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Examining Perceived Employability of Public Service Department Sponsored Undergraduates in Malaysian Public Universities: CareerEDGE Model and the Role of Self-Efficacy as a Mediator

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Abstract

Graduate employability is always being a global concern since it ties directly to tertiary education. Essentially, it refers to undergraduates' perceived chances of getting a job or the ability to be employed after graduation. Due to rapidly changing labour market, there is a need for empirical research in the area of self-perceived employability and its influencing factors. Hence, this study used the CareerEDGE model constructs to examine the influencing

factors of undergraduates' employability and the mediating effect of self-efficacy. Data were collected from 256 final-year students sponsored by the Malaysian Public Service Department across twenty public universities in Malaysia. Structural Equation Modelling Analysis of Moment Structures was employed for data analysis. The results showed that only career development learning influenced the employability. The other constructs (work experience; degree subject knowledge and skills; generic skills; and emotional intelligence) showed no influence. Additionally, self-efficacy did not mediate these relationships. These findings suggest that the CareerEDGE model does not influenced employability of PSD-sponsored undergraduates, and self-efficacy is not a key factor in this context. The findings contributed to the current body of knowledge and highlight the need for further exploration of undergraduates perceived employability studies, especially in the Malaysian context.

Keywords: employability, higher education, self-efficacy, sponsored undergraduate, CareerEDGE model

1. Introduction

Graduate employability is a global concern, intertwining education, a cornerstone of societal development, with the labour market's dynamic demands. Employability, at its core, signifies an individual's capacity to secure and sustain in employment (Leadbeatter et al., 2023). It is an essential concept bridging Higher Education Institutions (HEIs) and labour markets (Clarke, 2018; Tomlinson et al., 2022; Yusof & Jamaluddin, 2020). HEIs face increasing pressure to equip students with the skills necessary for a rapidly evolving economic, technological, and social landscape (OECD, 2020; Schueller, 2023).

The recent years has showcased that the global economy was contracting significantly as a result of the COVID-19 pandemic amidst the long-term effects of the 2008 global recession. One of the long-term consequences of a shrinking global economy is that people have less purchasing power, which leads to less production and, ultimately, less job creation (Sato et al., 2021). The impact of the pandemic on the employment status and psychological expectations of graduates has been studied, revealing a decline in employment demand and a rise in employment supply (Mao et al., 2022). Hence, graduate employability will continue to be the topic of discussion (Kamaruddin et al., 2020; Sato et al., 2021). As a result of many changing circumstances, many countries will see lesser jobs opportunities than new graduates for the next few years after pandemic, at least until national economies resume their normal pace (Hosain et al., 2021; World Economic Forum, 2020). To get their expected jobs, universities and graduates must adopt newer sets of skills and techniques in addition to traditional ones (Hosain et al., 2021). Thus, there is an essential and growing need for empirical studies to investigate the factors, attributes and the skill sets requires in enhancing graduate employability (Chow et al., 2019; Wujema et al., 2022).

The Department of Statistics Malaysia (DOSM, 2023) reported nearly 188,000 graduates (58%) were unemployed within six months after graduation in 2022, out of 324,408 graduates produced. The employability rate for graduates securing their first job within six months has decreased, with public universities' unemployment rates risen significantly

(Ministry of Higher Education Malaysia [MOHE], 2022). Malaysia Public Service Department (PSD) sponsored graduates also show a decline in employability rates (Public Service Department [PSD], 2023). The recent graduate tracers study done by the PSD in 2023 revealed that the employability rate (employed or self-employed) of PSD graduates sponsored graduated in 2022 is at 78%, after a declined by 12.5% in 2021 compared to 2020 from 86.5% to 74%, with an average rate of 82.15% between 2019 and 2022. This scenario, exacerbated by the COVID-19 pandemic, highlights the need to address employability issues comprehensively. Despite various strategic plans and initiatives, their employment prospects remain concerning due to the persistent gap between graduate output and job market demands. This necessitates ongoing investigation into the factors influencing employability (Sato et al., 2021).

Although several studies have explored perceived employability among undergraduates, especially post-COVID-19 (Rahman et al., 2022; Kamaruddin et al., 2020; Sato et al., 2021; Zhou et al., 2022), there remains insufficient empirical research on undergraduate perceived employability, particularly for sponsored undergraduates in public universities. Prior research findings indicate that psychological factors significantly influence graduates' employability (Ayala Calvo & Manzano Garcá, 2021; Baluku et al., 2021; Hinai et al., 2020; Rashid & Hinai, 2021). Moreover, empirical models evaluating perceived employability often incorporate only a few variables, overlooking several crucial factors in past research (Pool, 2017; Wujema et al., 2022). These gaps underscore the need for further investigation, particularly into the relationship between the CareerEDGE model and undergraduate employability in Malaysia.

Therefore, this study examined the influence of five CareerEDGE lower tier components toward the employability. This study using PSD sponsored undergraduates from 20 Malaysian public universities as samples of the study. The primary notion of CareerEDGE is that it will result in good employability interventions (Pool, 2020; Yawson & Yamoah, 2023). Thus, this study aims to contribute to employability literature by examining the influence of CareerEDGE model and undergraduates perceived employability, and the mediation effect of self-efficacy. This study pursued two objectives: assessing the influence of five CareerEDGE constructs on employability among PSD-sponsored undergraduates, and investigating whether self-efficacy mediates this relationship.

