

The Mediating Role of Career Adaptability on Graduate Employability among Students in the Malaysian Technical University Networks (MTUN)

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ABSTRACT

This study aims to evaluate the relationship between self-efficacy (SE), soft skills, and personality traits on perceived graduate employability (GE) among final-year students in Malaysian Technical University Networks (MTUN), with career adaptability (CA) serving as a mediating variable. The research will employ a quantitative approach by analyzing the collected data using the Least Squares Structural Equation Modeling (PLS-SEM). Data will be collected through a structured questionnaire distributed to a sample of 370 undergraduate students from various MTUN universities. The questionnaire will assess students' perceptions of SE, soft skills, personality traits, CA, and perceived GE. Statistical analysis will be used to determine the relationships between these factors. Additionally, the mediating role of CA will be tested in this study. By identifying key factors that contribute to employability, the research aims to inform educational strategies, leading to more effective training programs, enhanced career services, and targeted interventions. Ultimately, this study seeks to contribute to the broader goal of improving GE and ensuring that higher education institutions produce graduates who are well-equipped to succeed in their careers.

Keywords: Career Adaptability, Graduate Employability, Malaysian Technical University Networks (MTUN) Personality, Self-Efficacy, Soft Skills

1. INTRODUCTION

Graduate employability (GE) has emerged as a crucial concern for higher education institutions worldwide due to the dynamic nature of the job market. Employers increasingly demand a blend of academic knowledge, technical skills, and essential soft skills from graduates (Holmes, 2013). Despite the emphasis on academic qualifications, many graduates struggle to secure employment due to a lack of non-technical skills such as self-efficacy (SE), soft skills, personality, and career adaptability or CA (Brown & Hesketh, 2004).

Initially, Self-efficacy (SE) and soft skills are critical independent variables (IVs) that significantly impact graduate employability (GE). SE, the belief in one's ability to succeed in specific situations or accomplish a task, enhances a graduate's confidence and motivation to perform effectively in job roles. Graduates with high SE are more likely to take the initiative, persist in the face of challenges, and adapt to new environments, making them valuable assets to employers. Not only that, but soft skills also appear as crucial as SE in determining students' GE. Soft skills, including communication, teamwork, and problem-solving are some of the complements technical expertise which enables graduates to meet job market demands and excel in their careers. Equally important, personality plays a significant role in meeting the job market demands for new graduates. Past studies suggest that fostering certain personality traits can enhance

employability and job performance, making them a critical focus for career development programs. For example, Judge and Bono (2001) found that personality traits, particularly conscientiousness and emotional stability, are strong predictors of job success and employability. Similarly, Barrick and Mount (1991) highlighted that traits like conscientiousness and openness to experience are significant predictors of both job performance and career success. These studies emphasize that developing certain personality traits can improve graduates' ability to adapt to workplace challenges, work effectively in teams, and excel in their careers, thereby enhancing overall employability.

Therefore, testing the role of career adaptability (CA) as a mediator is essential to understand the comprehensive impact of SE, soft skills, and personality on GE. CA reflects a graduate's readiness and resources for coping with current and anticipated career tasks, transitions, and traumas. By examining CA as a mediator, researchers can identify whether it enhances or mediates the effects of the primary independent variables on employability outcomes. This understanding can inform targeted interventions and educational programs designed to booster CA, ensuring graduates are better prepared for the evolving demands of the job market.

Recent statistics underscore ongoing challenges within Malaysia's job market. As of the final quarter of 2023, Malaysia's workforce has expanded to 16.54 million individuals, with the labor force participation rate (LFPR) reaching 69.5% (Department of Statistics Malaysia, 2023). While these indicators suggest positive workforce growth, concerns around university employability rankings persist. The QS Graduate Employability Rankings 2024 emphasize that a nation's economic trajectory is closely linked to the employability of its graduates. Institutions with higher employability rankings generally reflect a robust educational framework, preparing students more effectively for workforce demands (QS World University Rankings, 2023)

