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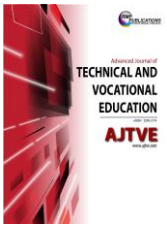

Factors Influencing Career Adaptability and Vocational Employability Towards Career Choice Among Bakery and Pastry Students

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Abstract: Career choice is a major issue in human resource development. Accurate choice of career will contribute to career satisfaction and improvement in the individual and national economy. In contrast, failure in making accurate career choices will cause investment loss within national human resources. This study examines the effect of career adaptability and vocational employability on students' career choice. The study respondents are 166 technical and vocational institutions students who enrolled in the Bakery and Pastry courses. The study analysis was conducted using the Structural Equation Modelling Partial Least Square (SEM PLS). Findings from the study confirmed that career adaptability helps students in their career choice. Meanwhile, vocational employability enhances their self-efficacy to make career choices.

Key words: *Career Adaptability, Vocational employability, career choice, self-efficacy and TVET*

INTRODUCTION

The emergence of the new industrial era, technological development and changes in socioeconomic development open up various spaces for new jobs to develop locally and internationally. The borderless world concept opens many skilled job opportunities from within and outside the country [1]. Consequently, more students seize this opportunity through skilled education such as technical and vocational education, better known as Technical and Vocational Education and Training (TVET) education [2]. Therefore, decision-making steps in choosing a career require knowledge about the job that comes through education for career, life experiences, and social connections [3]-[4]. However, various researchers claimed that the lack of relevant information about jobs and employability trends indirectly reduces confidence in choosing a career. This, in return, increases the unemployment rate among students [5] and contributes to harmful national economic growth [6], [7]. In other words, career choice becomes the subject of question among the policymakers - whether students are ready or not to work in the trained field while entering the challenging career gateway and demanding sacrifices to develop individual and national socioeconomic.

Career choice is highly related to the development of national human resources towards building a high per capita population, which eventually contributes to the individual and national economy. The career choice must be managed orderly and systematically so that the labor produced later will be based on the current demand and offer of the national industry.

Malaysia will be at a loss in developing human resources when the investment spent is less impactful in preparing skilled employees who do not use locals as main workers of organizations [8]. In reality, research findings revealed evidence stating that national investment for human resource development suffers minor losses through various aspects. The loss occurs because of curriculum issues [9], lack of mastery in terms of hard skill and soft skill [10]-[11], low language proficiency [12], unfavorable attitude and personality [13], skills incompatibility [14], picky about jobs [15]. This situation caused spillover effects such as low employability [12], imbalance demand [16], employment supply [6], unemployment and mistakes in career choice [2].

Students' failure to choose the right career will contribute to the loss of time, energy, and economy, affecting students and the country [6]. [17] stated that graduating students choose careers according to what

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they feel are related to their courses. However, [18] found that students fail to determine their specialized field, which is highly connected to the beginning of their careers. Students also will begin choosing jobs with high reputations in an attempt to enhance self-ability and satisfaction. Whereas the issue of lack of self-confidence as stated by [13], is caused by students with low self-esteem and lack the confidence to enter the career world.

These factors involve aspects of career adaptability and vocational employability skills, which in this study are known as Career Education. Career education will contribute to self-efficacy that encourages students' aspiration to choose a career. Students' inability in mastering factors of career adaptability will lead them into feeling restless and being sensitive to harmful stimuli, causing them to feel less satisfied with their career choice and eventually be stressed at the workplace [19]. Besides, failure in mastering vocational employability skills is also perceived to have a huge implication in the career path of a student who chooses technical and vocational fields as a source of income [20]. This skill covers several skills, such as technical skills, academic skills, and generic competency across three domains of taxonomy: cognitive, affective, and psychomotor [21]-[22]. If failed to be mastered, this combination of skills will produce incompatible work between industrial demands and institutional offers for students. Consequently, it would contribute to students' self-efficacy and commitment in choosing a career [23]-[24]-[25].