2. Literature Review

2.1 Graduates Employability in Malaysia

The concept of employability in Malaysia context are varies. Employability relates to the ability of individuals to be hired and compensated based on one's qualifications and functional competencies (Bhatti et al., 2022; Seng, 2018). It also refers to the ability of individuals to obtain and develop a rewarding career through continuous improvement of attributes and skills that are applicable to various employers in the industry, whether through the employer or through self-initiative (Belderbos, 2020). According to Abd Majid et al. (2020), employability could be related to the work, industry marketability, and finding and keeping a fulfilling job. And employability also includes the potential for advancement in a

specific job at work, as well as ability to find and keep a job (Seng, 2018). According to the Malaysia Higher Education Employability Strategic Plan 2022-2025 by MOHE (2022), employability is referred to the potential of a person to secure, maintain, and grow in a specific job at the workplace. MOHE further categorized graduate employability as a graduate who within 6 months after their graduation managed to obtain work, furthers his education, enhances his skills, or waiting for a job placement.

Each year Malaysian HEIs produce a large number of graduates for the local labour market, thus employability has always been a focus by Malaysia government (MOHE, 2022). However in today's highly competitive workplace, the belief that possessing a bachelor's degree ensures employment is no longer applicable (Bates et al., 2019; Chan, 2016; Ng et al., 2022). Hence, HEIs play an active the role in enhancing graduates' employability in Malaysia which includes enhancing language proficiency, industry-university linkages, generic skills, and the cultivation of an entrepreneurial mindset (Seng, 2018). MOHE has introduced several blueprints to address this issue, such as Malaysia Education Blueprint 2015-2025 (Higher Education) in year 2015 and later Malaysia Higher Education Action Plan 2022-2025 in year 2022. Concurrently, to further address the specified issue of employability, Malaysia National Graduate Employability Blueprint 2012-2017 has been introduced in year 2012 and later by Malaysia Higher Education Employability Strategic Plan 2022-2025 in year 2022 with the aims to achieve graduates' employability rates of more than 86.7% by 2025 (MOHE, 2022).

Apart from several blueprints and policies, the Malaysian government has also implemented various strategies to enhance graduates' employability. One of the key strategies has been the introduction of training programs and schemes aimed at strengthening graduates' skills. For instance, the Graduate Career Accelerated Programme (GCAP), the Graduate Employability Management Scheme (GEMS), and the earlier 1Malaysia Training Scheme (SL1M) have been established to provide training and coaching to enhance various aspect of graduate's competencies, especially in English proficiency, communication skills, and other soft skills (Nesaratnam et al., 2018) as well as the recent ongoing Professional Training and Education for Growing Entrepreneurs (PROTEGE)(MOHE, 2022). Additionally, the development of generic skills and the implementation of programs such as the 2u2i (two years attachment with university and two years attachment with industry) have been identified as strategies to enhance the employability of graduates in Malaysia (MOHE, 2022; Yusof & Jamaluddin, 2020).

2.2 Public Service Department (PSD) Sponsored Undergraduates

The Malaysian government and several other private entities have established various scholarship programmes to support local students pursuing higher education in Malaysia. The scholarships cover a wide array of disciplines, reflecting the government's commitment to fostering a diverse and inclusive higher education environment for students across various fields (MOHE, 2022). The main government's sponsoring bodies in pursuing bachelor's degree education are PSD, Majlis Amanah Rakyat (MARA) and National Higher Education Fund Corporation (PTPTN). The sponsorships come in study loan scheme, in which the students which were being sponsored will need to repay back after graduation in instalments.

PSD is one of the main government's sponsoring bodies in Malaysia and was established directly under the Malaysian Prime Minister Department. PSD sponsored approximately more than 10,000 newly enrolled undergraduate students pursuing their first degree at both public and private institutions across Malaysia and abroad annually. Several sponsorships programmed under PSD were in place for Malaysia citizen. Among other is the National Degree Program (PIDN), focuses on first-degree students who are studying at public universities, premier polytechnics and government-linked universities in the country. The primary aim of the sponsorships was to provide access to tertiary education for students while supporting the national human capital development agenda, ensuring that they acquire the necessary skills and knowledge to serve in the public sector upon graduation.

The selection process by PSD is highly rigorous and competitive. The final selection made based on a combination of academic performance, interview results, and the alignment of the undergraduate students' fields of study with the needs of the public service sector. The criteria for selection were also designed to identify undergraduate students who demonstrate both academic excellence and a commitment to serving in the public sector upon graduation. Among the key selection criteria were academic performance, field of study, leadership and extracurricular activities involvement, and performance in interview assessment.

This rigorous selection process ensures that only the most qualified undergraduate students receive PSD sponsorship, thereby maintaining a high standard of education and competency within the public service (Baqutayan et al., 2023). According to Baqutayan, once being sponsored, the undergraduate students were required to maintain a minimum intended GPA throughout their studies and failure to meet this academic standard may result in the loss of sponsorship, emphasizing the importance of academic diligence. Hence, undergraduate students who were being sponsored by PSD can be considered as one of the top performers in term of academic achievement.

In conclusion, with the vast investments put forth by the Malaysian government in sponsorships, the recent graduate tracers study done by the PSD in 2023 revealed that the employability rate of PSD sponsored students was still not achieved the national target set by MOHE of 86.5% (MOHE, 2022). Also, glancing to prior related empirical findings, psychological factors were among the factor that has significantly influence graduates' employability (Hinai et al., 2020). As a result, it is critical to investigate how these factors influence and mediate the relationship with PSD sponsored undergraduate students' employability.