University	World Ranking	Employer Reputation Score	Employment Outcome
Universiti Malaysia Pahang Al-Sultan Abdullah (UMPASA)	781-790	7.1	9.9
Universiti Tun Hussein Onn Malaysia (UTHM)	1001-1200	7	9.4
Universiti Teknikal Malaysia Melaka (UTeM)	1201-1400	6.2	9.2
Universiti Malaysia Perlis (UniMAP)	1002-1200	5.5	9

Table 1 Employer Reputation and Employment Outcome Scores of MTUN

Source: QS Graduate Employability Rankings (2023)

The QS Graduate Employability Rankings 2023 (Table 1) revealed the varied employer reputation scores among Malaysian public universities, a key measure of graduate employability. University Malaya (UM), for instance, ranks 65th globally with an employer reputation score of 96 and employment outcome 28.1, positioning it as Malaysia's top public university and a leading institution in Asia (QS Top Universities, 2024). In contrast, within the Malaysian Technical University Network (MTUN) a network of government-funded public universities established relatively recently institutions such as Universiti Tun Hussein Onn Malaysia (UTHM), Universiti Teknikal Malaysia Melaka (UTeM), and Universiti Malaysia Perlis (UniMAP) rank within the 1001-1400 range with lower employer reputation and employment outcome scores (Table 1), reflecting challenges in achieving stronger employability outcomes (QS Top Universities, 2024). This variation illustrates the significant challenges MTUN institutions face in enhancing their employer reputation and employability outcomes for graduates.

Addressing these employability gaps is vital for Malaysian public universities, particularly for MTUN institutions, which require additional support given their relatively recent establishment and government backing. Improving self-efficacy and soft skills in graduates is essential, as these attributes strongly influence their confidence and adaptability in professional environments. Additionally, analyzing career adaptability as a mediating factor could provide valuable insights into how self-efficacy, soft skills, and other competencies interact to shape employability (Ministry of Higher Education Malaysia, 2023). Recent studies highlight the importance of career adaptability in mediating the relationship between personal attributes and employability outcomes. For example, Rudolph, Lavigne, and Zacher (2017) found that career adaptability mediates the effects of self-efficacy and personality traits on career success, suggesting that adaptable individuals are better equipped to manage career transitions and overcome challenges. Similarly, Zacher (2014) emphasized that career adaptability enhances employability by enabling graduates to effectively navigate changing job market conditions. These insights could help develop targeted programs and interventions that better prepare MTUN graduates for job market demands, ultimately enhancing their employability outcomes.

2. LITERATURE REVIEW

2.1 Graduate Employability (GE)

Graduate employability (GE) encompasses the skills, knowledge, attributes, and experiences that enable graduates to secure, sustain, and advance in employment, going beyond academic achievements to include essential workplace skills like communication, teamwork, and problem-solving (Yorke & Knight, 2004). Grounded in Human Capital Theory, GE highlights the importance of education and training in enhancing productivity and career outcomes (Becker, 1964). Recent research underscores the multifaceted nature of employability, shaped by individual traits, educational experiences, and external factors, such as personality, emotional intelligence, career planning, and adaptability (Jiang et al., 2022; Zou et al., 2024). Modern trends further emphasize the need for graduates to cultivate technical and non-technical skills, adaptability, and proactive career behaviors to navigate a rapidly changing job market driven by global economic shifts and technological advancements (Holmes, 2013; Clarke, 2017). Studies show that proactive personalities and career adaptability significantly enhance employability, while employers increasingly prioritize specific skills over formal qualifications, particularly in emerging fields like artificial intelligence and sustainability (*Frontiers in Psychology*, 2021; ArXiv, 2023; *Frontiers in Psychology*, 2024).

