

THE ROLE OF EMOTIONAL INTELLIGENCE IN MODERATING THE IMPACT OF SELF-EFFICACY AND SOFT SKILLS ON GRADUATE EMPLOYABILITY

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<http://doi.org/10.46754/jbsd.2025.09.011>

Received: 12 December 2024

Revised: 14 May 2025

Accepted: 20 May 2025

Published: 15 September 2025

Abstract: This study examines the effects of Self-Efficacy (SE) and Soft Skills (SS) on the employability of graduates from the Malaysian Technical University Network (MTUN), with Emotional Intelligence (EI) serving as a moderating variable. A total of 370 valid responses were collected using a structured questionnaire and analysed using SmartPLS. The findings reveal that both SE and SS have significant positive impacts on Graduate Employability (GE), with SS exerting the strongest influence. Furthermore, EI was reported to moderate the relationships between SE and GE, as well as SS and GE, though its moderating effect was not significant in all contexts. These results underscore the significance of SE and SS as key contributors to graduate readiness. Overall, the study recommends that universities prioritise the development of SE and SS within academic programmes, while maintaining a balanced approach to EI integration. Practical implications for educators, policymakers, and industry stakeholders are also discussed to enhance graduates' competitiveness in an evolving labour market.

Keywords: Emotional intelligence, graduate employability, self-efficacy, soft skills.

Introduction

Overseas, Graduate Employability (GE) has emerged as a critical focus for universities, public policymakers, and employers. In the competitive global job market, an excellent academic record alone is no longer sufficient for securing meaningful employment. Employers now expect graduates to demonstrate high levels of Self-Efficacy (SE), Soft Skills (SS), and Emotional Intelligence (EI), which are essential for adapting to and excelling in the rapidly changing demands of 21st-century workplaces. However, this expectation poses a significant challenge for the Malaysian Technical University Network (MTUN), comprising Universiti Malaysia Perlis (UniMAP), Universiti Tun Hussein Onn Malaysia (UTHM), Universiti Teknikal Malaysia Melaka (UTeM), and Universiti Malaysia Pahang (UMPSA).

MTUN institutions consistently lag behind other universities in employability rankings, particularly in metrics such as employer

reputation and employment outcomes. The employer reputation score, a key metric in the QS Quacquarelli Symonds (2024) rankings Table 1, measures universities' success in producing graduates who are highly regarded by employers. Notably, employment outcomes reflect how effectively universities prepare students for the job market. Nonetheless, MTUN universities are significantly below the minimum employer reputation scores required to be competitive, with their scores considerably lower than those of reputable universities in Malaysia, such as Universiti Malaya (UM) and Universiti Kebangsaan Malaysia (UKM). These institutions have successfully aligned their programmes with industry demands, producing graduates equipped with both technical expertise and SS. Furthermore, MTUN institutions have struggled to achieve this level of recognition, directly impacting their rankings and the employability of their graduates.

Table 1: Employer reputation and employment outcome scores

University	World Ranking	Employer Reputation Score	Employment Outcome
Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA)	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

Source: QS Quacquarelli Symonds (2024)

To bridge this gap, MTUN universities must adapt their curricula to meet evolving employer demands by emphasising the development of SE, EI, and SS alongside technical knowledge. In addition, strengthening partnerships with industries through collaborations, internships, and co-curricular programmes is essential for enhancing both graduate outcomes and employer reputation. As publicly funded institutions, MTUN universities have a unique opportunity to lead innovative initiatives addressing these challenges. Accordingly, they can improve their employability scores, elevate their reputation among employers, and contribute to a globally competitive workforce, ultimately strengthening their national and international standing.

Hence, the data in Table 1 above reveal a clarion call for MTUN institutions to prioritise focused, strategic actions to enhance their employability ranking. In response, these universities could better prepare students to be competitive in the global job market by prioritising SE and developing better SS and EI among their youth.

Theoretical Background

SE, a concept rooted in Bandura's Social Cognitive Theory, reflects a person's confidence in their ability to successfully perform specific tasks. This belief plays a crucial role in shaping job readiness, adaptability, and resilience in the workplace. In essence, graduates with strong SE tend to approach job searches with more determination and persevere through challenges,

ultimately enhancing their employability (Bandura, 1997).

In parallel, SS such as effective communication, teamwork, and critical thinking are consistently highlighted by employers as essential for workplace success. Studies indicate that graduates who lack these skills often face difficulties adapting to professional environments, even if they possess excellent technical abilities (Robles, 2012).

EI, which involves recognising, understanding, and managing emotions, is another vital factor that supports employability. In particular, EI enhances interpersonal relationships and decision-making skills, enabling graduates to navigate workplace challenges effectively (Goleman, 1995). Moreover, EI can amplify the positive impacts of SE and SS on employability outcomes by acting as a moderator. The decision to include EI as a moderating variable, rather than a mediator, was influenced by both theoretical grounding and empirical evidence suggesting variability in the strength of relationships between the Independent Variables (IVs), SE and SS, and the Dependent Variable (DV), GE. Prior studies have demonstrated that these relationships, while often significant, are not always consistent across populations or contexts.

In short, this research examines the direct impact of SE and SS on GE among MTUN students, while exploring the moderating role of EI to uncover whether it strengthens these relationships. Using a quantitative approach, data were gathered from 370 final-year students across

MTUN institutions and analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings aim to offer practical recommendations for improving GE, contributing to Malaysia's goal of fostering an industry-ready workforce.

