



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

JULY 2021, VOLUME 9, ISSUE 3, 78 - 92

E-ISSN NO: 2289 – 4489

THE EFFECT OF CAREER MANAGEMENT SKILLS ON CAREER DEVELOPMENT ABILITIES: PERSPECTIVES FROM TVET COLLEGE STUDENTS

Simin Ghavifekr (PhD)^{1*} & Omaymah Radwan (PhD)²

ABSTRACT

The paper aimed to analyze the effect of Career Management Skills (CMS) on Career Development Abilities (CDA) from TVET college students' perspectives. Moreover, the main purpose of the paper was to examine the moderating effect of gender on CMS and CDA for TVET college students. The Study applied a quantitative research design by randomly distributing questionnaires with 86 items to TVET college students in Kuala Lumpur, Malaysia. The data were analyzed based on 435 responses using SPSS and SEM-AMOS. The results showed that CMS has a significant direct effect on CDA of TVET college students. The findings also presented that gender has no moderating effect on CMS and CDA of TVET college students. Limited studies have examined the effect of CMS on CDA in TVET college students. Therefore, the findings of this study will be more helpful for technical and vocational education policy and decision-makers particularly in terms of highlighting the importance of programs and opportunities for students to develop their CMS and CDA. This can be highly beneficial for the future evaluation and planning in technical colleges to ensure that students are equipped to be essential assets in their respective industries.

Keywords: Career Management Skills, Career Development Abilities, Technical and Vocational Education and Training Colleges, Students, Gender Studies, Malaysia.

[1]
Faculty of Education,
Universiti Malaya,
Malaysia

[2]
Faculty of Education,
Jazan University,
Kingdom of Saudi Arabia

Corresponding Author:
Universiti Malaya
E-mail: drsimin@um.edu.my



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

INTRODUCTION

Due to technological and economic factors, societies around the world have changed rapidly. These remarkable changes in the world have led to redefining the nature of careers and jobs. Employment norms have turned around significantly. The development of organizational structures are affecting the types and the nature of career that graduates eventually go into. Also, the skills required for these careers and jobs are influenced by the changing organizational structures. Accordingly, higher education institutions face a huge pressure in preparing students for these changes in the digitalized and industrial world. In effect, college students have to be aware of this rapid change in jobs and careers, and they should be responsible for their own personal and professional development. Therefore, higher education institutions, specifically technical and vocational colleges, have to prepare students to be equipped with the required skills that allow them to manage their future career.

The UNESCO Report (Quality and Employability in Higher Education) in 2018 emphasizes the importance of gaining the required skills for college graduates to manage and direct their career on a long-term basis. In this regard, Career Management Skills (CMS) have benefits for college students as it helps them to find a suitable job and manage their skills for lifetime employability. CMS is an essential tool for any individual, especially for school leavers. Students who have less knowledge about their career will end up choosing a job that does not fit their personal expectations and the industrial needs (Dries, 2011). Zakaria et al. (2019) pointed out that most vocational students manifested low levels of career management skills. Thus, technical and vocational colleges are considered as an essential place to develop CMS since they are considered as a platform for lifelong learning. Over the years, vocational colleges have focused on technical competencies and industry practices that provide an education system that meets all the requirements of industry and labour market. They also concentrate on raising employment opportunities for students' career development (Lawson, 2004; Zakaria et al., 2019). Indeed, education system of vocational colleges presents a potential venue to increase the skills of prospective workers and the quality of human capital.

The rapid changes in technology and economy, enable students to adapt to the latest trends to secure their future career through developmental abilities. Career Development Ability (CDA) indicates an individual's readiness to select and manage his or her own career (Talib et al., 2015). Several studies highlighted that an individual's career development could be achieved through an integrated process of gaining industry-related abilities, attitudes, maturity, and interest (Ballout, 2009; Hirschi & Lage, 2008; Talib et al., 2015; Roaten, 2004; Seibert et al., 2013). Students must be able to choose their career effectively and accurately; therefore, they need to believe in themselves and show self-confidence (Zakaria et al., 2019). They have to choose a job based on a career that fits their interests and abilities. Various elements affect career decision-making, which includes qualifications, personality, abilities, and self-awareness (Damiri & Yahaya, 2004). However, Several studies have confirmed that there are relationship between gender differences and career management and career development (Tang, Pan, & Newmeyer, 2008). Also, occupational choices are affected by gender and prestige levels. Female might avoid selecting careers that are usually perceived as too masculine or considered as low social prestige status. Number of studies also highlighted that females have different career patterns compared to males (Chung, 2002; Krakauer & Chen, 2003). Though, there is still a lack of studies that investigated about gender effect on CMS and CDA in the context of TVET colleges.

This current study focuses on how students from TVET colleges assess the ways and opportunities they have in terms of developing their abilities and skills needed for their future career. This study is in line with the fourth shift in Malaysian Higher Education Blueprint (2015-2025) that stresses the need to produce relevant graduates by improving the quality of TVET students. Malaysia will require a 2.5-fold rise in the enrolment rate in TVET institutions by 2025. Thus, the ministry of education relies on vocational colleges, community colleges, and polytechnics in meeting the demands of higher enrolment and the aspiration to render skilled graduates in order to keep up with the rapid changes in various industries and enhance their opportunity for career development (Malaysia Higher Education Blueprint, 2015).



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

Despite the state initiatives in higher education, students were reported to show less knowledge about the career that they need in the future. They make choices in selecting a job based on a specific criteria without reflecting on their interests and talent. As such, students make a wrong choice with respect to their future career because they do not have a good insight about themselves, they lack interest, or they are even unable to solve their problems (Willner, Gati & Guan, 2015). Therefore, they need to be guided through suitable training programs that may help them to make a decision about their future career and their professional development path that fit their skills, abilities, and interest. Indeed, CMS helps students to build their future career by matching the skills that they learned in TVET institutions because CMS pushes students to identify their values, skills, and interest while preparing them with the right set of abilities by being willing to seek and give feedback from others, especially those from different distinguished areas of their academic, professional, and personal development. Thus, this allows students to make a decision based on the accessible and available opportunities.