2.3 Theorising Employability: The CareerEDGE model

This study employed the CareerEDGE model. Nevertheless, there are several different employability models that examining employability in different ways. Among prevalent models include the UK Commission for Employment and Skills (UKCES) employability model, the four-stage model of career planning (DOTS), the Skills-Efficacy Beliefs-Metacognition (USEM) model, the National Career Development Guidelines (NCDG) Frameworks, the Canadian Blueprint for Life/Work Model, the Australian Blueprint for career development, and Career EDGE Model. The UKCES employability model emphasises

the importance of individual growth; with communication, technology, and numerical skills being the three key aspects that contribute to employability. As for the USEM model encompasses of understanding, skills (generic and specific), efficacy beliefs, and meta-cognition. The NCDG frameworks, the Canadian Blueprint for Life/Work Model, and the Australian Blueprint for career development, emphasize the involvement of higher educations as a component of lifelong learning and career planning (Hooley et al., 2013). It was noted that the above models encompass a broader perspective and were not limited to the environment of higher education alone. According to Eimer and Bohndick (2023), there is no dominating model or framework for developing graduate employability, and suggest that most models are highly contextualized.

The CareerEDGE model developed by Pool and Sewell (2007) presents a more comprehensive framework that incorporates various factors contributing to employability. In this model, the crucial links to employability has been introduced. By developing the five components on the lowest tier of the model, after reflecting on and evaluating these experiences, will fundamentally resulting in the development of self-efficacy, self-confidence and self-esteem, and ultimately further enhancing employability. The purpose of this model is to explain the concept of employability to a varied group of individuals (Blackmore et al., 2016). Several scholars believed that CareerEDGE model with its five components and including self-efficacy, self-confidence and self-esteem, is the most comprehensive framework for encouraging the development of graduate employability (Small et al., 2017; Wujema et al., 2022). According to Eimer and Bohndick (2023), the model is intended to serve as a foundation for working with students to improve their employability, as well as a tool for planning programmes and interventions in higher education. Thus, the CareerEDGE model is selected to be employed in this study.

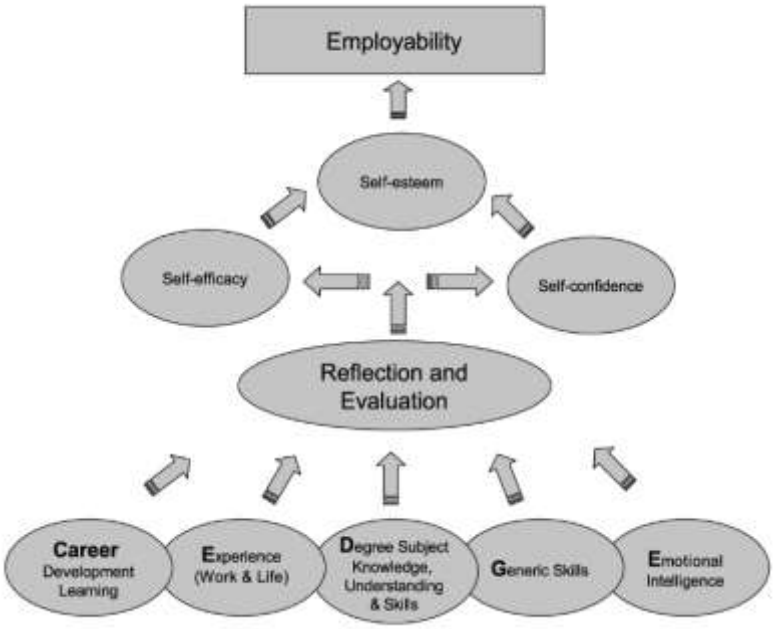

Figure 1. CareerEDGE Model by Pool and Sewell (2007)

The CareerEDGE model provides a practical and comprehensive framework for understanding the factors involved in employability. Despite its limitations, it is widely recognized for assessing employability among undergraduate students (Pool, 2017; Pool & Sewell, 2007; Sumanasiri et al., 2015). The model was created to address the inadequacies of existing frameworks in equipping students with the necessary resources to enhance their employment prospects. Pool also emphasizes that the CareerEDGE model helps students to take responsibility for their own employability development and encourages collaboration among university staff to collectively foster student growth and employability. Since its introduction, the model has remained unchanged, maintaining its original components (Pool, 2020).

Sumanasiri et al. (2015) in their study explored various employability models, including the USEM model and the CareerEDGE model, highlighted how the CareerEDGE model enables students to reflect and assess their experiences, emphasizing the importance of reflection and psychological variables like self-confidence, self-efficacy, and self-esteem. Pool's revisitation of the CareerEDGE model in 2020 emphasized its significant impact on employability development among career practitioners and academics. She highlighted the importance of reflection in fostering self-efficacy, self-confidence, and self-esteem, particularly in a volatile job market.

Recent research by Yawson and Yamoah (2023) extended the CareerEDGE model by incorporating entrepreneurship knowledge and skills. Their study, involving 947 business school students, confirmed the model's validity and found positive relationships between entrepreneurial attitude, achievement orientation, career development learning, degree subject knowledge, and generic skills development. Overall, past research indicates that the CareerEDGE model effectively explains graduates' employability and provides a robust framework for enhancing employability.

2.4 Career Development Learning

According to Pool (2007), career development learning refers to learning activities undertaken by university graduates during their academic tenure to equip themselves with the necessary skills and knowledge for future career opportunities. Recently, there has been increased recognition of the importance of complementing academic pursuits with career development learning (Healy et al., 2022; Wujema et al., 2022). This learning process helps students synthesize knowledge from their higher education experiences, forming a foundation for effective career decision-making, professional growth, and career-building activities (Bridgstock et al., 2019). Additionally, Brigstock also indicated that career development learning significantly impacts graduates' employment prospects, allows them to develop key personal skills like self-reflection, communication, and interpersonal abilities, which are highly valued by employers. Bhatti et al. (2022) also indicated that career development learning equips graduates with critical skills such as problem-solving and decision-making, vital for graduate-level employment. Career development learning also help graduates to significantly enhance their employability prospect by staying updated on industry trends and provide skills for professional networking (Ma et al., 2021). Hence, actively engaging in

career development learning is essential for undergraduates to equip themselves with the additional skills and knowledge necessary to boost their competitiveness in the future job market.