A similar scenario must be observed in the context of TVET education. TVET has been adopted as a specialized and specific vocational training among educational institutions in Malaysia. It was established to lead technical and vocational education and function as the nation's producer of highly skilled human capital resources [26]. Its operational mission is to empower technical and vocational education by implementing quality program to meet the industries' needs and offer job opportunities in technology, manufacturing and services [22].

One of the courses with high career prospects is the Bakery and Pastry program under Hospitality and Tourism clusters. This course is relevant to the current career trend, has a high demand for labor and offers a huge opportunity within entrepreneurship.
Idealistically, students' career choices should be based on the learning course they enrolled in accordance with their expertise [27]. However, findings through preliminary review showed otherwise. As the chosen career is not according to the skills and knowledge from the course learned, many researchers stated that the implication would be conflict within oneself [28] due to job mismatch [29]. It will lead to a lack of satisfaction in their work [30]. Therefore, this research is perceived to be very important to investigate the factors influencing solutions in overcoming the issue of students' career choice according to the trained courses, specifically for the Bakery and Pastry course in a technical and vocational institute in Malaysia. This problem needs to be scrutinized and must be conducted through a more systematic and specified study. Thus, this study investigates the inter-relationship between career adaptability, vocational employability, self-efficacy, and career choice among technical and vocational students.

LITERATURE REVIEW

Career adaptability

Career adaptability is a set of "attitude, competence and behavior used by an individual in adapting self to the job suitable for them" [31]. Career adaptability as a form of social psychology related to the source of strength within a person in overcoming the needs and wants of the task, changes, and current impact as well as expectations towards their roles in the job that will alter social integration, better or otherwise [32]. On the other hand, job aspects indicate career adaptability to the individual's ability to overcome the requirements of task changes, task shifts and current challenges, and the future in their career [33]. Career adaptability is related to an individual's ability to achieve higher career satisfaction by facing situations experienced such as identifying work stress level, the fitness of career advancement with other people and positive results towards career fun and satisfaction overall.

Vocational Employability Skills

An employee's ability and skills in the career world are a set of employability skills that employers want from each of their future employees to perform assigned tasks according to their maximum roles and ability [6]. The employability skills can also be interpreted as job readiness skills which are competency in hard skill and soft skill aspects [34]. It is a set of transferable skills required by individuals to make themselves employable [34]. Among elements of employability include the personality, attitude and behavior quality of individuals in influencing and interacting with other employees [35]. This research focuses on the definition of job readiness skills, comprising competency in the hard skill and soft skill aspects. Both of these skills determine one's personal quality and value, enabling them to grow in the aspects of potential, workplace, and profession

Self-Efficacy

Learning experience through observation, social experience, formal and informal education that will expand a student's personality is a success factor in life [36]. Such belief in oneself will determine how the student thinks, behaves and feels. Self-efficacy has a huge enough impact not only involving feelings towards oneself but also drives to success in life [37]. Students who believe in their abilities to face future challenges and solve tasks successfully are said to possess the self-efficacy to succeed [38]. Self-efficacy in career choice refers to an individual's confidence to be involved in activities related to choosing a suitable career path [39]. This research defines self-efficacy as students' belief towards their abilities to succeed in doing something, influence the ways of thinking and be motivated to behave. The students will plan actions, strive to achieve, be resilient in facing obstacles and challenges, shape the unchallenged pattern of thoughts, avoid career stress and pressure, and be realistic with what they want to achieve.

Career Choice

The process of choosing a career involves several choices in education and training for a future career [40]. The career path chosen by students will determine their lifelong journey [41]. Influencing factors such as field interest, academic ability, current situation, economic stability, and influence from various parties like parents, friends, and others may play a role in students' career choice decision-making [42]. Therefore, this research's definition of career choice is choosing several job opportunities to determine the relevant skill course for the students, be it within or outside the organization that shapes their life pattern. Career choice is important because it will determine students' success in the next stage of life after leaving behind the education world.