Relatively, CDA is a key to identifying the specific requirements of preparing students to get needed skills in career management. Zakaria et al. (2019) pointed out that there is an overlap between CMS and CDA. This indicates that individuals need CMS in their career development, and this demonstrates a clear relationship between CMS and CDA of individuals (Zakaria et al., 2019). However, previous studies did not clarify the nature of this relationship or whether CMS affects CDA. They also did not examine if there are moderation or mediation components between CMS and CDA. Therefore, the current study aims to analyze the effect of CMS on CDA in TVET colleges. Likewise, this paper examines the moderating effect of TVET students' gender on CMS and CDA. Accordingly, this study seeks to answer the following questions:

- 1) Do career management skills (CMS) affect career development abilities (CDA) of TVET colleges students?
- 2) Does the gender of TVET college students moderate the effects of CMS on CDA?

LITERATURE REVIEW AND THEORETICAL DEVELOPMENT

Technical and Vocational Education Training (TVET)

TVET has been described by United Nations Educational, Scientific and Cultural Organization (UNESCO) as a type of educational sector that covers the following: the learning of technologies and related sciences; achievement of applied skills; and acquisition of knowledge associated to professions in several divisions of the economy and social life. According to Pavlova (2014), a number of nations have taken serious steps to support the monitoring frameworks and strategic direction for TVET to create collaborations with other private sectors. Various industrial trades and economic activities require highly skilled employees; therefore, there is an increasing attention to TVET. The development of human resources is an essential component in any nation because it allows the different population to compete worldwide. Zakaria et al. (2019) pointed out that a number of Malaysian teenagers seek jobs that could not be related to the requirements set by the state. However, Nik Hairi Omar et al. (2012) investigated about the career success of the late bloomers who had TVET background, and they found that their success in their careers was the outcome of a perceived good fit between the strengths of the individual and the ability of the organization to support and motivate them in their career development. Currently, the goals of TVET has changed to be aligned with the aforementioned ideal. Babenko et al. (2017) suggested that it is imperative to learn and benefit from the experiences of the developed countries to improve employees' job-related safety consciousness. Therefore, the current ideological movement in TVET has changed, and it has given more consideration to hone CMS and CDA of college students to prepare them for the future job market.

Career Management Skills (CMS)

A career decision is vital for an individuals' life. Individuals must have sufficient skills in career management to make a desirable career decision. The procedure for selecting a suitable job is very critical for school leavers. Thus,



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

CMS is essential for individuals (Zakaria et al., 2019). Several individuals believe that CMS is necessary in terms of helping them to navigate through a different area of work. A number of high school graduates are learning to become technical assistants, computer technicians, operators, graphic designers, nurses, and other technically related careers. More adults are becoming more involved in TVET. Babenko et al. (2017) highlighted that an individual's focus on lifelong education is continuing to increase even after getting and completing their formal training. However, students seem to have not fully acquired the essential and necessary career skills in the actual work world.

The necessity of developing CMS needs to be integrated in secondary and post-secondary education by employing methods to coach students through educative programs in career transitions. Halpern and Hakel (2010) stated that there is a significant attention to understanding how educational efforts can be shaped to ease the enrollment of students. CMS refers to the awareness, approaches, characteristics, and abilities that individuals need to manage their career. CMS also defines as a set of education-related consequences that allow individuals to develop their career in life. Zakaria et al. (2019) pointed out that CMS is considered as a serious requirement that can fill the gap in the industry. CMS should be evaluated based on a specific criteria including assignments, self-assessment, observations, and portfolios. Neary, Dodds and Hooley (2016) stated that there was no available training for students as students are unaware of training program regarding CMS. Training programs on CMS must include mentoring and experiential learning, good practice exchanges, accredited courses at all levels including postgraduate, regular seminars and workshops, and new tools and models. Indeed, CMS is an excellent source for the right career and desirable life. Adults who learn and develop their CMS will find the career they love and will live for themselves. Rubio et al. (2017) clarified that a career development program entails significant factors such as selecting the right issue and obtaining support, being self-consciousness, having sufficient encouragement, supervising oneself, meeting professional demands, and working in teams.

Feldman (1988) pointed out that career management is the most important component in human resource management that affects the organization by keeping the most skilled and talented individuals in the organization. Fish and Wood (1993) stated that career management programs are critical in developing performance and enhancing a positive attitude among individuals. CMS includes the following aspects: personal effectiveness, managing relationships, finding work and accessing learning, managing life and career, and understanding the world (Neary et al., 2016). Therefore in theory, CMS programs are a very crucial element in achieving success in any organization (Sumari, Md.Khalid & Razak, 2015).

Career Development Ability (CDA)

Career development refers to a set of activities or procedures related to lifelong learning, which is geared towards advancing an individual's career. It includes training individuals to gain new skills, move to a better job, transfer to another organization, or even start a new business. Career development is related to the objectives and goals set by the individuals themselves. Besides, studies pointed out that young employees are in need of CMS in their career development (Zakaria et al., 2019). Also, a culture of career development is very crucial for individuals. Conger (2002) stated that the culture of career development helps to display competitiveness, productivity, and succession planning in the organization. It also allows individuals to redefine their abilities in order to understand the full potential of their jobs. However, there is a minimal examination and exploration of career development at technical and vocational colleges. Most studies focus on secondary school and universities. CDA is a crucial point to determine the requirements needed in preparing students to get the necessary skills in career management (Abd-Hanid, 2007). There are specific components related to CDA of TVET college students since CDA is concentrated on career decision-making, self-efficacy, career planning ability, and career maturity (Abd-Hanid, 2007). Thus, this current study examines these components that related to CDA of TVET college.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

The Relationship between Career Management Skills and Developmental Abilities

Since CMS and CDA can be construed as overlapping terminologies, this indicates that individuals need CMS in their career development. There is a clear relationship between career management skills and developmental abilities of learners (Zakaria et al., 2019). Besides, Talib et al. (2015) found from their study that using a career education module in programs related to career development could significantly improve career planning ability, self-efficacy, and career maturity among students in Malaysian community colleges. These findings indicated that career management skills affect the career development ability of college students. Besides, the competence of an individual through career management and work motivations is highly considered as a significant predictor of early success in one's career (Bridgstock, 2011). Hence, career success depends on career management.