H1a: Career Development Learning has positive influence on employability among undergraduates.

2.5 Work Experience

Work experience, as defined by Pool and Sewell (2007), refers to life experience combining with any work-related experience that undergraduates engaged in before graduation (formally or informally) to enhance their employability. According to Smith (2012), undergraduates work experience is work-integrated learning, which is a curriculum approach that involves undergraduates participating in practical experiences, such as placements, internships, supervised practise, and simulations, that are directly relevant to their field of study and future careers. Work experience during university tenure involves internships and part-time jobs that allow students to apply what they have learned in a real workplace, enhancing their employability prospects (Helyer & Lee, 2014; Jackson & Wilton, 2017; Ng et al., 2022). One of the main goals of obtaining this experience is to improve employability skills, boosting graduates' readiness and confidence in the job market (Razali et al., 2020; Tomlinson et al., 2022). Job-shadowing, for example, helps individuals develop communication and problem-solving skills, along with gaining professional insights that was not taught in classrooms as well as helps students understand workplace dynamics and employer expectations (Abdullah et al., 2019). It also enhance technical skills and acquire transferable abilities, making individuals stand out in the job market, and helps build professional networks, which can be beneficial for future career opportunities (Bakry et al., 2020). Employers often emphasize the value of internships, job-shadowing, and other pre-graduate work experiences for those seeking employment after graduation (Razali et al., 2020). Such experience shows a candidate's commitment to their career and gives employers insight into their skills and expertise (Jackson & Wilton, 2017). Hence, gaining work experience before graduation is essential for enhancing employability and advancing career prospects.

H1b: Work experience has positive influence on employability among undergraduates.

2.6 Degree Subject Knowledge and Skills

According to Pool and Sewell (2007), degree subject knowledge and skills refers to how satisfy undergraduates in their academic performance by completing the degree course in specific discipline in depth by acquiring knowledge, skills and attributes that leading to the attainment of a degree and improved employment prospects. Tentama and Abdillah (2019) suggest that strong academic performance in specific discipline of study is a valuable asset for job seekers, giving them a competitive advantage due to their specialized knowledge and accomplishments. Pool et al. (2014) indicated that high achievers are often self-motivated to enhance their employability by developing their skills and knowledge. Similarly, Lim et al. (2016) indicated that proficient in understanding, evaluating, and applying domain-specific knowledge is crucial for graduates pursuing career opportunities. Employers seek candidates

who not only have a deep understanding of their field but can also apply their knowledge to solve new challenges creatively (Razali et al., 2020). Graduates need a solid foundation in their subject knowledge to be competitive in the job market. Employers highly value graduates who can understand, explain, and apply concepts relevant to their field (Saunders & Zuzel, 2010). This means graduates should have a comprehensive understanding of their discipline and related areas to enhance their employment prospects.

H1c: Degree subject knowledge and skills has positive influence on employability among undergraduates.

2.7 Generic Skills

According Pool and Sewell (2007), generic skills refer to transferable skills that applicable across a variety of contexts. In academia, it's widely agreed that having both specialized knowledge and adaptable skills gives individuals a competitive edge in the job market (Pool, 2017). Generic skills are broad cognitive and interpersonal abilities that enhance productivity and effectiveness in professional environments. These skills are often developed through exposure to various situations, experiences, and people, and are highly valued by employers (Humburg & Velden, 2017). Moreover, empirical studies have demonstrated that possessing a robust repertoire of "generic skills" or "core competencies" significantly enhances graduates' prospects of securing jobs, advancing in their professional trajectories, and effectively navigating the growing need for individuals capable of effectively managing diverse responsibilities (Bennett & Ananthram, 2022). Hence, the study highlights the importance of acquiring a broad set of transferable skills. In a dynamic job market, the ability to continuously learn and adapt is essential. Employers are increasingly looking for candidates with a diverse skill set not just subject-specific expertise.

H1d: Generic skills have positive influence on employability among undergraduates.

2.8 Emotional Intelligence

Emotional intelligence refers to the ability to identify and understand our own emotions and the emotions of others, to effectively motivate ourselves, and to skilfully regulate emotions both inside ourselves and in our interactions with others (Pool, 2017; Pool & Sewell, 2007). Emotional intelligence was also defined as the ability to understand and manage own emotions, as well as recognize and influence the emotions of others (Mayer et al., 2008). According to Bano and Vasantha (2022), emotional intelligence is vital for career success and building strong personal relationships. Additionally, employers highly valued emotional intelligence ability of job candidates, especially recent graduates as studies show that a candidate's emotional intelligence significantly influence employer’s assessment (Bano & Vasantha, 2022; Ma’dan et al., 2020). Graduates with high emotional intelligence communicate better with colleagues, managers, and potential employers, enhancing their job prospects. Hence, emotional intelligence is a vital professional attribute that enhances job prospects and career success. Understanding its importance and developing emotional intelligence skills can significantly benefit graduates in their professional lives.

H1e: Emotional intelligence has positive influence on employability among

undergraduates.

2.9 Mediation Effect of Self-efficacy

As discussed by a psychologist Albert Bandura in 1995 as quoted by Rumjaun and Narod (2020), states that perceived self-efficacy refers to an individual's views regarding their capacity to effectively execute a certain conduct and have a significant impact on individuals' cognitive processes, emotional experiences, self-motivation, and behavioural patterns. It reflects person's confidence in performing effectively across various tasks and situations.

