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Gender and Socioeconomic Influences on Career Interest, Career Adaptability, and Employability Among Malaysian Bachelor of Technology Students

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Abstract

Selecting the right career is crucial in preparing students to meet the challenges of the job market. This study investigates the relationships between career interest, career Adaptability, and employability skills among TVET students in MTUN. Specifically, it aims to explore how these factors are interconnected within TVET students. The study involved 265 randomly selected Bachelor of Technology (SMT) students, utilizing a questionnaire adapted from the Career Interest Instrument (*Xplorasi*), Career Adaptability Instrument, and Employability Skills Instrument. Analysis of career interest differences based on demographic factors revealed no significant differences by gender ($F=1.35$, $p=.25$), socio-economic status ($F=1.99$, $p=.07$), or parental education level ($F=0.72$, $p=.65$). However, career Adaptability showed significant gender-based differences ($F=0.57$, $p=.45$) and was notably influenced by socio-economic status ($F=3.29$, $p=.00$), while parental education background had a moderate effect on career Adaptability ($F=1.74$, $p=.10$). Regarding employability skills, gender ($F=0.00$, $p=.98$), socio-economic factors ($F=2.52$, $p=.02$), and parental education level ($F=1.76$, $p=.10$) significantly impacted students' employability. Despite the lack of significant relationships or differences between the main variables, the study successfully developed a conceptual framework linking career interest, career Adaptability, and employability skills. The findings provide critical insights for TVET institutions, policymakers, and industries to enhance the educational system and increase the competitiveness of TVET graduates by focusing on these key factors.

Keywords: career development, career interest, career adaptability, employability skills, TVET students

Introduction

Career choice among graduates is influenced not only by interest, skills, and family influence but also by other factors such as the employment system, salary, and the professions offered (Md. Johan & Mohd Ilias, 2010). Salary as a form of reward plays a crucial role in job selection decisions, where mismatches between salary and qualifications often become a major issue for graduates (Mat Pesa, Mustafa & Mohyeddin, 2020). In fact, a high salary often becomes the primary driver in accepting a job without considering its alignment with personal interests and abilities. As a result, many graduates struggle to adapt to careers that do not match their interests, causing them to easily give up and tend to change jobs (Ministry of Higher Education, 2022). Therefore, the relationship between interest and career selection must be emphasized to avoid instability in the labor market.

Labor statistics reported by the Department of Statistics Malaysia (2019) show that 7.21 million individuals, or 31.5% of the population aged 15 to 64, are made up of housewives, students, retirees, and those not interested in working. From 2016 to 2019, the graduate labor force increased by 6.9%, reaching 5.29 million individuals in 2019 compared to 4.94 million the previous year. However, the graduate unemployment rate remained at 3.9% (170,300 individuals), indicating ongoing challenges in graduate employability (Department of Statistics Malaysia, 2019). To address this issue, the Ministry of Education Malaysia and the Ministry of Higher Education (KPT) introduced the TVET agenda as a strategic initiative to provide a workforce that meets industry needs.

Industry-oriented TVET education aims to improve graduate employability and contribute to the growth of a knowledge-based economy, technological advancement, and global workforce mobility (Ministry of Higher Education, 2020). This effort aligns with the increasingly complex labor market demands, where the demand for skilled human capital continues to rise (Rahman & Aziz, 2021). Through an industry-driven approach, TVET not only ensures graduates possess relevant technical skills but also strengthens the competitiveness of the local workforce. The increase in TVET enrollment reflects the awareness of the need for technical and vocational education as a key pathway to developing more competitive human capital in the job market (Aziz & Nor, 2020). Therefore, TVET is a crucial component in the strategy for developing a dynamic and competitive workforce at both the domestic and international levels.

Purpose of the Study

This study aims to examine the differences between career interest, career Adaptability, and employability skills among TVET students, specifically Bachelor of Technology (SMT) students in MTUN. It investigates students' tendencies in determining their career interests and their Adaptability to the workforce. The findings of this study can help stakeholders such as MTUN, the government, and industries develop strategies to enhance graduate employability. The study also identifies challenges in students' career interest and Adaptability to strengthen their competitiveness in the increasingly competitive job market. It aims to identify the differences in career interest based on gender, socio-economic status (parental

income), and parental education level among TVET students in MTUN. It also seeks to identify the differences in career Adaptability based on gender, socio-economic status (parental income), and parental education level among TVET students in MTUN. Additionally, the study aims to identify the differences in employability skills based on gender, socio-economic status (parental income), and parental education level among TVET students in MTUN.