Research Objectives

This study delves into the critical factors influencing GE, with a particular focus on students from the MTUN. Specifically, it investigates how SE and SS directly contribute to graduates' readiness for the workforce. Both factors have been widely recognised as essential components of employability. Yet, there remains a need to explore their unique and combined effects within the context of MTUN students, who are being prepared for roles in a competitive, rapidly evolving job market.

Beyond these direct effects, the research also examines the role of EI as a moderating factor. EI, which encompasses the ability to manage emotions and navigate social interactions effectively, is believed to enhance the relationship between SE, SS, and employability outcomes. Thus, by understanding how EI influences these dynamics, the study seeks to provide deeper insights into the interplay of psychological and interpersonal competencies that contribute to graduate success in the workplace.

Data for this research were collected from 370 final-year students across MTUN institutions using a structured quantitative approach. The findings are expected to offer practical strategies for improving GE, with the potential to guide curriculum development and institutional policies. This aligns closely with Malaysia's broader goal of fostering a dynamic, industry-ready workforce and enhancing the global standing of its higher education institutions. Furthermore, by addressing these objectives, the study contributes to the ongoing effort to bridge the gap between academic preparation and industry expectations, ensuring graduates are well-equipped to thrive in their careers.

1. RO1: To investigate the direct impact of SE on GE among MTUN students.
2. RO2: To examine the direct impact of SS on GE among MTUN students.
3. RO3: To explore the moderating role of EI in the relationship between SE and GE.
4. RO4: To explore the moderating role of EI in the relationship between SS and GE.

The research objectives outlined above emphasise the study's commitment to providing a comprehensive understanding of the key factors influencing GE within MTUN institutions. Notably, by investigating both direct and moderating relationships, the study aims to bridge theoretical gaps and offer actionable insights for stakeholders. These findings will contribute to improving institutional practices and support the broader national agenda of preparing graduates who are adaptable, competent, and ready to excel in a dynamic global workforce.

Literature Review

Graduate Employability (GE)

GE refers to a graduate's ability to secure and maintain employment while progressing in their career. It extends beyond technical knowledge to include personal attributes, skills, and the capacity to contribute effectively in professional settings (Knight & Yorke, 2004; Clarke, 2017). Notably, employability is increasingly viewed as a multidimensional concept that incorporates hard skills, transferable skills, and personality traits, which are essential for adapting to the dynamic labour market (Yorke, 2006; Pool & Sewell, 2007).

Furthermore, the QS World University Rankings emphasise that employer reputation significantly impacts employability, reflecting institutions' success in preparing students for industry demands (QS Top Universities, 2023). This perspective is particularly relevant as global labour markets demand graduates who possess academic knowledge and demonstrate practical and interpersonal skills that align with employer expectations (Succi & Canovi, 2020).

In addition to the global context, the situation in Malaysia highlights the critical role of employability in addressing the nation's workforce needs and supporting its transition to a knowledge-based economy (Marimuthu & Azizan, 2019). Specifically, the Malaysia Education Blueprint 2015-2025 underscores the significance of producing industry-ready graduates with strong technical, interpersonal, and cognitive skills (Ministry of Education Malaysia, 2015). However, MTUN institutions, which focus on technical education, face challenges in employer reputation and graduate rankings (Ali *et al.*, 2020). Consequently, these challenges reflect a gap in aligning academic outcomes with the demands of employers and the labour market.

To address this, research highlights the pivotal role of individual traits, such as SE and SS, in shaping GE. For example, SE has been linked to job search persistence and career adaptability, while SS enhances graduates' ability to collaborate and communicate effectively in the workplace (Bandura, 1997; Robles, 2012). Moreover, EI moderates the impact of these traits by enhancing interpersonal interactions and resilience, further strengthening employability outcomes (Goleman, 1995; Lopes *et al.*, 2006).

Self-Efficacy (SE)

Despite the well-established role of SE in enhancing GE, several empirical gaps remain in the literature. First, while numerous studies report a positive correlation between SE and GE (e.g., Zimmerman, 2000; Suleman, 2018), these findings often overlook the influence of contextual or moderating factors, such as career adaptability, EI, or digital literacy. This suggests a gap in understanding how SE interacts with other psychological and industry-relevant competencies to impact employability outcomes.

In the Malaysian context, particularly within the MTUN, there is a limited body of research that examines SE in conjunction with industry-specific expectations. While technical proficiency is emphasised, how SE functions

alongside SS and EI in technical graduates remains underexplored. Moreover, most prior studies focus on general employability rather than sector-specific needs, which are vital for technical university students preparing for a specialised workforce.

Additionally, research on SE has largely been conducted in Western settings, where educational systems and labour market dynamics differ significantly from those in Malaysia. This creates a gap in understanding the cultural and economic influences on SE's effectiveness in non-Western contexts. There is also insufficient investigation into whether SE operates consistently across academic disciplines, especially in STEM-based programmes, where technical qualifications may take precedence over confidence or behavioural traits. In line with this, the rise of remote work, digital platforms, and artificial intelligence further complicates the role of SE, calling for a reassessment of its relevance in digitally evolving labour markets.

Importantly, empirical findings on the relationship between SE and GE have been mixed. On one hand, several studies confirm that high SE enhances job search success, career adaptability, and the development of employability-related behaviours (Lent *et al.*, 1994; Koen *et al.*, 2012). Similarly, Suleman (2018) noted that graduates with strong SE and SS are more likely to secure employment, reinforcing the role of SE as a key personal resource.

