EPRA International Journal of Environmental Economics, Commerce and Educational Management
Journal DOI: 10.36713/epra0414 |ISI I.F Value: 0.815|SJIF Impact Factor (2025): 8.57 ISSN: 2348 – 814X
Volume: 12 | Issue:6 |June 2025

A CONCEPTUAL FRAMEWORK OF GRADUATE EMPLOYABILITY: THE MEDIATING ROLE OF JOB READINESS IN THE RELATIONSHIP BETWEEN CAREER ADAPTABILITY, DIGITAL LITERACY, AND SELF-EFFICACY

Mathivannan Jaganathan[1], Siti Zubaidah Othman[2], Yeoh Khar Kheng[3], Ooi Yeng Keat[4]
[1-4]*School of Business Management, Universiti Utara Malaysia*

ABSTRACT
The Malaysian government has invested tremendous effort through various policies to address the issue of graduate employability for the past few decades. However, unemployment among recent graduates remains at an alarming stage, alerting academics and practitioners. Therefore, this study will examine the influence of career adaptability, digital literacy, and self-efficacy on graduate employability. In addition, job readiness has been incorporated as a mediator. Career Construction Theory is incorporated as an underpinning theory by targeting final-year business students in Malaysian universities. Moreover, this study is also expected to bridge the gap between higher education and industry's needs. The proposed conceptual framework is anticipated to provide a holistic framework for educational institutions to integrate into their curricula and support services to augment students' preparedness as future ready employees. This study is also expected to provide implications for policymakers' strategic planning to expand the employability of graduates in Malaysia, especially business graduates.
KEYWORDS: *Career Adaptability, Digital Literacy, Self-Efficacy, Job Readiness, Graduate Employability*

INTRODUCTION

The challenge of graduate employability in Malaysia warrants a critical review, as graduate unemployment remains a significant issue (Hutasuhut et al., 2020). This problem persists despite various efforts undertaken by the Malaysian government (Rani et al., 2019). The challenges of globalisation and the digital economy also bring new needs for graduates to possess a wide range of skills that are not limited to their study disciplines. The differences between the job readiness and digital literacy of the graduates indicate that they are not fully prepared for the industry (Cheng et al., 2009). In addition, graduate employability is not only a practical issue but also an academic one that requires theoretical and empirical examination. Hence, this study aims to respond to the research questions and objectives to ensure this study is important and meaningful for the field. The competition in the job market is very severe, especially for the fresh graduates who is seeking most fit job according to their field (Bakar et al., 2023). However, graduates encountered many barriers that limit their job opportunities and retention in their future jobs. Graduate employability is vital not only for an individual's success but also the country's success (Jamaludin et al., 2021; Zhang, 2021).

The growing number of graduates without employment opportunities stems from insufficient job creation. It could lead to a more significant unemployment issue in the country, causing an imbalance between the labour market's supply and demand. Thus, some graduate workers end up being employed at positions that are below their qualifications. Past research also found that the main reason for graduates' unemployment is that the distance between industry and academia was significant and failed to meet the industry's needs (Ismail et al., 2021). At present, the students must be able to cope with work role changes, including freelancing and taking several jobs, because many of them will not have a linear work life in a single job (Ahmad et al., 2021). One major issue with graduate employability is that the number of unemployed graduates in Malaysia is also increasing (Tee et al., 2024). The number of unemployed graduates has increased from 43,800 in 2000 to more than 175,500 in 2017 (Jamaludin et al., 2021). This means that the number of unemployed graduates in Malaysia is increasing (Jamaludin et al., 2021). Relatively, other researchers also highlighted that the issue of unemployment is more complicated and not just caused by unskilled

EPRA International Journal of Environmental Economics, Commerce and Educational Management
Journal DOI: 10.36713/epra0414 |ISI I.F Value: 0.815|SJIF Impact Factor (2025): 8.57 ISSN: 2348 – 814X
Volume: 12 | Issue:6 |June 2025

workers, but it's related to external factors, such as economic conditions and changing industry needs. The issues and challenges of graduate employability in Malaysia are a subject of ongoing debate. There is a major issue of a mismatch between graduates' skills and industry needs. As a result, the unemployment rate among graduates is at an alarming stage.

Ultimately, this study aims to establish a deeper understanding of the existing literature on the graduate employability of business students in Malaysian universities. Therefore, this study incorporated job readiness as a moderator to examine the direct relationship between career adaptability, digital literacy, and self-efficacy on graduate employability. By positioning job readiness as an explanatory mechanism, the research also offers practical insights for curriculum designers and career-development practitioners seeking to close the persistent skills–industry gap.

This study is expected to fill the existing gaps in the literature on graduate employability. It will also uncover the less obvious factors that influence graduate employability among graduates (Ali et al., 2021). Unambiguously, this study will contribute to the enhancement of policies on graduate employability within the academic context. Furthermore, a holistic understanding of the complex relationship between career adaptability, digital literacy, self-efficacy, job readiness, and graduate employability can add new knowledge to the field of career. Drawing upon two strands of research into graduate employability in the sense of practical skills will provide better insights for higher education institutions to improve existing curricula and programmes to align with industry needs. In particular, this will assist future-ready employees to develop the skills and attributes in order to ensure employability enhancement and prepare in advance to meet the future competitive job market.

Furthermore, entrepreneurship education also plays a significant role in promoting motivation and interest in entrepreneurship among graduates. The academic literature on entrepreneurship has revealed that young people tend to exhibit a high level of creativity, adaptability, mental resilience, and technology usage (Habsy, 2017). Additionally, Sidik et al. (2018 highlighted that soft skills are essential for imparting knowledge to high school students preparing to enter the workforce. Taken together, alumni of universities and entrepreneurs need to work together to ensure academic programmes stay relevant and meet the industrial needs (Sidik et al., 2018). It will warrant that graduates are prepared with the skills, knowledge and abilities to prosper in the job market (Sidik et al., 2018). It is important to have technology-based education to provide the information to support and facilitate daily academic management and processes (Mustafa et al., 2022). It is the role of universities to provide an entrepreneurial spirit to the students to introduce them to the dreams of venturing into the business field and prepare them to face the risk of the business (Prasetio & Hariyani, 2023). Therefore, universities should cultivate an entrepreneurial mindset among graduates (Delza et al., 2021). In conclusion, this study addresses a deeper understanding of the issue of graduate employability in Malaysia.