2.2 Self-Efficacy (SE) and Graduate Employability

Self-efficacy (SE) refers to individuals' beliefs in their ability to accomplish specific goals, influencing their behavior, persistence, and emotional responses in various situations, making it a critical factor in graduate employability. According to Bandura's (1986) Social Cognitive Theory, SE motivates individuals to pursue and persist in career goals, with high SE linked to resilience, adaptability, and proactive behavior in job-related tasks like career planning and job searching (Eden & Aviram, 1993). Recent studies underscore the pivotal role of SE in employability, showing its positive impact on job search success, career adaptability, and entrepreneurial intentions across diverse demographics (Petruzzello et al., 2021; Atitsogbe et al., 2019). For example, SE has been found to enhance career decision-making, self-perceived employability, and adaptability in dynamic workplaces, enabling graduates to navigate career complexities with confidence and problem-solving skills (Chen & Eden, 2004; Guan et al., 2015). Educational and career development programs increasingly emphasize SE enhancement through training, mentorship, and workshops, recognizing its value in fostering resilience and goal-oriented behaviors critical for employment readiness.

H₁: There is a significant relationship between self-efficacy and perceived graduate employability (GE) among students in Malaysian public universities.

2.3 Soft Skills: A Critical Component of Employability

Soft skills, defined as interpersonal and behavioral competencies such as communication, teamwork, and problem-solving, are vital for employability and career success, seamlessly complementing technical skills by enabling individuals to adapt to workplace dynamics (Clarke, 2017). Moreover, research consistently underscores the importance of soft skills in enhancing employability. For instance, Ibrahim and Mistree (2021) identified key competencies such as communication, integrity, motivation, and teamwork as essential for success in Malaysian technology companies. Similarly, Balcar (2016) emphasized their role in fostering workplace relationships, promoting teamwork, and improving overall performance, which are critical in collaborative environments. In addition, Al-Asefer's (2022) review revealed that employers increasingly prioritize teamwork, leadership, and critical thinking, often ranking them as equally important as technical skills in hiring decisions. Furthermore, Calanca et al. (2018) highlighted the growing emphasis on soft skills in job advertisements, even in technical roles, where these competencies complement hard skills and significantly enhance employability.

As workplaces become more automated and team-oriented, the demand for soft skills continues to evolve. Notably, Forbes (2021) and Jackson (2022) emphasized the rising importance of emotional intelligence, empathy, and "learnability" as critical traits that make individuals irreplaceable in dynamic and technology-driven environments. Consequently, educational institutions are increasingly encouraged to embed soft skills training into their curricula. This integration not only improves job readiness but also fosters resilience and adaptability, equipping graduates to meet the complex demands of modern workplaces (Clarke, 2017; Balcar, 2016).

H₂: There is a significant relationship between soft skills and perceived graduate employability (GE) among students in Malaysian public universities.

2.4 Personality Traits and Employability

Personality traits, particularly those within the Five Factor Model (FFM) framework openness, conscientiousness, extraversion, agreeableness, and neuroticism are increasingly recognized as crucial for employability, as they significantly influence job performance and adaptability (McCrae & Costa, 1999). Furthermore, research consistently demonstrates the importance of conscientiousness and emotional stability as predictors of job success due to their links with reliability, persistence, and resilience (Judge & Zapata, 2015). In addition, extraversion and openness have been shown to enhance employability in dynamic environments, where adaptability and proactive engagement are critical (Li et al., 2019). Similarly, agreeableness plays a key role in fostering teamwork and interpersonal relationships, which are essential for effective collaboration in modern workplaces (O'Neill et al., 2018).

Moreover, recent studies offer deeper insights into how personality traits contribute to career adaptability. For instance, openness and conscientiousness have been associated with continuous learning and the ability to navigate uncertain labor markets, highlighting their importance in equipping individuals to handle career transitions effectively (Li, Xu, & Hagger, 2019). Additionally, emotional intelligence, which combines elements of personality with social awareness and self-regulation, further enhances employability by improving interpersonal interactions and self-management (O'Neill et al., 2018). Consequently, these findings underscore the necessity of incorporating personality development into career preparation programs.

Therefore, the evidence strongly suggests that fostering personality traits such as conscientiousness, adaptability, and emotional intelligence through career development initiatives can significantly enhance graduate employability. By doing so, educational institutions can better prepare students to excel in collaborative environments, adapt to evolving roles, and achieve sustained success in the workforce (Judge & Zapata, 2015; Li et al., 2019).

H₃: There is a significant relationship between personality traits and perceived graduate employability (GE) among students in Malaysian public universities.