On the other hand, some studies present conflicting evidence, suggesting that SE alone may not guarantee employability advantages, particularly in challenging economic environments. For instance, Gbadamosi *et al.* (2015) stated that SE had limited influence in recession-affected labour markets, where external factors dominated hiring decisions. Ali *et al.* (2020) also noted that high SE does not compensate for skill deficits, implying that confident graduates without adequate technical ability may still struggle. Additionally, Okolie *et al.* (2021) reported that in STEM-related fields,

technical experience and internships were more critical than SE, whereas SE played a greater role in business and management contexts.

These mixed findings highlight the need to explore moderating variables, such as EI, to better explain when and how SE contributes to employability. Therefore, future research should address these gaps by investigating SE in combination with other competencies, particularly in non-Western, technical university contexts such as MTUN.

Soft Skills

Despite the growing emphasis on SS in employability research, several empirical gaps remain unaddressed. First, while numerous studies affirm the positive relationship between SS and GE (Clarke, 2017; Succi & Canovi, 2020), many fail to examine how specific SS interact with technical competencies to influence job market outcomes. Moreover, the tendency to generalise SS as a broad category without assessing their individual impact (e.g., communication, teamwork, adaptability) limits a precise understanding of their role in employability.

Second, research often overlooks the industry-specific demands for SS, particularly in technical and STEM-related fields. While employers acknowledge the significance of SS, the extent to which these skills affect employability in different sectors varies significantly (Deming, 2017). For instance, while teamwork and adaptability are crucial in management and service industries, problem-solving and communication may be more critical in engineering and Information Technology (IT) roles. Consequently, the lack of sector-specific studies on SS-employability relationships weakens the generalisability of existing findings.

Third, although the empirical literature predominantly focuses on employer perceptions of SS, it lacks sufficient data on how graduates themselves perceive and develop these skills. While employer surveys highlight a gap in SS

among graduates (World Economic Forum, 2020), limited research explores how students cultivate these competencies and the effectiveness of educational interventions designed to improve them. Moreover, most studies examine SS in developed economies, while there is limited research on how SS impacts employability in developing countries, particularly within the Malaysian context. Considering that labour market dynamics, education systems, and employer expectations vary across regions, findings from Western economies may not fully apply to MTUN graduates. Additionally, the rapid digitalisation of the workforce demands new SS, such as digital communication and virtual collaboration, yet little research has assessed whether current educational programmes adequately equip graduates with these evolving competencies. This gap suggests the need for updated research that integrates digital SS into employability models.

Research on the relationship between SS and GE has produced mixed results, with some studies confirming a strong positive effect. In contrast, others suggest a weaker or insignificant impact depending on contextual factors. On the one hand, substantial evidence supports the notion that SS enhances job market success. For example, Succi and Canovi (2020) revealed that employers consistently prioritise candidates with superior communication and teamwork abilities over those with only technical expertise. Their study also highlighted how SS contribute to increased employability by improving workplace relationships, leadership potential, and career adaptability.

Similarly, Deming (2017) emphasised that SS play a vital role in long-term career progression, as employees with strong interpersonal abilities are more likely to be promoted and entrusted with leadership roles. Furthermore, Clarke (2017) reported that SS, particularly adaptability and problem-solving, enable graduates to transition more effectively into dynamic and unpredictable labour markets, enhancing their job stability and career growth.

While some studies indicate that the influence of SS on employability is context-dependent and not always significant. For instance, Marimuthu and Azizan (2019) discovered that while SS are valued by employers, their impact on actual hiring decisions varies by industry. In highly technical fields, such as engineering and IT, employers tend to prioritise technical expertise over SS, suggesting that SS alone may be insufficient to secure employment in certain professions. Similarly, Ali *et al.* (2020) observed that many Malaysian graduates, particularly those from MTUN institutions, possess strong technical competencies yet struggle with SS. Despite that, their employment prospects remain relatively stable due to high demand for specialised technical knowledge.

Additionally, some researchers argue that SS may not directly contribute to employability unless they are effectively integrated with industry-specific technical skills. For example, Suleman (2018) underscored that while communication and teamwork are desirable attributes, their employability impact is significantly weaker when candidates lack the technical qualifications required for a given role.

Thus, extensive research underscores the importance of SS in employability. However, the findings remain inconclusive due to variations across industries, educational contexts, and labour market conditions. Therefore, future studies should focus on examining the industry-specific relevance of SS, exploring how students develop these competencies, and assessing whether educational institutions are adequately preparing graduates for the evolving digital workforce. In the context of MTUN graduates, targeted interventions such as curriculum reforms, experiential learning programmes, and industry-academia collaborations are necessary to bridge the SS gap and align educational outcomes with employer expectations.

Emotional Intelligence (EI) as a Moderator

EI refers to the capacity to recognise, understand,

and regulate emotions in oneself and others (Goleman, 1995; Mayer & Salovey, 1997). This includes emotional awareness, empathy, and emotional regulation, all of which are key to maintaining interpersonal relationships intact and managing challenges in the workplace. According to Goleman (1995), “EI may be more important than IQ in determining success, particularly in professions that require high levels of interpersonal interaction”. These abilities are especially beneficial in settings that require collaboration, direction, and flexibility. Notably, the role of EI is increasingly acknowledged as an essential determinant of improving employability, as it facilitates interpersonal relationships and decreases workplace conflicts and rage (Lopes *et al.*, 2006; Mayer *et al.*, 2008; Clarke, 2010). Thus, according to research, people with high EI are better able to manage stress and adjust to changes in the organisation, which helps them to be more successful in their careers. Moreover, EI aids the communication and the decision-making that are critical for proper job performance (Boyatzis, 2008).