Methods

This study uses a quantitative design through a survey approach. The survey method is an approach that involves the collection of data at a single point in time (cross-sectional) using instruments such as questionnaires to obtain information related to the research issues (Creswell, 2022). A total of 265 respondents answered the questionnaire, with 132 respondents being SMT students from Universiti Tun Hussein Onn Malaysia (UTHM), 57 respondents from Universiti Teknikal Malaysia Melaka (UTeM), 38 respondents from Universiti Malaysia Pahang Al Sultan Abdullah (UMPASA), and 38 respondents from Universiti Malaysia Perlis (UniMAP). The researcher used a questionnaire to collect information from the respondents. Questionnaires have the advantage of being cost-effective and can also be used when targeting a large sample size, aiming to provide the best solution to address specific issues (Leedy and Ormrod, 2015). Furthermore, Abdul Rahman and Alias (2010) state that questionnaires are a frequently used instrument in descriptive studies as they facilitate respondents' cooperation in answering. Through the distributed questionnaires, the researcher made an analysis based on the scale values assigned to each response from the respondents. This questionnaire instrument is a modification and Adaptability of the Career Interest Instrument (Xplorasi) by Amla Mohd Salleh (2012), the Career Adaptability Instrument (Career Adapt-Abilities Scale, CAAS) by Savickas and Porfeli (2012), and the Employability Skills Instrument by Seri Bunian Mokhtar, Saemah Rahman, and Mohd Yusof Husain (2012).

Result

The analysis for finding differences in career interest based on gender, socio-economic status (parental income), and parental education level among TVET students in MTUN is presented in result 4. This inferential analysis uses t-tests and analysis of variance (ANOVA) with SPSS software. Based on descriptive data on the mean career interest of TVET students based on gender. The data analysis includes the mean value, standard deviation, and standard error mean for both male and female students. The mean value for male students is 3.43 with a standard deviation of 0.50, which is higher compared to female students at 3.13 with a standard deviation of 0.46. This difference indicates that career interest among male students is slightly higher than that of female students. The standard error of the mean for both groups is the same, which is 0.04.

Table 1 Analysis of Career Interest Differences Based on Gender

		Independent Samples Test								
		Levene's Test for Equality of Variances			t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Mean Career Interest	Equal variances assumed	1.35	0.25	5.01	263.00	.00	0.30	.06	0.18	0.41
	Equal variances not assumed			5.02	262.71	.00	0.30	.06	0.18	0.41

n = 265, *p < .05

Table 1 shows the difference in career interest based on gender. The SPSS analysis uses the t-test, specifically the "Independent Samples Test," to determine the difference in career interest based on gender among TVET students in MTUN. Levene's Test for Equality of Variances shows an F value of 1.35 with a p-value (Sig.) of 0.25. Since the p-value is greater than 0.05, this indicates that the variance for both groups (male and female) is equal. Therefore, the t-test analysis can proceed using the assumption of equal variances. The t-test result shows a t-value of 5.01 with 263 degrees of freedom. The two-tailed p-value is 0.00, which is much smaller than 0.05. This means there is a significant difference in career interest between male and female students. The mean difference obtained is 0.30, where male students show a higher mean of 3.43 compared to female students at 3.13. Additionally, the standard error of the difference is 0.06, indicating a high level of precision in estimating this difference. The 95% confidence interval for the mean difference ranges from 0.18 to 0.41, providing additional evidence that this difference is real and not a statistical coincidence. This shows that the mean difference of 0.30 is stable and reliable within the stated confidence range. The analysis found that gender has a significant influence on the career interest of TVET students in MTUN, with male students showing a higher level of interest than female students. This suggests the possibility of cultural or social factors influencing career choices, which should be considered when developing more inclusive career interest development strategies for all students.