LITERATURE REVIEW AND THEORETICAL FOUNDATION

Career Construction Theory (Savickas)

Career Construction Theory, as Mark Savickas critically explains, suggests that individuals hold the autonomy to continuously develop their career throughout career progress (Savickas, 2011; Wang & Li, 2024). According to this theory, career is not only considered as a sequence of jobs; instead, it is a planned and purposeful construction (Yudiaryani, 2017). In terms of direction of career, individuals build and adjust their careers by adopting different situations and opportunities (Doğanülkü & Korkmaz, 2023). The Career Construction Theory also pinpointed the concept of graduate employability. Further research also defined career adaptability as an individual's ability to adapt to changes in the work atmosphere and create a meaningful career. Similarly, Savickas defines career adaptability categorised into four components, namely anxiety, control, curiosity, and confidence.

High levels of career adaptability among graduates also indicate increased employability, as they effectively respond to job market changes and opportunities. Moreover, theory emphasises that individuals with a high awareness of career opportunities will have a high level of confidence in their capacity to succeed in their endeavours. Consequently, they will have a high willingness to consider alternative career pathways (Kuijpers, 2025). Career adaptability also supports graduates to cope with a new job environment, which is a meaningful lesson from their experiences. Furthermore, this competency also ensures that graduates remain relevant and competitive in their working environment. Further Career Construction Theory emphasises that career identity plays a crucial role in shaping an individual's career decisions and paths. Career identity encompasses an individual's self-perception about work by focusing on values, interests, and goals. According to Kuijpers (2025), a better understanding of career identity among graduates highly correlated

with better career decisions. Taken together, this phenomenon leads to a higher level of employability as the graduates are dedicated to their profession.

Graduate Employability: Definitions and Dimensions

Graduate employability is an elusive term encompassing skills, understandings, and qualities that contribute to the ability to secure a job and excel in one's career upon graduation (Obi et al., 2020; Othman et al., 2020; Thetsane & Mokhethi, 2020). Further research also claimed it is more than a set of personal achievements, knowledge, capabilities, and characteristics that can enhance graduates' prospects of succeeding in the job market (Fawehinmi & Yahya, 2018). Graduate employability refers to the personal capability of a person to find an occupation and to perform in it, as well as the capacity to remain in that position and successfully transit from one role to another throughout their career. According to Moumen & Mejjad (2021), graduate employability comprises a variety of soft and hard skills, qualities, and experience that lead to graduates meeting the needs of an employer and familiarize with ongoing job market demand.

On the other hand, graduate employability includes technical skills, soft skills, career awareness, and experience. Technical skills refer to the skills required for a specific job or industry. Technical skills consist of programming, data analysis, finance, and engineering. Soft skills, on the other hand, are known as interpersonal or transferable skills and involve skills that enable one to interact with others and work efficiently in any environment. While a variety of definitions of the term, soft skills include communication, teamwork, problem-solving, critical thinking, and leadership (Darwanto & Nova, 2020). Career awareness is a person's knowledge of the different careers in the job market, requirements, and approach to obtaining a job. It involves knowledge of various industries, roles, and career paths, as well as how to craft a compelling resume and cover letter, secure a great interview, and establish professional connections. Compared with knowledge, experience is defined as practical learning gained from part-time jobs, internships, practicum, volunteering, and extracurricular activities.

Additionally, technical skills are central to enhance the employability of graduates. Technical skills defined as technical abilities that allow graduates to execute the required roles and tasks of their work and profession. These technical skills comprise the ability to utilise the necessary tools and technological equipment, analyse information, and resolve technical problems. In contrast, soft skills are the abilities that allow graduates to interact effectively with their peers, express themselves clearly and concisely, and solve conflicts. It can be concluded that career awareness enables graduates to make appropriate career decisions and be able to deal with the job market successfully. Moreover, their job-hunting experience also assists in the form of practical application of the knowledge and skills acquired during the study period, the ability to solve problems, and the creation of a network of professionals (Latifah et al., 2024); (Salahuddin & Asroriyah, 2019; Sumarno et al., 2018).

The job market and employers' requirements constantly change, resulting in challenges to the issue of graduate employability. Hence, graduates have been compelled to consider upskilling and reskilling to learn new skills to stay relevant. Therefore, higher education institutions should revisit several policies on graduate employability, especially on reskilling and upskilling of graduates` knowledge, skills and abilities. For example, university-industry collaboration in aligning the curriculum by focusing on industrial needs could be an effective measure to resolve the issue of graduate employability. In addition, ongoing career development and training programs by people with industrial experience and experts will provide more exposure to graduates on contemporary soft skills and career awareness. By doing so, higher education institutions could increase graduate employability and the quality of graduates. In conclusion, higher education institutions should prioritise technical skills, soft skills, career awareness, and work experience through internships to augment employment opportunities for graduates.

Career Adaptability and Graduate Employability

An individual who can manage dynamic changes and challenges in career development is regarded as career adaptability. Career adaptability encompasses a range of skills and abilities such as career planning, career exploration, career decision-making, and career confidence. Those skills enable graduates to direct a dynamic job market, meet employer job demand, and remain flexible and resilient within career development. Previous research has evidently revealed that graduates with high career adaptability positively adjust to changes in job expectations and employer demand (Donald et al., 2024; Kuijpers, 2025; Le et al., 2019). Likewise, graduates also more inclined to find and pursue a profession suited to their interests, values, and skills (Kintu, 2019). With respect to career adaptability, a

career-adaptable graduate can adjust to changes in the workplace, including external and internal demand such as technology, organisational changes, customer, sociocultural and so on.