However, only a few studies addressed the connection between CMS and CDA (McGartland et al., 2017). Therefore, it is very crucial to find and create strategies to develop the effectiveness of CMS and CDA of college students (Ministry of Education, 2012). A limited number of studies also investigated the effect of gender on both CMS and CDA. Kelly and Colangelo (1990) conducted a study to examine the effects of academic ability and gender on career development on a group of gifted students. They found that the level of academic ability has a positive impact on career maturity. They also found that there are no differences according to gender while the scores between female and male respondents were approximately equal. Similarly, Talib et al. (2015) conducted a study to examine the effect of a career education module on career development on 122 students in a community college in Malaysia. They also investigated about the effect of gender and career education module on career development. They found that there is no significant connection between gender and strategies related to career development.

A study conducted by Chung (2002) analyzed the relationship between career decision-making self-efficacy and career commitment among college students. Chung also examined the gender and ethnic role in this relationship. The findings indicated that there was a moderating relationship between career decision-making, self-efficacy, and career commitment. The results also indicated that no gender or ethnic differences was found in this relationship among college students. Likewise, Neice and Bradley (1979) also investigated the relationship among age, sex, and educational groups with regard to career decisiveness. They used the Career Decision Questionnaire (CDQ) on 369 students from high school freshmen to college juniors to measure the antecedents of educational-vocational indecision. The researchers found that the students' age was an important aspect in career decisiveness. In addition, certain educational groups were identified as significant factors correlated with the level of career decisiveness. However, the students' gender was not deemed as an essential factor in determining decisiveness.

Based on the discussion above, it appears that only a minimal number of studies addressed the relationship between CMS and CDA. Also, a few studies regarding career issues investigated the moderating effect of gender. Therefore, it is very crucial to examine the effect of CMS and CDA and the moderating effect of gender of TVET college students on this relationship. Accordingly, the conceptual framework has been created to examine gender as a moderator on CMS and CDA, which also illustrates the effect of CMS on CDA.

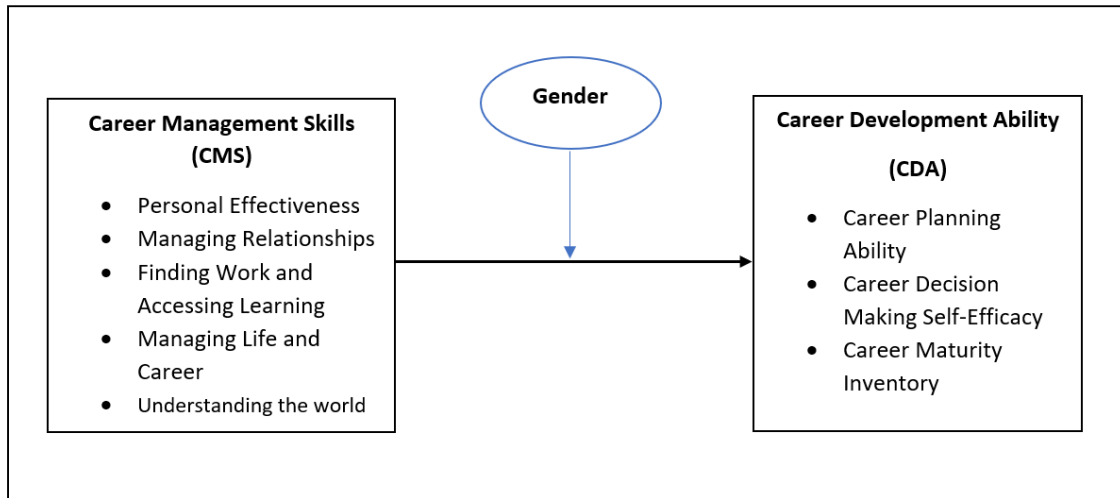


Figure 1. Conceptual framework of the study

Based on the conceptual framework above, this study focuses on the moderating effect of gender on CMS and CDA of TVET college students. CMS includes the following aspects: personal effectiveness, managing relationships, finding work and accessing learning, managing life and career, and understanding the world (Neary et al., 2016; Zakaria et al., 2019). CDA covers career planning ability, career decision-making self-efficacy, and career maturity inventory (Abd-Hanid, 2007; Talib et al., 2015; Zakaria et al., 2019). As stated earlier, there are minimal studies that addressed the moderating effect of gender on the relationship between CMS and CDA among TVET college students (Kelly & Colangelok, 1990; McGartland et al., 2017; Talib et al., 2015). Accordingly, the following hypotheses were formulated to achieve the aim of the study as follows:

H₀₁: CMS has no significant and direct effect on the CDA of TVET college students.

H₁: CMS has a significant and direct effect on the CDA of TVET college students.

H₀₂: Gender does not moderate the effect of CMS on the CDA of TVET college students.

H₂: Gender moderates the effect of CMS on the CDA of TVET college students.

METHODS

Research Design

The current study conducted a quantitative research design by utilizing a survey questionnaire. This is the most suitable design that can be used for the current study that focused on examining the relationship and effect between variables (Creswell, 2018).

