The mediating role of career decision self-efficacy on the relationship of career emotional intelligence and self-esteem with career adaptability among university students

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ABSTRACT
This study was undertaken to investigate whether career decision self-efficacy (CDSE) could mediate the relationships of career adaptability with emotional intelligence and with self-esteem among university students. Using cluster random sampling, a total of 205 university students aged 22 to 24 years (M age = 23.0, SD = .875) were selected as respondents. The strongest linear relationship was found between CDSE and career adaptability (r = .568, p = .001). Besides CDSE the main predictor of career adaptability (β = .354, p = .000), emotional intelligence (β = .282, p = .000) and self-esteem (β = .145, p = .019) also contributed significantly to career adaptability. CDSE was found to significantly mediate the influences of emotional intelligence and self-esteem on career adaptability. These results suggest that undergraduate students’ emotional intelligence, self-esteem and CDSE are substantially associated with career adaptability, which plays an important role in workforce efficiency and graduates’ employability.

Introduction
Individuals pay a lot of attention to the formation of career pathways that would lead to a satisfying life. In fact, many people construct careers that match how they view the direction and meaning of life (Savickas, 2013). Therefore, one of the most important requisites when selecting a career path is career adaptability. In recent times, the need for career adaptability in the local and global labour market has increased considerably (K. Maree, 2017). Employers seek workers who are able to adapt and react quickly to change (Carter, 2019), and deal effectively with multiple tasks as a result of rapid changes in their organizations (Van Vianen et al., 2012). Hence, it is vital to ensure that job-seekers, particularly undergraduate students who are on the cusp of entering the labour market, have what it takes to succeed in their careers.

Besides having specialized skills and knowledge, university graduates should also be flexible, have a positive attitude towards work, be self-motivated, and be willing to learn new skills and acquire new technical knowledge (Robles, 2012). Thus, it is extremely important to identify factors that influence career adaptability so that students can be familiar with appropriate intervention plans before they graduate. As Malaysia aims to be a developed nation in the near future, there is urgent need for a workforce that possesses high levels of career adaptability to ensure workforce efficiency and graduate employability. Low career adaptability among fresh graduates has resulted in many of them not being prepared to be part of the nation’s workforce at an early part of their adult life. As
a consequence, the problem needs to be urgently addressed with the aid of all stakeholders in higher education institutions.

In light of the present-day volatile work environment, career adaptability is vital to forge successful careers. According to the Department of Statistics Malaysia (2018), the graduate employability rate for 2018 was 80.2%, with 58.6% attaining jobs, including entrepreneurial initiatives, 15.7% furthered their education, 1.3% underwent training for skill improvement, and 4.6% were waiting for a job placement. The Malaysia Employers Federation (MEF) predicted that the job market in 2020 would not be promising, and that those with tertiary qualifications would face difficulty finding employment (Aun, 2020). Besides skill mismatch, unemployment and under-employment in today’s global labour market are partially due to inadequate career adaptability among young adult job-seekers (Kwon, 2019).

Career adaptability is essential for the navigation of constant change (J. B. Maree, 2012). Those who are highly adaptable in their vocations have greater ability to adjust to meet challenges of the working world (Autin et al., 2017). Career adaptability has been shown to relate to personality (Teixeira et al., 2012), employability skills (De Guzman & Choi, 2013), and orientation to happiness and work stress (Johnston et al., 2013). While some recent studies also examine relationships between individual characteristics and career adaptability (Atac et al., 2018), very few have investigated the influence of emotional intelligence, self-esteem, and career decision self-efficacy (CDSE) on career adaptability among university students, particularly in the Malaysian context. To the best of the authors’ knowledge, research to date has not ventured sufficiently far in examining the experiences of undergraduate students concerning their personal resources vis-à-vis career adaptability.

