

**UNDERSTANDING GRADUATE EMPLOYABILITY IN MALAYSIAN HIGHER EDUCATION:
IMPLICATIONS OF CONVERGENCE AND DIVERGENCE ACROSS DISCIPLINES*****S K Dilashni Serilharan****Husaina Banu Kenayathulla****Muhammad Faizal A. Ghani**

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skdila2907@gmail.com*ABSTRACT**

This study examines patterns of convergence and divergence in graduate employability among final-year undergraduate students in Malaysian private higher education institutions. Drawing on the CareerEDGE model, Self-Efficacy Theory, and the concept of self-perceived employability (SPE), the study adopts a quantitative, cross-sectional design involving 446 students who had completed internships. Data were analysed using Multivariate Analysis of Variance (MANOVA), one-way Analysis of Variance (ANOVA), and independent-samples t-tests to assess differences across disciplines and gender. The results show consistent trend of convergence in employability skills and self-efficacy across all academic disciplines, suggesting that students develop comparable levels of competence and confidence regardless of their area of study. Likewise, no notable gender disparities were detected, indicating uniform advancement of employability-related outcomes. Divergence was seen in self-perceived employability, with notable disparities among disciplines, underscoring the impact of contextual and perceptual factors on students' appraisal of their employability. The study enhances the scientific literature by introducing a convergence-divergence viewpoint, illustrating that although employability capacities may be standardised by institutional procedures, perceptions of employability are nevertheless susceptible to disciplinary contexts. The findings provide important implications for curriculum design, career support services, and policy development in higher education.

Keywords: *Graduate employability, CareerEDGE, self-efficacy, self-perceived employability, higher education.*

INTRODUCTION***Background of the Study***

Graduate employability has been a major concern for higher education institutions worldwide, with universities under increasing pressure to generate university graduates deemed not only academically sound but also competent with the skills, versatility, adaptability, and confidence to succeed in a rapidly changing labour market. This concern is pertinent in Malaysia, where graduate labour shortages and skill mismatches persist, resulting in considerable number of graduates employed in roles that do not align with their qualifications or educational levels (Moo & Wan, 2023). This discrepancy signifies ongoing challenges in aligning university outcomes with labour market conditions, particularly for private universities whose curricula typically focus on graduate job preparation outcomes.

Universities have responded to this by progressively embedding employability-related activities in their courses, such as work placements, work-based learning, and transferable competencies such as teamwork, communication, and problem-solving. These initiatives seek to close the divide between academic learning and workplace standards through the provision of technical knowledge and soft skills

to students (Jackson, 2016; Wilton & Jackson, 2016). However, employers continue to perceive gaps in graduates' preparation for the workplace, notably in terms of flexibility, emotional intelligence, and hands-on training (Osman, 2025). This implies that employment readiness is a multidimensional construct that is not limited to disciplinary knowledge but requires greater awareness of how capacities and perceptions are built during university education.

A commonly employed framework for conceptualising graduate employability is the CareerEDGE model, typically known as the employability model, which was developed by Dacre Pool and Sewell (2007). The model identifies five key components: Career Development Learning, Work and Life Experience, Degree Subject Knowledge, Generic Skills and Emotional Intelligence. These dimensions together constitute the basic talents that are the foundation of graduate employability. This perspective is substantiated by Bandura's (1997) Self-Efficacy Theory, which emphasises the degree to which individuals believe that they are able to successfully do a task and how this influences their motivation, persistence and career behaviours. Moreover, Self-Perceived Employability (SPE), as defined by Rothwell and Arnold (2007), refers to an individual's subjective judgement of the possibility of acquiring and sustaining a job. Taken together, these theories indicate that employability is constructed not only of objective qualities, but also of psychological confidence along with individual judgements of labour opportunities in the marketplace.

Problem Statement

There is growing anxiety over graduates' readiness for the work market, notwithstanding the increased emphasis on employability in higher education. Evidence persists of a disparity between the competencies of graduates and the expectations of employers in Malaysia, especially regarding graduates' soft skills, adaptability, and practical experience (Low & Mah, 2024; Osman, 2025). Even though universities have sought to enhance graduates' employability through initiatives like offering internships and skills-based courses, the efficacy of these strategies in producing a consistently employable cohort of graduates across many fields remains ambiguous.

Most of the existing research has focused on studying differences in employability traits, self-efficacy and SPE between disciplines of study and gender groups. In this research, it is generally assumed that differences in the development of curriculum, industry exposure, and learning experiences lead to different employability success rates (Jackson, 2016). Gender-based research has also yielded conflicting results, with several suggesting negligible or no significant differences in confidence and perceived employability (Bennett et al., 2022).

A significant limitation of this research is its focus on preference variations rather than elucidating trends. Besides, empirical data frequently reveal minimal variations in employability attributes and self-efficacy within disciplines, suggesting a convergence in competence development despite structural discrepancies (Amissah et al., 2026; Nowiński et al., 2019). Simultaneously, discrepancies in SPE may arise, suggesting that graduates can possess differing beliefs about their employability despite having identical talents (Räty et al., 2020).

This indicates a significant yet under-explored issue regarding the merging of convergence and divergence in employability advancement. Employability procedures are frequently standardised across faculties, so students in Malaysian private higher education institutions may acquire equivalent levels of skills and confidence. However, discipline-specific elements, such as exposure to the industry and projected job chances, may still influence graduates' employability evaluation. This convergence-divergence dynamic needs to be addressed to move toward a more sophisticated understanding of graduate employment readiness beyond the traditional difference-based methods.

