and educators are recommended to play an active role in integrating career information and

guidance in the learning process efficiently in order to improve students' career decisions and employability skills.

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