Numerous researches have shown that persons exhibiting elevated levels of self-efficacy tend to establish more ambitious and demanding objectives, engage in greater risk-taking behaviour, and have enhanced perseverance when confronted with obstacles (Yousaf & Sanders, 2012). Several other researches also yielded similar findings. Chow et al. (2019) in his study with a sample of 267 undergraduate students from various public and private schools in Malaysia found a significant relationship between self-efficacy and employability, emphasizing the crucial role of self-efficacy. Tentama and Nabilah (2020) conducted a research study using a sample of 132 vocational high school students in Indonesia, which also yielded similar findings. In a study done by Wujema et al. (2022), with a sample of 264 students from several institutions in Nigeria revealing a significant association between self-efficacy and employability, as well the role of self-efficacy as a mediating variable in the relationship between the five components of the CareerEDGE model and employability.

In a separate investigation conducted by Ojonugwa et al. (2015) using CareerEDGE model to study the self-efficacy of Nigerian polytechnic engineering students, found a positive relationship between self-efficacy and employability. As indicated by Pool and Sewell (2007), a graduate who possesses a strong sense of self-efficacy is significantly more inclined to get work and achieve success in their chosen career path compared to a graduate lacking such self-efficacy. This is in line with evidence provided by Dacre Pool and Qualter (2012) to support this assertion on CareerEDGE model that self-efficacy effectively integrates the key components of employability. As for this study, the researcher has considered it significant to incorporate it as mediator as self-efficacy has been analysed by past studies as a mediator and has more widespread coverage if compared with other two (2) components which are self-confidence and self-esteem.

H2a: Self-efficacy mediates the relationship between career development learning and employability among undergraduates.

H2b: Self-efficacy mediates the relationship between work experience and employability among undergraduates.

H2c: Self-efficacy mediates the relationship between degree subject knowledge and skills, and employability among undergraduates.

H2d: Self-efficacy mediates the relationship between generic skills and employability among undergraduates.

H2e: Self-efficacy mediates the relationship between emotional intelligence and employability among undergraduates.

3. Methodology

3.1 Research Design

The study encompassed a quantitative approach using both descriptive and correlational research designs. The instrument used to collect the data were modified versions of those used by other researchers. Using the Daniel Soper a-priori sample size calculator and formula, the smallest sample size required to detect an effect is 247 samples, while the medium effect size is required for a model structure with a desired statistical power level of 0.95. In this study, a stratified random sampling approach was used. The lists of final-year bachelor's degree PSD-sponsored undergraduates, stratified by 20 public universities, served as the basis for the samples, which were adequately and fairly represented. A link to the online Google Forms containing the questionnaire was sent out via email to 272 randomly chosen respondents in accordance with the sample frame plus an additional 10%. A total of 260 respondents completed the questionnaire. Following the removal of four cases involving outliers, 256 cases were analysed.

3.2 Instrumentation

Every measure uses a 5-point Likert scale, where 1 indicates strongly disagree and 5 indicates strongly agree. Pool et al. (2014) developed five items of career development learning items, five items of subject knowledge and skills, twelve items for generic skills, and four items of emotional intelligence. For each of these measurements, the Cronbach's alpha was 0.72, 0.78, 0.63, and 0.83, respectively. Five items of the work experience scale, which was created by Pool et al. (2014) and Smith (2012), evaluates two linked aspects of internship programme and work-related activities undertaken before graduation. "My degree experience at the university has exposed me to work-related experience through internship," for instance, was one example of the item. For this measure, the Cronbach's alpha was 0.81. Additionally, self-efficacy was measured using Chen et al. (2001) eight-item scale (e.g., "I will be able to achieve most of the goals that I have set for myself"). The Cronbach's alpha for this scale was 0.89. Lastly, the employability scale was created by Rothwell et al. (2008) and consists of 16 items that assess undergraduate students' perceived employability based on their abilities, strength of field of study, and perceptions of the labour market. Some examples of these item are: "There are plenty of job vacancies in the geographical area where I am aiming at," "I feel I could get any job as long as my skills and experiences are reasonably relevant," and "The skills that I possess are what employers are looking for.". For this measure, the Cronbach's alpha was 0.75.

3.3 Data Analysis

The descriptive statistical analysis was used to determine the demographic profile of the sample. Frequency distribution, percentage, mean value, and standard deviation were used to assess the employability and selected predictors of the respondents. The variables' intercorrelations were then calculated. This study utilised the structural equation modelling Analysis of Moment Structures (SEM AMOS) with maximum likelihood estimation was used to evaluate the study hypotheses (Hair et al., 2017). SEM analysis was carried out using three

key stages of analysis: Confirmatory Factor Analysis (CFA), factor effectiveness (measurement model), and structural modelling (Hair et al., 2017). Graphical SEM provides information about the relationship between the assessed variables, the accuracy of the tested model, and the evidence of construction validity, including convergence validity and discrimination, as well as construction reliability. Goodness of fit was evaluated using the Goodness-of Fit Index (GFI), Comparative Fit Index (CFI), Adjusted Goodness-of-Fit Index (AGFI), Incremental Fit Index (IFI), Normed Fit Index (NFI) and Tucker–Lewis Index (TLI). Hair et al. (2010) suggests 3 to 4 indicator fit indices to determine the adequacy of the model. Hair et al. (2010) also proposed that one incremental index, one absolute index, and the x^2 value be employed in the study. The structural model was tested, and the relationship between variables and employability, as well as the mediating role of self-efficacy, were determined.