Technical and Vocational Education Training (TVET)

Technical and Vocational Education Training (TVET) is a form of education and training that provides knowledge and skills for a job field [43] TVET form education combines formal and informal learning to achieve the purpose and demand of growing industries to stay relevant with the current time [44]. In this study, TVET is assessed as an alternative approach methodology of training and skills education related to various job field, manufacturing, and services industries that contribute to the community's livelihood. TVET is a field in lifelong learning that can happen as early as secondary school, higher learning, or economic improvement courses for society to generate individual income in life. Many developing countries recognize TVET as an important development agent for social and economic equity besides contributing to sustainable country development [1]. Through the TVET platform, these developing countries mostly direct learning and development systems for a source of labor through collaboration between the educational institution and industry player. In line with the rapid changes in industries, the TVET approach must be parallel to the current demand that requires the addition of new skills and needs new learning methods to highlight experts such as scientists, inventors, and high-level skill experts [45].

METHODOLOGY

This study is conducted quantitatively which applied a cross-sectional research design [46]. The descriptive research was utilized to determine respondents' perceptual tendencies towards the study constructs: career adaptability, vocational employability skills, self-efficacy, and reasons to choose a career. The population for this study is students of Diploma in Bakery and Pastry from Technical and Vocational Institute in Malaysia. Non-experimental research was chosen for this study to gain the information needed in an unplanned or natural environment whereby activities occur normally and uncontrolled [47]. The unit of analysis in this study involves students with skills in Bakery and Pastry from one of the Technical and Vocational Institutes in Malaysia in 2020. The respondents were selected through simple random sampling that specify only Diploma students who enrolled on the subject/module of Bakery and Pastry skills for 2021.

The research instrument used in this study is based on a questionnaire items were adapted and modified from previous studies to suit the dimension and paradigm of this study. Approval from the Technical and Vocational Education Department, Ministry of Education, was obtained before data collection. The distribution of the questionnaire instrument was made through Google form link via Whatsapp application. The respondents were provided with an explanation about this study and notified of the confidentiality terms. The data were analyzed using SPSS version 24 and SmartPLS version 3.1.2. Descriptive analysis was used to explore the demographic profile of the sample via the SPSS Software while the SmartPLS software assesses both the measurement and structural models.

One hundred sixty-six respondents in twelve institutions had answered the questionnaire from this study. All respondents are between 18 to 20 years old (n =166). The number of female respondents exceeded the number of males with 77.7 percent (n =129) against 22.3 percent (n=37). Next, 7.2 percent (n=12) of the respondents have at least a family member who works similarly in a related field, while the other 92.8 percent (n=154) of family members do not work in the same field as the students' career field

RESULTS AND DISCUSSION

Partial-Least Square-Structural Equation Modeling (PLS-SEM)

PLS-SEM is employed to test the hypotheses proposed in the research framework. Two stages of procedures involved in this analysis are a) measurement model and b) structural model. The measurement model is used for assessing the research item's reliability and validity, whereas the structural model focuses on testing the relationship between the underlying exogenous and endogenous constructs.

Measurement Model

In performing the measurement model assessment, reflective measurement is used. Four parameters need to be administered and pursued as statistic requirements: (1) internal consistency reliability, (2) indicator reliability, (3) convergent validity and (4) discriminant validity [48]. The outer loading, indicator reliability, composite reliability, AVE scores and Cronbach Alpha value for the reflective measurement model is shown in Table 1 below

Latent Variable	Indicators	Loadings	Composite Reliability	AVE	Cronbach Alpha
Career Adaptability	KK10	0.850	0.821	0.880	0.821
	KK11	0.740			
	KK12	0.826			
	KK9	0.801			
Vocational Employability	KBV1	0.779	0.808	0.874	0.808
	KBV13	0.848			
	KBV15	0.815			
	KBV8	0.741			
Self-efficacy	ED2	0.715	0.630	0.802	0.630
	ED7	0.789			
	ED8	0.770			
Career Choice	PM10	0.756	0.802	0.871	0.802
	PM15	0.788			
	PM5	0.779			
	PM7	0.843			