Research Objectives

This study is guided by the following objectives:

1. To examine whether significant differences exist in Career Development Learning, Work and Life Experience, Degree Subject Knowledge and Skills, Generic Skills, and Emotional Intelligence across different disciplines of study.
2. To determine whether self-efficacy differs significantly across different disciplines of study.
3. To investigate whether self-perceived employability differs across different disciplines of study.
4. To examine whether gender influences self-perceived employability among undergraduate students.
5. To examine whether gender influences self-efficacy among undergraduate students.

Research Questions

RQ1: To what extent do employability attributes differ across academic disciplines?

RQ2: Does self-efficacy vary across academic disciplines?

RQ3: Does self-perceived employability differ across academic disciplines?

RQ4: Are there significant gender differences in self-perceived employability?

RQ5: Are there significant gender differences in self-efficacy?

Hypotheses

H1a: There is a significant difference in Career Development Learning across disciplines.

H1b: There is a significant difference in Work and Life Experience across disciplines.

H1c: There is a significant difference in Degree Subject Knowledge and Skills across disciplines.

H1d: There is a significant difference in Generic Skills across disciplines.

H1e: There is a significant difference in Emotional Intelligence across disciplines.

H2: There is a significant difference in self-efficacy across disciplines.

H3: There is a significant difference in self-perceived employability across disciplines.

H4: There is a significant difference in self-perceived employability between male and female students.

H5: There is a significant difference in self-efficacy between male and female students.

LITERATURE REVIEW

CareerEDGE Model and Employability Development

Dacre Pool and Sewell (2007) suggested the CareerEDGE model as an integrated framework for analysing the development of employability in higher education, acknowledging its multifaceted nature. Career Development Learning is the students' capacity to identify paths to employment, make informed choices, and participate in career preparation. Work and Life Experience encompasses acquiring practical learning through internships and real-world engagements, enabling students to apply academic knowledge in professional settings. Degree Subject Knowledge refers to expertise in a certain domain, whereas Generic Skills encompass transferable abilities such as teamwork, interaction, and problem-solving. Lastly, Emotional Intelligence is the capacity to effectively employ emotions and manage interpersonal relationships in a professional setting (Dacre Pool & Sewell, 2020; Jackson & Wilton, 2017).

In the present research, together, these aspects are the key components of employability growth. Many of these factors are systematically incorporated in higher education curricula and may lead to similar levels of competence development across disciplines, supporting the convergence reported in employability qualities. Empirical studies demonstrate that higher education institutions are integrating these elements in curricula through structured learning activities, business alliances and employment-integrated learning initiatives (Jackson, 2016). These practices are notably prevalent in the Malaysian private higher education sector, where employability serves as a critical performance metric and curricular standardisation frequently ensures that students across various disciplines encounter analogous professional development experience (Moo & Wan, 2023). This suggests that employability-related attributes may evolve comparably across disciplines, despite differences in academic specialisation.

Self-Efficacy and Employability

The CareerEDGE model describes the development of employability-related capacities but does not fully explain the psychological processes by which these capabilities influence individuals' confidence and behaviour. Another perspective is Bandura's (1997) Self-Efficacy Theory. It supports the above as it

focuses on individuals' beliefs about their ability to complete tasks. Self-efficacy develops from mastery experiences, vicarious learning, social persuasion, and emotional states, and is crucial in influencing motivation, persistence, and performance results (Schunk & DiBenedetto, 2020).

Self-efficacy is an indicator of students' belief in their ability to cope with academic and career-related challenges in connection with employability (Chow et al., 2019). Research suggests that higher levels of self-efficacy relate to more positive career decision-making, adaptability, and proactive career practices (Lent et al., 2017). The internship experience is acknowledged as a significant source of mastery experiences that bolster self-efficacy by enabling students to use their skills in authentic work environments (Wong et al., 2023). Dacre Pool and Qualter (2013) discovered that emotional self-efficacy is positively correlated with graduate employability and career outcomes, indicating that confidence is a crucial element in transforming employability skills into views of job readiness.

Nonetheless, prior studies on gender and disciplinary variations in self-efficacy remain inconclusive. Certain studies indicate little or non-significant disparities between the groups, potentially due to shared educational experiences and institutional support that may result in comparable levels of student confidence (Bennett et al., 2022). This indicates that self-efficacy may be cultivated uniformly across disciplines if students encounter analogous learning environments and opportunities.

Self-Perceived Employability

The employability of individuals is also determined by their perceptions of their own position in the job market, as well as their capabilities and confidence. Self-Perceived Employability (SPE), as defined by Rothwell and Arnold (2007) and Rothwell et al. (2008), is the individual's subjective assessment of their potential to seek and keep employment. This construct consists of internal elements, such as skills and self-confidence, and external factors, such as perceived labour market conditions and opportunities for a career.

Research demonstrates that SPE correlates with career outcomes such as job search behaviour, career adaptability, and psychological well-being (Fugate et al., 2021). SPE is subjective, in contrast to the more objective employability qualities, and may be interpreted differently by individuals based on their self-evaluation of abilities and the opportunities present in their selected industry. Students in occupations with clear career paths or strong industry connections often report higher perceived employability than those in more specialised or competitive fields (Wilton & Jackson, 2016). Recent employability studies have highlighted the significance of career adaptability as a crucial factor influencing students' confidence and perceptions of employability in volatile labour market situations (Barbosa et al., 2024; Wong et al., 2023).