Population and Sampling

The targeted population of the study were TVET college students in Kuala Lumpur (KL), Malaysia. Initially, there were 9 TVET colleges invited to participate in this study. These institutions were deemed suitable for this research due to their existing programs, the population of students, and their ratings from the Malaysian Qualification Agency. Only five TVET colleges that agreed to participate in this research. The representatives from the four TVET colleges declined to participate since they were busy at the moment. Therefore, five TVET colleges in Kuala Lumpur were purposefully selected for collecting data. Based on the population at these five colleges, more than 500 questionnaires were distributed via random sampling technique. These questionnaires were distributed randomly among TVET college students in Kuala Lumpur (KL), Malaysia. The random sampling technique was used to give



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

achance and allow every member in the targeted institutions to participate (Creswell, 2018). Further details regarding the development of the questionnaire will be elaborated in the following sections.

Instrument

The current study utilized a questionnaire containing 86 items divided between CMS and CDA. The CMS included 5 different subsections with 32 items. The subsections under CMS are the following: personal effectiveness (PE), managing relationships (MR), finding work and accessing learning (FW), managing life and career (ML), and understanding the world (UW). These subsections and the items related to CMS were adapted from Neary et al. (2016). The second variable (CDA) included 3 different subsections with 54 items. The subsections belonging to CDA are as follows: career planning ability (CP), career decision-making self-efficacy (CD), and career maturity inventory (CM). The subsections and the items related to CDA were taken from Career Planning Ability Questionnaire (CPAQ) developed by Abd-Hanid (2007).

The questionnaire has been modified to suit the Malaysian setting. After revising the questionnaire, the researchers distributed it to collect the data from targeted TVET colleges in KL. It was followed by getting the necessary approval from the Ministry of Education, State Department of Educational Planning and Research Division (EPRD), and the targeted colleges to distribute and collect data. The respondents were asked to choose one response for each item using a 4-point Likert Scale with the following descriptors: 1= strongly disagree, 2= disagree, 3= agree, and 4= strongly agree. The 4-point Likert Scale is more preferred by researchers who want to prevent receiving the neutral/undecided answer from the participants (Torff & Tirota, 2010; Pimentel, 2019). Therefore, in this study the researchers applied 4-point likert scale to enforce responses to select whether they are agree or disagree regardless to the undecided situation. After improving the questionnaire and getting the required permissions, the researchers did a pilot study to test the validity and reliability of the instrument (Chua, 2016).

Data Collection Procedure

The actual study was conducted after doing pilot test and making sure that the instrument is reliable and valid to be used for actual research. The data was collected from March to July 2019. The researchers distributed more than 500 questionnaires randomly and only 442 were received. The participants have been selected randomly from different TVET colleges in KL.

Reliability

Reliability testing was done by checking the internal consistency of the instrument by using statistical tools, such as Cronbach's alpha (Pallant, 2013). It is the most common statistical technique used to test the internal consistency of the instrument. The acceptable values of Cronbach's alpha range from 0.70 to 0.95 (Pallant, 2013; Tavakol & Dennick, 2011). Table 1 below shows the reliability test of the scale.



Table 1
Results of Reliability Test and Normality test

Variables	Constructs	Number of Items	Values of Cronbach Alpha	Skewness	Kurtosis
CMS	PE	8	.897	-.514	.251
	MR	6	.857	-.589	.546
	FW	6	.867	-.430	-.126
	ML	7	.910	-.446	-.059
	UW	5	.880	-.434	.038
CDA	CP	11	.916	-.581	.354
	CD	18	.947	-.280	-.193
	CM	25	.959	-.388	-.569

Table 1 above shows that all the values of Cronbach's alpha of the instrument were within the acceptable range, as suggested by Pallant (2013) and Tavakol and Dennick (2011). All the values were above 0.7, which indicated that the current instrument is reliable to be used for the study.

Content Validity

The validity test on the instrument was conducted via several experts with respect to the issue being studied. Three different experts conducted the validity of the instrument based on several criteria, and they ensured that the items in every variable covered the topic under study, checked the correct translation from the English language to the Malay language, and verified the language accuracy of the instruments. The experts' feedback contributed to the development and finalization the instrument to fit this study.

Normality Test

Normality test can be used to check whether the data are distributed normally or not. It can be checked using numbers of statistical techniques, such as Skewness and Kurtosis values. According to Pallant (2013), the acceptable values of Skewness and Kurtosis should be within the range of -1 and +1. Therefore, the normality of data has been tested and shown in Table 1 above. The results indicated that the data were normally distributed because the values of Skewness and Kurtosis were within the acceptable range.

Factor Analysis

The researchers utilised factor analysis to determine the validity of 86 items in the instrument. Factor analysis is a statistical technique for data reduction (Pallant, 2016). It includes exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) (Pallant, 2016). The EFA used to gather information about the interrelationship between different variables in the instrument. However, the CFA utilised to confirm specific theories or hypotheses regarding the structure underlying set of variables (Pallant, 2016).

Based on that, the researchers applied EFA, as an early stage, to check the relationship between variables. The EFA also used to identify the suitability of factor analysis for every variable. Then later, the researchers applied the second stage of factor analysis (CFA) via running the structural equation modelling (AMOS). The following sections included more details regarding EFA and CFA.

Explanatory Factor Analysis (EFA)

Three steps included in EFA; namely, the assessment of the data appropriateness for factor analysis, the evaluation of factor extraction, and finally the evaluation of factor rotation and interpretation (Pallant, 2016). The first step



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

involved doing 2 tests: Kaiser Meyer-Olkin (KMO) and Bartlett's Test of Sphericity. The second step included 3 tests: Kaiser's criterion, scree test, and parallel analysis. The last step involved Oblimin rotation, which covers Pattern Matrix, and Structure Matrix. Communalities also included here in more details.

The first step in EFA included testing the KMO and Bartlett's Test of Sphericity. These 2 statistical measures help to evaluate the data factorability. The KMO assess the adequacy of sampling and its acceptable value range from 0 to 1 (Kaiser, 1974; Pallant, 2016). The value of KMO that equal to 0.6 and above is considered a good factor analysis. The value of Bartlett's Test of Sphericity should be significant ($p < .05$) (Bartlett, 1954; Pallant, 2016; Tabachnick & Fidell, 2013). In this study, all the values of the KMO were above 0.6. This value is considered acceptable as suggested by Pallant (2016) and Kaiser (1974). Additionally, the Bartlett's Test was significant which found acceptable as indicated by Pallant (2016) and Bartlett's (1954). Clearly, the first step in EFA refers to that the factor analysis is considered appropriate.