It acts as a moderator, to a degree, mitigating the impact of SE and SS on employability outcomes. Graduates with high EI, for instance, can effectively respond to organisational pressures related to the job market (e.g., interview performance, networking) through their social competencies (Joseph *et al.*, 2010). Furthermore, the nature of EI to enhance the positive influence of SE by enhancing resilience and perseverance in adverse conditions is well supported by empirical literature (Petrides *et al.*, 2004). Likewise, EI complements the efficacy of SS as it allows graduates to exercise their emotional awareness and empathy in collaborative and problem-solving environments (Bar-On, 2006).

Although the potential impact of EI on employability is widely recognised, its role as a moderating factor in the Malaysian context, particularly among graduates from the MTUN, has yet to be fully explored. Existing research has primarily focused on SE and SS as key determinants of GE (Marimuthu & Azizan, 2019;

Ali *et al.*, 2020). Nonetheless, the interplay between SE and EI remains underexamined, despite growing evidence suggesting that EI can significantly influence how individuals navigate job-related challenges, interpersonal relationships, and career adaptability.

The justification for selecting EI as a moderator stems from its ability to enhance and regulate the effects of SE and SS on employability outcomes. SE contributes to job-seeking persistence and career resilience, while SS, such as communication and teamwork, improve workplace integration. However, without strong EI, graduates may struggle to effectively apply these skills in real-world professional settings. EI plays a critical role in stress management, adaptability, and self-regulation, all of which are essential in highly competitive labour markets. Thus, by moderating the relationship between SE, SS, and employability, EI can determine the extent to which graduates effectively leverage their competencies to secure and retain employment.

Furthermore, in the context of MTUN graduates, who often excel in technical expertise but face challenges in interpersonal competencies, EI could serve as a crucial differentiator. It facilitates better communication and teamwork and enhances decision-making, leadership potential, and conflict resolution, all of which are vital for career success. Considering the increasing emphasis on EI in modern

workplaces, understanding its moderating role will provide valuable insights for curriculum development and employability enhancement programmes. Thus, incorporating EI as a moderator in employability research is essential for developing well-rounded graduates who are both technically proficient and emotionally intelligent, and adaptable to dynamic job market demands.

Research Framework

This study is theoretically grounded in Bandura's Social Cognitive Theory, in which SE is viewed as a critical determinant of behaviour. This is in addition to Goleman's Theory of Emotional Intelligence, where emotional regulation is perceived as critical for success in professions. The model suggests that SE and SS directly either enhance or inhibit the GE, and that higher levels of EI moderate the relationships between SE, SS, and GE, enabling graduates to meet workplace needs more effectively.

As illustrated in Figure 1, the conceptual framework of this study aims to examine the complex relationships between SS, GE, EI as a moderating variable, and SE. Underpinned by Bandura's Social Cognitive Theory and Goleman's Emotional Intelligence Theory, the framework underscores the dynamic interaction between individual characteristics and their collective effect on employability outcomes.

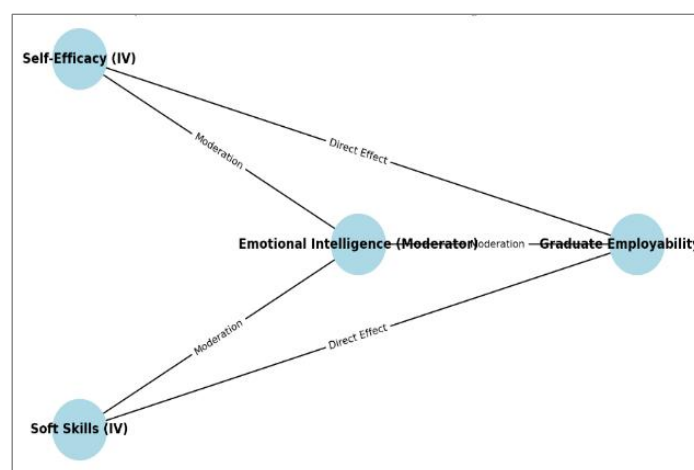


Figure 1: Conceptual framework (the role of emotional intelligence as a moderator)

The DV of the framework is GE, which denotes a graduate's ability to obtain, retain, and advance in employment. Two notable IVs of salience are SE and SS, which are direct predictors of employability. SE is an individual's belief in their ability to execute job-related tasks successfully. It can affect persistence during job searches and adjustment to workplace requirements, helping them be more resilient. Often, SE-savvy graduates are proactive and capable of managing workplace problems well. Likewise, SS (communication, teamwork, problem-solving, etc.) are the crucial non-technical skills that personify the ability to function and integrate at work. According to experts, employers consistently seek these skills, as they promote interpersonal interactions and enhance organisational productivity.