Table 2 Analysis of Career Interest Differences Based on Socioeconomic Status (Parental Income)

ANOVA					
	Mean Career Interest				
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.98	6.00	0.50	1.99	0.07
Within Groups	64.38	258.00	0.25		
Total	67.36	264.00			

n = 265, *p < .05

Analysis for Table 2 was conducted using one-way ANOVA in SPSS to evaluate differences in students' career interest based on socioeconomic status, measured by parents' total income. The results show an F value of 1.99 with degrees of freedom $df = 6$ (between groups) and $df = 258$ (within groups). The obtained significance value (Sig.) was 0.07, which is greater than the significance level of 0.05. These findings indicate that there is no significant difference in TVET students' career interest based on their socioeconomic status. In brief, although there are variations in career interest among different socioeconomic groups, the variation is not large enough to be considered statistically significant.

Table 3 Analysis of Career Interest Differences Based on Parents' Education Level

ANOVA					
	Mean Career Interest				
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.30	7.00	0.19	0.72	0.65
Within Groups	66.06	257.00	0.26		
Total	67.36	264.00			

n = 265, *p < .05

Based on ANOVA analysis in Table 3, this part of the study examined differences in TVET students' career interest by their parents' education level. The results show an F value of 0.72 with a significance (Sig.) value of 0.65. Since this significance value is greater than 0.05, it clearly indicates that there is no significant difference in students' career interest based on their parents' education level. The differences in average career interest between groups categorized by parents' education level are very small. The between-group mean square was 0.19 versus 0.26 within groups. This shows that parents' education level does not have a significant impact on the career interest of TVET students in MTUN, suggesting that other factors might have more influence on their career interests.

Table 4 Analysis of Career Adaptability Differences Based on Gender

Table 4: Analysis of Career Adaptability Differences Based on Gender										
		Independent Samples Test								
		Levene's Test for Equality of Variances	t-test for Equality of Means							
			F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower	Upper
Career Adaptability	Equal variances assumed	0.57	0.45	3.51	263.00	0.00	0.28	0.08	0.12	0.43
	Equal variances not assumed			3.51	261.94	0.00	0.28	0.08	0.12	0.43

n = 265, *p < .05

Table 4 shows the descriptive data on the mean career Adaptability of TVET students by gender. This analysis includes the mean, standard deviation, and standard error of the mean for both male and female students. The mean for male students is 4.32 with a standard deviation of 0.63, which is higher than that for female students (mean 4.05, SD 0.64). This difference indicates that career Adaptability among male students is slightly higher than among female students. The standard error of the mean for both groups is similar (0.05 for males and 0.06 for females). For the difference in career Adaptability by gender, an independent samples t-test (see Table 6 for summary) yielded two main outcomes: one under the assumption of equal variances and one without that assumption. Levene's Test for Equality of Variances gave an F value of 0.57 with a Sig. value of 0.45. Since $p = 0.45$ is greater than 0.05, the equal variances assumption is satisfied. Therefore, the t-test results based on the first line (equal variances assumed) are appropriate to use. Under the equal variances assumed condition, the t-test produced a t value of 3.51 with degrees of freedom (df) = 263. The two-tailed Sig. value was 0.00. This indicates that the difference in means is highly significant statistically at the 1% level ($p < 0.01$). Furthermore, the mean difference between male and female students' career Adaptability was 0.28, with a standard error of difference of 0.08. The 95% confidence interval for this difference is from 0.12 to 0.43, indicating that this difference is positive and significant.

The analysis shows a significant difference in mean career Adaptability between male and female students. Since equal variances were assumed, the result is reliable. The significant mean difference indicates that the two genders have markedly different levels of career Adaptability. In conclusion, this provides strong evidence that there is a difference in career Adaptability between genders, with male students demonstrating a slightly higher Adaptability level than female students.