The second step in EFA is testing the factor extraction. This test included Kaiser's criterion (eigenvalue), scree test, and parallel analysis. For the career management skills variable, there were 3 eigenvalues greater than one that accounted for 58.734 % of the total variance. For the scree plot and parallel analysis test, the results seemed to support a three-factor solution. Again, the scree plot and parallel analysis seemed to support the three-factor solution explaining 58.734 % of the total variance. For career development ability variable, there were 5 eigenvalues greater than one that accounted for 66.130 % of the total variance. The scree plot and parallel analysis for this variable were seemed to support a five-factor solution. Again, the scree plot and parallel analysis appeared to support the five-factor solution explaining 66.130 % of the total variance.

The last step in EFA included testing the Oblimin rotation that covers Pattern Matrix, and Structure Matrix (Pallant, 2016). The factor loading of every variable presented via checking the Pattern Matrix. The relationship between factors and variables checked via Structure Matrix.

The Communalities also checked in this study, which indicates how much is the variance in each item in the scale (Pallant, 2016). Any item with value less than 0.3 should be deleted to increase the total variance explained (Pallant, 2016). This low value of communality refers to unfit item together with other items in its factor. The value of communality of each item in the questionnaire loaded above 0.5. This value is considered acceptable and with the acceptable range of the communality. To sum up, the EFA results indicated that the factor analysis of the variables was suitable.

RESULTS

Demographic Information

The demographic information included the following variables: gender, age, ethnicity, type of college, and area of study of the participants from TVET colleges in KL. The male respondents, 347 (78.5%), were more than female. The age of the majority of the respondents, 238 (53.8%), ranges between 16 to 20 years old. Most of the respondents, 361 (81.7%), were Malay. The majority of the respondents, 416 (94.1%), were from public colleges. Most of the respondents, 163 (36.9%), were specialists in Electronics.

After collecting 442 responses, the researchers conducted data screening and cleaning. Data screening was done to ensure that there are no missing values, suspicious responses, and outliers (Hair et al., 2017). Since there are no missing values in the existing data, the data was then checked for suspicious responses (inconsistent answers or straight-lining). The researchers found no suspicious responses. The outliers were also checked based on the standardized residual value, so 7 cases were removed from the data set because the standardized residual's values were > 3.3 and < -3.3 (Hair et al., 2017; Pallant, 2016; Tabachnick & Fidell, 2013). The number of cases has dropped from 442 to 435. Thus, 435 cases were deemed suitable for further analysis.



Confirmatory Factor Analysis and Model Fit

Confirmatory Factor Analysis (CFA) was conducted via Structural Equation Modeling (SEM) on AMOS. CFA included several measurements and model fit index.

Different measures can be used to determine the goodness of the model fit via AMOS. These measures included normed chi-square value (χ^2/df), p -value, Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Tucker-Lewis Index (TLI) (Byrne, 1998; Hair et al., 2014, Lomax & Schumacker, 2016). The values are considered acceptable if the p -value is above 0.05 and the normed chi-square value (χ^2/df) is below 3 (Bagozzi & Yi, 1988). The acceptable values considered in a good fit of CFI and NFI must be at least 0.90 (Bagozzi & Yi, 1988). For RMSEA, values lower than 0.05 are considered as a good fit while RMSEA values that range between 0.05 to 0.08 imply a good fit (Byrne, 1998; De Jong, 1999; Schumacker & Lomax, 2016). Based on the discussion above, the researchers checked the goodness- of-fit of the model and presented the results in the table and figure below. Figure 2 below shows the model fit results.