As explained earlier, career adaptability comprises four components: career anxiety, career control, career curiosity, and career confidence. Specifically, career anxiety refers to the extent to which one is concerned about their career future and is enthusiastic about planning and preparing for it. On the other hand, career control refers to the extent to which one feels that they have control over their career and able to make decisions that are beneficial for career success (Fawehinmi & Yahya, 2018; Tabolova et al., 2021; Tikson et al., 2021). Career curiosity is another important component that enables graduates' interest in different career options and learning about new career opportunities (Fawehinmi & Yahya, 2018; Tabolova et al., 2021; Tikson et al., 2021). On the other hand, career confidence refers to a person's conviction in their ability to succeed and achieve their goals in their chosen career path. Career adaptability is more about adapting to changes in the industry and the ongoing demands of employers (Muda et al., 2020).

In addition, employers prefer graduates with high problem-solving skills, decision-making, and communication skills, which highly correlate with high career adaptability. Moreover, career adaptability helps graduates build their personal and professional resilience and perseverance. Consequently, career adaptability helps graduates to overcome career challenges in the job environment. Career adaptability also empowers them to build professional networks and explore a wide range of career opportunities. Therefore, higher education institutions should prioritise fostering career adaptability by offering career development programs and services that support students in discovering their career interests, strengthening their skills, and planning their future careers.

Digital Literacy and Graduate Employability

Digital literacy has been a significant concern among graduates for the past two decades. Digital literacy is commonly defined as an individual's ability to use digital technologies effectively and efficiently to find, evaluate, manage, and create information (Singh & JALIL, 2020). The concept of digital literacy encompasses a wide range of skills and abilities. Specifically, this skill relates to the use of computer software, online information search, digital communication, and the dependability of online sources (Firmansyah & Dede, 2022). Graduates' employability is highly dependent on their ability to utilise digital technology to solve problems, communicate effectively with colleagues, and collaborate in the digital workplace. With the ability to use different tools and platforms, graduates can be more effective in a multifunctional team and work in a variety of places. As digital literacy enables access to multiple sources of information and online learning opportunities, graduates can enhance their knowledge and skills. Digitally literate individuals can share digital knowledge across various roles and may progress from an entry-level position or transition to a different field (Hecker & Loprest, 2019).

According to Purnama et al. (2021), individuals can acquire digital literacy skills including communication, teaching and methodology. The digital era has compelled organisations to adopt digital technology, creating a new demand for graduates with high digital skills to enhance their productivity, innovation and competitiveness (Ramsaran-Anand & Zimmerman, 2021). In addition to the effective use of digital technology, the digitally literate person must also be able to assess the credibility of the technology and its impact. They should be able to assess online sources, identify fake news, and use digital technology effectively and ethically (Shariman et al., 2012). Hence, universities and higher education institutions should create a platform for graduates to enhance their digital literacy. The development of digital literacy is based on understanding the risks and benefits of digital technology, as well as its ethical and social implications. Higher education institutions play a significant role in helping their students develop their digital literacy through the provision of courses and workshops on the practical and critical use of digital technology.

Communication, teaching, and methodology can be improved with better digital literacy (Purnama et al., 2021). As more organisations incorporate digital technology into their operations, the demand for digital graduates is likely to increase, as companies strive to improve productivity, innovation, and competitiveness. Digital literacy is more than simply being able to use digital technology effectively. It also entails the ability to critically examine digital technology and its impact (Bouwmans et al., 2024). It seems graduates with high levels of digital literacy are capable of assessing the credibility of online information, identifying misinformation, and using digital technology responsibly and ethically (Shariman et al., 2012). Therefore, universities and higher education institutions should offer students opportunities to develop their digital literacy. This involves understanding the potential risks and benefits of digital technology, as well as its ethical and social impact. Digital literacy also involves being able to identify and deal with

misinformation and fake news found online. Higher education institutions can contribute to enhancing students' digital literacy by providing courses and workshops that educate students on the effective and critical use of digital technology.

Self-Efficacy and Graduate Employability

Self-efficacy is another crucial factor in determining graduate employability. Mulianingsih et al. (2020) defined self-efficacy as self-assurance in their ability to perform specific tasks and activities in any circumstances. On the other hand, an individual with high self-efficacy always sets high expectations and strives to achieve the desired outcome. Moreover, it encourages individuals to persist in their actions despite encountering failure (Fang et al., 2024; Saks, 2024). However, relying heavily on self-efficacy is not a guarantee of successful employment in the job market. Self-efficacy helps graduates view job prospects positively, thereby improving their chances of success in the job hunt. Apart from that, high self-efficacy among graduates will boost encouragement to apply for jobs, join job interviews, and negotiate employment opportunities.

Self-efficacy also allows the graduate to be adaptable to changes in the workplace and address work challenges, which result in job satisfaction and career success. An educator who believes in their ability to succeed has a positive attitude, is determined, committed, and driven to attain the best results in assignments. They are described as being in a state of high readiness to contribute to their workplace (Amatan & Han, 2019). Research indicates that individuals who possess high self-efficacy achieve superior performance levels within their professional domain (Fatimah et al., 2021; Francisco et al., 2022). Several factors contribute to high self-efficacy, such as mastery experience, vicarious experience, verbal persuasion, and emotional states. Mastery experience helps people to perform better and become confident in their capability through exerting effort and perseverance. A person can also gain self-efficacy through vicarious experience, which is having other people succeed in similar work or circumstances. Verbal persuasion allows a person to receive encouragement and support from others to boost their confidence and build motivation. Emotional states, such as managing anxiety and stress, enable a person to think and act better. Individuals with low self-efficacy often feel helpless, unmotivated, and give up on trying hard tasks. People with high self-efficacy will be more motivated and persevering while working on learning, compared to people with low self-efficacy who avoid academic difficulties and get discouraged easily. Higher education institutions should increase students' self-efficacy to improve their performance in the job market and fulfil their potential. A higher education institution should support and develop students' self-efficacy by implementing cultural and civic literacy (Desyandri, 2018). Hence, higher education institutions should invest more in developing graduates' multi-dimensional employability.