The relationship of SE and SS on employability is moderated by EI, which bolsters the impact of EI on employability. EI is the ability to recognise, understand, and manage emotions in ourselves and others. Such graduates can utilise their SE and SS better to overcome challenges in the workplace. They can also apply EI to cope with stress while job hunting, navigate the changing workplace, and form good professional relationships. In addition, EI also adds value to SS by enabling individuals to regulate their emotions, foster empathy, and develop communication skills to resolve conflicts and work more effectively in a team.

The framework describes the direct and moderated relationships/paths between SE, SS, and GE. Thus, the direct effects demonstrate the role of SE in prompting confidence and resilience, and the significance of SS in being effective in modelling this, generating

employable human capital. Examining moderation effects, we illustrate that EI positively modulates these associations, highlighting the capacity of graduates to cope with rejection, adapt to new contexts, and interact harmoniously. These relationships are illustrated in Figure 1, which highlights that the EI development is to be assured in the higher education institutions' curricula. By promoting SE, SS, and EI together, educational institutes can prepare graduates with a comprehensive skill set to cater to the complex needs of the modern workplace and improve their industry readiness.

Methodology

Research Design and Approach

This study adopts a quantitative cross-sectional design to examine the relationships between SE, SS, and GE, with EI as a moderating variable. In particular, a structured survey instrument was employed to collect data from final-year undergraduate students at four MTUN institutions.

Population and Sampling

The final-year students from UniMAP, UTHM, UTeM, and UMPsA constituted the target population. The sample size reached 370 respondents using the Krejcie and Morgan (1970) table, in addition to a stratified random sampling selection to allow proportional representation of the respondents from the institutions. Thus, to determine the population size and required sample size based on Krejcie and Morgan's (1970) table, the outline of the general principle is presented in Table 2 below.

Table 2: Sample size determination based on population size

Population Size (N)	Required Sample Size (S)
1,000	278
5,000	357
10,000	370
20,000	377
50,000	381

Source: Krejcie, R. V. and Morgan, D. W. (1970)

Since this study determined a sample size of 370 respondents, this suggests that the estimated total population of final-year students across UniMAP, UTHM, UTeM, and UMPSA is approximately 10,000 students.

The selection of 370 respondents aligns with Krejcie and Morgan's recommendation, ensuring that the sample is statistically representative with a 95% confidence level and a margin of error of approximately $\pm 5\%$. Additionally, the use of stratified random sampling ensures proportional representation from each institution, minimising bias and enhancing the generalisability of findings across the MTUN universities.

One of the crucial considerations is the selection of MTUN students as a study sample, as MTUN holds a distinctive position in Malaysia's higher education system. In addition, MTUN, which comprises UniMAP, UTHM, UTeM, and UMPSA, is the foundation that produces graduates with technical expertise that will benefit the nation in industrial and technological fields. Despite these government-subsidised institutions being an integral part of Malaysia's workforce strategy, persistent challenges relating to employer reputation and employment outcomes exist, according to the QS GE Rankings (2024). These universities enjoy positive overall graduate employment rates. However, they can be perceived as being outmatched in terms of quality when it comes to aligning with industry expectations.

This study specifically focuses on the final-year students as they lie at the cusp between education and employment. Their preparedness and perceived employability are critical for analysing the impact of MTUN programmes and identifying skills development gaps. Ultimately, a total sample of 370 respondents (as calculated with Krejcie and Morgan's [1970] formula using stratified random sampling for all four institutions) was selected proportionally from all four institutions. This approach captures the diversity of experiences and readiness levels across different campuses and programmes, thus making the findings more robust and generalisable.

Thus, this study highlights how this situation can ultimately be improved, providing a profound insight into how MTUN institutions should address employability challenges by developing a more workforce-focused curriculum. The findings will be beneficial to students, universities, and the nation's competitiveness, as the local ratings will help nurture industry-ready graduates. Consequently, MTUN students form a crucial population to investigate employability matters and to develop strategies for improvement.

Instrumentation

A structured questionnaire was used, presented in Table 3.

Table 3: Structured questionnaire

Demographics	Gender, age, and university affiliation.
Self-Efficacy	Measured using Bandura's validated scale, assessing belief in task-specific abilities.
Soft Skills	Assessed using items related to communication, teamwork, and problem-solving.
Emotional Intelligence	Measured using a scale derived from Goleman's Emotional Intelligence framework.
Graduate Employability	Evaluated through items addressing job readiness, adaptability, and employability perceptions.

The study employed structured instruments to measure key constructs and demographic

variables, as outlined in Table 3. Demographic data, including gender, age, and university

affiliation, provided essential context for understanding the composition of the sample from the MTUN. SE was assessed using Bandura's validated scale, focusing on graduates' belief in their ability to perform specific tasks, which influences job search persistence and workplace adaptability. Meanwhile, SS, including communication, teamwork, and problem-solving, were evaluated as critical non-technical competencies essential for workplace integration. Moreover, EI was measured using a scale derived from Goleman's Emotional Intelligence framework, emphasising the ability to perceive, interpret, and manage emotions to enhance interpersonal relationships and decision-making. At the same time, GE was measured through items addressing job readiness,

adaptability, and employability perceptions, capturing the preparedness of graduates to secure and progress in their careers. This comprehensive framework, detailed in Table 2, ensured a robust evaluation of the factors influencing GE.

Table 4 summarises all responses in this study, which were captured using a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), to measure participants' agreement with various statements related to SE, SS, EI, and GE. Correspondingly, the collected data were analysed using PLS-SEM via SmartPLS software. This analytical approach was selected for its effectiveness in testing complex models, particularly those involving moderation effects.