Table 5 Analysis of Career Adaptability Differences Based on Socioeconomic Status (Parents' Total Income)"					
ANOVA					
	Mean Career Adaptability				
	Sum of Squares	df	Mean Square	F	Sig.
<i>Between Groups</i>	7.94	6.00	1.32	3.29	0.00
<i>Within Groups</i>	103.98	258.00	0.40		
Jumlah	111.93	264.00			

n = 265, *p < .05

Based on Table 5, ANOVA was conducted for the career Adaptability variable. The analysis describes the variation in career Adaptability among groups of students. The Sum of Squares Between Groups is 7.94, indicating the amount of variation in career Adaptability explained by differences between the groups, whereas the Sum of Squares Within Groups is 103.98, indicating the variation within groups that is not explained by group differences. The total Sum of Squares is 111.93, representing the overall variation in career Adaptability. The mean square between groups is 1.32, and the mean square within groups is 0.40. The F statistic is 3.29 with a significance of 0.00, showing a statistically significant difference between groups ($p < 0.05$). This means that the grouping factor (in this case, socioeconomic status groups by parents' income) has a noticeable influence on the variation in career Adaptability. In summary, this analysis confirms that there are significant differences in career Adaptability based on socioeconomic status (parents' income).

Table 6 Analysis of Career Adaptability Differences Based on Parents' Education Level					
ANOVA					
	Mean Career Adaptability				
	Sum of Squares	df	Mean Square	F	Sig.
<i>Between Group</i>	5.07	7.00	0.72	1.74	0.10
<i>Within Group</i>	106.86	257.00	0.42		
Total	111.93	264.00			

n = 265, *p < .05

Table 6 presents the results of the analysis of differences in career Adaptability based on parents' education level for TVET students in MTUN. The data was

analyzed using ANOVA with SPSS 27. The F value obtained is 1.74 with a significance (p) value of 0.10. Since the significance value is higher than the commonly used threshold ($p < 0.05$), these results indicate that there is no significant difference in the career Adaptability of TVET students based on their parents' education level. Accordingly, the findings explain that parents' education level does not exert a notable influence on students' ability to adapt to their careers. Although there were small average differences between groups (Mean Square Between Groups = 0.72) these findings are not significant enough to indicate a meaningful effect, especially when compared to the within-group variation (Mean Square Within Groups = 0.42). Overall, these results suggest that other factors may have a greater impact on TVET students' career Adaptability than parents' education level.

Table 7 Analysis of Differences in Employability Skills Based on Gender

		Independent Samples Test								
		Levene's Test for Equality of Variances			t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Employability Skills	Equal variances assumed	0.00	0.98	1.60	263.00	0.11	0.10	0.06	-0.02	0.22
	Equal variances not assumed			1.60	261.44	0.11	0.10	0.06	-0.02	0.22

n = 265, *p < .05

The descriptive data on the mean employability skills of TVET students in MTUN by gender. This analysis includes the mean, standard deviation, and standard error of the mean for both male and female students. The mean for male students is 4.29 with a standard deviation of 0.51, which is slightly higher than that for female students (mean 4.19, SD 0.52). This difference suggests that employability skills among male students are marginally higher than among female students. The standard error of the mean for both groups is similar (0.04 for males and 0.05 for females). Analysis of Table 7 used an independent samples t-test to assess differences in employability skills by gender. Equality of variances was tested using Levene's Test. The F value from Levene's Test was 0.00 with Sig. = 0.98. The result ($p = 0.98$) is greater than 0.05, indicating that the variances are equal between the

gender groups. Thus, the t-test results assuming equal variances are appropriate. Moreover, the t-test results show a t value of 1.60 with degrees of freedom (df) = 263. The two-tailed significance (Sig.) value is 0.11, which is greater than 0.05. This indicates that there is no significant difference in the level of employability skills based on gender. The mean difference between the gender groups is 0.10 with a standard error of difference of 0.06. The 95% confidence interval for the mean difference ranges from -0.02 to 0.22. Since this interval includes zero, it confirms that the observed difference is not statistically significant. The analysis indicates that student gender (male vs. female) does not have a significant influence on employability skills. The small mean difference of 0.10 is not sufficient to support a true difference between the gender groups.