Fudali-Czyż et al. (2022) indicate that SPE may differ among fields and, to some extent, by gender; nevertheless, these variations are often minimal and context-dependent. In the Malaysian setting, where internships are often embedded into educational programs, students may achieve equal skills and confidence levels, but still differ in their employability perception, determined by disciplinary encounters and labour market exposure.

Integrating Employability, Self-Efficacy, and Perceived Employability

The CareerEDGE model, Self-Efficacy Theory, and Self-Perceived Employability have been extensively researched; they are generally researched in isolation, resulting in a fragmented view of graduate employability. The amalgamation of these frameworks can provide a more comprehensive understanding of how employability is developed and perceived.

The CareerEDGE model offers a theoretical foundation for comprehending the cultivation of employability skills via education and experiential learning. However, these competencies do not transfer into employment results unless people have the confidence to use them effectively. Self-efficacy is the mediating factor, since it represents the extent to which individuals believe in their capacity to use their talents in academic and professional settings (Bandura, 1997; Lent et al., 2017). This process is measured by SPE, which refers to students' assessment of their employability in terms of their

capabilities and confidence to be employable, as well as their perception of external opportunities (Rothwell & Arnold, 2007; Rothwell et al., 2008).

Building on this integration, it is hypothesised in this study that employability development may present both convergence and divergence tendencies. At the level of employability qualities and self-efficacy, convergence is envisaged when institutional activities like standardised curricula, internships, and skill development efforts give similar learning experiences across disciplines. Such common experiences can result in relatively homogeneous development of competencies and confidence across students.

In contrast, divergence may occur at the level of self-reported employability, which is subject to discipline-specific factors such as industry exposure, career clarity, and anticipated labour market opportunities. Despite possessing the same skill levels and self-efficacy, students' employability perceptions may vary according to their views on employment opportunities within their respective fields.

This convergence-divergence paradigm elucidates the reasons for variations in graduate employment despite analogous advancements in competence. This study's convergence-divergence perspective critically differentiates capability development from employability perception, hence enhancing employability frameworks. This study illustrates that the institutional uniformity of employability-related learning experiences may result in a convergence of employability attributes and self-efficacy, in contrast to previous employability research that emphasised disciplinary or demographic disparities. Variations in SPE may persist as students assess career opportunities differently based on disciplinary setting and labour market visibility. This distinction enriches employability literature by demonstrating that skills and confidence do not inherently correlate with views of employability. It also provides a theoretical framework for analysing empirical findings that show non-significant variations in employability traits and self-efficacy but significant disparities in self-perceived employability.

METHODOLOGY

Research Design

The present research investigated employability convergence and divergence among Malaysian private higher education final-year undergraduates using a quantitative, cross-sectional design. Comparative analysis was used to compare employability traits, self-efficacy, and self-perceived employability across academic disciplines and gender groupings.

A quantitative design was considered appropriate as it allows for statistical comparison of constructs based on existing theoretical frameworks, namely the CareerEDGE model (Dacre Pool & Sewell, 2007), Self-Efficacy Theory (Bandura, 1997), and Self-Perceived Employability (Rothwell & Arnold, 2007; Rothwell et al., 2008). The cross-sectional aspect of the study captures students' opinions at a point in time, namely in the final year of study after completing internship experiences, which are crucial to employability development (Jackson & Wilton, 2017).

Sample and Sampling Procedure

The study sample consisted of 446 final-year undergraduate students enrolled in private higher education institutions in Selangor, Malaysia. All participants had completed at least one internship as part of their academic programme, ensuring that they possessed relevant work-integrated learning experience. A proportionate sampling approach was employed to ensure representation across four major disciplinary clusters:

- i. Social Sciences, Humanities, and Education (n = 143)
- ii. Business and Management (n = 140)
- iii. Science and Technology (n = 142)
- iv. Service and Creative Industries (n = 21)

The discipline grouping represents Malaysian private institutions' organisational structure and addresses curriculum design and industry exposure. So, the naturally occurring distribution of respondents during data collection caused different sample sizes across academic fields. Hence, unequal group sizes are typical in social science research, and this does not violate ANOVA if normality and variance homogeneity are met. Moreover, MANOVA and ANOVA can accommodate unequal sample sizes, especially when variance homogeneity is achieved, and sample sizes are above 20 per group (Field, 2018; Hair et al., 2019; Tabachnick & Fidell, 2019). As stated by Jackson (2016), comparable disparities have been noted in previous educational studies when specific specialised fields exhibit reduced student representation. Despite having a smaller sample size ($n = 21$), the Service and Creative Industries group exceeded the minimum recommended for parametric analysis. Initial assumption testing showed normality across all constructs in this study, thus validating the analyses.

To address disparate group sizes across disciplines, suitable statistical methods, such as MANOVA and ANOVA, were utilised, accompanied by meticulous assessment of statistical assumptions and effect sizes to reinforce the validity of the results (Hair et al., 2019). Moreover, effect size metrics (Partial η^2 and Cohen's d) were presented to offer a more thorough comprehension of practical significance beyond p -values. The sample consisted of 186 male and 260 female students, facilitating significant gender-based comparisons. The total sample size was above the minimum threshold suggested by Cochran's formula and statistical power analysis (Hair et al., 2021), demonstrating sufficient statistical power for this study.