Table 4: Instrumentation

Construct	Number of Items	Source/Scale	Scale Type
Self-Efficacy	8	Bandura (1997)	5-point Likert
Soft Skills	10	Robles (2012) and Heckman & Kautz (2012)	5-point Likert
Emotional Intelligence	12	Goleman (1995)	5-point Likert
Graduate Employability	6	Fugate <i>et al.</i> (2004)	5-point Likert

The analysis process comprised several steps. First, descriptive statistics were conducted to summarise demographic profiles and the mean scores for each construct. Next, the measurement model was evaluated for reliability and validity. Indicator reliability was assessed by ensuring outer loadings exceeded 0.7, while internal consistency was confirmed with Cronbach's Alpha values greater than 0.7. Convergent validity was established with Average Variance Extracted (AVE) values exceeding 0.5, and discriminant validity was verified using the Fornell-Larcker criterion.

The structural model assessment involved calculating path coefficients and R^2 values to determine the strength of relationships among

variables. Additionally, moderation analysis was conducted to examine the interaction effects of EI on the relationships between SE and GE, as well as SS and GE. The analysis also evaluated effect sizes (f^2) and predictive relevance (Q^2) to gauge the model's explanatory power. These comprehensive analytical steps provided robust insights into the relationships and the moderation effects underpinning them.

Process of Data Analysis

The sequential process of data analysis conducted in the study begins with descriptive analysis and progresses to more complex statistical evaluations. The first step, descriptive analysis, involved summarising demographic profiles and

mean scores for key constructs, including SE, SS, EI, and GE. This foundational analysis provided an overview of the data, setting the stage for further evaluation. Following this, the measurement model evaluation was performed to ensure reliability and validity, focusing on indicator reliability (outer loadings > 0.7), internal consistency (Cronbach's Alpha > 0.7), convergent validity (AVE > 0.5), and discriminant validity using the Fornell-Larcker criterion. Subsequently, the structural model assessment examined the relationships between variables, assessing path coefficients, R^2 values, and f^2 to determine the strength and direction of these relationships. Finally, the moderation analysis assessed the interaction effects of EI on the relationships between SE and GE, as well as SS and GE, highlighting the moderating role of EI in enhancing employability outcomes. This structured process ensured a comprehensive and robust analysis of the data, addressing the study's research objectives.

Table 5 reveals that respondents reported high levels of perceived SE, SS, and GE, with mean scores of 4.12, 4.03, and 4.15, respectively. In particular, EI had a slightly lower mean score

Ethical Considerations

Ethical approval was obtained to ensure the study adhered to established research ethics standards, and informed consent was secured from all participants. Note that participation was entirely voluntary, with respondents having the right to withdraw at any time. Simultaneously, confidentiality was strictly maintained, ensuring that all data collected was anonymised and used solely for research purposes, safeguarding participants' privacy and rights throughout the study.

Results and Findings

Descriptive Statistics

A total of 370 final-year students from MTUN institutions participated in the study. The demographic analysis suggested that the sample was well-distributed across universities, genders, and age groups. The descriptive analysis in

of 3.89, indicating room for improvement in this area. Meanwhile, the standard deviations ranged between 0.65 and 0.74, indicating a relatively consistent distribution of responses across the sample.

Table 5: Descriptive statistics

Variable	Mean	Standard Deviation (SD)
Self-Efficacy (SE)	4.12	0.65
Soft Skills	4.03	0.72
Emotional Intelligence (EI)	3.89	0.74
Graduate Employability (GE)	4.15	0.68

These results indicate that respondents generally feel confident in their SE, SS, and employability, while slightly less confident in their EI, which could influence their ability to navigate workplace challenges effectively. Overall, these results indicate a high level of perceived SE, SS, and employability among respondents, with slightly lower perceptions of EI.

Measurement Model Evaluation

Reliability

Cronbach's Alpha for all constructs exceeded the threshold of 0.7, confirming internal consistency. Table 6 presents an evaluation of the reliability and validity of the constructs central to this study: SE, SS, EI, and GE. Note that establishing these metrics is crucial to ensure that the constructs are measured consistently and accurately, providing a solid foundation for meaningful analysis.

Table 6: Reliability and validity statistics

Construct	Cronbach's Alpha	Composite Reliability (CR)	AVE
Self-Efficacy (SE)	0.85	0.89	0.61
Soft Skills	0.88	0.91	0.66
Emotional Intelligence (EI)	0.86	0.90	0.63
Graduate Employability (GE)	0.89	0.92	0.68

Cronbach's Alpha, a statistic used to assess internal consistency, indicates how well the items within a construct measure the same underlying concept. Values above 0.7 are considered to reflect strong reliability. In this study, all constructs meet or exceed this threshold, confirming that the items consistently capture their intended concepts. For example, SE has a Cronbach's Alpha of 0.85, indicating a high level of reliability in measuring SE.

Similarly, Composite Reliability (CR) evaluates the overall reliability of each construct by considering the variance of all items collectively. Like Cronbach's Alpha, a CR value above 0.7 signifies good reliability. The CR values for all constructs in this study surpass this benchmark, further affirming their internal consistency. Notably, GE achieves a CR value of 0.92, reflecting a robust and reliable measure of this construct.