Job Readiness as a Mediator

Job readiness is an important mediating variable between career adaptability, digital literacy, and self-efficacy about graduate employability. Job readiness includes a set of skills, knowledge, and attitudes that an individual should possess in order to be successful in the labour market. Some examples of skills and qualities that make up job readiness include communication, problem-solving, teamwork, and professionalism (Li et al., 2025). Job readiness means that a person is prepared to deal with any difficulties and overcome them. It is the people with high job readiness who can easily find and keep a job because job readiness is determined by a person's ability to meet the needs and expectations of the labour market, including the appropriate skills, positive attitudes, and the ability to adapt to various working conditions. That is why job readiness is important for students to be able to enter the labour market with confidence and be successful (Pham, 2024).

Job readiness acts as a mediator between career adaptability, digital literacy, and self-efficacy and graduates' employability. Those with high levels of career adaptability are better able to meet the demands of a changing labour market, obtain the necessary knowledge and skills, and find job opportunities. It is crucial to understand that the measure of a person's employability does not only rely on job readiness but also on other factors, such as technical skills, work experience, and personality. Job readiness can be measured by using different dimensions. For example, dimensions such as participation in internships, volunteer work, and extracurricular activities are considered key indicators of job readiness. (Stojanová & Tomšík, 2014; Zhang et al., 2022). In particular, these indicators are highly linked to the necessary skills, knowledge and provide opportunities to network. Therefore, higher education institutions should incorporate work-based learning programs in their curriculum, offer career development services, and collaborate with relevant industry partners.

EPRA International Journal of Environmental Economics, Commerce and Educational Management
Journal DOI: 10.36713/epra0414 |ISI I.F Value: 0.815|SJIF Impact Factor (2025): 8.57 ISSN: 2348 – 814X
Volume: 12 | Issue:6 |June 2025

One of the most notable ways in which job readiness serves as a mediator between various factors is by providing a means for one to enter the job market in a faster manner. This will increase the work productivity in the organisation and allow one to achieve long-term work goals in a given job. With the advancement of society in terms of digitalisation, the skills required for one to keep up with the fast-paced job market have to be enhanced through soft skills and technical skills (Meiyanto & Huda, 2022). Thus, job readiness as a mediator shows how career adaptability, digital literacy, and self-efficacy positively influence graduate employability. Career adaptability enables individuals to stay at the forefront and remain current in the fast-paced job market. Digital literacy provides one with the needed tools and skills to be well-equipped in a fast-changing and complex digital landscape. In contrast, self-efficacy gives one the ability to strive for and pursue career goals.

In short, job readiness links career adaptability, digital literacy, and self-efficacy to graduate employability. With the ability to adapt to work conditions, the skills to thrive in a digital world, and the confidence to move toward their goals, graduates can secure jobs more quickly and easily, while helping companies become more productive and achieve long-term success in their careers. In conclusion, soft-skills training, digital upskilling, and the development of self-efficacy are most effective strategies for educators, policymakers, and industry stakeholders to prepare students with the competences needed to thrive in the labour force.

Conceptual Framework

The research conceptual framework consists of the relationship between career adaptability, digital literacy, self-efficacy, and graduate employability. In addition, job readiness positioned as mediating variables in this conceptual framework. The Career Building Theory addresses an individual's ability to construct their career through adaptation, exploration, and development. The dimensions of career adaptability include career anxiety, career control, career curiosity, and career confidence.

As explained earlier, digital literacy refers to the ability to use technology and information effectively and efficiently, including tasks such as the capacity to search, filter, and create information. On the other hand, self-efficacy is an individual's belief in their ability to perform well in a particular situation or task. Job readiness refers to the combination of skills, knowledge, and attitudes required for one to enter the job market. These include communication, problem-solving, teamwork, and professionalism. This research also created a relationship path in which career adaptability and digital literacy, along with self-efficacy, influence job readiness, which contributes to graduate employability.

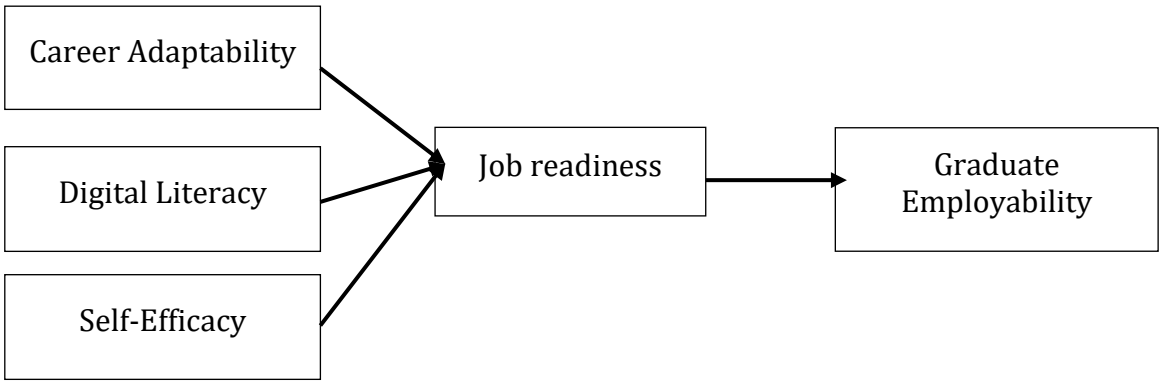


Figure 1.0: Conceptual Framework

Graduate employability refers to the ability of graduates to secure meaningful employment and maintain a fulfilling career over the long term. According to Figure 1.0, the research conceptual framework shows that career adaptability, digital literacy, and self-efficacy directly affect job readiness, which in turn affects the graduate's employability. The research conceptual framework also shows that job readiness acts as a mediator between career adaptability, digital literacy, and self-efficacy for the graduate's employability. Thus, the following propositions are developed:

Proposition 1: Career adaptability has a positive relationship on graduates' employability.