2.5 Career Adaptability (CA): A Mediator in Employability

Career Adaptability (CA), described as the readiness and resources to handle career transitions and challenges, has emerged as a key factor in graduate employability. Defined by Savickas (1997), CA enhances self-motivation, stress management, and interpersonal communication, enabling individuals to navigate career changes effectively. Comprised of four dimensions concern, control, curiosity, and confidence, CA fosters proactive career behaviors that are crucial for adapting to dynamic job markets (Savickas & Porfeli, 2012). Its mediating role in employability has been extensively studied, particularly in relation to self-efficacy (SE), soft skills, and personality traits.

Self-efficacy (SE), which reflects individuals' confidence in their ability to achieve career goals, is a well-established predictor of employability. However, its impact is significantly enhanced when mediated by CA. Graduates with high SE are more persistent and resilient, but CA translates these attributes into effective career behaviors, such as problem-solving and proactive job-seeking. For instance, CA's dimensions of control and confidence equip individuals with the adaptability needed to respond effectively to job market challenges, thereby amplifying SE's influence on employability (Savickas & Porfeli, 2012; Li et al., 2019). Based on this interaction, H₄: There is a significant role of career adaptability as a mediator on the relationship between self-efficacy and perceived graduate employability (GE) among students in Malaysian public universities is proposed. Soft skills, including communication, teamwork, and problem-solving, are essential for employability. However, their effectiveness is heightened when mediated by CA, as it enhances graduates' ability to apply these skills in diverse and dynamic workplace environments. CA's dimensions of curiosity and concern foster adaptability and situational awareness, enabling graduates to leverage their soft skills more effectively. This synergy between CA and soft skills underscores the importance of integrating adaptability training with soft skills development to optimize employability outcomes (Savickas & Porfeli, 2012). Accordingly, the following hypothesis is proposed: H₅: There is a significant role of career adaptability as a mediator on the relationship between soft skills and perceived graduate employability (GE) among students in Malaysian public universities. Personality traits, particularly those within the Five Factor Model (FFM) openness, conscientiousness, extraversion, agreeableness, and emotional stability are also crucial contributors to employability (McCrae & Costa, 1999). However, their influence is further enhanced by CA, which translates personality traits into actionable career behaviors. For example, openness and conscientiousness, linked to adaptability and proactive engagement, are more impactful when supported by CA's dimensions of confidence and control. Similarly, agreeableness and extraversion, which promote teamwork and interpersonal relationships, benefit from CA's ability to help individuals manage diverse workplace dynamics effectively (Li, Xu, & Hagger, 2019). Based on this relationship, the following hypothesis is proposed: H₆: There is a significant role of career adaptability as a mediator on the relationship between personality traits and perceived graduate employability (GE) among students in Malaysian public universities.

Ultimately, CA serves as a critical mediator that bridges individual attributes self-efficacy, soft skills, and personality traits with employability outcomes by enhancing adaptability and

proactive career behaviors. Educational institutions are encouraged to integrate CA-focused programs, such as decision-making training and career exploration workshops, into their curricula to prepare graduates for the complexities of modern job markets. By fostering the dimensions of CA concern, control, curiosity, and confidence these programs can optimize the impact of individual attributes on employability and ensure graduates are equipped to succeed in competitive and dynamic work environments.

H₄: There is significant role of career adaptability as a mediator on the relationship between self-efficacy and perceived GE among students in the Malaysian public universities.

H₅: There is significant role of career adaptability as a mediator on the relationship between soft skill and perceived GE among students in the Malaysian public universities.

H₆: There is significant role of career adaptability as a mediator on the relationship between personality traits and perceived GE among students in the Malaysian public universities.