AVE, a measure of convergent validity, assesses the extent to which a construct captures the variance of its items relative to measurement error. An AVE value above 0.5 suggests that the construct explains more than half of the variance in its items, confirming its validity. In this study, all constructs meet this criterion, with AVE values ranging from 0.61 for SE to 0.68 for GE. In other words, these results indicate that the items within each construct effectively measure their respective domains, demonstrating strong convergent validity.

In summary, the findings confirm that the constructs used in this study are both reliable and valid, ensuring the robustness of the measurement model. These metrics provide confidence in the quality of the data and the suitability of the

constructs for subsequent analysis, strengthening the credibility of the study's findings.

Moderation Analysis

The study explored the moderating role of EI in shaping the relationships between SE, SS, and GE. The analysis was conducted using interaction terms to determine whether EI amplified the effects of these IVs on employability outcomes. The findings revealed interesting patterns that highlight the nuanced role of EI in enhancing specific competencies.

EI was observed to significantly moderate the relationship between SE and GE, with a positive interaction effect ($\beta = 0.18, p < 0.05$). This result indicates that graduates with higher levels of EI were better able to leverage their confidence and resilience (SE) to improve their employability. Similarly, EI strengthened the relationship between SS and employability, implying a stronger interaction effect ($\beta = 0.22, p < 0.01$). This suggests that emotionally intelligent individuals were more adept at using their communication, teamwork, and problem-solving skills to navigate professional environments effectively.

Interestingly, the analysis reported no significant moderating effect of EI on other pathways, indicating that its influence is selective. These findings highlight that while EI enhances the effects of SE and SS, it does not universally amplify all factors influencing employability. Furthermore, these results underscore the significance of focusing on the interplay between EI and specific competencies to understand how graduates can maximise their potential in the workforce.

Table 7 presents the moderation analysis results, examining the role of EI in influencing the relationships between SE, SS, and GE. The findings indicate that EI significantly moderates both SE and SS in enhancing employability outcomes. Specifically, EI strengthens the effect of SE on GE ($\beta = 0.18, p < 0.05$), suggesting that graduates with higher EI are better able to leverage their confidence and resilience in job-related tasks. On a similar note, EI amplifies the influence of SS on GE ($\beta = 0.22, p < 0.01$), suggesting that emotionally intelligent

individuals can more effectively utilise communication, teamwork, and problem-solving abilities in professional environments. However, no significant moderating effect was detected for other pathways, indicating that EI selectively enhances specific competencies rather than universally affecting all employability factors. These results emphasise the importance of integrating EI development into educational curricula to maximise graduates' employability potential.

Table 7: Moderation Analysis of Emotional Intelligence (EI) on Graduate Employability (GE)

Pathway	Path Coefficient (β)	p-value	Significance	Moderation Effect
SE $\rightarrow$ GE (Direct Effect)	0.35	< 0.01	Significant	-
Soft Skills $\rightarrow$ GE (Direct Effect)	0.42	< 0.01	Significant	-
SE $\times$ EI $\rightarrow$ GE (Moderation Effect)	0.18	< 0.05	Significant	EI enhances SE's effect on GE
Soft Skills $\times$ EI $\rightarrow$ GE (Moderation Effect)	0.22	< 0.01	Significant	EI strengthens the soft skills' effect on GE

The study investigated the direct effects of SE and SS on GE among students from the MTUN, with EI serving as a moderating variable. The findings, as presented in Table 8,

demonstrate significant contributions of SE and SS to GE, emphasising their critical role in shaping graduates' readiness and success in the labour market.

Table 8: Hypothesis testing summary

Hypothesis	Result
H1: SE positively influences GE.	Supported
H2: Soft skills positively influence GE.	Supported
H3: EI moderates SE $\rightarrow$ GE.	Supported
H4: EI moderates Soft Skills $\rightarrow$ GE.	Supported

SS in particular, emerged as a stronger predictor of GE, highlighting the importance of interpersonal and behavioural competencies in enhancing employability. Furthermore, EI was noted to enhance the effects of both SE and SS on GE, confirming its moderating role. As such, graduates with high EI are better equipped to manage workplace challenges, leveraging their

SE and SS effectively in professional settings. Following this, these results underscore the need for higher education institutions to integrate EI training alongside SE and SS development in their curricula. Such integration can better prepare students to meet the dynamic demands of the job market and improve their career readiness.

Discussion

This section presents an in-depth analysis of the findings, aligning them with the study's objectives, the existing literature, and their practical implications. By exploring how the results contribute to the understanding of GE, this discussion highlights the interplay between SE, SS, and EI in shaping graduates' career readiness. The analysis also examines how these findings support or challenge prior research, offering new insights into the factors influencing employability. Furthermore, the implications for higher education institutions, employers, and policymakers are discussed, emphasising actionable strategies to bridge the gap between academic outcomes and workforce demands. Additionally, this overview sets the foundation for interpreting the results in the broader context of employability research and practice.

The Influence of Self-Efficacy on Graduate Employability

The results confirm that SE significantly influences GE. Graduates with high SE are more confident in their abilities to adapt, problem-solve, and perform in the workplace, aligning with Bandura's Social Cognitive Theory (1997). This finding supports prior research that associates SE with job search persistence and adaptability (Zimmerman, 2000; Petruzzello, 2020). Moreover, the positive relationship between SE and GE highlights the need for higher education institutions to provide environments that foster mastery experiences, mentorship, and opportunities for skill development.