Studies have indicated that personal resources such as emotional intelligence indirectly affect career decision and self-perceived employability (Harry, 2017). Furthermore, career adaptability is significantly associated with employability (Rudolph et al., 2017). Career adaptability may account for the effect of emotional intelligence on career-related outcomes (Udayar et al., 2018). Past research has confirmed the importance of developing emotional intelligence in order to strengthen one’s career adaptability (Coetzee & Harry, 2014). Emotional intelligence is a good predictor of career adaptability; both variables are self-regulatory strategies that serve as important psychosocial resources in personal and environmental interaction (Savickas & Porfeli, 2012). Furthermore, emotional intelligence and career adaptability are flexible cognitive–affective characteristics that can be improved through training, counselling, mentoring, and coaching (Johnston et al., 2013; Savickas & Porfeli, 2012). Where undergraduate students are concerned, facilitating the development of their emotional intelligence as part of their personal resources would be a beneficial exercise.

People with a high degree of self-esteem are viewed as having high self-perceived competency and self-image (Baumeister et al., 2003). They are motivated to set high career goals and act accordingly to prove their positive self-regard. According to Savickas and Porfeli (2012), individuals with a high level of self-esteem are more likely to involve themselves in activities that are related to their career advancement, and thus would develop applicable career-related personalities and adaptability. They feel confident when facing challenges and would adapt readily to necessary changes (Atac et al., 2018). Thus, self-esteem, or the individual’s perception regarding self-worth, would enhance his or her ability to address changes at the workplace. Past studies conducted by Atac et al. (2018), Hui et al. (2018), and Ismail (2017) also point to self-esteem being a significant predictor of career adaptability. In other words, career adaptability could be increased via the improvement of self-esteem, and this would lead to higher employability. Among its objectives, the present study hence seeks to analyse the relationship between self-esteem and career adaptability among undergraduate students.

In the current investigation, we apply the career construction theory in an educational setting (Savickas, 2013). The theory suggests that the adaptation of individuals within an organization, including the manner in which they prepare to take up their work roles and the way that they deal with career transition and changes, influences career success. Furthermore, the career construction
theory views adaptation to these transitions as being fostered by five behaviours, viz. orientation, exploration, establishment, management and disengagement (Savickas, 2013). All these constructive activities form a cycle of adaptation. For example, fresh graduates begin their new jobs with a period of growth when they take on new roles that include exploration of the requirements and routines of those roles. Subsequently, they become established in their respective roles, manage the roles for a certain period and slowly disengage from them when other job opportunities emerge (Akkermans et al., 2018).

Past studies on career adaptability in career decision-making among students have shown that those with higher levels of career aspirations mediated by CDSE demonstrated higher adaptability (Gadassi et al., 2013; Zhou et al., 2016). Recent studies have also shown that CDSE could significantly predict career adaptability (Bocciardi et al., 2017; Kim & Lee, 2018). Furthermore, CDSE helps students to be better prepared for their future careers. In addition, past research also revealed that individuals with high levels of CDSE have a tendency to visualize future success for themselves (Huang, 2015). This characteristic is vital for the successful performance of tasks and it has a great impact on work behaviour, regardless of knowledge and skills (Bandura, 1997).

Hence, along with hypothesizing direct relations between emotional intelligence and self-esteem with career adaptability, we also aimed to explore CDSE as a mediator that might explain undergraduate students’ confidence to perform a specific course of action, accomplish given tasks, and obtain the desired results. Therefore, we propose the following hypothesis: CDSE mediates the relationship of career adaptability with emotional intelligence and self-esteem.

Hence, the objectives of the present study were: 1) to examine the influence of personal resources (emotional intelligence and self-esteem) on career adaptability and 2) to investigate the mediating role of CDSE on the relationship between personal resources and career adaptability among undergraduate students.

**Research framework**

Figure 1 shows the mediating effect of CDSE on the relationship of career adaptability with emotional intelligence and self-esteem among undergraduate students.

The conceptual framework consists of two independent variables, namely emotional intelligence and self-esteem. The intervening variable is CDSE that will be tested as a mediator in this study. Career adaptability constitutes the dependent variable.