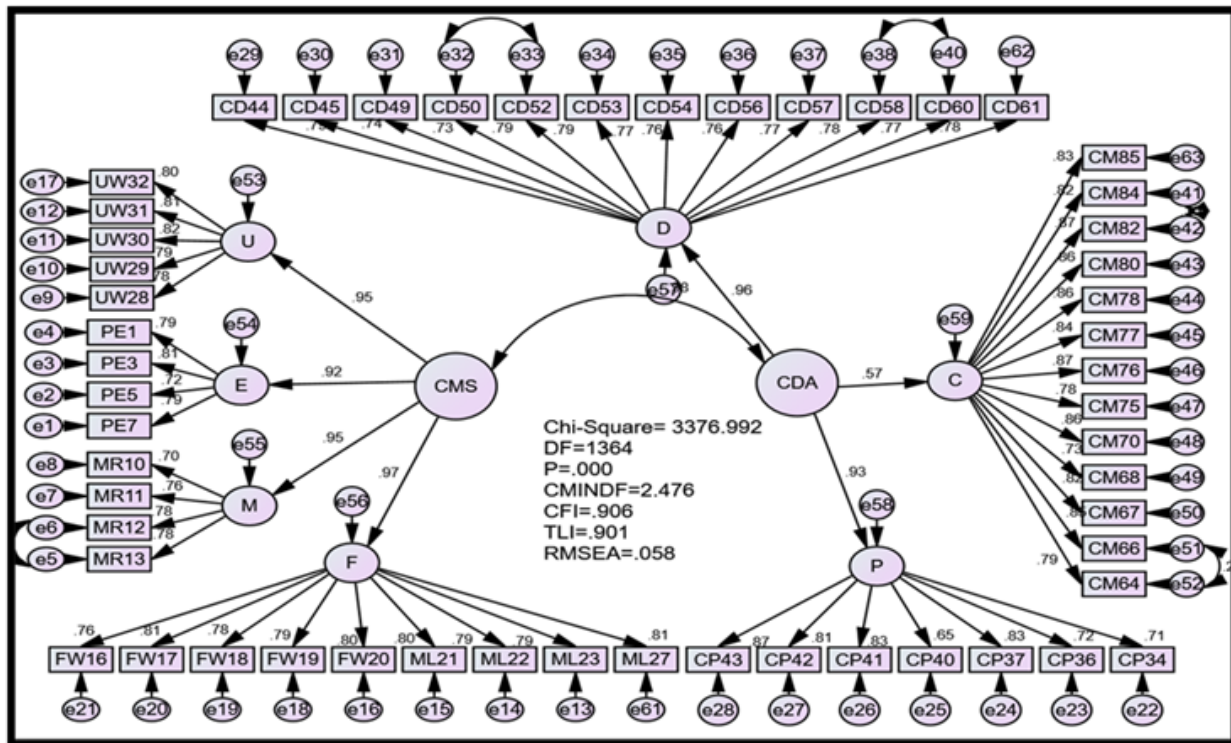


Figure 2. The entire model fit index

Figure 2 above shows the entire model fit of the current study, which illustrates that all the values of χ^2/df , p -value, CFI, NFI, TLI, and RMSEA were within the acceptable range. These values will also be clarified further in Table 2 below:



Table 2
Results of Model Fit

Fit index	Value	Interpretation
Chi-square	3376.992	Good fit
$\chi^2 / df \leq 3.00$	2.476	Good fit
P-value > 0.05	.000	Good fit
CFI \geq 0.90	0.906	Good fit
RMSEA \leq 0.08	0.058	Good fit
TLI \geq 0.90	0.901	Good fit

It is shown that all the results of χ^2/df , p -value, CFI, NFI, TLI, and RMSEA, were within the acceptable range (Anderson & Gerbing, 1988; Bagozzi & Yi, 1988; Browne & Cudeck, 1993; Hoang et al., 2006; Schumacker & Lomax, 2016). Therefore, these results established that this model has a good fit for evaluation.

Hypotheses Testing

Hypotheses H_{01} and H_{02} were tested via AMOS-SEM after the assessment of the structural model. Figure 3 below shows the structural model assessment:

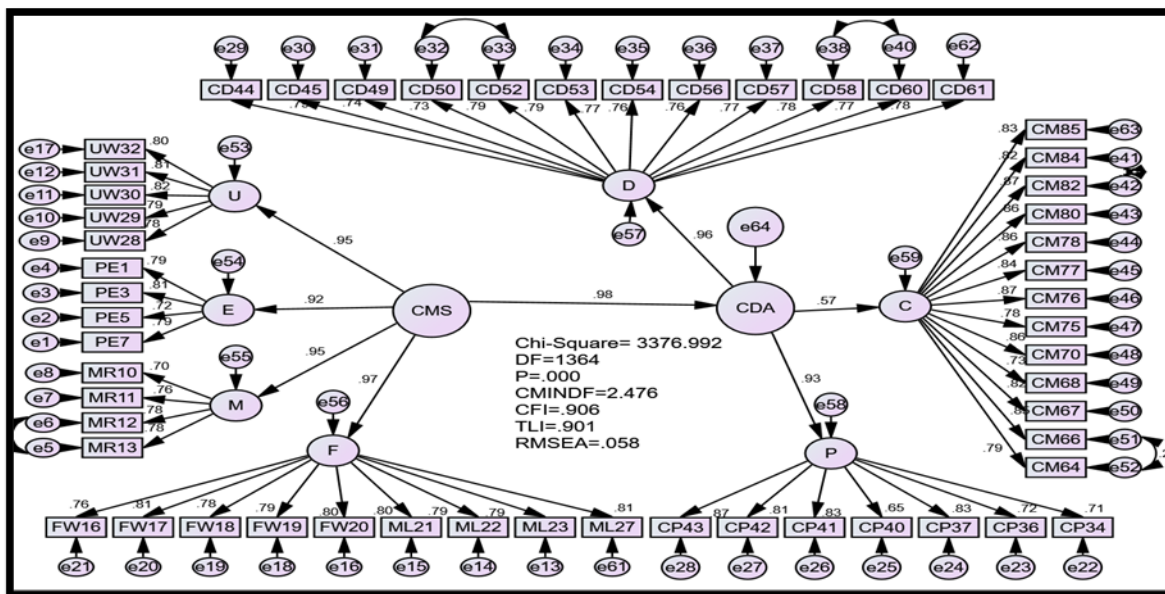


Figure 3. The Structural Model Assessment

Figure 3 above presents the structural model assessment. After assessing the model, the hypothesis was tested based on the results of Critical Ratio value (C.R) and p -value with a significant level of 5% (<0.05). The null hypothesis is rejected if the p -value is equal or less than 0.05; otherwise, the hypothesis is accepted (Hair et al., 2014).

The Effect of CMS on CDA

Research question 1 focused on examining the effect of CMS on CDA among TVET colleges' students. Therefore, H_{01} and H_1 were formulated to answer this question. Table 3 below shows the results of the hypothesis testing:



Table 3
The results of H₀₁

H ₀₁	Structural Path	Standardized Estimates (>.2)	C.R (>1.96)	P-value	Decision-based on the test of significance (>.1.96)	Practical importance based on the effect size (>.2)
No direct and significant effect of CMS on CDA	CMS → CDA	0.978	16.272	0.000	Not supported H ₀₁	Important

Based on the results of Table 3 above, the null hypothesis H₀₁ has been tested and found that (Standardized Estimates = 0.978, C.R= 16.272, p-value= 0.000). These results fail to accept the null hypothesis H₀₁. So, the null hypothesis H₀₁ has been rejected, and the alternative H₁ has been accepted. Therefore, Career Management Skills (CMS) have a significant and direct effect on Career Development Abilities (CDA) of TVET college students.