Instruments

Data were gathered utilising three validated measures that assess employability traits, self-efficacy, and self-perceived employability.

CareerEDGE Employability Attributes. Employability qualities were assessed with a tool derived from the CareerEDGE model established by Dacre Pool and Sewell (2007). The instrument consists of five dimensions: Career Development Learning, Work and Life Experience, Degree Subject Knowledge, Understanding and Skills, Generic Skills, and Emotional Intelligence. Thirty items were assessed utilising a 7-point Likert scale, with values ranging from 1 (strongly disagree) to 7 (strongly agree).

Self-Efficacy. Self-efficacy was assessed by eight items derived from Chen et al. (2001), reflecting students' confidence in executing academic and career-oriented tasks. Responses were documented using a 5-point Likert scale, with 1 indicating severe disagreement and 5 indicating strong agreement.

Self-Perceived Employability (SPE). Self-perceived employability was assessed using the 16-item scale developed by Rothwell et al. (2008). The scale measures students' perceptions of their ability to obtain and maintain employment. Responses were recorded on a 5-point Likert scale. Minor wording adjustments were made to ensure contextual relevance to Malaysian private higher education institutions without altering the original meaning of the items.

Validity and Reliability

To ensure construct reliability and convergent validity, the instruments were adapted from previously validated scales in employability and educational research (Chen et al., 2001; Dacre Pool & Sewell, 2007; Rothwell et al., 2008). Internal consistency and convergent validity were assessed using Cronbach's Alpha (CA), Composite Reliability (CR), Average Variance Extracted (AVE), and indicator loadings. According to Hair et al. (2019), acceptable values for CA and CR should exceed 0.70, while AVE should exceed 0.50. As presented in Table 3.1, all constructs demonstrated satisfactory reliability and convergent validity, with CA values ranging from 0.827 to 0.965, CR values ranging from 0.896 to 0.973, and AVE values exceeding the recommended threshold of 0.50. Most indicator loadings also exceeded 0.70, indicating acceptable construct reliability.

Table 3.1
Assessment Results of the Measurement Model on Construct Reliability and Validity

Construct/Item			IL	CA	CR	AVE
Career Development Learning (CDL)				0.965	0.973	0.878
CDL1			0.949			
CDL2			0.936			
CDL3			0.928			
CDL4			0.941			
CDL5			0.932			
Experience Work & Life (WLE)				0.909	0.943	0.846
WLE1			0.909			
WLE2			0.919			
WLE3			0.932			
Degree Subject Knowledge (DSK)				0.827	0.896	0.743
DSK1			0.819			
DSK2			0.904			
DSK3			0.860			
Generic Skills (GS)				0.946	0.953	0.596
GS1			0.766			
GS4			0.838			
GS5			0.815			
GS6			0.867			
GS7			0.808			
GS8			0.748			
GS9			0.802			
GS10			0.779			
GS11			0.808			
GS12			0.771			
GS13			0.802			
GS14			0.838			
GS15			0.538			
GS16			0.548			
Self-Efficacy (SE)				0.889	0.911	0.563
SE1			0.758			
SE2			0.723			
SE3			0.757			
SE4			0.760			
SE5			0.771			
SE6			0.709			
SE7			0.761			
SE8			0.761			
Self-Perceived Employability (SPE)				0.915	0.927	0.516

SPE3	0.676
SPE4	0.671
SPE5	0.725
SPE6	0.724
SPE7	0.648 (Deleted)
SPE8	0.727
SPE9	0.728
SPE10	0.703
SPE11	0.730
SPE12	0.751
SPE13	0.700
SPE14	0.651 (Deleted)
SPE15	0.743
SPE16	0.734

IL: Indicator Loading

CA: Cronbach Alpha

CR: Composite Reliability

AVE: Average Variance

Common Method Bias

Since the data were collected using self-reported measures from a single source, Harman's single-factor test was conducted to assess the potential presence of common method bias. The analysis showed that the first unrotated factor accounted for 40.882% of the total variance, which is below the recommended threshold of 50% (Podsakoff et al., 2003). Additionally, procedural remedies such as assuring anonymity and reducing evaluation apprehension were implemented during data collection to minimise response bias.

Data Analysis

Data analysis was performed via IBM SPSS Statistics (Version 29). Initial data screening involved assessments for missing values and normal distribution. The skewness and kurtosis values were analysed, and all constructs were within the permissible range of -2 to +2, signifying a normal distribution (Hair et al., 2019; Kline, 2016).

To fulfil the research objectives:

Multivariate Analysis of Variance (MANOVA) was employed to investigate disparities in CareerEDGE subconstructs among various disciplines. A one-way Analysis of Variance (ANOVA) was performed to evaluate variations in self-efficacy and self-perceived employability among different disciplines. Independent-samples t-tests were employed to assess gender disparities in self-efficacy and self-perceived employability. Effect sizes were expressed using Partial η^2 for MANOVA/ANOVA and Cohen's d for t-tests to elucidate the extent of differences. Statistical significance was established at $p < 0.05$.

Ethical Considerations

Ethical approval for this investigation was secured from the appropriate institutional ethics committee before data collection. All participants were apprised of the study's purpose and granted voluntary informed consent before participation. Confidentiality and anonymity were rigorously upheld, and no personally identifiable information was gathered. Participants were guaranteed that their replies would be utilised exclusively for academic study and presented in aggregate form.