Proposition 2: Digital literacy has a positive relationship on graduates' employability.

Proposition 3: Self-efficacy has a positive relationship on graduates' employability.

EPRA International Journal of Environmental Economics, Commerce and Educational Management
Journal DOI: 10.36713/epra0414 |ISI I.F Value: 0.815|SJIF Impact Factor (2025): 8.57 ISSN: 2348 – 814X
Volume: 12 | Issue:6 |June 2025

Proposition 4: Career adaptability has a positive relationship on job readiness.

Proposition 5: Digital literacy has a positive relationship on job readiness.

Proposition 6: Self-efficacy has a positive relationship on job readiness.

Proposition 7: Job readiness mediates the relationship between career adaptability and graduate employability.

Proposition 8: Job readiness mediates the relationship between digital literacy and graduate employability.

Proposition 9: Job readiness mediates the relationship between self-efficacy and graduate employability.

In conclusion, this study aims to examine the relationship between career adaptability, digital literacy, and self-efficacy on graduate employability among business students in Malaysian universities. In addition, job readiness conceptualized as a mediator to examine indirect effect of career adaptability, digital literacy, and self-efficacy on graduate employability.

METHODOLOGY

A quantitative approach will be employed to collect and analyse data to examine the relationship between variables (Sumarno et al., 2022). Therefore, this study will choose final-year business students as the sample. Final-year students will be selected due to characteristics such as their imminent entry into the job market. A power analysis will be used to determine the sample size. A proportional random sampling will be employed by randomly selecting a sample of final-year active business students from different Malaysian universities (Katarina & Satrianto, 2020).

This research will utilise survey questionnaires for data collection purposes. Questionnaire items by variable will be sourced from previous research on career adaptability, digital literacy, self-efficacy, job readiness, and graduate employability. The survey includes questionnaire items from validated instruments which researchers previously used in other academic studies. This questionnaire will be distributed to the sample via an online survey to collect data and ensure the privacy and confidentiality of the respondents. Upon completion of data collection, the data will be analysed using descriptive and inferential statistics. Descriptive statistics specifically will be employed to analyse demographic variables as well as sample, mean, standard deviation, and frequency of each variable. Regression analysis will be used to determine the direct relationship between career adaptability, digital literacy, self-efficacy, job readiness, and graduate employability. Furthermore, mediation analysis will be conducted to examine indirect effect of job readiness on graduate employability. The Statistical Package for Social Sciences (SPSS) will be used to analyse both descriptive and inferential data.

THEORETICAL AND PRACTICAL IMPLICATIONS

This research study advances graduate employability literature by demonstrating how career adaptability and digital literacy, combined with self-efficacy, affect employability outcomes for graduates. It develops a new conceptual framework that incorporates digital literacy and self-efficacy in career construction theory. The study provides further insight into the mechanisms through which career adaptability, digital literacy, and self-efficacy influence graduate employability by showing that job readiness mediates the relationships between career adaptability and digital literacy, as well as between self-efficacy and digital literacy.

The expected findings of this study will provide practical implications for universities. According to Sukesi and Rindaningsih's 2023 study, higher education should give special attention to graduate employability by considering several aspects such as career adaptability, digital literacy and self-efficacy. For example, universities should build the skills by using innovative teaching methods such as case studies, projects and simulation exercises (Sukesi & Rindaningsih, 2023). Therefore, universities in Malaysia should make sure graduates are equipped with soft and technical know-how that matches industry demands. Next, training and development programs such as workshops on writing resumes, interviewing, and networking are also a mechanism to boost students' confidence in encountering

future job market demand. Third, universities should work closely with industry to create internships and work placement opportunities for students to gain practical experience and build professional connections.

The results are expected to have significant implications for students' development and consequent outcomes. First, the findings underline the graduates' proactivity in cultivating their career adaptability, digital literacy, and self-efficacy. Second, graduates should continually cultivate their job readiness by seeking jobs, internships, and part-time work experience. Third, it is an undeniable fact that this study provides better insights on employability to policy-makers in designing and implementing policies and programs to improve graduate employability. Specifically, policies such as the inclusion of industry-oriented courses to help students develop their career adaptability skills and digital literacy. Additionally, students should be given financial support to attend training and development programs and obtain work experience. Overall, the study underlines the need for collaborative efforts to enhance graduate employability through improved skills, job readiness, and industry-aligned initiatives.

LIMITATIONS AND FUTURE RESEARCH

This study has several limitations. First, this study was conducted in Malaysian universities, which may limit the generalisation of the study due to the specific context. In addition, context such as the education framework, the job market, and the cultural environment may impede better insights from the findings. Second, the study used a cross-sectional design, which cannot establish a cause-and-effect relationship among variables. Therefore, future studies should consider a longitudinal design to study the changes in these variables over time and examine the relationship of the variables. Third, the study used self-report measures, which are prone to biases. Participants in this survey may provide socially desirable responses based on current perceptions and experiences, which can limit the validity and reliability of the findings.