The Role of Soft Skills in Graduate Employability

SS were observed to be the strongest predictor of GE among MTUN graduates, emphasising their critical importance in today's workplace. Communication, teamwork, and problem-solving skills are highly valued by employers and are essential for navigating professional environments (Robles, 2012; Succi & Canovi, 2020). This finding highlights the persistent skills

gap among graduates, particularly from technical universities, where the focus often remains on hard skills. Thus, integrating SS training into technical curricula is essential to bridge this gap.

Emotional Intelligence as a Moderator

EI was demonstrated to enhance the effects of SE and SS on GE, consistent with Goleman's Emotional Intelligence Theory (1995). Graduates with higher EI can better manage workplace stress, build relationships, and apply their skills in emotionally complex situations. The moderation effect of EI underscores its role as a catalyst, amplifying the impact of both SE and SS. However, the selective moderation suggests that EI's effects are more prominent in interpersonal and adaptive scenarios, requiring emotional regulation and social awareness.

Implications for Higher Education and Policy

MTUN institutions should implement structured programmes to foster SE, SS, and EI among students. These programmes can integrate experiential learning opportunities, such as internships and collaborations with industry, to provide practical avenues for skill enhancement. In addition, workshops focusing on EI and resilience can further equip students to manage the emotional demands of modern workplaces, ensuring they are well-prepared for professional challenges.

Employers must prioritise SS and EI in their recruitment and performance evaluation processes, recognising their significance in workplace success. In line with this, partnerships between employers and universities can help align academic curricula with industry requirements, ensuring graduates possess the skills most valued by employers. These collaborations can also provide students with exposure to real-world scenarios, thereby bridging the gap between academic learning and professional application.

Policymakers should incentivise universities to design employability-focused programmes that integrate technical and non-technical skill development. Moreover, national-level frameworks for GE should explicitly include EI as a critical competency, encouraging institutions to embed it into their curricula. Such policy measures can help create a cohesive approach to graduate readiness, aligning academic outcomes with the demands of the workforce.

Alignment with Literature

This study aligns with and builds upon existing research on the predictors of GE by incorporating SE, SS, and EI as key components. Notably, SE, as highlighted by Bandura (1997), plays a vital role in shaping an individual's belief in their capacity to perform tasks and achieve goals, directly influencing career success (Pajares, 2002; Betz & Hackett, 2006).

Similarly, SS, such as communication, teamwork, and adaptability, are consistently emphasised as critical determinants of employability in a rapidly evolving job market (Andrews & Higson, 2008; Robles, 2012). While these components have been extensively studied, the inclusion of EI as a moderating factor offers deeper insights into the complex interplay of these predictors. Drawing on Goleman's (1995) foundational work on EI, recent studies (Clarke, 2010; Joseph *et al.*, 2015) underscores its significance in enhancing interpersonal interactions and emotional resilience, both of which are vital for navigating workplace challenges.

By validating these theoretical perspectives, this study reinforces the cognitive, behavioural, and emotional dimensions of employability, aligning with the broader frameworks proposed by Fugate, Kinicki, and Ashforth (2004) and Yorke (2006), who emphasised a multidimensional approach to understanding employability.

Limitations

Despite its valuable contributions, this study has several limitations that must be acknowledged. Firstly, the cross-sectional design of the research restricts the ability to establish causal relationships between SE, SS, EI, and employability outcomes. Hence, longitudinal studies could provide deeper insights into how these factors evolve and interact over time, offering a more comprehensive understanding of their impact on GE.

Secondly, the study is context-specific, focusing exclusively on the MTUN. While this provides valuable insights into the employability predictors within this setting, the findings may not be directly applicable to other educational systems, cultural contexts, or diverse labour markets, where different social, economic, and institutional factors might influence the results. Additionally, the reliance on self-reported measures for data collection introduces the potential for response bias, as participants may overestimate their competencies or provide socially desirable responses rather than accurate reflections of their abilities.

These limitations should be considered when interpreting the findings, as they highlight opportunities for future research to expand the scope, diversify methodologies, and incorporate broader contexts to strengthen the understanding of factors influencing graduate employability.

Conclusions

This study underscores the importance of SE, SS, and EI in shaping GE, particularly within the context of the MTUN. By integrating EI as a moderating factor, the research extends existing literature and highlights the interplay of cognitive, behavioural, and emotional competencies in influencing employability outcomes. While the findings validate theoretical frameworks such as Bandura's (1997) concept of SE and Goleman's (1995) EI model, the study also reveals the necessity for structured interventions.

This includes curriculum enhancements, employer engagement, and supportive policy initiatives to better equip graduates for the workforce. However, the study's limitations, including its cross-sectional design, reliance on self-reported measures, and context-specific focus, suggest the need for further exploration. In response, future research should adopt longitudinal designs, expand to diverse cultural and educational settings, and explore additional moderators like digital literacy and cultural intelligence. Overall, the findings provide valuable insights for academia, industry, and policymakers, offering a roadmap to enhance GE and address the evolving demands of the global job market.

Acknowledgements

The author extends heartfelt gratitude to Associate Professor Dr. Ummy Naiemah Saraih for her invaluable guidance, critical feedback, and continuous support throughout this research. This work forms part of a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Universiti Malaysia Perlis. Special thanks are also extended to the co-author for their valuable contributions and collaboration in this article.

Conflict of Interest Statement

The authors declare that they have no conflict of interest.

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