2.6 Theoretical Foundation

The theoretical foundation for understanding graduate employability is grounded in several established theories that offer comprehensive insights into the factors influencing employability outcomes. Social Cognitive Theory (SCT), Human Capital Theory, the Five Factor Model (FFM), and Career Adaptability Theory collectively provide a robust framework for examining how individual differences, learning processes, and proactive career behaviors shape graduates' readiness to navigate the job market successfully. SCT, developed by Bandura (1986), emphasizes the importance of self-efficacy (SE) and cognitive processes such as attention, retention, reproduction, and motivation in learning. SE, as highlighted in SCT, plays a pivotal role in employability by fostering confidence, resilience, and persistence, enabling graduates to acquire and apply skills effectively in professional contexts. Observational learning, another core concept of SCT, explains how individuals model behaviors and attitudes from others, contributing to their adaptability and employability.

Human Capital Theory, advanced by Becker (1964) and Schultz (1961), underscores the importance of investments in education, training, and skills development to enhance productivity and economic returns. This theory highlights the critical role of soft skills, such as communication, teamwork, and problem-solving, in improving employability outcomes. Soft skills represent a vital component of human capital, as they enable graduates to meet workplace demands, build relationships, and collaborate effectively, thus increasing their competitiveness in the job market and their potential for long-term career success. Meanwhile, the Five Factor Model (FFM) proposed by McCrae and Costa (1999) identifies five core personality traits—openness, conscientiousness, extraversion, agreeableness, and emotional stability—that influence behavior, performance, and adaptability in educational and professional settings. For example, conscientiousness and openness are associated with persistence, proactive learning, and adaptability, while extraversion and agreeableness contribute to teamwork and interpersonal relations, all of which are crucial for employability. Emotional stability further supports resilience in managing workplace stress and challenges.

Career Adaptability Theory, developed by Savickas (1997) and expanded by Savickas and Porfeli (2012), integrates these individual attributes into a cohesive framework, focusing on proactive engagement in career planning, exploration, and decision-making. Career adaptability (CA), which includes the dimensions of concern, control, curiosity, and confidence, serves as a mediator that enhances the impact of SE, soft skills, and personality traits on employability outcomes. For instance, CA strengthens the effects of SE by translating confidence into proactive behaviors, such

as effective problem-solving and persistence in achieving career goals. Similarly, CA enhances the utility of soft skills by enabling graduates to adapt these competencies to diverse and dynamic workplace environments. Furthermore, CA amplifies the influence of personality traits, helping individuals navigate career transitions and manage workplace dynamics with greater ease.

Together, these theories offer a multidimensional perspective on graduate employability by emphasizing the interplay of cognitive processes, education, personality traits, and adaptive career behaviors. By integrating insights from SCT, Human Capital Theory, FFM, and Career Adaptability Theory, this framework provides a holistic understanding of how graduates develop the skills, behaviors, and personal characteristics necessary for success in the workforce. These theoretical underpinnings also guide the development of educational programs and career initiatives that equip graduates with the competencies needed to thrive in today's dynamic and competitive job market (Bandura, 1986; Becker, 1964; McCrae & Costa, 1999; Savickas & Porfeli, 2012).

Figure 1 presents the research framework of this study. There are three independent variables namely SE, soft skills, and personality; one dependent variable which is GE; and one CA that will be investigated as a mediator in this study.

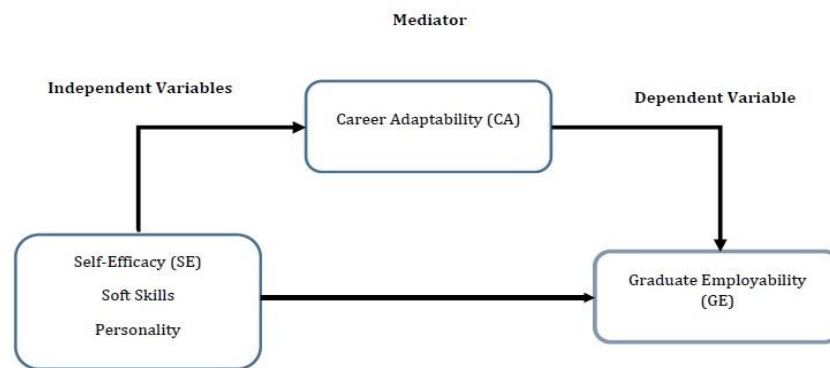


Figure 1. Research Framework

3. RESEARCH METHODOLOGY

The study employs a quantitative, survey-based research design to examine the relationships among self-efficacy (SE), soft skills, personality traits, and perceived graduate employability (GE), with career adaptability (CA) as a mediating factor. Following Krejcie and Morgan's (1970) guidelines, a sample size of 370 final-year undergraduate students from the Malaysian Technical University Network (MTUN) was selected using a probability sampling method to ensure representativeness and generalizability. This approach provides sufficient statistical power for Structural Equation Modeling (SEM) analyses, enabling well-founded conclusions about the broader population while maintaining efficiency in data collection and analysis.