Table 8 Analysis of Employability Skills Differences Based on Socioeconomic Status (Parents' Total Income)

ANOVA					
Mean Employability Skills					
	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
<i>Between Groups</i>	3.86	6.00	0.64	2.52	0.02
<i>Within Groups</i>	65.80	258.00	0.26		
Total	69.66	264.00			

n = 265, *p < .05

Table 8 presents the ANOVA results for differences in employability skills based on socioeconomic status (parents' total income) among TVET students. The analysis finds that there is a significant difference in students' employability skills based on socioeconomic status: the F value is 2.52 with p = 0.02. This p-value is less than 0.05, indicating a statistically significant difference in mean employability skill scores among groups of different socioeconomic status. The data show a total variance of 69.66 in employability skills, of which 3.86 is accounted for by differences between socioeconomic groups, while 65.80 is within-group variance. The between-group mean square is 0.64, and the within-group mean square is 0.26. This indicates that socioeconomic status does play a role in influencing the level of employability skills of TVET students. In summary, students from different socioeconomic backgrounds may have different levels of employability skills. This finding needs attention in policies or programs for skill enhancement (upskilling) or retraining (reskilling).

Table 9 Analysis of Employability Skills Differences Based on Parents' Education Level

ANOVA					
Mean Employability Skills					
	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
<i>Between Groups</i>	3.18	7.00	0.45	1.76	0.10
<i>Within Groups</i>	66.48	257.00	0.26		
Total	69.66	264.00			

n = 265, *p < .05

Table 9 provides a detailed ANOVA analysis of employability skills differences based on parents' education level. The F value obtained is 1.76 with Sig. = 0.10. This shows that parents' education level does not have a significant difference in TVET students' employability skills, because the significance value is greater than the standard threshold of 0.05. Additionally, the total variance in employability skills is 69.66. The variance between groups (by parents' education level) is 3.18, whereas the variance within groups is 66.48. This clearly shows that differences in employability skills are more influenced by variations within the student group itself rather than by differences between groups categorized by parents' education. Therefore, it can be concluded that parents' education level does not have a significant effect on the employability skills of TVET students in MTUN in the context of this study.

Discussion

This section examines whether there are differences in career interest among TVET students in MTUN based on the inferential analysis. The main focus is on understanding the extent to which factors such as gender, socioeconomic status, and parents' income influence students' career choices, providing a comprehensive picture of the strength of career interest in the context of TVET education.

Difference Career Adaptability Based on Gender Among TVET Students In MTUN

The differences in career interests between male and female students in MTUN's TVET programs reflect broader societal influences shaped by cultural norms and individual characteristics. Male students generally show a preference for technical and mechanical careers, whereas female students are more inclined toward caregiving and service-oriented roles (Eccles, 1994). This pattern aligns with Holland's RIASEC theory, which emphasizes that career preferences stem from the interaction between personal traits and environmental contexts (Holland, 1997). The theory's six domains provide a lens to understand how gender roles and socialization affect students' vocational choices.

Within the RIASEC framework, male students are commonly drawn to the Realistic domain, which includes practical, hands-on fields such as engineering,

automotive, and construction. This trend is reinforced by cultural norms that associate technical competence with masculinity (Charles & Bradley, 2009). Similarly, the Conventional domain, emphasizing structured and administrative tasks like logistics and technical coordination, also sees more male participation. On the other hand, female students often gravitate toward the Social domain—encompassing teaching, caregiving, and interpersonal services—and the Artistic domain, which emphasizes creativity and expression. Fields such as early childhood education, culinary arts, and hospitality typically attract female students due to their alignment with nurturing and expressive roles (Eccles, 1993).

Although less emphasized in TVET, careers in the Investigative domain (e.g., scientific research) tend to attract male students interested in technical problem-solving, while the Enterprising domain (e.g., entrepreneurship) appeals to both genders, depending on individual exposure and background (Gottfredson, 2002). Early gender socialization significantly impacts these patterns, with boys encouraged to pursue technical paths and girls steered toward social and artistic fields (Bandura, 1986; UNESCO, 2018).

These findings highlight the persistent influence of gendered expectations on career interests. To foster inclusivity, TVET institutions must implement strategies to challenge stereotypes and expand opportunities, ensuring that students of all genders can explore a wide range of career paths aligned with their interests and potential.

Difference Career Interest Based on Socioeconomic Status Among TVET Students In MTUN

This study employed a one-way ANOVA to examine the influence of socioeconomic status (SES), measured by parental income, on the career interests of TVET students at MTUN. The analysis revealed no significant differences in career interests across different SES groups. Although SES did not directly impact students' career preferences, Holland's RIASEC theory (1997) provides a meaningful framework to interpret these findings. The theory suggests that career interests develop through the interaction between individual personality traits and environmental factors. The six RIASEC domains are Realistic, Investigative, Artistic, Social, Enterprising, and Conventional that help explain how SES may subtly shape aspirations.