All items are loaded significantly (loadings ranging from 0.715 to 0.850) onto their respective factors, verifying their indicator reliability [49]. Besides, the AVE values were well above the required minimum level of 0.50. With that, the measures of the four reflective constructs had exceeded levels of convergent validity and exhibited high reliability. In addition, the factor loading, composite reliability (CR), and the AVE analysis exceeded the recommended cut-off parameters.

In testing the discriminant validity, two criteria are used: the [49] criteria and the [50] cross-loadings criteria. The Fornell-Larcker criteria assess in construct level based on the two principles that are: 1) the square root of the AVE- exceeds the correlations between the measure and all other measures, and 2) when the indicators' loadings are higher than their respective construct in comparison to other constructs [49]. As shown in Table 2 below, the non-bolded values represent values on the inter-correlation value between constructs meanwhile, the bolded values represent the square roots of the AVE. All off-diagonal elements are lower than the square roots of AVE (bolded on the diagonal), reflecting the results that meet the criteria stipulated by [49].

Table 2: Latent Variable Correlations using the Fornell-Larcker Criteria

	Self-efficacy	Vocational employability	Career Adaptability	Career choice
Self-efficacy	**0.759**			
Vocational employability	0.754	**0.797**		
Career Adaptability	0.675	0.776	**0.805**	
Career choice	0.694	0.675	0.767	**0.792**

Cross-loadings is the next assessment in determining the discriminant validity that considers the indicators' loadings with respect to all construct correlations. It serves as another check for discriminant validity on the indicator level [50]. The output shows that all measurement items loaded higher concerning their intended latent variable than other variables. Based on the preliminary assessments of reliability, convergent validity and discriminant validity, the measures show satisfactory reliability and validity, thus indicating that the measurement model is valid.

Table 3: Cross-loadings

	Self-efficacy	Vocational employability	Career Adaptability	Career choice
ED2	**0.715**	0.719	0.628	0.390
ED7	**0.789**	0.521	0.357	0.525
ED8	**0.770**	0.470	0.532	0.657
KBV1	0.687	**0.779**	0.629	0.543
KBV13	0.667	**0.848**	0.626	0.613
KBV15	0.559	**0.815**	0.591	0.396
KBV8	0.457	**0.741**	0.625	0.572
KK10	0.569	0.688	**0.850**	0.603
KK11	0.331	0.599	**0.740**	0.489
KK12	0.526	0.577	**0.826**	0.697
KK9	0.679	0.640	**0.801**	0.648
PM10	0.636	0.533	0.598	**0.756**
PM15	0.462	0.557	0.556	**0.788**
PM5	0.558	0.486	0.653	**0.779**
PM7	0.525	0.564	0.613	**0.843**

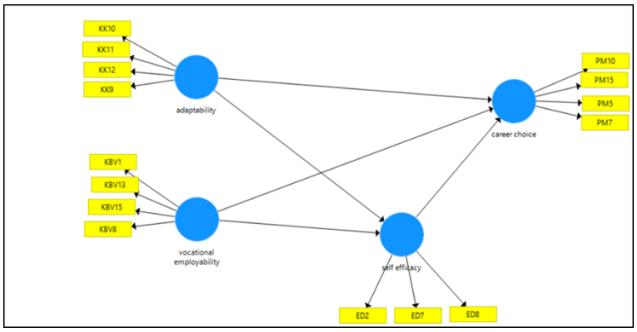

Figure 1 : Measurement Model

Structural Model Assessment

According to [50], path analysis should be used to confirm the strength of the relationship between independent variables and dependent variables. Based on the Smart PLS bootstrapping analysis, the significance level, the path relationship presented in the framework was examined through regression coefficient (β) value. The significance was based on t-values

obtained from the Smart PLS bootstrapping process. The proposed hypotheses, either accepted or rejected, is elaborated from the observed t-statistics and significance levels for all hypothesized path as table 4 below.

