



Career Decision Self-Efficacy among Malaysian TVET Students: A Gender-Based Analysis across Five Career-Decision Dimensions

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ABSTRACT:

Career decision self-efficacy (CDSE) refers to an individual's confidence in performing the tasks required to make and implement career-related decisions. It is particularly important in technical and vocational education and training (TVET), where students must translate occupationally focused learning into informed choices about employment and further education. This study examined the CDSE profiles of Malaysian TVET students and investigated gender differences across five dimensions: self-appraisal, occupational information, goal selection, planning, and problem-solving. A cross-sectional survey was completed by 116 students (59 male and 57 female) at a TVET institution in Kuching, Sarawak. Data were collected using a 25-item questionnaire adapted from the Career Decision-Making Self-Efficacy Scale–Short Form and rated on a six-point response scale. Descriptive statistics, independent-samples t tests, and Cohen's d effect sizes were used to analyse the data. Goal selection recorded the highest mean for both male ($M = 4.84$, $SD = 0.78$) and female students ($M = 4.76$, $SD = 0.94$), whereas self-appraisal recorded the lowest means (male: $M = 4.38$, $SD = 1.05$; female: $M = 4.17$, $SD = 1.14$). None of the five gender comparisons was statistically significant ($p = .300-.621$), and all standardised mean differences were small (Cohen's $d = 0.09-0.19$). The findings indicate broadly similar CDSE profiles rather than gender-differentiated patterns of career confidence. Career-development initiatives should therefore address students' shared developmental needs, particularly self-appraisal, while remaining responsive to individual differences. Given the single-institution sample and the absence of an equivalence-testing design, the findings should not be interpreted as evidence that gender differences are absent across the wider Malaysian TVET student population.

KEY WORDS: Career decision self-efficacy, gender, Malaysia, technical and vocational education and training; TVET, career development.

1. INTRODUCTION

Technical and vocational education and training (TVET) prepares learners for occupational participation by developing applied knowledge, technical competencies, and work-related skills. However, technical competence alone may not enable students to identify suitable career pathways, obtain relevant occupational information, establish realistic goals, plan their transition from education to employment, or respond effectively to career-related barriers. These tasks also require confidence in career decision-making. For students approaching the transition from study to work, such confidence may influence whether they actively explore opportunities and translate their vocational training into coherent and achievable career plans.

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Career decision self-efficacy (CDSE) extends self-efficacy theory to the tasks involved in educational and occupational choice. Self-efficacy refers to individuals' beliefs in their capability to organise and execute the actions required to attain specific outcomes (Bandura, 1997). Taylor and Betz (1983) applied this concept to career decision making, and subsequent work operationalised CDSE through five task domains: self-appraisal, occupational information, goal selection, planning, and problem-solving (Betz et al., 1996). CDSE is therefore task-specific: it neither measures employment outcomes nor guarantees employability. Rather, it reflects confidence in carrying out the processes that support informed and purposeful career decisions.

This distinction is particularly relevant in Malaysian TVET. National graduate statistics typically emphasise transitions from education to employment, further study, training, or job placement (Ministry of Higher Education Malaysia, 2024). Although these indicators describe post-study destinations, they provide limited insight into the career-management capabilities that students draw upon before and during the transition. Examining CDSE across its five dimensions can therefore help educators and career counsellors identify areas of relative confidence and those requiring more structured support.

1.1 Gender and career decision self-efficacy

Gender remains an important consideration in career-development research because educational opportunities, occupational expectations, role models, and social encouragement may be experienced differently by male and female students. Nevertheless, findings on gender differences in CDSE are inconsistent and appear to vary according to population, cultural context, field of study, age, and the CDSE domain examined. Meta-analytic evidence similarly positions CDSE within a wider network of individual and contextual influences rather than as an outcome determined by a single demographic characteristic (Choi et al., 2012). It would therefore be premature to assume either a universal gender gap or complete gender similarity.

Evidence concerning gender and CDSE remains limited in Malaysian TVET settings, particularly at the dimensional level. An overall score may obscure whether students feel confident in selecting goals but less confident in appraising their interests and capabilities, obtaining occupational information, planning, or solving career-related problems. Moreover, gender comparisons based solely on statistical significance may encourage overinterpretation: a non-significant result does not establish that two populations are equivalent. Examining mean patterns, confidence intervals, and effect sizes alongside p values offers a more informative account of both the direction and magnitude of observed differences.