![Figure 1. Framework of the study showing the independent variables, the mediator, and the dependent variable.](image-url)
Materials and methods

Study area, population, design and period

This study was conducted in Universiti Putra Malaysia (UPM), located at Serdang, Selangor, which is one of Malaysia's premier research universities and presently UPM is a home for more than 30,000 students. This study involved the final year undergraduate students. This study employed a descriptive correlation design with quantitative data collection methods. A cluster random sampling approach was adopted and questionnaires were used as research instruments for data collection. The questionnaires were distributed and collected between November 2018 until December 2018 after the pilot study had been successfully conducted and was deemed reliable. During the data collection process, the researcher approached the participants before lecture hours to explain briefly the purpose of the research and assured the participants of data confidentiality.

Sampling method

The total population sampling was executed; the participants were final year students who had completed industrial training at Universiti Putra Malaysia. The researcher split the population into separate groups according to their respective faculties. After obtaining approval from the university review board for a cross-sectional study, we recruited 205 undergraduate students.

Sample size calculation

Sample size was determined by G Power, a tool that can perform accurate statistical power analysis for common statistical tests in the behavioural research field. The analytical parameters were as follows: $f_2 = 0.15$; $\alpha = 0.05$; power = 0.95; number of tested predictors = 3. A medium effect size ($f_2 = 0.15$) was set according to Erdfelder et al. (1996). Based on the G power analysis, the minimum sample size for running the Pearson Product Moment Correlation Coefficient and the Multiple Linear Regression was 115 and 119, respectively. However, the researcher sampled additional subjects to ensure the reliability of the study and as a precaution against non-response error. Hence, in the final cluster of the random sample, there were 205 participants, comprising 144 (70.2%) females and 61 (29.8%) males of a mean age of 23.0 years ($SD = .875$). These students were in the final year of the bachelor degree programme in four different fields, viz. agricultural engineering (25.8%), business administration (23.9%), environmental management (24.4%), and human resources development 53 (25.9%).

Study instruments

Emotional intelligence in this study was measured using the Schutte Self Report Emotional Intelligence Test (SSEIT). The evaluation covered four dimensions of emotional intelligence as conceptualized by Salovey and Mayer (1990), namely the assessment of emotions in oneself and others, how emotions were expressed, personal emotional control, and how emotions were used to solve problems. SSEIT consists of 33 items, and utilizes a 5-point Likert scale, ranging from 1 = 'strongly disagree' to 5 = 'strongly agree'. High scores on all items collectively show a high degree of emotional intelligence (Schutte et al., 1998).

Self-esteem was measured using the Rosenberg Self-esteem Scale (Rosenberg, 1965) that employs a ten-item Self-Esteem Scale. The participants were asked to indicate how much they agreed with each of the ten items on a five-point Likert scale, ranging from 'strongly disagree' to 'strongly agree'. Sample items included ‘On the whole, I am satisfied with myself’ and ‘I certainly feel useless at times’.
The Career Decision Self-Efficacy Scale–Short Form (Betz et al., 1996) was used to measure the participants’ levels of personal competency in handling specific tasks. A 25-item questionnaire covered five domains, namely self-appraisal, occupational information, goal selection, making plans for the future, and problem solving. Examples of such items included ‘I can decide a career fit for my preferred lifestyle’ and ‘I can choose a major or career that I am interested in.’ Participants responded to the items on a 5-point Likert scale, ranging from 1 (‘strongly disagree’) to 5 (‘strongly agree’). The Career Adapt-Abilities Scale (CAAS) (Savickas & Porfeli, 2012) was used to measure the participants’ career adaptability. The assessment consisted of 24 items that measured adaptive resources of career concern, control, curiosity, and confidence. The participants responded to each item on a scale from 1 (‘not strong’) to 5 (‘strongest’). Examples of items included in the questionnaire were ‘I make decisions by myself’ and ‘I am concerned about my career.’