The Moderating Effect of Gender on CMS and CDA

Research question 2 focused on analyzing the moderating effect of gender on CMS and CDA of TVET colleges' students. H₀₂ and H₂ were formulated to answer this question. In addition, the gender-invariant analysis was done to test this hypothesis via AMOS-SEM. The analysis is shown in Table 4 below:

Table 4
Results of the gender-invariant analysis

	Unconstrained	Constrained	Change	Decision
Chi-square	6107.858	6108.101	0.243	Groups are NOT different which means gender does not moderate the effect between CMS and CDA
Degree of freedom	2728	2729	1	

The results of Table 4 above, including the results of Chi-square and Degree of freedom, indicated that gender does not moderate the effect of Career Management Skills on Career Development Abilities of TVET college students. Therefore, the null hypothesis is accepted as gender does not have any moderating effect on CMS and CDA of TVET college students.

DISCUSSION AND IMPLICATIONS

The study aimed to analyze the effect of Career Management Skills on Career Development Abilities among TVET students. The findings indicated that CMS has a significant and direct effect on the CDA of TVET students. This finding is supported by the results from the studies conducted by McGartland et al. (2017), Talib et al. (2015) and Zakaria et al. (2019) in terms of the relationship between CMS and CDA. In addition, Bridgstock (2011) pointed out that individual career management and work motivations are both considered significant predictors of early success in an individual's career. Indeed, these findings establish the significance of CMS through developing personal effectiveness, managing relationships, finding work and accessing learning, managing life and career, and understanding the world (Neary et al., 2016). These factors were reported to have an effect on CDA aspects such as career planning ability, career decision-making self-efficacy, and career maturity inventory (Abd-Hanid, 2007) among TVET students.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

Moreover, this study also analyzed the moderate effect of gender on CMS and CDA of TVET students. The findings indicated that gender does not moderate the effect of CMS on CDA. This finding is supported by previous findings by Chung (2002), Kelly and Colangelo (1990), Neice and Bradley (1979), and Talib et al. (2015). All these findings indicated that gender has no moderating effect on the relationship between CMS and CDA. Gender differences do not influence the way TVET students in Kuala Lumpur decide or manage their professional development.

Therefore, the findings of this study will be more valuable for technical and vocational education policy and decision-makers particularly in terms of highlighting the importance of programs and opportunities for students to develop their career management skills and development abilities. This can be highly beneficial for the future evaluation and planning in technical colleges to ensure that students are equipped to be essential assets in their respective industries.

LIMITATION OF THE STUDY

This study was limited to TVET college students in Kuala Lumpur (KL), Malaysia. It is also limited to investigating about the effect of CMS on CDA and the moderating effect of gender on CMS and CDA of TVET students in Kuala Lumpur only.

CONCLUSION AND RECOMMENDATIONS

The findings presented in this paper indicate that CMS affects the CDA of TVET students in Kuala Lumpur. The results also show that gender does not moderate the effect of CMS on CDA among TVET students. This study contributes to the continuous assessment of the impact of CMS on CDA among TVET college students. The findings imply that personal effectiveness, managing relationships, finding work and accessing learning, managing life and career, and understanding the world have an impact on career planning ability, career decision-making self-efficacy, and career maturity inventory. These elements of CMS and CDA are very crucial in TVET planning and evaluation.

Therefore, future studies should be carried out to investigate other elements that could be more effective in TVET. These studies must investigate other components that could have a significant moderating or mediating effects on CMS and CDA. Since this study was limited to TVET college students, it will be more favourable if this study is conducted in another context of higher education to compare differences. This study is also limited to investigating about the moderating effect of gender on CMS and CDA. Therefore, it will be more encouraging to examine the effect of other moderators like age, experience, and the field of study on CMS and CDA in TVET. Finally, exploring the opinions and perspectives of academic leaders in higher education and TVET about the factors that enhance CMS and CDA among college students may present deeper insights on the relationship between CMS and CDA. Researchers should also probe into the obstacles and challenges facing college students regarding CMS and CDA in TVET.

ACKNOWLEDGEMENT

We would like to acknowledge the financial support provided by the Faculty of Education, University of Malaya research grant GPF0120-2018.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

REFERENCES

- Abd-Hanid, H. (2007). *The effectiveness of career exploration stage of career development in secondary schools in Dungun district of Terengganu* [Unpublished Doctoral Dissertation]. Universiti Putra Malaysia, Serdang.
- Babenko, O., Sudha, K., Lia, D., Lindsey, N., & Vijay D. (2017). Lifelong learning along the education and career continuum: meta-analysis of studies in health professions. *Journal of Advances in Medical Education & Professionalism*, 5 (4), 157–163.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74-94.
- Ballout, H. I. (2009). Career commitment and career success: moderating role of self-efficacy. *Career Development International*, 14(7), 655-670.
- Bartlett, M. S. (1954). A note on the multiplying factors for various χ^2 approximations. *Journal of the Royal Statistical Society. Series B (Methodological)*, 16 (2), 296-298.
- Bridgstock, R.S. (2011) Skills for creative industries graduate success. *Education and Training*, 53(1), 9-26.
- Browne, M. W., & Cudeck, R. (1993). *Alternative ways of assessing model fit*. Newbury Park, California: Sage Publications.
- Byrne, B. M. (1998). *Structural equation modeling with LISREL, PRELIS, and SIMPLIS: Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Chua, Y. P. (2016). *Mastering research methods*. Shah Alam, Selangor: McGraw-Hill (Malaysia).
- Chung, Y. B. (2002). Career decision-making self-efficacy and career commitment: Gender and ethnic differences among college students. *Journal of Career Development*, 28(4), 277-284.
- Creswell, J. W. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*. Los Angeles: SAGE.
- Damiri, N., & Yahaya, A. B. (2004). *Ciri-Ciri Personaliti Dalam Pemilihan Kerjaya Pelajar, Gaya Pembelajaran Pelajar Dan Hubungannya Dengan Pencapaian Akademik (Personality Characteristics in Student Career Selection, Student Learning Styles and Their Relationship with Academic Achievement)*. [Doctoral dissertation, Universiti Teknologi Malaysia].
- De Jong, G. (1999). *Causal loops in long-term supply relationships: Theory and evidence from the United States, Japan, and Europe*. [Unpublished doctoral dissertation]. SOM, University of Groningen, The Netherlands.
- Dries, N. (2011). The meaning of career success: Avoiding reification through a closer inspection of historical, cultural, and ideological contexts. *Career Development International*, 16 (4), 364– 384.
- Feldman, D. C. (1988). *Managing careers in organizations*. Glenview, IL: Scott, Foresman & Company.
- Fish, A., & Wood, J. (1993). HRM and international expatriate management: a strategic link for Australian business. *International Journal of Career Management*, 5(4), 25-36.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling* (2nd ed.). Thousand Oakes, CA: Sage.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis*. United States of America: Pearson Prentice Hall.
- Halpern, D., & Hakel, M. (2010). Applying the science of learning to the University and beyond: teaching the long-term retention and transfer. *Change Mag. High. Learn.* 35 (4), 36–41.
- Hirschi, A., & Läge, D. (2008). Increasing the career choice readiness of young adolescents: An evaluation study. *International Journal for Educational and Vocational Guidance*, 8(2), 95-110.
- Hoang, D. T., Igel, B., & Laosirihongthong, T. (2006). The impact of total quality management on innovation, findings from a developing country. *International Journal of Quality & Reliability Management*, 23(9), 1092-1117.
- Talib, J. A., Salleh, A., Amat, S., Ghavifekr, S., & Ariff, A. M. (2015). Effect of career education module on career development of community college students. *International Journal for Educational and Vocational Guidance*, 15(1), 37-55.
- Torff, B., & Tirota, R. (2010). Interactive whiteboards produce small gains in elementary students' self-reported motivation in mathematics. *Computers & Education*, 54(2), 379-383.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

- Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39(1), 31-36.
- Kelly, K. R., & Colangelo, N. (1990). Effects of academic ability and gender on career development. *Journal for the Education of the Gifted*, 13(2), 168-175.
- Lawson, R. (2004). Work futures: Employability skills and attributes. *Queensland Government, Department of Employment and Training. European Journal of Social Sciences*. 9 (1), 147-160.
- Malaysia Higher Education Blueprint . (2015). *Executive Summary Malaysia Education Blueprint (2015-2025)* (Higher Education). Ministry of Education, Putra Jaya.
- McGartland. R., D., Georgeanna., F. W. B. Robinson, Janice, G., & Emma. A. M. (2017). Creating effective career development programs. *J Clin Transl Sci*. 1 (2), 83–87.
- Neary, S., Dodd, V., & Hooley, T. (2016). *Understanding Career Management Skills: Findings from the First Phase of the CMS Leader Project*. Derby: International Centre for Guidance Studies, University of Derby. Derby.
- Neice, D. E., & Bradley, R. W. (1979). Relationship of age, sex, and educational groups to career decisiveness. *Journal of Vocational Behavior*, 14(3), 271-278.
- Nik Hairi Omar, Azmi Abdul Manaf, Rusyda Helma Mohd, Arena Che Kassim, & Khairani Abd Aziz. (2013). Graduates' Employability Skills Based on Current Job Demand through Electronic Advertisement. *Asian Social Science*, 8(9), 103-110.
- Pallant, J. (2013). *SPSS survival manual : A step by step guide to data analysis using IBM SPSS* (4th ed.). Crows Nest, NSW: Allen & Unwin.
- Pallant, J. (2016). *SPSS Survival Manual: A Step By Step Guide to Data Analysis Using SPSS Program* (6th ed.). London, UK: McGraw-Hill Education.
- Pavlova, M. (2014). TVET as an important factor in country's economic development. *Springer Plus*, 3(1), K3. 1-2. doi:10.1186/2193-1801-3-S1-K3
- Pimentel, J. L. (2019). Some biases in Likert scaling usage and its correction. *International Journal of Science: Basic and Applied Research (IJSBAR)*, 45(1), 183-191.
- Roaten, G. A. K. (2004). *The effects of a career development intervention on the career decision-making skills of high school students* (Doctoral dissertation, Texas A&M University-Corpus Christi).
- Rubio D., Robinson. G.F. W. B., Gabrilove J. & Meaghe E. (2017). Creating effective career development programs. *J Clin Transl Sci*. 1(2), 83–87.
- Schumacker, R., & Lomax, R. (2016). *A beginner's guide to structural equation modeling* (Fourth). New York, New York: Routledge.
- Seibert, S. E., Kraimer, M. L., Holtom, B. C., & Pierotti, A. J. (2013). Even the best laid plans sometimes go askew: career self-management processes, career shocks, and the decision to pursue graduate education. *The Journal of Applied Psychology*, 98 (1), 169–82.
- Sumari, M., Md.Khalid, N., & A.Razak, N. A. (2015). *Teori dan Amalan Kaunseling Kerjaya (Career Counseling Theory and Practice)* (1st ed.). Kuala Lumpur: Penerbit Universiti Malaya.
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed). Boston: Pearson Education.
- Tang, M., Pan, W., & Newmeyer, M. D. (2008). Factors influencing high school students' career aspirations. *Professional School Counseling*, 11(5), 2156759X0801100502.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, 2 (2011), 53-55.
- UNESCO Report. (2018) . Quality and Employability in Higher Education: New Trends in Higher Education. Paris: UNESCO/ International Institute for Educational Planning.
- Willner, T., Gati, I., & Guan, Y. (2015). Career decision-making profiles and career decision-making difficulties: A cross-cultural comparison among US, Israeli, and Chinese samples. *Journal of Vocational Behavior*, 88(2015), 143–153.
- Zakaria, N., Hamzah, N., Yamin, N. A., Hamidon, N. I., Ariffin, A., & Rubani, S. N. K. (2019). Competency in Career Management among Technical University Students. *International Journal of Academic Research in Business and Social Sciences*, 9(13), 173–182.