1.2 Study purpose and questions

Accordingly, this study aimed to profile students' CDSE across five career-decision dimensions and to explore gender-related variation within a Malaysian TVET institution. By identifying shared strengths and developmental needs, the study seeks to provide context-specific evidence for career education and counselling without presuming that gender necessarily determines the type or intensity of support required. The following research questions guided the study:

RQ1. What are the levels and relative profiles of self-appraisal, occupational information, goal selection, planning, and problem-solving among the participating TVET students?

RQ2. Do male and female students differ significantly across the five CDSE dimensions?

2. LITERATURE REVIEW AND CONCEPTUAL BASIS

2.1 Self-efficacy and career decision making

Bandura's (1997) social cognitive account proposes that efficacy beliefs influence the activities people undertake, the effort they invest, and their persistence when difficulties arise. Applied to career choice, students with stronger task-specific efficacy should be more willing to appraise their interests and capabilities, seek information, select goals, formulate plans, and address obstacles. Taylor and Betz (1983) introduced CDSE to connect these beliefs with career indecision. The construct has since become a prominent indicator in career research and intervention.

The Career Decision-Making Self-Efficacy Scale–Short Form reduced the original instrument to 25 items while retaining the five domains (Betz et al., 1996). Subsequent research has examined whether this multidimensional structure transfers across populations. Lo Presti et al. (2013), for example, evaluated one- and five-factor structures among Italian secondary students. This body of work supports using the five domains as a practical profile. Still, it also cautions against presuming that an adapted or translated instrument operates identically in a new cultural and educational setting. Reliability and construct validity remain sample-dependent properties.

2.2 The five CDSE dimensions in TVET

Self-appraisal refers to confidence in evaluating interests, abilities, values, and personal strengths relevant to occupational choice. Occupational information concerns the ability to locate and use reliable information about jobs, entry requirements, and career pathways. Goal selection reflects confidence in choosing a suitable educational or occupational direction. Planning concerns identifying and sequencing actions needed to implement a choice. Problem-solving captures confidence in revising plans and responding to barriers or unexpected outcomes. In TVET, these domains connect technical education with transition behaviour: a student may possess vocational skills but still be uncertain about personal fit, available pathways, or how to respond when the preferred option is unavailable.

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Research links CDSE with important career-development processes, including career adaptability and reduced career indecision (Stead et al., 2022; Udayar et al., 2020). Intervention research also suggests that career-development programmes can strengthen career-related efficacy when they provide structured opportunities for reflection, information seeking, planning, and practice (Whiston et al., 2017). The present study does not test these outcomes or an intervention. Rather, it identifies the dimensions that appear comparatively strong or weak in one TVET student sample, providing an empirical basis for later programme design.

2.3 Interpreting gender similarities

Gender comparison is meaningful only when embedded in the educational context. Students enrolled in the same institution may share curricula, career services, exposure to industry, and transition requirements. These common experiences may produce similar career-confidence profiles even when broader labour-market opportunities remain gendered. Conversely, small average differences can conceal substantial variation within each gender. An inclusive interpretation should therefore avoid both deficit assumptions and the conclusion that all students require identical support. The central analytical question is whether the observed between-group differences are sufficiently large and precise to justify gender-specific conclusions.

3. METHOD

3.1 Design and setting

The study used a quantitative cross-sectional survey design. Data were collected online through Google Forms from students enrolled at one TVET institution in Kuching, Sarawak, Malaysia, during [insert month and year]. The achieved sample included students from several semesters and academic departments. Although the original report described Semester Two students as the intended target, the realised sample was concentrated in later semesters; 71 respondents (61%) were in Semester Five and 24 (21%) were in Semester Four. The current manuscript reports the achieved sample rather than treating it as a Semester Two cohort.

3.2 Participants and recruitment

A total of 116 usable responses were analysed: 59 respondents identified as male (50.9%) and 57 as female (49.1%). The questionnaire was distributed electronically with institutional assistance. Because the available report does not document a complete sampling frame, random selection sequence, or response rate, recruitment is described conservatively as institution-facilitated voluntary participation rather than probability sampling. The findings therefore characterise the participating students and should not be generalised statistically to all Malaysian TVET students.

3.3 Instrument

CDSE was assessed with a 25-item questionnaire adapted from the Career Decision-Making Self-Efficacy Scale–Short Form (Betz et al., 1996) and its five-factor application (Lo Presti et al., 2013). Five items represented each domain: self-appraisal, occupational information, goal selection, planning, and problem-solving. Responses were recorded on a six-point scale from 1 (strongly disagree) to 6 (strongly agree). Bahasa Melayu translations were presented with the items. Higher scores indicated stronger reported confidence in the relevant career-decision tasks.