Therefore, future studies should employ a longitudinal or mixed-methods design. Specifically, as explained earlier, a longitudinal design would enable the identification of cause-and-effect relationships and directionality between the variables. Moreover, mixed methods by incorporating both quantitative and qualitative data are capable of providing a comprehensive view of the phenomenon. Future studies should consider other factors affecting graduates' employability, such as social capital, emotional intelligence, and leadership skills. It is essential to recognise that these factors vary across different regions and industries, and their impact on graduates' employability is also multifaceted. Future studies could also explore the relationships between variables in different contexts, for example, different industries or countries. In conclusion, addressing these limitations in future research will provide a more comprehensive, contextually nuanced, and methodologically robust understanding of the factors influencing graduate employability among business graduates in Malaysia.

CONCLUSION

The research proposes developing a conceptual framework to study how career adaptability, digital literacy and self-efficacy affect business student employability within Malaysian universities. Based on the expected findings, several insights can be discovered on how career adaptability and digital literacy along with self-efficacy affects graduate employability. The finding is also useful for higher education institutions. For instance, university administrators can create programs and design interventions that increase the career adaptability, digital literacy, self-efficacy, and employability of business students.

It can also be instrumental in forming policies and programs that will facilitate the employability of graduates and ensure they have the required skills and knowledge to meet the demands of the job market. By addressing the limitations, future studies are capable of foreseeing a better understanding of the factors influencing the employability of graduates and help develop effective strategies. In conclusion, this study has shown the significance of equipping individuals with the required knowledge and skills to thrive in the ever-changing global economy.

Acknowledgment

This research was supported by Universiti Utara Malaysia through the *Geran Penjanaan* (SO Code - 13422). The authors gratefully acknowledge this financial support.

In addition, the authors would like to acknowledge the late Associate Professor Dr Ooi Yeng Keat, who passed away prior to the completion of this work. He made significant contributions to the early development of research ideas and

the conceptual framework. His intellectual input and academic guidance were invaluable during the initial phase of this study. The authors respectfully honour his memory and lasting contributions to the academic community.

Funding
This research received financial support from the Universiti Utara Malaysia through *Geran Penjanaan.*

REFERENCES

1. *Ahmad, M. F., Salamuddin, N., & Surat, S. (2021). The marketability of UiTM products: A study of employability skills among UiTM Perlis sports graduates. International Journal of Academic Research in Progressive Education and Development, 10(1), 1–12. https://doi.org/10.6007/ijarped/v10-i1/8923*
2. *Ali, A. J., Suradee, N. K., Menon, U., Khalil, J., Nordin, N. M., Selvanathan, M., Hidayah, N., Ali, M. H., & Yahya, Y. (2021). The lesser prominent factors contributing to Malaysian graduates' employability. International Conference on Community Development (ICCD), 3(1), 287. https://doi.org/10.33068/iccd.vol3.iss1.363*
3. *Amatan, M. A., & Han, C. G. K. (2019). The influence of the school's psychosocial environment and the teacher's self-efficacy on the 21st-century teaching and learning practices. International Journal of Education, Psychology and Counseling, 4(32), 284. https://doi.org/10.35631/ijepc.4320026*
4. *Bakar, N. A., Yusop, H., Ali, N. M., & Bakar, N. F. A. (2023). Determinants of students' academic performance in higher learning institutions in Malaysia. International Journal of Academic Research in Business and Social Sciences, 13(2), 1–15. https://doi.org/10.6007/ijarbss/v13-i2/16250*
5. *Bouwmans, M., Lub, X., Orlowski, M., & Nguyen, T. T. (2024). Developing the digital transformation skills framework: A systematic literature review approach. PLoS ONE, 19(7), e0304127. https://doi.org/10.1371/journal.pone.0304127*
6. *Budiyono, S., & Haerullah, H. (2024). The impact of technology on learning in the 21st century. TSAQOFAH, 4(3), 1790. https://doi.org/10.58578/tsaqofah.v4i3.3005*
7. *Cheng, M., Chan, W. S., & Mahmood, A. (2009). The effectiveness of entrepreneurship education in Malaysia. Education + Training, 51(7), 555–566. https://doi.org/10.1108/00400910910992754*
8. *Darwanto, D., & Nova, S. (2020). Integrating soft skills in every learning. Exponents, 10(2), 42–48. https://doi.org/10.47637/eksponen.v10i2.295*
9. *Delza, D. G., Perwira, H., Ahyani, I., Siregar, Y. H., & Vebrianto, R. (2021). Build an entrepreneurial spirit in society. Tasnim Journal for Community Service, 2(1), 9. https://doi.org/10.55748/tasnim.v2i1.55*
10. *Desyandri, D. (2018). The values of local wisdom to foster cultural literacy in elementary schools. Elementary School of Educational Theory and Practice Studies, 27(1), 1. https://doi.org/10.17977/um009v27i12018p001*
11. *Doğanülkü, H. A., & Korkmaz, O. (2023). The role of proactive personality and general self-efficacy in proactive career behaviour: A mediation model. International Journal for Educational and Vocational Guidance. https://doi.org/10.1007/s10775-023-09597-9*
12. *Donald, W. E., van der Heijden, B., & Manville, G. (2024). (Re)Framing sustainable careers: Toward a conceptual model and future research agenda. Career Development International, 29(5), 513. https://doi.org/10.1108/cdi-02-2024-0073*
13. *Fang, M., Pan, R., Ding, R., Hou, Z., & Wang, D. (2024). Effect of proactive personality on career adaptability of higher vocational college students: The mediating role of college experience. Frontiers in Psychology, 15, 1333677. https://doi.org/10.3389/fpsyg.2024.1333677*
14. *Fatimah, S., Manuardi, A. R., & Meilani, R. (2021). The level of self-efficacy of students' academic performance is reviewed from the perspective of the Bandura dimension. Prophetic Professional Empathy and Islamic Counseling Journal, 4(1), 25. https://doi.org/10.24235/prophetic.v4i1.8753*
15. *Fawehinmi, O., & Yahya, K. K. (2018). Investigating the linkage between proactive personality and social support on career adaptability amidst undergraduate students. Journal of Business and Social Review in Emerging Economies, 4(1), 81–92. https://doi.org/10.26710/jbsee.v4i1.370*
16. *Firmansyah, D., & Dede, D. (2022). Entrepreneurial performance: Economic literacy, digital literacy, and the role of innovation mediation. Formosa Journal of Applied Sciences, 1(5), 745–755. https://doi.org/10.55927/fjas.v1i5.1288*
17. *Francisco, E. M., Hermosa, J. P., & Ofrin, D. D. (2022). Is self-motivation linked to job-related factors? A case study of teaching and non-teaching personnel. International Journal of Academe and Industry Research. https://doi.org/10.53378/352956*
18. *Habsy, B. A. (2017). The art of understanding qualitative research in guidance and counselling: Literature studies. JURKAM Journal of Counseling Andi Matappa, 1(2), 90. https://doi.org/10.31100/jurkam.v1i2.56*
19. *Hecker, I., & Loprest, P. (2019). Foundational digital skills for career progress. Urban Institute. https://files.eric.ed.gov/fulltext/ED601774.pdf*
20. *Hutasuhut, S., Irwansyah, I., Rahmadsyah, A., & Aditia, R. (2020). Impact of business models canvas learning on improving learning achievement and entrepreneurial intention. Journal of Education Horizon, 39(1), 168–179. https://doi.org/10.21831/cp.v39i1.28308*
21. *Ismail, J. B., Chik, C. T., & Hemdi, M. A. (2021). TVET graduate employability: Mismatching traits between supply and demand. International Journal of Academic Research in Business and Social Sciences, 11(13), 1–15. https://doi.org/10.6007/ijarbss/v11-i13/8522*