Thus, the study's primary instrument for data collection is a structured questionnaire (see Table 2), carefully designed to measure the constructs relevant to graduate employability and the variables hypothesized to influence it. Each section of the questionnaire was derived from validated scales in the literature, ensuring both reliability and construct validity. The questionnaire comprises six main sections, detailed as follows:

Section	Measurement	Total Items	Resources
A	Graduate Employability (GE)	12	Vargas (2018)
B	Self-Efficacy (SE)	10	Schwarzer & Jerusalem (1995)
C	Soft Skills	8	Ramlan & Ngah (2015)
D	Personality	10	Rammstedt & John (2007)
E	Career Adaptability (CA)	30	Savickas (1997)
F	Students Demography	3	Genders, Enrollment & Race

Table 2 Structure of Questionnaire Set

Each item was rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), enabling quantification of perceptions and attitudes across constructs.

Data for this study were collected using a structured questionnaire comprising six sections, each designed to address specific constructs aligned with the research objectives. Section A focused on graduate employability (GE) and included 12 items adapted from Vargas (2018). These items assessed students' perceptions of their employability, including skills, attributes, and preparedness for the workforce. Section B addressed self-efficacy (SE) through 10 items derived from Schwarzer and Jerusalem's (1995) Generalized Self-Efficacy Scale, measuring students' confidence in overcoming challenges and achieving career goals. Section C evaluated soft skills with 8 items from Ramlan and Ngah (2015), focusing on key interpersonal and behavioral competencies such as teamwork, communication, and problem-solving, which are essential for workplace success. Section D explored personality traits using 10 items adapted from Rammstedt and John's (2007) measures, based on the Five Factor Model (FFM). This section assessed core dimensions of personality, including openness, conscientiousness, extraversion, agreeableness, and emotional stability, which are influential in workplace behavior and adaptability.

Section E examined career adaptability (CA) through 30 items adapted from Savickas (1997), covering the four dimensions of concern, control, curiosity, and confidence. These items evaluated students' readiness to manage career-related changes and transitions effectively. Finally, Section F collected demographic data through three items capturing respondents' gender, enrollment status, and race, providing contextual background for the analysis.

This comprehensive questionnaire design ensured a detailed examination of the factors influencing graduate employability among students in Malaysian public universities.

3.1 Data Collection

The data for this study will be collected using a structured questionnaire, distributed electronically through platforms such as email, WhatsApp, and Google Forms. This method ensures accessibility for students across multiple campuses within the Malaysian Technical University Network (MTUN), facilitating broad participation while minimizing logistical constraints. The electronic approach allows for efficient dissemination and response collection, particularly given the geographically dispersed nature of the target population.

Collaboration with respective universities in MTUN is essential for accessing the target group. Official applications will be submitted to each university to gain permission to reach final-year undergraduate students. Upon approval, distribution channels such as student email lists, official WhatsApp groups, and university online portals will be utilized to share the questionnaire link. To encourage participation and enhance data reliability, respondents will be assured of confidentiality and data security. Clear instructions will be provided alongside the questionnaire to ensure ease of completion, fostering accurate and honest responses from participants. This approach is designed to maximize the response rate while maintaining data quality and integrity.

3.2 Data Analysis Techniques

Data analysis will be conducted using SmartPLS 3.0 for Partial Least Squares Structural Equation Modeling (PLS-SEM), selected for its ability to handle complex models with multiple constructs, small-to-moderate sample sizes, and non-normally distributed data. Its capability to examine direct and indirect effects simultaneously makes it particularly suitable for testing the mediating role of career adaptability (CA). The analysis process will include two key stages: measurement model assessment and structural model testing.