RESULTS

Test for Normality

The skewness and kurtosis values were analysed to evaluate the normality of the data for all constructs, including Career Development Learning (CDL), Work and Life Experience (WLE), Degree Subject Knowledge (DSK), Generic Skills (GS), Emotional Intelligence (EI), Self-Efficacy (SE), and Self-Perceived Employability (SPE). Skewness values varied from -1.120 to -0.127 , and kurtosis values ranged from -0.607 to 1.281 . Hair et al. (2019) assert that values between -2 and $+2$ signify adequate normality. Kline (2016) posits that skewness values ranging from -3 to $+3$ and kurtosis values from -10 to $+10$ are deemed acceptable in behavioural research. According to these criteria, all constructs are within the allowed range, signifying that the data are normally distributed and appropriate for parametric statistical analysis.

Table 4.1

Normality of the Data

Construct	N	Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error
CDL	446	-1.120	0.116	0.721	0.231
WLE	446	-0.902	0.116	1.281	0.231
DSK	446	-0.736	0.116	-0.029	0.231
GS	446	-0.680	0.116	0.080	0.231
EI	446	-0.822	0.116	0.743	0.231
SE	446	-0.361	0.116	-0.214	0.231
SPE	446	-0.127	0.116	-0.607	0.231

Note. Source: Researcher's construct

Descriptive Analysis of CareerEDGE and Its Subconstructs

Table 4.2 displays the mean and standard deviation values for the five subconstructs of the CareerEDGE model. The average scores varied from 5.327 to 5.481 on a 7-point Likert scale, signifying a substantial level of employability qualities among participants. Emotional Intelligence had the highest mean ($M = 5.481$, $SD = 1.031$), succeeded by Generic Skills ($M = 5.402$, $SD = 1.008$) and Work and Life Experience ($M = 5.396$, $SD = 1.102$). Career Development Learning exhibited the lowest mean ($M = 5.327$, $SD = 1.308$); however, it remains within the high range. The comparatively low standard deviation values indicate that responses were uniform among individuals. These findings demonstrate that undergraduate students have robust employability-related competencies across all aspects of the CareerEDGE framework. The aggregate CareerEDGE score ($M = 5.391$, $SD = 0.824$), illustrated in Table 4.3, substantiates a significant degree of employability qualities among participants.

Table 4.2

Descriptive Analysis of the Subconstruct of CareerEDGE

Subconstruct-Career EDGE	N	Mean	SD	Level
Career Development Learning	446	5.327	1.308	High
Work and Life Experience	446	5.396	1.102	High
Degree Subject Knowledge	446	5.350	1.123	High
Generic Skills	446	5.402	1.008	High
Emotional Intelligence	446	5.481	1.031	High

Note. Source: Researcher's construct

The overall mean score for the CareerEDGE construct was 5.391 ($SD = 0.824$), as shown in Table 4.3 below. This means that the undergraduate students who answered the survey had a lot of employability traits. A mean score of 4.67 on a seven-point Likert scale is typically regarded as high, indicating

significant agreement with the affirmative statements regarding career advancement, transferable abilities, and self-awareness. The standard deviation of 0.824 is comparatively low, indicating that most undergraduates consistently provided positive ratings for the items. This indicates that undergraduate students typically share a similar perspective on employability preparation and personal development attributes as delineated by the CareerEDGE framework. Overall, the results suggest that the respondents have many skills that make them ready for a job and a career, which means they are ready to move into the workforce smoothly.

Table 4.3

Descriptive Analysis of the Overall CareerEDGE

Construct	N	Mean	SD	Level
CareerEDGE	446	5.391	0.824	Very High

Note. Source: Researcher's construct

Descriptive Analysis of Self-Efficacy

The findings in Table 4.4 reveal that participants exhibited a substantial degree of self-efficacy, achieving a mean score of 3.890 (SD = 0.596) on a 5-point Likert scale. A mean score of 3.67 is typically regarded as high, indicating that students exhibit substantial confidence in their capacity to execute academic and career-related tasks. The comparatively low standard deviation signifies uniformity in responses, suggesting that students possess similar levels of self-efficacy and confidence.

Table 4.4

Descriptive Analysis of the Construct of Self-efficacy

Construct	N	Mean	SD	Level
Self-Efficacy	446	3.890	0.596	High

Note. Source: Researcher's construct

Descriptive Analysis of Self-Perceived Employability

Referring to Table 4.5, the average score for Self-Perceived Employability (SPE) was 3.781 (SD = 0.617), signifying a high level of perceived employability among the students. This indicates that students typically perceive themselves as competent in securing and sustaining jobs. The minimal range in responses suggests that this perspective is largely uniform among the students.

Table 4.5

Descriptive Analysis of the Construct of Self-Perceived Employability

Construct	N	Mean	SD	Level
Self-Perceived Employability	446	3.781	0.617	Very High

Note. Source: Researcher's construct

MANOVA Results by Discipline (RO1 / H1a–H1e)

A one-way MANOVA was conducted to examine differences in CareerEDGE subconstructs across the four disciplinary groups (see Table 4.6). The multivariate results indicated no statistically significant difference, $F(4, 441) = 0.85$, $p = 0.62$, Partial $\eta^2 = 0.01$. This suggests that the combined employability attributes do not differ significantly across disciplines. Further univariate analyses also showed no significant differences for any of the five subconstructs ($p > 0.05$), with very small effect sizes. The findings suggest that students from various disciplines demonstrate comparable levels of employability attributes, indicating a uniform trend in employability development.