22. *Jamaludin, S., Said, R., Ismail, N. W., & Nor, N. M. (2021). Are jobs available in the market? A perspective from the supply side. Sustainability, 13(4), 1973. https://doi.org/10.3390/su13041973*
23. *Kasim, M., Rahman, F. A., Rahim, N., & Masruki, R. (2022). Resilient application model for PWD entrepreneurs towards business sustainability. International Journal of Education Psychology and Counseling, 7(46), 168–181. https://doi.org/10.35631/ijepc.746015*
24. *Katarina, K., & Satrianto, A. (2020, January 1). The influence of educational financing, career guidance, student learning motivation, and learning discipline on readiness to enter the world of work among senior high school students in Padang City. In Proceedings of the 5th Padang International Conference on Economics Education, Economics, Business and Management, Accounting and Entrepreneurship (PICEEBA-5 2020) (pp. 181–188). https://doi.org/10.2991/aebmr.k.201126.032*
25. *Kuijpers, M. (2025). Career competencies: Preparing students for the future. Social Sciences, 14(5), 291. https://doi.org/10.3390/socsci14050291*
26. *Latifah, U., Jalinus, N., & Fadhilah, F. (2024). Innovations and latest trends in vocational technology education career development. Al Qalam Scientific Journal of Religion and Society, 18(5), 3470–3484. https://doi.org/10.35931/aq.v18i5.3934*
27. *Le, K. K., Hamzah, S. R., & Omar, Z. (2019). Conceptualising personal resources in relation to career adaptability. International Journal of Academic Research in Business and Social Sciences, 9(9), 931–944. https://doi.org/10.6007/ijarbss/v9-i9/6378*
28. *Li, F., Cheng, L., Wang, X., Shen, L., Ma, Y., & Islam, A. Y. M. A. (2025). The causal relationship between digital literacy and students' academic achievement: A meta-analysis. Humanities and Social Sciences Communications, 12(1), Article 199. https://doi.org/10.1057/s41599-025-04399-6*
29. *Meiyanto, O., & Huda, M. (2022). Building the competence of the golden generation through strengthening vocational education and training. Proceedings of the National Seminar on Community Service, 1(1), 1070. https://doi.org/10.33086/snpm.v1i1.923*
30. *Moumen, A., & Mejjad, N. (2021). Graduate employability: An exploratory literature review. SHS Web of Conferences, 119, 05010. https://doi.org/10.1051/shsconf/202111905010*
31. *Young, D. Y. A., Berek, N. C., & Fall, I. A. T. (2020). Analysis of factors related to occupational safety and health (K3) behaviour among health workers at Prof. Dr. W. Z. Johanes Kupang Hospital. Public Health Media, 2(3), 17. https://doi.org/10.35508/mkm.v2i3.2770*
32. *Mulianingsih, F., Anwar, K., Shintasiwi, F. A., & Rahma, A. J. (2020). Artificial intelligence and the formation of values and character in the field of education. IJTIMAIYA Journal of Social Science Teaching, 4(2), 148. https://doi.org/10.21043/ji.v4i2.8625*
33. *Mustafa, D., Ahsan, S. C., Aris, M., Niswaty, R., & Arhas, S. H. (2022). Service quality and performance of academic administration employees in relation to student satisfaction. Sociohumanities, 24(3), 335. https://doi.org/10.24198/sosiohumaniora.v24i3.40870*
34. *Obi, L., Hampton, P., & Awuzie, B. (2020). Total interpretive structural modelling of graduate employability skills for the built environment sector. Education Sciences, 10(12), 369. https://doi.org/10.3390/educsci10120369*
35. *Othman, W. N. A. W., Abdullah, A., & Romli, A. (2020). Predicting graduate employability based on programme learning outcomes. IOP Conference Series: Materials Science and Engineering, 769(1), 012018. https://doi.org/10.1088/1757-899X/769/1/012018*
36. *Pham, L. T. T. (2024). Work readiness of graduates in the digital age: A literature review. Ho Chi Minh City Open University Journal of Science – Social Sciences, 14(2), 120–128.*
37. *Prasetio, T., & Hariyani, R. (2023). Fostering entrepreneurial spirit amongst short- and medium-term students of the secretary study programme. Journal of Economics and Management, 7(2), 169. https://doi.org/10.31294/widyacipta.v7i2.16329*
38. *Purnama, S., Ulfah, M., Machali, I., Wibowo, A., & Narmaditya, B. S. (2021). Does digital literacy influence students' online risk? Evidence from Covid-19. Heliyon, 7(6), e07406. https://doi.org/10.1016/j.heliyon.2021.e07406*
39. *Putranto, W. A., Suharso, A. R., Khaeroman, Susanto, S., & Saleh, N. T. (2023). Improvement of soft skills and hard skills of East Beji Ungaran residents through basic horizontal position electric welding training. Journal of Urban Development, 3(1), 6. https://doi.org/10.52005/abdinusa.v3i1.125*
40. *Rani, N. S. A., Krishnan, K. S. D., Saidun, Z., & Ahmad, H. (2019). The relationship between entrepreneurship education and entrepreneurial intention of Universiti Kuala Lumpur – Teknoputra alumni. Humanities & Social Sciences Reviews, 7(1), 147. https://doi.org/10.18510/hssr.2019.7118*
41. *Saks, K. (2024). The effect of self-efficacy and self-set grade goals on academic outcomes. Frontiers in Psychology, 15, 1324007. https://doi.org/10.3389/fpsyg.2024.1324007*
42. *Salahuddin, M., & Asroriyah, F. (2019). Thinking skills in the context of learning approaches within the school curriculum in Indonesia. Al-Adabiya Journal of Culture and Religion, 14(1), 63. https://doi.org/10.37680/adabiya.v14i01.104*
43. *Savickas, M. L. (2011). Constructing careers: Actor, agent, and author. Journal of Employment Counseling, 48(4), 179–181. https://doi.org/10.1002/j.2161-1920.2011.tb01109.x*
44. *Shariman, T. P. N. T., Razak, N. A., & Noor, N. F. M. (2012). Digital literacy competence for academic needs: An analysis of Malaysian students in three universities. Procedia - Social and Behavioral Sciences, 69, 1489–1496. https://doi.org/10.1016/j.sbspro.2012.12.090*
45. *Sidik, I. F., Awang, M. M., & Ahmad, A. R. (2018). Support from the social environment in different types of secondary schools in improving students' soft skills. http://journalarticle.ukm.my/14390/*