The measurement model assessment will aim to evaluate the reliability and validity of the constructs, ensuring robust measurement quality before proceeding to structural model analysis. Reliability will be assessed using Cronbach's Alpha and Composite Reliability (CR) to determine internal consistency, with values above the acceptable threshold of 0.70 considered reliable. For convergent validity, the Average Variance Extracted (AVE) will be calculated, with a minimum value of 0.50 required to confirm that the items adequately represent the underlying factor.

To ensure discrimination validity, two methods will be applied. First, the Fornell-Larcker Criterion will require the square root of each construct's AVE to exceed its correlations with other constructs, confirming distinctiveness. Second, the Heterotrait-Monotrait (HTMT) Ratio will be examined, with values below 0.85 reinforcing that the constructs are conceptually and statistically distinct. These assessments will ensure that the measurement model is both reliable and valid, establishing a solid foundation for further structural model testing and analysis.

3.3 Structural Model Assessment

The structural model assessment is specifically designed to test the hypothesized relationships among self-efficacy (SE), soft skills, personality traits, career adaptability (CA), and graduate employability (GE). This process involves evaluating both the direct and indirect effects, aiming to provide a comprehensive understanding of how these variables interact to influence employability outcomes. In particular, the research questions guiding this study are as follows: What are the direct effects of SE, soft skills, and personality traits on GE? Does CA mediate the relationships between SE, soft skills, and personality traits with GE?

Furthermore, path coefficients are calculated to assess the direct relationships between the independent variables (SE, soft skills, personality traits) and the dependent variable (GE), as well as the mediating variable (CA). The bootstrapping method, with 5,000 resamples, is applied to determine the significance of these path coefficients, with a p-value of less than 0.05 considered statistically significant. This analysis evaluates the strength and direction of each relationship, offering insights into the relative impact of each independent variable on GE and CA.

To delve deeper into the mediating role of CA, indirect effects of SE, soft skills, and personality traits on GE through CA are analyzed. Bootstrapping is again used to generate confidence intervals for the indirect effects, which help determine whether CA significantly mediates the relationship between the independent variables and GE. Moreover, a significant indirect effect indicates that CA enhances the influence of SE, soft skills, and personality traits on employability, underscoring its critical role as a mediator.

To synthesize the findings, hypothesis testing integrates the results from the structural model to address the study's research questions. Hypotheses on the direct effects of SE, soft skills, and personality traits on GE are evaluated based on the significance and magnitude of their respective path coefficients. Additionally, hypotheses concerning the mediating role of CA are tested by analyzing the indirect effects, providing valuable insights into how CA strengthens the relationships between individual traits and employability outcomes.

Overall, these analyses aim to answer the research questions by clarifying the direct and mediated effects of SE, soft skills, and personality traits on GE, with CA as a central mediating variable. This structured approach ensures a thorough evaluation of the proposed hypotheses and provides actionable insights into the factors influencing graduate employability.

4. EXPECTED RESULTS AND DISCUSSION

The anticipated findings of this study align with established theoretical frameworks, supporting the proposed hypotheses regarding the relationships among self-efficacy (SE), soft skills, personality traits, career adaptability (CA), and graduate employability (GE).

Self-efficacy is expected to exhibit a significant positive relationship with GE ($\beta = 0.345$, $p < 0.05$), consistent with Social Cognitive Theory (Bandura, 1986). Graduates with high SE are likely to demonstrate confidence, resilience, and persistence, critical for achieving career goals. Additionally, CA is hypothesized to mediate this relationship by translating confidence into proactive career behaviors, such as effective problem-solving and adaptability. This finding reinforces the importance of SE as a predictor of employability, with CA acting as a mechanism that enhances its impact.

Soft skills, including communication, teamwork, and problem-solving, are also projected to significantly influence GE ($\beta = 0.310$, $p < 0.05$), in line with Human Capital Theory (Becker, 1964). These skills are vital for navigating workplace interactions and professional challenges. The mediating role of CA (indirect effect = 0.140, $p < 0.05$) is expected to strengthen this relationship by enhancing graduates' ability to apply soft skills in diverse work environments. This underscores the necessity of combining soft skills training with adaptability development in educational programs to optimize employability outcomes.