TVET programs typically align with the Realistic (hands-on, technical roles) and Conventional (structured, orderly tasks) domains. Fields such as engineering, hospitality, and skilled trades are commonly linked to these categories and appeal broadly across SES backgrounds (Psacharopoulos, 2004). For students from lower SES backgrounds, Realistic careers are especially attractive due to their promise of job security and stable income (Hill et al., 2004). Meanwhile, students from higher SES backgrounds may gravitate toward the Conventional domain, which offers clearer career pathways and advancement opportunities (McGrath & Powell, 2016).

Although domains like Investigative and Enterprising typically attract students from higher SES families that given their resource-intensive nature and need for higher education (Eccles, 1993), these areas are less emphasized in TVET,

possibly explaining their limited presence in the results. Similarly, while the Artistic and Social domains may vary by SES due to differing cultural exposure, TVET's focus on practical and structured training may reduce their impact. Despite the lack of significant SES-based differences, subtle trends remain. Tailored interventions are needed to nurture diverse career interests and ensure TVET continues to provide equitable opportunities, helping students pursue paths aligned with both their traits and socioeconomic realities.

Difference Career Interest Based on Parents' Education Level Among TVET Students In MTUN

The study explored whether there were differences in career interests among TVET students at MTUN based on their parents' education level. Career interest is a key factor in career decision-making, reflecting an individual's enthusiasm for specific career paths (Holland, 1997). Parental education level is often considered to influence students' career aspirations (Eccles, 1994). Using ANOVA, the study assessed how parents' education levels impact students' career interests, providing insights into socio-cultural factors affecting educational outcomes. The results of the ANOVA showed no significant differences in career interests based on parents' education level. The total variance in career interests was 69.66, with 3.18 attributable to the differences between the groups (defined by parents' education level) and 66.48 within the groups. This suggests that career interest differences are more influenced by internal variation within the student population than by parental education.

According to Holland's RIASEC theory, career interests are shaped by the alignment between an individual's personality traits and the work environment (Holland, 1997). Although parents' education levels can guide career choices, the lack of significant differences in this study suggests that factors like institutional support and peer influence may play a more substantial role in shaping TVET students' career interests. This aligns with Bandura's Social Cognitive Theory, which emphasizes the interaction between individual traits, behavior, and the environment (Bandura, 1986). Research by Keller and Whiston (2008) found that parental involvement has a stronger impact in early education but is less influential at the tertiary level. Other studies (Creed et al., 2010; Hirschi, 2012; Koen et al., 2012) have emphasized the importance of self-efficacy, institutional factors, and peer/mentor support in shaping career interests, particularly in vocational and higher education contexts. The study highlights that TVET students' career interests at MTUN are less influenced by parents' education levels and more shaped by personal agency, institutional resources, and peer support.

Career Adaptability

This section examines differences in career Adaptability based on Savickas and Porfeli's career Adaptability theory, considering factors of gender, socioeconomic status, and parents' income among TVET students in MTUN. The analysis aims to understand the relationship between career Adaptability and these factors, as well as the extent to which they influence students' career choices. This provides a

comprehensive view of the role of career Adaptability in the context of TVET education.

Difference Career Adaptability Based on Gender Among TVET Students In MTUN

This study found notable gender differences in career adaptability among TVET students at MTUN, with male students showing slightly higher levels of adaptability. Using the framework of Savickas and Porfeli's Career Adaptability Theory which includes the dimensions of concern, control, curiosity, and confidence. The research examined how students engage in career planning and transitions (Savickas & Porfeli, 2012). Career adaptability reflects a student's preparedness to handle career changes, and these dimensions highlight how individuals manage future planning, make career decisions, explore options, and believe in their own abilities. Male students scored higher in the concern dimension, potentially due to social expectations that encourage men to achieve professional and financial security. In contrast, female students often experience tension between career ambitions and traditional family roles, which can hinder their long-term planning. Gender stereotypes continue to influence career pathways, with males often directed toward technical careers, while females remain underrepresented in TVET sectors (Sax et al., 2017). In terms of control, male students displayed greater autonomy in decision-making, supported by societal norms that favor male leadership in technical areas (Bandura, 1986). Female students often encounter societal limitations, reducing their decision-making confidence (Folberg, 2022). For curiosity, male students benefited from more exposure to TVET careers, whereas female students faced obstacles in exploring male-dominated industries (Stoet & Geary, 2013). Confidence was also higher among males, reinforced by encouragement in technical competencies. Female students, despite their potential, often internalize doubts about their abilities (Gottfredson, 2002). To close these gaps, TVET institutions must foster inclusive cultures, mentorship initiatives, and actively challenge gender biases.