A pilot study with 40 students produced an overall Cronbach's alpha of .898 for the 25 items. This value indicates good preliminary internal consistency for the total item set, but it does not establish the reliability of each five-item dimension in the final sample. Before journal submission or secondary analysis, dimension-specific reliability and evidence concerning the translated scale's factor structure should be reported if the item-level dataset is available.

3.4 Data analysis

Means and standard deviations were calculated for each CDSE dimension for the full sample and by gender. Independent-samples *t* tests were used to compare male and female mean scores, with statistical significance evaluated at $\alpha = .05$ using two-tailed tests. Cohen's *d*, calculated using the pooled standard deviation, represented the standardised magnitude of each difference; positive values indicated higher male means. Approximate 95% confidence intervals for the unstandardised mean differences were reconstructed from the reported group statistics. Values near 0.20 were interpreted as small, while recognising that practical importance is context-dependent (Cohen, 1988). Because none of the unadjusted comparisons was statistically significant, applying a correction for multiple testing would not alter the substantive conclusion; nevertheless, the five comparisons should be regarded as exploratory.

3.5 Ethical considerations

Participation was reported as voluntary, and responses were collected electronically. Before submission, the authors must insert the documented name of the approving institution or ethics committee, approval/reference number, consent procedure, data-protection arrangements, and any permission obtained from the participating institution: [insert verified ethics statement]. These details should not be inferred or reconstructed retrospectively.

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4. RESULTS

4.1 CDSE profiles

Across the full sample, goal selection had the highest reported mean ($M = 4.81$, $SD = 0.86$), followed by planning ($M = 4.65$, $SD = 0.96$), occupational information ($M = 4.57$, $SD = 0.91$), problem-solving ($M = 4.31$, $SD = 1.01$), and self-appraisal ($M = 4.28$, $SD = 1.09$). Thus, participants reported greatest confidence in selecting career goals and comparatively less confidence in evaluating their own career-relevant attributes. Because these values are self-reports on an agreement scale, they should be interpreted as relative profiles, not direct demonstrations of career competence or workforce readiness.

Table 1. Gender comparisons across the five CDSE dimensions

Dimension	Male M (SD)	Female M (SD)	Mean [95% CI]	diff.	t(114)	p	Cohen's d
Self-appraisal	4.38 (1.05)	4.17 (1.14)	0.21 [-0.19, 0.61]		1.04	.300	0.19
Occupational information	4.67 (0.85)	4.50 (0.97)	0.17 [-0.17, 0.51]		0.98	.328	0.19
Goal selection	4.84 (0.78)	4.76 (0.94)	0.08 [-0.24, 0.40]		0.50	.621	0.09
Planning	4.72 (0.86)	4.58 (1.06)	0.14 [-0.22, 0.50]		0.78	.436	0.15
Problem-solving	4.39 (0.94)	4.23 (1.07)	0.16 [-0.21, 0.53]		0.83	.410	0.16

Note. Male $n = 59$; female $n = 57$. Mean difference = male minus female. Confidence intervals were reconstructed from the reported group statistics. Positive d values indicate higher male means.

4.2 Gender comparisons

As shown in Table 1, male students recorded slightly higher mean scores across all five dimensions; however, none of the differences was statistically significant. The largest standardised mean differences were observed for self-appraisal ($d = 0.19$) and occupational information ($d = 0.19$), whereas the smallest was observed for goal selection ($d = 0.09$). All 95% confidence intervals for the mean differences included zero. Taken together, these results indicate that the sample did not provide sufficient evidence of gender differentiation across the five CDSE dimensions.

The pattern is more appropriately described as broad similarity than equality. The study was not designed as an equivalence or non-inferiority test, and the confidence intervals allow for effects in either direction. Nevertheless, the consistently small point estimates and identical rank ordering of the five dimensions among male and female students support a cautious interpretation that their average CDSE profiles were broadly similar within this institutional sample.

5. DISCUSSION

5.1 Principal findings

The study provides three main findings. First, goal selection was the strongest CDSE dimension for both genders. Students appeared relatively confident about choosing a career direction. Second, self-appraisal was the weakest dimension for both groups, suggesting comparatively lower confidence in identifying personal interests, values, strengths, and limitations relevant to career choice. Third, gender differences were small and statistically inconclusive across all dimensions. The male and female profiles followed the same ordering, from goal selection at the top to self-appraisal at the bottom.