4. Results

The aim of this study was to determine whether the five CareerEDGE constructs (career development learning; work experience; degree subject knowledge and skills; generic skills; and emotional intelligence) influence the employability of PSD sponsored undergraduate students. Additionally, to determine whether self-efficacy mediate these relationships. To achieve this objectives, ten (10) hypotheses were formulated and tested. Structural Equation Modelling (SEM) of inferential statistics was employed using Amos graphics. Moreover, based on the basic SEM provisions, the model of this study was hypothesised to have about seven (7) variables (career development learning; work experience; degree subject knowledge and skills; generic skills; and emotional intelligence, self-efficacy; and employability). The output of the structural model was used to ascertain these hypotheses. The goodness-of-fit indices are summarized as shown in Table 1.

Table 1. Table Goodness-of-fit Indices of the Output Structural Model

Model	CMIN	DF	*P*	CMIN /DF	GFI	AGFI	CFI	IFI	NFI	TLI	RMSEA
Default Model	860.563	382	0.000	2.253	0.826	0.788	0.901	0.902	0.837	0.887	0.070
Saturated Model	0.000	0			1.000		1.000	1.000	1.000		
Independence Model	5267.359	435	0.000	12.109	0.160	0.102	0.000	0.000	0.000	0.000	0.209

Note. CMIN= minimum discrepancy (or X2); DF= degrees of freedom; RMSEA= root of mean square error of approximation; GFI= goodness-of-fit index; NFI = normed fit index; TLI = Tucker-Lewis index.

4.1 The Influence of CareerEDGE Model Constructs

The first objective of this study is to examine the influence of five CareerEDGE constructs towards undergraduate employability. The structural model results (Table 2) show that only career development learning (β = 0.322, ρ = 0.003) influenced the undergraduate employability. The results show that each beta unit change in career development learning

was related with an increase of 0.322 units in undergraduate employability. Based on the finding, H1a was supported.

The remaining four CareerEDGE constructs, work experience (β = 0.062, p = 0.482), degree subject knowledge and skills (β = -0.080, p = 0.638), generic skills (β = 0.209, p = 0.334), and emotional intelligence (β = 0.070, p = 0.785), showed no influenced on the undergraduate employability. Based on the finding, H1b, H1c, H1d and H1e were not supported.

Table 2. Summary of Standardized Regression Weights in the Hypothesized Structural Model

Hypothesis	Construct	Path	Construct	Estimate	Beta, β	S.E.	C.R.	ρ	Decision
H1a	EMP	←	CDL	0.311	0.322	0.104	2.997	0.003	Supported
H1b	EMP	←	WE	0.060	0.062	0.085	0.703	0.482	Not supported
H1c	EMP	←	DSKS	-0.116	-0.080	0.246	-0.470	0.638	Not supported
H1d	EMP	←	GS	0.259	0.209	0.268	0.966	0.334	Not supported
H1e	EMP	←	EI	0.086	0.070	0.316	0.273	0.785	Not supported

Note. ** p≤ 0.05, R = 0.663 R^2 = 0.439

Beta, β = Standardized Regression Weight, S.E. = Standard Error; C.R. = Critical Ratio, EMP= Employability; CDL= Career Development Learning; WE= Work Experience; DSKS= Degree Subject Knowledge and Skills; GS= Generic Skills; EI= Emotional Intelligence.

The R^2 for the exogenous variables on endogenous variable was 0.439, indicating that the variables of the study explained the 43.9% variance in undergraduate employability.

4.2 The Mediation Effect of Self-Efficacy

The second objective of this study is to examine the mediation effect of self-efficacy on the relationship between CareerEDGE's five constructs and undergraduate employability. The results of the mediation test using the bootstrapping method show that all weren't significant (Table 2). Thus, we can conclude that the mediation effect is statistically insignificant, indicating that H2a, H2b, H2c, H2d, and H2e were not supported.

Table 2. Summarize results of mediation test using bootstrapping method

Hypotheses	Hypothesized Path	Beta	*p*	95% Bootstrap BC CI		Result	Decision
				LB	UB		
H2a	Direct Model					No mediation	Not supported
	CDL → EMP	0.044	0.870				

	Mediation Model						
	CDL → EMP	0.064	0.817				
	Std. Indirect Effect (SIE)	-0.021	0.418	-1.088	0.084		
H2b	Direct Model					No mediation	Not supported
	WE → EMP	0.069	0.440				
	Mediation Model						
	WE → EMP	0.061	0.489				
	Std. Indirect Effect (SIE)	0.009	0.394	-0.025	0.127		
H2c	Direct Model					No mediation	Not supported
	DSKS → EMP	-0.071	0.679				
	Mediation Model						
	DSKS → EMP	-0.074	0.663				
	Std. Indirect Effect (SIE)	0.006	0.591	-0.064	0.391		
H2d	Direct Model					No mediation	Not supported
	GS → EMP	0.310	0.149				
	Mediation Model						
	GS → EMP	0.211	0.393				
	Std. Indirect Effect (SIE)	0.098	0.347	-0.248	0.646		
H2e	Direct Model					No mediation	Not supported
	EI → EMP	0.044	0.870				
	Mediation Model						
	EI → EMP	0.064	0.817				
	Std. Indirect Effect (SIE)	-0.021	0.418	-1.088	0.084		

Note. LB = Lower Bound, UB = Upper Bound, EMP= Employability; CDL= Career Development Learning; WE= Work Experience; DSKS= Degree Subject Knowledge and Skills; GS= Generic Skills; EI= Emotional Intelligence