Table 4.6
The Effects of Faculty on CareerEDGE Subconstruct using MANOVA

Test	Variables Included	F	Sig. (p)	Partial η^2	Result
MANOVA	CDL, WLE, DSK, GS, EI	0.85	0.62	0.010	Not significant
CDL	Career Development Learning	1.98	0.12	0.013	Not significant
WLE	Work and Life Experience	1.03	0.38	0.007	Not significant
DSK	Degree Subject Knowledge	0.06	0.98	0.000	Not significant
GS	Generic Skills	0.71	0.55	0.005	Not significant
EI	Emotional Intelligence	0.02	1.00	0.000	Not significant

Note. Source: Researcher's construct

ANOVA Results for Self-Efficacy (RO2 / H2)

A one-way ANOVA was performed to investigate variations in self-efficacy among the disciplines (see Table 4.7). The findings indicated no statistically significant difference, $F(3, 442) = 1.274$, $p = 0.283$. The average scores varied from 3.834 to 3.964, demonstrating uniformly elevated levels of self-efficacy within all disciplinary categories. This indicates that students exhibit similar levels of confidence irrespective of their academic discipline.

Table 4.7
Compared Mean of Self-Efficacy Based on the Discipline of Study

Self-Efficacy	N	Mean	SD	F	Sig.
Social Sciences Humanities & Education	143	3.964	0.606	1.274	0.283
Business & Management	140	3.834	0.627		
Science & Technology	142	3.865	0.550		
Service & Creative Industries	21	3.935	0.602		
Total	446	3.890	0.596		

Note. Source: Researcher's construct, $DF=3,442$

ANOVA Results for Self-Perceived Employability (RO3 / H3)

A one-way ANOVA was conducted to examine differences in self-perceived employability across disciplines (see Table 4.8). The results revealed a statistically significant difference, $F(3, 442) = 3.482$, $p = 0.016$. Students in the Service and Creative Industries reported the highest mean score ($M = 4.027$, $SD = 0.540$), followed by Social Sciences, Humanities and Education ($M = 3.844$, $SD = 0.669$) and Business and Management ($M = 3.800$, $SD = 0.605$). Students in Science and Technology reported the lowest mean score ($M = 3.662$, $SD = 0.566$). Although the effect size is small, the findings indicate that students' perceptions of their employability vary across disciplines.

Table 4.8
Compared Mean of Self-Perceived Employability Based on the Discipline of Study

Self-Perceived Employability (SPE)	N	Mean	SD	F	Sig
Social Sciences Humanities & Education	143	3.844	0.669	3.482	0.016
Business & Management	140	3.800	0.605		
Science & Technology	142	3.662	0.566		
Service & Creative Industries	21	4.027	0.540		
Total	446	3.781	0.617		

Note. Source: Researcher's construct, $DF=3,442$

To address the uneven group sizes among the disciplines, a Games-Howell post-hoc test was performed (see Table 4.9). The analysis indicated a statistically significant difference solely between students from Science and Technology and those from Service and Creative Industries, with the latter group reporting elevated levels of self-perceived employability. No notable discrepancies were detected among the remaining disciplinary groupings. The data indicate that although perceptions of employability are largely consistent across disciplines, certain disciplinary contexts may affect students' evaluations of their employability.

Table 4.9

Games-Howell Post-Hoc Comparisons for Self-Perceived Employability Across Disciplines

Discipline Comparison	Mean Difference (I–J)	Std. Error	p	95% CI
Science & Technology vs Social Sciences, Humanities & Education	-0.182	0.073	.065	[-0.372, 0.007]
Science & Technology vs Business & Management	-0.138	0.070	.198	[-0.318, 0.042]
Science & Technology vs Service & Creative Industries	-0.365*	0.127	.037	[-0.713, 0.017]

*p < 0.05

Note. Source: Researcher's construct

Independent t-Test for Gender Differences in Self-Perceived Employability (R04 / H4)

An independent-samples t-test was conducted to examine gender differences in self-perceived employability (see Table 4.10). The results indicated no statistically significant difference between male (M = 3.765, SD = 0.652) and female students (M = 3.792, SD = 0.591), $t(444) = -0.461$, $p = 0.645$. This suggests that male and female students have similar perceptions of their employability.

Table 4.10

Compared Mean of Self-Perceived Employability Based on Gender

Gender	N	Mean	SD	t	df	sig.
Self-Perceived Employability	Male 186	3.765	0.652	-0.461	444	0.645
	Female 260	3.792	0.591			

Note. Source: Researcher's construct

Independent t-Test for Gender Differences in Self-Efficacy (R05 / H5)

Referring to Table 4.11, an independent-samples t-test was conducted to examine gender differences in self-efficacy. The results showed no statistically significant difference between male (M = 3.909, SD = 0.621) and female students (M = 3.877, SD = 0.578), $t(444) = 0.545$, $p = 0.586$. This indicates that both male and female students report comparable levels of self-efficacy.

Table 4.11

Compared Mean of Self-Efficacy Based on Gender

Gender	N	Mean	SD	t	df	sig.
Self-Efficacy	Male 186	3.909	0.621	0.545	444	0.586
	Female 260	3.877	0.578			

Note. Source: Researcher's construct

DISCUSSION

This section synthesises theoretical frameworks and empirical data to elucidate the convergence and divergence of graduate employability in relation to the research objectives and assumptions.