These findings refine the question of whether one gender is generally more career-confident to which career-decision tasks require support across the student population. Gender-based averages may be less informative for intervention design than domain-specific needs. In this sample, the common weakness in self-appraisal may be more actionable than the small differences between male and female means.

5.2 Gender similarity without overclaiming equivalence

The non-significant results should be interpreted with statistical restraint. Failure to reject a null hypothesis is not proof that the population means are equal. With 116 respondents, the study had limited precision for detecting small effects, as reflected in the confidence intervals. A preregistered equivalence study with an a priori smallest effect size of interest would be required to claim that differences are sufficiently small to be practically unimportant.

Even with this qualification, the observed pattern challenges the automatic use of gender as the primary basis for career programming. Both gender groups reported the same strongest and weakest domains, and every standardized mean difference was below 0.20. Career services could therefore begin with universal support and then differentiate assistance according to assessed needs, academic discipline, stage of study, occupational aspirations, and barriers faced by individual students. Gender-responsive

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services may still be necessary where labour-market conditions or field-specific experiences differ; those mechanisms were not measured here.

5.3 Implications for TVET practice

Comparatively low self-appraisal scores suggest a practical focus for career education. Students may benefit from guided skills inventories, structured reflection on workplace learning, values clarification, portfolio review, and feedback that connect demonstrated technical performance with occupational options. These activities should help students articulate not only what work they want, but why a pathway fits their interests and capabilities.

High goal-selection scores should not be equated with complete transition readiness. A chosen goal can remain fragile if it is not supported by accurate occupational information, realistic planning, and strategies for setbacks. TVET institutions could therefore embed a developmental sequence across semesters: early self-appraisal and occupational exploration; middle-stage exposure to employers, alumni, and work roles; and later-stage planning, application practice, and contingency problem-solving. Individual screening could be used to direct additional support without assuming that male or female students constitute homogeneous groups. The results also support evaluating career services at the dimension level. A programme may raise planning confidence without changing self-appraisal or strengthen occupational information while leaving problem-solving unchanged. Repeated CDSE measurement, combined with behavioural indicators such as completion of career plans, applications, internships, or counselling activities, would provide stronger evidence than self-report alone.

5.4 Contribution

The study contributes a five-dimensional account of career decision confidence in an underreported Malaysian TVET setting. Its value lies less in demonstrating a gender effect than in showing a shared configuration of strengths and needs. This interpretation adds contextual evidence to research cautioning that demographic differences in CDSE are not necessarily uniform. Methodologically, reporting effect sizes and uncertainty alongside non-significant tests provides a more informative basis for discussing similarity than relying on *p* values alone.

6. LIMITATIONS AND FUTURE RESEARCH

Several limitations delimit the conclusions. The data came from one institution in Kuching, and participation was electronically facilitated; the sample is therefore not statistically representative of Malaysian TVET. The original sampling description was inconsistent with the achieved semester distribution, and no response rate was available. The cross-sectional design prevents causal inference. All measures were self-reported and may be influenced by response style or social desirability. The instrument was adapted and translated, but the available report supplied only an overall pilot alpha and did not establish dimension-specific reliability or factor validity in the final sample. Gender was recorded as a binary category, which does not capture gender diversity or the mechanisms through which gendered experiences might influence career development. Finally, five separate *t*-tests were exploratory, and the study was not powered or designed to establish statistical equivalence.

Future studies should use multi-institutional samples across Malaysian regions and TVET disciplines, document probability or stratified sampling where feasible, and conduct *a priori* power analysis. Measurement invariance across gender should be examined before latent mean comparisons. Researchers should also incorporate semester, field of study, socioeconomic context, prior work exposure, career support, and intended occupation. Longitudinal designs could test how CDSE changes through industrial training and the transition to employment. Where the substantive objective is to demonstrate similarity, equivalence bounds should be defined before analysis and tested directly.

7. CONCLUSION

Among 116 students at one Malaysian TVET institution, male and female participants displayed broadly similar profiles across self-appraisal, occupational information, goal selection, planning, and problem-solving. Goal selection was the strongest domain for both groups, whereas self-appraisal was the weakest. None of the gender comparisons was statistically significant, and all observed effect sizes were small. These findings do not prove gender equivalence, but they provide little support for designing career-development assistance around a presumed general gender gap. A more defensible response is to provide universal, developmentally sequenced career support—especially for self-appraisal—and tailor additional assistance to individual and contextual needs.

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