A pilot study was conducted to assess the reliability of the study instrument. The generated values of cronbach alpha for the study dimensions were all greater than 0.70, specifically, .814 (emotional intelligence), .880 (self-esteem), .822 (CDSE), and .954 (career adaptability). This study only employed the content validity. An assumption is that the researchers have developed good working definitions of the study constructs to frame the evaluation of the appropriateness of the content of the instruments that were adapted from Schutte et al. (1998), Rosenberg (1965), Betz et al. (1996), and Savickas and Porfeli (2012).

**Statistical analysis**

The data collected in the study were analysed using SPSS version 24. Descriptive statistics such as frequency, percentage, measurement of central tendency, and measure of variability were used to characterize the level of variability in this study. Inferential statistics was used as the frame of statistical computations applicable in making inferences from the findings. The Pearson product moment correlation was used to establish the direction and magnitude of relationship between two variables (Babbie, 2010). Guilford’s (1973) Rule of Thumb was used to determine the strength of the relationship between variables. A multiple linear regression analysis was executed where the standardized regression coefficients, beta, of the independent variables (emotional intelligence, self-esteem, and CDSE) reflected their respective potential influences on the dependent variable, career adaptability. The mediation role of CDSE on the relationship of emotional intelligence and self-esteem with career adaptability was analysed using PROCESS IBM SPSS 24, as suggested by (Preacher and Hayes, 2008). This method examines the total direct effect and the indirect effect of CDSE as mediator in the relationship between the independent variables and career adaptability. The PROCESS IBM SPSS 24 procedure by Hayes (2013) was used for the bootstrapping analysis of mediation in this study. The method examines the total effect and the indirect effect of the variable, CDSE, as a mediator in the relationship of the independent variables (emotional intelligence and self-esteem) with career adaptability, controlling for the other antecedents. This approach is less laborious than that of Baron and Kenny (1986) adopted in mediation testing by Yang et al. (2019) in their research on career adaptability, work engagement, and employee well-being. It is also deemed superior to the method of Hu et al. (2018) used in their research on career goal importance and the relationship between career feedback and career-related stress. The PROCESS procedure constructs bias-corrected percentile and Monte Carlo Confidence Intervals (CI for indirect effects). It is considered superior relative to other approaches such as that by Baron and Kenny (1986) in mediation testing, according to Jiang (2016) who used the technique in her research on university students.

**RESULTS**

The relationships of emotional intelligence, self-esteem, CDSE and career adaptability level were analysed using the Pearson Product-Moment correlation. Preliminary analyses were performed to ensure that there were no violations of the assumptions of normality and linearity. Table 1 shows
Table 1. Bivariate correlations between emotional intelligence, self-esteem, career decision self-efficacy and career adaptability among undergraduate students (n = 205).

| Variables          | 1    | 2       | 3    | 4    |
|--------------------|------|---------|------|------|
| 1. Career adaptability | 1.00 |         |      |      |
| 2. Emotional intelligence | .539** | 1.00    |      |      |
| 3. Self-esteem      | .408** | .426** | 1.00 |      |
| 4. CDSE             | .568** | .551** | .403** | 1.00 |

Note: ** indicates levels of statistical significance: p < 0.001 level (2-tailed)

a strong and positive correlation of emotional intelligence (r = .539, p < .000), self-esteem (r = .408, p < .000), and CDSE (r = .568, p < .000) with career adaptability. Hence, high scores on emotional intelligence, self-esteem and career decision self-efficacy would predict strong association with career adaptability among undergraduate students.