Discussion on R01 / H1a–H1e: Disciplinary Differences in CareerEDGE Attributes

From the findings of the MANOVA, the results revealed that there were no significant differences in any of the CareerEDGE antecedents, CDL, WLE, DSK, GS, and EI across the four disciplinary groups, revealing similar levels of employability-related talents among students. The findings indicate that there is a convergence in employability development across the disciplines rather than a simple reflection of the lack of distinction. This could be due to the systematic integration of employability-centred practices in Malaysian private higher education institutions, where internships, project-based learning, and transferable skills development are generally included in curricula (Moo & Wan, 2023). The results of this study are consistent with the CareerEDGE model of employability, which conceptualises employability as a holistic integration of skills, knowledge and experiences rather than discipline-specific competences (Dacre Pool & Sewell, 2007). They are also in line with earlier research that suggests institutional practices and employability frameworks might help diminish disciplinary differences in skill development (Bennett et al., 2022; Jackson, 2016). This convergence is further supported in the Malaysian context by the Malaysian Qualifications Framework (MQA), which stresses generic skills and work-based learning across academic curricula.

Discussion on R02 / H2: Disciplinary Differences in Self-Efficacy

The findings revealed that there were no significant disparities in self-efficacy among disciplines, indicating students from various academic backgrounds exhibited comparable levels of confidence in their capacity to execute academic and career-related tasks. This conclusion reinforces the trend of psychological convergence, suggesting that self-efficacy may be minimally affected by the academic setting in this study. Bandura (1997) posits that self-efficacy is cultivated through mastery experiences and conducive learning contexts. As all participants had undertaken internships, they were probably exposed to analogous chances for practical application and experiential learning, resulting in similar levels of confidence across fields. Schunk and DiBenedetto (2020) corroborate this perspective by highlighting the significance of repeated performance experiences in enhancing self-efficacy. Wong et al. (2023) emphasised the significance of internship participation in bolstering students' confidence, irrespective of their academic discipline. The results correspond with SCCT, which highlights the significance of environmental support in influencing self-efficacy (Lent et al., 1994; 2017).

Discussion on R03 / H3: Disciplinary Differences in Self-Perceived Employability

Contrary to the convergence noted in employability traits and self-efficacy, the findings indicated a statistically significant disparity in self-perceived employability among disciplines. Post-hoc analysis revealed that significant differences were present solely between students from Service and Creative Industries, who exhibited higher levels of self-perceived employability compared to their counterparts in Science and Technology disciplines, indicating that perceptions of employability may vary based on disciplinary background within Malaysian higher education. Prior Malaysian research indicates that employability confidence is frequently linked to communication skills, interpersonal capabilities, and industry-specific exposure, particularly stressed in service-oriented fields (Ismail et al., 2011; Tahir et al., 2018).

This divergence may be ascribed to the subjective nature of self-perceived employability, which is shaped by both personal competencies and beliefs about labour market prospects (Rothwell & Arnold, 2007). Students in service and creative fields may cultivate enhanced perceptions of employability owing to increased industry engagement, portfolio-centric education, and improved career clarity (Jackson & Wilton, 2017; Wong et al., 2023). Conversely, students in Science and Technology fields may view the employment markets as more competitive or specialist, despite having robust technical skills (Niu & Wolniak, 2022; Wilton & Jackson, 2016). These findings confirm the convergence-divergence concept articulated in this study, indicating that employability competences may converge across fields, although contextual circumstances shape employability perceptions.

Discussion on R04–R05 / H4–H5: Gender Differences in Self-Perceived Employability and Self-Efficacy

The results revealed that there were no substantial disparities in self-perceived employability and self-efficacy, indicating that male and female students exhibited similar levels of confidence and perceived

employability. This indicated a trend of gender convergence, suggesting that gender may no longer be a significant differentiator in employability growth within Malaysian private higher education institutions (Saadat & Sultana, 2024). Furthermore, the results align with other research indicating a reduction in gender disparities regarding employability beliefs when educational access and experiential learning opportunities become more egalitarian (Bennett et al., 2022; Fudali-Czyż et al., 2022). The growing focus on inclusive educational approaches and internship involvement may lead to comparable developmental outcomes for all genders. Bandura (1997) posited that self-efficacy evolves through analogous processes when individuals encounter comparable learning events. Likewise, Social Cognitive Career Theory posits that environmental support might mitigate the impact of demographic characteristics on career-related beliefs (Lent et al., 2017), potentially elucidating the lack of gender differences in this study.

Synthesis: Explaining Convergence and Divergence in Employability

The findings collectively offer a more refined comprehension of graduate employment by illustrating the simultaneous presence of convergence-divergence patterns. The observed convergence in employability qualities and self-efficacy indicates that institutional measures, such as standardised curricula and internship integration, foster uniform development of skills and confidence across disciplines and gender groups. The found variance in perceived employability suggests that students' perspectives are affected by discipline-specific factors, including career visibility, industry exposure, and projected labour market opportunities (Rothwell et al., 2008). These findings indicate that although institutional standardisation may diminish variability in employability skills and self-efficacy, the disciplinary setting still influences students' perceptions of their employment opportunities. This study enhances the literature by merging the CareerEDGE model, Self-Efficacy Theory, and Self-Perceived Employability, presenting a convergence-divergence viewpoint that elucidates how commonalities in employability development can coexist with disparities in perceived employability.