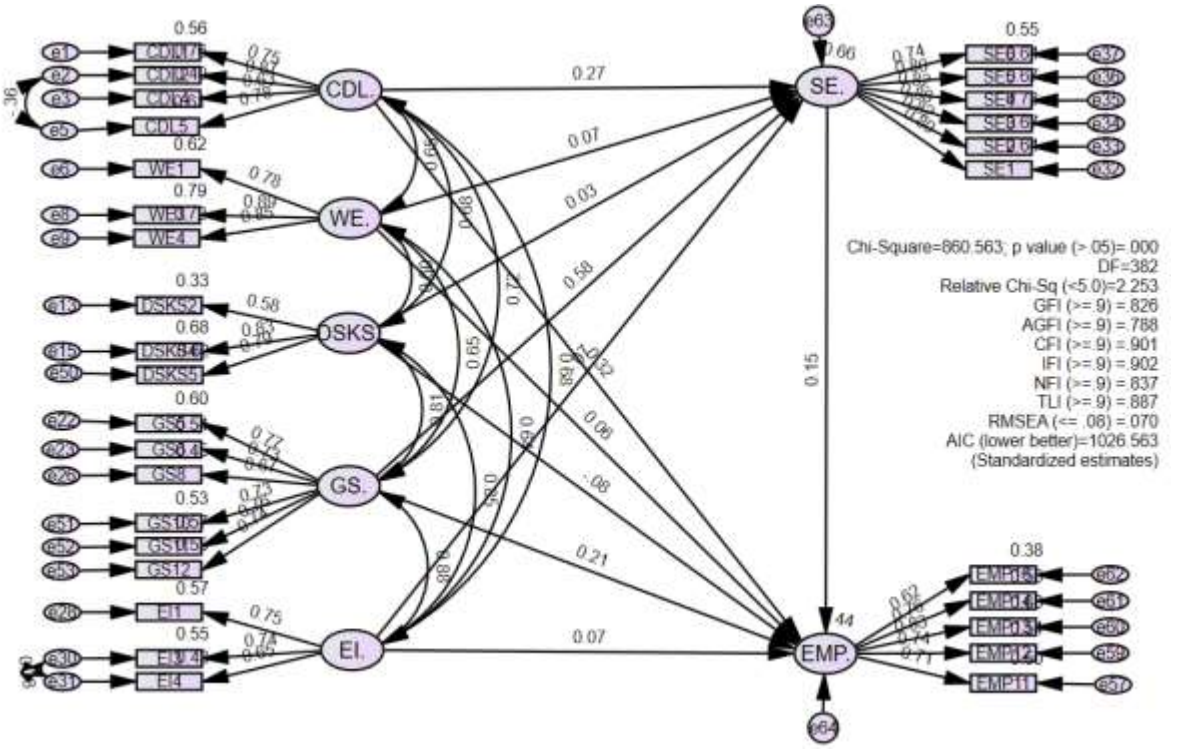

Figure 2. Diagram for the Structural Model of the Study.

5. Discussion

This paper presents an overview of the existing literatures and practical knowledge on perceived employability to improve undergraduates' employment prospects. Despite extensive information and models on undergraduate employability, empirical research is limited, especially in the Malaysian context. Furthermore, a significant number of employability studies have been conducted in other demographic locations around the world, which might not be accurately appropriate to the Malaysian setting. This study focuses on factors influencing employability among Malaysian public university undergraduates' students sponsored by the PSD, guided by the Career EDGE model. The study examines how five CareerEDGE constructs (career development learning, work experience, degree subject knowledge and skills, generic skills, and emotional intelligence) influence employability and explores how self-efficacy mediates these relationships.

Using SEM AMOS to test the hypotheses, the results showed that only career development learning significantly influence undergraduate employability, accounting for 47.7% of the variance. This aligns with studies by Razali et al. (2020) and Bridgstock et al. (2019), who discovered career development learning as an approach to enhance students' employability. This suggests that career development learning is crucial for undergraduates' career readiness and offering them with opportunity to improve their employability.

However, the results also indicated that the other components in CareerEDGE model which are work experience, degree subject knowledge and skills, generic skills, and emotional intelligence no influenced the undergraduate employability, in this context of study. This finding was contradicted to the finding from Pool and Sewell's study and several other

studies. The finding on work experience in this study implies that work experience among undergraduate students does not necessarily influence with their perceived employability. The findings were consistent with the findings of Garcá‐Aracil et al. (2018) and Ergun and Şeşen (2021), who discovered that work experience prior to and throughout studies may not significantly alter students' perceptions of their readiness for transitioning into the workforce. Additionally, the contribution of university education in term of term-time paid employment or internship programme, may not have a strong impact on students' perceived employability (Ergün & Şeşen, 2021; Mainga et al., 2022). Furthermore, the duration of undergraduate internship may not be sufficient to allow undergraduates to effectively apply what they have learned from formal study and into actual practice.

The finding on degree subject knowledge and skills reveals that it was also not influenced the undergraduate employability. While degree subject knowledge and skills are deemed important for some graduate vacancies (Pool & Sewell, 2007), students' perceptions of their preparedness for work after graduation may not be solely influenced by their degree subject knowledge (Garcá-Aracil et al., 2021). This suggests that while degree subject knowledge is essential in certain contexts, it may not be the sole determinant of perceived employability among undergraduate students. Another point to note in the context of this study is that, as generally understood, most of the PSD sponsored undergraduates would be the top performers in terms of academic achievement, so the degree subject knowledge and skills may be seen as given to them and may not really be seen as a predictor in their effort to obtain job placement after graduation.

Another finding also indicated that generic skills among sponsored undergraduates was not influenced the employability. According to Chillas et al. (2015), while generic skills are valuable for undergraduates' success in gaining internships and employment opportunities, the direct influence between generic skills and perceived employability may vary depending on individual experiences and the unique demands of the labour market.