The data were further analysed using the multiple regression analysis with the forced enter method (Table 2) to determine the contributions of emotional intelligence, self-esteem and CDSE to variations in career adaptability among undergraduate students. It was found that CDSE (β = .354, p = .000), emotional intelligence (β = .282, p = .000) and self-esteem (β = .145, p = .019) significantly influenced career adaptability of the undergraduate students who participated in this study (F (3, 201) = 47.012, p < .001). The largest beta coefficient was .354 for CDSE, making it the strongest contribution in explaining career adaptability. The coefficient of determination, R² = 0.404, suggested that 40.4% of the variance in career adaptability among undergraduate students was explained by the three independent variables, viz. emotional intelligence, self-esteem and CDSE.

Table 3 presents the results of the mediating effect of career decision self-efficacy (CDSE) on the relationship between emotional intelligence and career adaptability. The determination of CDSE mediation is based on ‘zero’ (0) value location in the confidence interval (CI) (Hayes, 2013); if CI does not encompass a ‘zero’ (0) value, the indirect or mediation effect is statistically significant.

Table 3 indicates that the bias-corrected 95% percentile of CI (β = 0.276, CI = 0.108, 0.523, p < 0.05) for emotional intelligence did not include a zero value. These findings hence revealed that the indirect effect of emotional intelligence on career adaptability through the mediator (CDSE) was statistically significant. As for self-esteem, the bias-corrected 95% percentile of CI (β = 0.169, CI = 0.095, 0.255, p < 0.05) did not include a zero value. These findings also revealed that the indirect effect of self-esteem on career adaptability through the mediator (CDSE) was statistically significant. Therefore, the outcome of the analysis indicates that emotional intelligence and self-esteem are vital to increasing the level of career adaptability, especially with CDSE acting as mediator.

Discussion

By exploring the interrelationships of emotional intelligence, self-esteem, career adaptability, and CDSE of university students, this study seeks to expand research concerning these variables. First, our research showed that career adaptability was correlated with emotional intelligence, self-esteem and CDSE. Career decision self-efficacy was the strongest predictor of career adaptability. Pinquart et al. (2002) illustrated the importance of CDSE in successful school-to-work transition and adaptation that
would influence future career development. The results of this study are also in consonance with reports from other studies which found that CDSE significantly predicted career adaptability among youth, students of higher education institutions, as well as existing workers (Gadassi et al., 2013; Loo & Choy, 2013). CDSE influences career decisions, achievements, and adjustment behaviours, all of which are necessary for career adaptability development. As mentioned by Chen et al. (2020), to enhance career adaptability among university students, it is vital for university educators and counsellors to gauge their students’ level of CDSE so as to create an environment that is conducive for its development. The results of this study suggest that enhancing CDSE among university students would directly improve their career adaptability when they seek employment upon graduation.

The second important predictor of career adaptability was emotional intelligence. The findings in this study indicated that emotional intelligence was positively related with career adaptability. This finding is in line with research conducted by Coetzee and Harry (2014) that found emotional intelligence to be a predictor of employees’ career adaptability. The results of the present study also corroborate previous studies (Arefnasab & Babamahmoodi, 2012; Schutte et al., 2008) reporting that the ability to manage one’s emotions, as well as the emotions of others, has a positive impact on the performance of the individual as well as that of the organization. As the working world is highly challenging and demanding, the ability to control one’s own emotions and manage those of others would assist the employee to be more composed and in control of any situation. For instance, graduates nowadays have unrealistic expectations of their future career environment when entering the job market (Paul & Michael, 2017). When faced with the reality, they need to be able to cope with disappointment that may arise so that their performance would not be adversely affected. An employee with a high level of emotional intelligence would be able to control and express emotions appropriately and not be affected by negative emotions when facing unpredictable or unfamiliar work-related challenges. Hence, emotional intelligence helps the individual adapt and fit into a new environment more easily, thus reducing work stress (Darvishmotevali et al., 2018).