Difference Career Adaptability Based on Socioeconomic Status Among TVET Students In MTUN

This study investigated the differences in career adaptability among TVET students at MTUN based on socioeconomic status (SES), with a focus on parental income. The findings, supported by ANOVA analysis, indicated significant variations in career adaptability across SES groups. These results align with Savickas and Porfeli's Career Adaptability Theory, which identifies four core dimensions which are concern, control, curiosity, and confidence as essential in preparing individuals to manage career development and transitions (Savickas & Porfeli, 2012). Career adaptability refers to the use of psychosocial resources to navigate career-related tasks and uncertainties. SES, often reflected through parental income, influences these resources by determining access to career-related support, exposure, and guidance.

Students from higher SES backgrounds generally enjoy better access to structured support systems such as career coaching, industry exposure, and

mentoring opportunities, which positively shape their adaptability (Hill et al., 2004). In contrast, those from lower SES families often face constraints that limit the development of both technical and interpersonal competencies, thereby affecting their ability to respond to career demands (Bourdieu, 1986; Tomlinson, 2017). The ANOVA results confirmed that SES significantly contributes to the variation in adaptability levels, with higher-SES students benefiting from enhanced social capital and broader professional networks that facilitate smoother career transitions (Yorke, 2006).

To reduce these disparities, TVET institutions should implement targeted support measures for students from lower SES backgrounds. These may include financial aid, skills workshops, and structured mentoring to strengthen career readiness (McGrath & Powell, 2016; Fugate et al., 2004). The study underscores the role of SES in shaping career adaptability and highlights the importance of equitable support systems. By prioritizing lifelong learning, inclusive mentoring, and career development initiatives, TVET programs can help ensure that all students are equally equipped to navigate the challenges of the labor market.

Difference Career Adaptability Based on Parents' Education Level Among TVET Students In MTUN

This study explored the association between parental education level and the career adaptability of TVET students in MTUN, using McClelland's Competency Theory as the guiding framework. McClelland (1973) highlighted that employability encompasses more than technical knowledge, it involves acquiring transferable skills, self-marketing abilities, and adapting to workforce demands. The findings revealed no significant differences in employability skills, including career adaptability, based on parents' education level. This implies that other variables may have a greater influence on shaping these competencies.

Although parental education is frequently linked to improved access to resources and support that could enhance skill development, the study suggests that TVET institutions within MTUN effectively provide equitable support to all students, regardless of their family background. ANOVA analysis showed a total variance in employability skills of 69.66, with only 3.18 attributed to differences between parental education groups and 66.48 to individual differences within the groups. This indicates that personal attributes contribute more to employability outcomes than parental education.

These results are consistent with the work of Ba Gow Jie and Yasin (2022), who emphasized the need to improve employability awareness among both students and parents. Despite assumptions about the benefits of higher parental education, MTUN's inclusive and structured TVET programs such as mentoring, career services, and targeted skill-building that appear to mitigate these advantages. Therefore, institutions should focus on addressing individual needs and fostering adaptive skills through customized support. Encouraging lifelong learning, collaboration with industry, and continuous upskilling can help ensure all students are equally prepared to succeed, regardless of their parental education level.