Furthermore, the finding in this study also reveals that emotional intelligence did not influence the perceived employability among undergraduate students. While emotional intelligence is crucial for various aspects of personal and professional development, including stress management and interpersonal skills (Patel et al., 2021; Qamar et al., 2022), its direct impact on perceived employability may not be straightforward. Also, in consideration that the undergraduates are still at the developing age, the maturity to really understand the influence towards employability may not be fully achieved and it may be influenced by a combination of other factors (Kristianto, 2019; Chand et al., 2019).

Finally, the finding also demonstrated that self-efficacy does not mediate the relationships of career development learning, work experience, subject degree knowledge and skill, generic skills, and emotional intelligence on employability. The results of this mediation effect contradicted with the various studies that shows positive mediation effect of self-efficacy. However, and Casey (2022) indicated that while self-efficacy is a significant factor in the realm of graduate employability, it is essential to note that efficacy belief alone may not mediate the relationship between career development learning and graduate employability.

Their research gives insight on how equality practices inside institutions can affect women graduates' employment, emphasizing the gendered nature of career confidence as a factor affecting entry into the workforce (Crimmins & Casey, 2022). This indicates that while self-efficacy is vital, other elements such as gender dynamics and equity practices within educational institutions also play a role in shaping graduate employability outcomes. Another argument to note is that the PSD sponsored undergraduates may not see the importance of self-efficacy in the relationship with obtaining employment after graduation in perceived consideration that their employment secured by the Government. However, in reality it is not the case, as the responsibility of obtaining or getting employment after graduation is upon graduates' own effort and responsibility.

6. Conclusion

In conclusion, the findings of this study contribute to the undergraduates perceived employability literature by providing empirical evidence on the capability of the CareerEDGE constructs (career development learning; work experience; degree subject knowledge and skills; generic skills; and emotional intelligence) to influence undergraduate employability. Even though the findings of this study in the context of PSD sponsored undergraduates show that the majority of the constructs and self-efficacy do not mediate the relationship between the predictors, career practitioners are anticipated to incorporate these constructs to improve undergraduates' future employability. However, the sponsoring body, or PSD in particular, must also educate their sponsored undergraduates that employment after graduation is not guaranteed, even for government sector jobs, and that undergraduates must work hard and compete with others in the job market.

7. Implication for Theory, Methodology and Practice

The findings of this study contribute to the theoretical understanding of the CareerEDGE model by emphasizing the importance of career development learning as a key predictor of employability. This reinforces the notion that the model may require refinement to better capture the nuances of employability in specific contexts, such as among Malaysian PSD sponsored undergraduate students. Future research should explore the contextual factors that may influence the effectiveness of the other predictors, such as work experience and emotional intelligence, in enhancing employability (Pepper et al., 2016). Additionally, the lack of mediation by self-efficacy suggests that the relationship between the CareerEDGE predictors and employability may be more complex than previously understood. This calls for further exploration of alternative mediators or moderators that could influence these relationships, thereby enriching the theoretical framework of the CareerEDGE model (Suarta et al., 2018).

The methodological implications of this study highlight the effectiveness of using Structural Equation Modeling (SEM) with AMOS to test the relationships between the CareerEDGE predictors, self-efficacy, and employability. However, the findings also suggest the need for longitudinal studies to capture the evolving nature of employability over time. Future research could benefit from employing mixed-methods approaches that combine quantitative and qualitative data to provide a more comprehensive understanding of the factors

influencing employability (Tong & Gao, 2022). Moreover, the reliance on self-reported measures for assessing self-efficacy and employability may introduce bias. Future studies should consider incorporating objective measures, such as employment outcomes or employer assessments, to complement self-reported data and enhance the validity of findings (Waterworth et al., 2022).

The practical implications of this study are particularly relevant for educational institutions, policymakers, and employers. Educational institutions should prioritize the integration of career development learning into their curricula, ensuring that students are equipped with the skills and knowledge necessary to succeed in the job market. Employers should also recognize the importance of supporting students' career development through initiatives such as internships and cooperative education programs. By providing students with opportunities to gain practical experience, employers can help bridge the gap between academic learning and real-world application, ultimately enhancing students' employability prospects (Baqadir et al., 2011). Finally, policymakers should consider the implications of this study for national education policies. By promoting initiatives that focus on career development learning and employability enhancement, policymakers can contribute to the development of a skilled workforce that meets the demands of the labour market.

8. Limitations and Recommendation for Future Studies

This study has six limitations, which should be addressed in future research. This study has a high risk of inference because the author focuses solely on the CareerEDGE model and employed only PSD-sponsored undergraduates in public universities as the context of the study. Future research could examine various models' explanatory power for understanding student employability, particularly when dealing with sponsored undergraduates. Second, this study did not incorporate two other variables identified in CareerEDGE, namely self-confidence and self-esteem. Hence, future study should consider to incorporate these two variables into their studies. Other limitations of this study include self-reported data collection, which is prone to bias, and respondents' unfamiliarity with the items used in the study instruments. Future study should consider using longitudinal strategy, as well as additional data collection methods such as interviews and observation. Several previous research have also found that family or parental educational level and socio-economic diversity are associated with undergraduate perceived employability. Thus, future research should also consider including these variables and evaluate how they affect undergraduate employability, particularly in Malaysia setting. Furthermore, this study recognises that non-measurable attributes, frequently referred to as soft indicators, are among the most important instruments for measuring student employability. However, this study did not consider soft variables such as undergraduates’ ambition, expectations, educational institution values, and so on. Thus, additional research is required to examine how soft attributes influence undergraduate perceived employability (Razali et al., 2020).

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