The third predictor, self-esteem, was also found to be positively related with career adaptability. This is consistent with findings from a study in Hong Kong (Hui et al., 2018). The findings of our study confirm the literature regarding the relationships between self-esteem and career adaptability. Undergraduate students with higher perceptions of self-esteem tend to have a more positive view of themselves in terms of career adaptability (Atac et al., 2018). They are confident of being able to adjust with ease to the changing needs and transitions of work life. Self-esteem manifests itself as a critical resource, especially in the early stages of career development. This finding that self-esteem significantly predicted career adaptability is supported by previous studies (Duffy, 2010; Rossier et al., 2012; Van Vianen et al., 2012). Students who have higher self-esteem are predicted to have stronger career adaptability as a whole; they express more concern, control, curiosity and confidence regarding their future careers. They regard themselves as being prepared to adjust to changing needs and transitions, either from school to work or from one job to another. As self-esteem enhances career adaptability too, students should be encouraged to be more confident in taking the initiative to prepare for their future careers.

In this study, we also focused on the mediating effect of CDSE on the relationship of emotional intelligence and self-esteem with career adaptability among undergraduate students. The results of this study indicated that CDSE did mediate the influence of personal resources towards career
adaptability. This outcome is consistent with the studies by Hou et al. (2019) and Kim and Lee (2018) that identified the mediating effects of CDSE in social support and locus of control towards career adaptability.

In addition, the social cognitive career theory also assumes that CDSE has a direct relationship with the set goals of an individual. Accordingly, university students who have higher CDSE would find it easier to achieve their set goals (reflecting career adaptability). In short, the results of this study imply that efforts towards improving CDSE among the university students could improve their career adaptability significantly.

Implications

This study provided the evidence that CDSE, emotional intelligence, and self-esteem directly affected the level of career adaptability of final year undergraduate students of a research university in Malaysia. With regard to practical implications, such personal resources may be used to enhance and also explain career adaptability of final year undergraduate students as a whole. The implication of this finding is that since final year university students who exhibit high levels of CDSE, emotional intelligence, and self-esteem are likely to have high career adaptability, educators, counsellors, and human resources practitioners should embark on intervention to boost career adaptability, taking into consideration these variables. Students should be enabled to enhance their personal resources through innovative instruction, career counselling services, training and management, career exploration database, and regular career intervention programmes.

Limitations of the study

This study investigated career adaptability among final year undergraduate students in only one public Malaysian university. It is suggested that similar studies should be conducted with students from various other public and private higher education institutions in Malaysia.

A cross-sectional self-reported data collection technique was used for the current study to assess career adaptability among final year students. The researchers recommend that future researchers could use a longitudinal strategy to examine the relationships tested in this study in follow-up investigations at the workplaces of the same generation of students after their graduation. Furthermore, since career adaptability is generally important to the smooth transition of university students from an educational setting to the competitive labour market, the researchers recommend that this study be replicated in other parts of the world, especially in developing nations where youth or graduate unemployment poses a serious challenge.

The sample size selected in this study was limited. Perhaps a larger sample size would provide greater confidence in conclusions drawn from this study. The findings of this study require more university students to participate in repeated tests for acceptance of the universality of our results.

Conclusion

This study has verified the mediating effect of CDSE on the relationship of university students’ emotional intelligence and self-esteem with career adaptability. The findings provide a theoretical basis for improving the career adaptability of university students. Our team will further focus on specific intervention studies to explore effective career development interventions to promote career adaptability of undergraduates.

This study contributes to the body of knowledge in terms of developing a research framework in the context of undergraduate students in Malaysia. It also highlights career decision self-efficacy (CDSE) as a mediator in the relationship between personal resources and career adaptability. In addition, this study also provides career development information for HRD professionals, career counsellors, lecturers, government, and family institutions so that additional support can be given to
university students who are otherwise likely to experience no change, or even negative change, in career adaptability. Such information would be helpful to facilitate undergraduate students when making the transition from the lecture hall to the working environment.

Finally, this study seeks to create awareness among university students of the importance of personal resources such as CDSE, emotional intelligence, and self-esteem to improve their level of career adaptability. University students should capitalize on these personal resources and take steps to enhance them in order to embark on successful career development.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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