46. *Singh, K., & Jalil, N. B. A. (2020). The relationship between digital literacy and teachers' perceptions of 21st-century learning: A study of SMK Bako Kuching, Sarawak. DEStech Transactions on Social Science, Education and Human Science. https://doi.org/10.12783/dtssehs/icedde2019/33710*
47. *Stojanová, H., & Tomšík, P. (2014). Factors influencing employment for tertiary education graduates at selected universities. Agricultural Economics, 60(8), 376–383. https://doi.org/10.17221/136/2013-AGRICECON*
48. *Sukesi, D., & Rindaningsih, I. (2023). Human resource planning and competence as determinants of employee performance. SHIELD Journal of Science Education and Research, 2(2), 195. https://doi.org/10.32672/perisai.v2i2.162*
49. *Sumarno, C., Kuat, T., & Susatya, E. (2022). Teacher competence, work culture, and teacher motivation as factors affecting the work readiness of vocational school students. Vocational Park, 10(2), 111. https://doi.org/10.30738/jtvok.v10i2.13496*
50. *Sumarno, S., Gimin, G., Haryana, G., & Saryono, S. (2018). Design of student entrepreneurship education based on technopreneurship principles. Journal of Economics of Education and Entrepreneurship, 6(2), 171. https://doi.org/10.26740/jepk.v6n2.p171-186*
51. *Tabolova, E. S., Taranov, V. A., Perepelkina, N. A., & Lantsova, T. I. (2021). Career guidance as a form of self-determination and self-realisation in youth. Revista on Line de Política e Gestão Educacional, 25(esp.1), 726. https://doi.org/10.22633/rpge.v25iesp.1.15009*
52. *Tee, P. K., Wong, L. C., Dada, M., Song, B. L., & Ng, C. P. (2024). The demand for digital skills, skill gaps, and graduate employability: Evidence from employers in Malaysia. F1000Research, 13, 389. https://doi.org/10.12688/f1000research.148514.1*
53. *Thetsane, R. M., & Mokhethi, M. C. (2020). Enhancing graduates' employability and marketability: The case of the National University of Lesotho. Journal of Marketing Management (JMM), 8(2). https://doi.org/10.15640/jmm.v8n2a7*
54. *Tikson, S. D. S., Sahas, N. S., Ulfa, S., & Nurfadillah, N. (2021). Career planning and career management: A case study of the workforce in Makassar. Hasanuddin Economics and Business Review, 5(2), 54. https://doi.org/10.26487/hebr.v5i2.3133*
55. *Wanda, E. M. (2024). The influence of digital literacy on Generation Z's social interactions in the era of advancements in science and technology. Journal of Social Technology, 3(12), 1035. https://doi.org/10.59188/jurnalsostech.v3i12.1078*
56. *Wang, D., & Li, Y. (2024). Career construction theory: Tools, interventions, and future trends. Frontiers in Psychology, 15, 1381233. https://doi.org/10.3389/fpsyg.2024.1381233*
57. *Yudiaryani, et al. (2017). COPYRIGHT: Performing Arts. https://opac.etnomusikologi.isi.ac.id/index.php?p=show_detail&id=6*
58. *Zhang, C. (2021). An analysis and countermeasures for the employment difficulties faced by college students. Advances in Social Science, Education and Humanities Research, 563, 155–159. https://doi.org/10.2991/assehr.k.210527.034*
59. *Zhang, Y., Zhang, Y., Xiong, X., Liu, J., & Zhai, R. (2022). An empirical study on the enhancement of college students' employability based on university factors. Frontiers in Psychology, 13, 952144. https://doi.org/10.3389/fpsyg.2022.952144*