Differences in Employability Skills Based on Gender Among TVET Students in MTUN

This study explored gender-based differences in employability skills among TVET students at MTUN, guided by McClelland's Competency Theory. According to McClelland (1973), employability involves not only acquiring skills but also demonstrating and applying them effectively in the workforce. The analysis considered how gender, alongside individual traits and institutional influences, may affect employability outcomes. Although societal expectations often suggest gender disparities in skill development, the study found no significant difference between male and female students' employability skills, indicating that institutional support likely contributes to levelling the field. Descriptive statistics showed male students with slightly higher mean scores, but similar standard deviations across genders suggest balanced skill acquisition. Levene's test confirmed equal variance, while the independent t-test revealed a minimal and statistically insignificant mean difference of 0.10. These findings are consistent with past research by Syed Sahil and Hassan (2018) and Safwan et al. (2023), which also reported minimal gender-related variation in employability. The results reflect the effectiveness of MTUN's gender-neutral curriculum and standardized career development programs. TVET institutions appear to provide equal learning environments that equip all students for the job market. Nevertheless, efforts should continue to uphold gender-inclusive practices, offering targeted support, workshops, and lifelong learning initiatives to ensure equitable development for all students (Holmes, 2001).

Differences in Employability Skills Based on Socioeconomic Status Among TVET Students in MTUN

This study investigates the influence of socioeconomic status (SES), represented by parental income, on the employability skills of TVET students in MTUN, guided by McClelland's Competency Theory. The findings demonstrate that SES significantly impacts employability, particularly in dimensions such as ownership, positioning, and process, as proposed by McClelland (1973), who emphasized that employability extends beyond technical abilities to include how these skills are applied within various socioeconomic environments. Students from higher SES backgrounds generally benefit from greater access to resources like mentorship, industry exposure, and career guidance, which foster skill development. Conversely, those from lower SES backgrounds often encounter barriers that limit their access to such opportunities, thus affecting their competitiveness in the labor market (McQuaid & Lindsay, 2005). ANOVA results revealed notable differences in employability skills by SES, with between-group variance at 0.64 versus 0.26 within groups, and a total variance of 65.80. This suggests that while SES is a major determinant, personal factors also contribute to employability outcomes. These findings are supported by previous studies (Md Isa & Hussin, 2015; Salleh et al., 2009), emphasizing the role of family background in shaping skill acquisition. To bridge this gap, TVET institutions should enhance support for lower SES students through targeted financial aid, career counselling, industry exposure, and mentoring programs.

Differences in Employability Skills Based on Parental Education Level Among TVET Students in MTUN

This study explores the relationship between parental education level and the employability skills of TVET students within the MTUN network, using McClelland's Competency Theory (1973) as a theoretical foundation. McClelland's framework posits that employability is not limited to technical competencies but also includes broader attributes such as adaptability, self-presentation, and skill acquisition necessary for labor market integration. The results of the study revealed no statistically significant difference in employability skills based on parental education. Although parental education is often linked to greater access to resources and support, the findings suggest that institutional factors play a more decisive role in nurturing employability. ANOVA results showed that the total variance in employability skills was 69.66, with only 3.18 attributed to differences between parental education groups, and the remaining 66.48 due to within-group individual differences. This implies that personal factors, rather than parental background, account for most of the variation in students' employability. These outcomes are consistent with research by Ba Gow Jie and Yasin (2022), who noted that raising awareness alone does not necessarily result in improved employability outcomes. While Bourdieu (1986) highlighted the advantages linked to higher parental education in terms of cultural and social capital, this study indicates that MTUN institutions have succeeded in providing equal training and opportunities through structured programs, career services, and mentoring support. As emphasized by Yorke (2006), institutional engagement is critical in shaping students' employability. Thus, strengthening individualized support mechanisms is essential to ensure that all students can thrive, regardless of their parental educational background.

Conclusion

This study explores the relationship between parental education level and the employability skills of TVET students at MTUN, using McClelland's Competency Theory (1973) as a framework. McClelland's theory suggests that employability goes beyond technical skills to include self-presentation, skill application, and adaptability to the job market. The study found no significant difference in employability skills based on parental education level, implying that other factors may play a more substantial role. Although parental education is often linked to better access to resources, the results highlight that institutional support is crucial in providing equal opportunities for all students. ANOVA analysis showed that individual differences among students contributed more to variations in employability skills than parental education level. These findings are in line with Ba Gow Jie and Yasin (2022), which indicated that raising awareness about employability in TVET does not always lead to significant skill improvements. TVET institutions at MTUN ensure equal access to resources, career services, and skill development, making the impact of parental education less significant.

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