IMPLICATIONS OF THE STUDY

Theoretical Implications

This research enhances the graduate employability literature by synthesising the CareerEDGE model, Self-Efficacy Theory, and Self-Perceived Employability into a cohesive framework. The results indicate that employability evolves through a stratified process, in which competencies affect confidence via self-efficacy, subsequently manifested in perceived employability (Bandura, 1997; Rothwell & Arnold, 2007).

This study's principal contribution is the convergence-divergence perspective. The results indicate a convergence in employability traits and self-efficacy across all disciplines and genders, implying that organised educational methods may provide relatively uniform developmental results. Nonetheless, variations in self-assessed employability suggest that contextual and perceptual elements influence students' evaluations of their employability. This corroborates Social Cognitive Professional Theory, emphasising the impact of environmental circumstances and outcome expectations on professional beliefs (Lent et al., 1994; 2017). This study provides a process-oriented explanation of employability in higher education by differentiating between capability growth and employability perception.

Practical Implications

The results provide significant implications for higher education institutions in enhancing employability development. The noted convergence in employability qualities indicates that integrating internships, project-based learning, and transferable skills into the curriculum effectively fosters uniform capability development across disciplines (Jackson, 2016; Moo & Wan, 2023). Universities must persist in strengthening these strategies to maintain fundamental employability preparedness.

The disparity in self-assessed employability underscores the necessity for targeted interventions within individual disciplines. Despite possessing comparable skills and confidence, students' opinions of employability differ according to their job awareness and industry exposure (Wilton & Jackson, 2016). Institutions should consequently offer specialised career advising, industry involvement, and networking possibilities, especially for fields with less apparent career trajectories.

Moreover, incorporating reflective learning and organised career assistance, including workshops and employability training, can improve students' capacity to identify and express their skills, thus closing the divide between actual competence and perceived employability (Rothwell & Arnold, 2007).

Policy Implications

The findings present significant implications for higher education and workforce development in Malaysia at the policy level. The alignment of employability attributes and self-efficacy indicates that policies advocating for work-integrated learning and transferable skills, especially those directed by the Malaysian Qualifications Agency (MQA) and the Ministry of Higher Education (MOHE), could enhance uniform employability advancement across institutions (Ministry of Higher Education Malaysia, 2023; Moo & Wan, 2023). Nonetheless, variations in self-assessed employability indicate that policymakers ought to transcend a uniform strategy by acknowledging discipline-specific career trajectories and labour market constraints (Wilton & Jackson, 2016). Consequently, more tailored employment tactics across academic disciplines may be required. The lack of gender disparities signifies advancement towards gender equality in higher education results, aligning with Sustainable Development Goal 5 (Fudali-Czyż et al., 2022). Policymakers ought to integrate self-assessed employability into graduate result evaluations to enhance comprehension of students' preparedness and self-assurance (Rothwell & Arnold, 2007).

LIMITATIONS AND FUTURE RESEARCH

This research possesses multiple limitations. The sample was confined to final-year undergraduate students from private higher education institutions in Selangor, Malaysia, perhaps limiting the generalisability of the findings to other contexts, such as public universities or various locations. The cross-sectional design restricts the capacity to make causal inferences, given that data were gathered at a single moment in time. Future studies may utilise longitudinal methodologies to investigate the evolution of employability development and perceptions across time. Third, the research depended on self-reported metrics, which may be susceptible to response bias. Future research may integrate multi-source data, including employer or supervisor ratings, to deliver a more thorough assessment of employability. The limited sample size for the Service and Creative Industries category may compromise the reliability of comparisons. Future studies should strive for more equitable samples and investigate supplementary elements such as career adaptability, labour market awareness, and institutional support, potentially employing qualitative methodologies for enhanced understanding.

CONCLUSION

This study investigated disciplinary and gender trends in employability traits, self-efficacy, and self-perceived employability among final-year undergraduate students in Malaysian private higher education institutions. The results demonstrated a convergence in employability qualities and self-efficacy across fields and genders, suggesting that students cultivate similar levels of skills and confidence irrespective of their academic backgrounds. Divergence in self-perceived employability was noted across disciplines, indicating that students' perspectives are shaped by contextual factors, including job visibility and industry exposure. These findings underscore a distinction between capability development and perceptions of employability, indicating that analogous skills and confidence do not inherently lead to consistent perceptions of employability. This study integrates the CareerEDGE model, Self-Efficacy Theory, and Self-Perceived Employability to present a convergence-divergence approach, thereby providing a more nuanced understanding of graduate employability and highlighting the necessity for discipline-specific support in higher education.

CO-AUTHOR CONTRIBUTION

The authors affirmed that there is no conflict of interest in this article. Author 1 contributed to conceptualisation, methodology, data curation, formal analysis, and writing the original draft of the article. Author 2 was involved in conceptualisation, supervision, and reviewing the full article. Author 3 was involved in proofreading, reviewing, editing, and contributed to the interpretation of results.

DECLARATION OF AI-GENERATED CONTENT

AI tools were used in their standard automated modes for grammar correction, clarification, and accuracy enhancement. Accordingly, no structured or content-generating prompts were employed. Grammarly AI was used to improve grammar and language quality. The authors further declare that AI tools were not used to generate the research data, conduct the bibliometric analysis, or produce the scientific results presented in this manuscript. The authors take full responsibility for the integrity, accuracy, and originality of the work.

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