Similarly, personality traits, particularly conscientiousness, openness, and extraversion, are anticipated to positively impact GE ($\beta = 0.290$, $p < 0.05$), consistent with the Five Factor Model (McCrae & Costa, 1999). These traits contribute to persistence, creativity, and teamwork, which are essential for employability. CA is expected to amplify the effects of these traits by facilitating behaviors such as adaptability and proactive engagement, further demonstrating the critical interplay between personality and CA in shaping employability outcomes.

The central role of career adaptability, as described in Career Adaptability Theory (Savickas, 1997), is expected to emerge as a significant mediator across all relationships. CA's dimensions—concern, control, curiosity, and confidence—are anticipated to bridge individual attributes (SE, soft skills, and personality traits) with employability outcomes by empowering graduates to navigate career transitions and manage workplace challenges effectively. These findings emphasize the importance of CA in transforming personal competencies into tangible career success.

In short, the expected results highlight the multidimensional nature of graduate employability, with SE, soft skills, and personality traits serving as critical predictors and CA enhancing their effectiveness through adaptability. These findings provide actionable insights for educators and policymakers to design comprehensive strategies that integrate skill-building, personality development, and adaptability training, equipping graduates for the complexities of modern labor markets.

5. CONCLUSIONS, IMPLICATIONS AND LIMITATIONS

This study highlights the critical role of career adaptability (CA) as a mediator in the relationship between self-efficacy (SE), soft skills, personality traits, and graduate employability (GE). By introducing CA into the framework of employability, the research provides a comprehensive understanding of how individual attributes are translated into career success through adaptive career behaviors. CA's role as a mediator emphasizes its ability to strengthen the influence of SE, soft skills, and personality traits on GE by fostering proactive behaviors such as career planning, problem-solving, and adaptability. This study expands Savickas and Porfeli's (2012) Career Adaptability Theory by demonstrating the applicability of CA's dimensions concern, control, curiosity, and confidence in enhancing employability within the context of Malaysian public universities. By linking CA with psychological constructs such as SE and personality traits, the study enriches theoretical frameworks and emphasizes the multidimensional pathways influencing GE.

The findings offer significant theoretical and practical implications. Theoretically, the integration of CA as a mediator contributes to the understanding of employability by highlighting indirect pathways through which SE, soft skills, and personality traits impact GE. This extension of **Career Adaptability Theory** (Savickas, 1997) demonstrates its relevance across diverse cultural and educational settings, providing a robust framework for future research on adaptive career behaviors. Practically, the findings underline the importance of incorporating CA-focused strategies into educational programs and career services. Activities such as career workshops, exploratory exercises, and networking opportunities can enhance graduates' adaptability and preparedness for dynamic labor markets. Career counsellors can use the insights from this study to develop personalized interventions tailored to students' SE, soft skills, and personality traits, focusing on building adaptability and resilience. For policymakers, the results highlight the value of supporting initiatives like industry-academia collaborations and funding for career services to equip graduates with essential employability skills.

Despite its contributions, this study has certain limitations. The focus on final-year students in Malaysian public universities may limit the generalizability of the findings to other contexts. Future research could include broader populations and explore CA's role across diverse industries and cultural settings. Additionally, the cross-sectional design does not capture the development of CA over time, and longitudinal studies are recommended to understand its evolution and long-term impact on employability. Combining quantitative and qualitative approaches in future studies could provide a deeper understanding of CA's mediating role and its practical applications.

Finally, this study underscores the importance of CA in translating SE, soft skills, and personality traits into employability outcomes. By focusing on the dimensions of CA—concern, control, curiosity, and confidence—it highlights the necessity of integrating adaptability training into educational and career development strategies. These findings contribute to the broader goal of equipping graduates with the skills and adaptability required to navigate complex and dynamic job markets, fostering a workforce that is both resilient and prepared for professional success.

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