Table 4: Path Coefficients, Observed T-statistics and Significance Levels

	Path Analysis	Sample Mean (M)	T Statistics	P Values	Hypothesis
H_1	Career Adaptability -> Career Choice	0.551	2.976	0.003	Accept
H_2	Vocational Employability -> Career Choice	0.019	0.080	0.936	Reject
H_5	Career Adaptability -> Self Efficacy	0.249	1.330	0.184	Reject
H_6	Vocational Employability -> Self Efficacy	0.565	3.364	0.001	Accept

Note: p-value<0.05***

Referring to Table 4, the results of the path coefficients revealed that career adaptability (β=0.551***; and t=2.979) possessed a significant effect on career choice. Meanwhile, the path coefficients between vocational employability and career choice (β= 0.019; and t=0.080) were insignificant. On the other note, results of the path coefficients showed that knowledge of adaptability (β=0.249; and t=1.330) is insignificant to influence self-efficacy. In contrast, vocational employability (β=0.565***; and t=3.364) significantly affected self-efficacy. In other words, vocational employability significantly influences students' self-efficacy. The path coefficients are acceptable when their significance is at least at the 95% confidence level. Next, Table 5 reports the coefficient of determination, effect size and predictive relevance of the structural model.

Table 5: Factor of the research model

Variables			R^2	Q^2
Career Choice			64.5%	0.338
Self-efficacy			58.9%	0.273
Variables	f^2 CC	Effect size	f^2 SE	Effect size
Career Adaptability	0.313	Moderate effect	0.049	Substantial effect
Vocational Employability	0.000	Weak Effect	0.325	Moderate effect

The R2 (0.645) between endogenous (Career adaptability and Vocational employability) with exogenous (Career Choice) indicates a substantial explanatory power between the independent and dependent variables [51]. Next, the study also confirms that self-efficacy is able to explain 58.9 percent of the variance in career choice. On the other hand, according to [50], the f 2 values of 0.02, 0.15, and 0.35 represent weak, moderate and substantial effects, respectively. The f 2 columns (in Table 5) revealed that career adaptability substantially affects self-efficacy (0.049). Moreover, the result indicates that vocational employability has a medium effect on self-efficacy (0.325). This result also happens to career adaptability, which also has a medium effect in producing R2 for Career Choice. Lastly, Vocational employability indicates a weak effect in producing R2 for Career Choice. In addition, the predictive relevance of the model is examined using the blindfolding procedure. Based on [52], the model has a predictive relevance for a certain endogenous construct if the Q2 value is larger than 0. In referring to table 5, both results of Q2 values for Career Choice (0.338) and Self efficacy (0.273) are more than 0, indicating that the model has a sufficient predictive relevance.

Mediating Analysis

In this study, the fifth hypotheses are to test whether Self-efficacy mediates the relationship between Career Adaptability (H5) and Vocational employability (H6) and Career Choice. This is based on the theoretical reasoning that suggests self-efficacy as the mediating factor that influences career choice. The mediating variable (Self Efficacy) is introduced into the relationship between Career Adaptability and Vocational employability and Career Choice. Table 6 shows a summary of the results

Table 6: Sobel test

	Hypothesis 5 Career Adaptability	**Hypothesis 6 Vocational employability**
Direct w/o Med	0.587***	0.227***
Direct w/Med	0.541***	0.016***
IV > Med Beta	0.224***	0.580***
Med > DV Beta	0.336***	0.420***
IV > Med SE	0.087	0.076
Med > DV SE	0.140	0.148
Sobel test statistic	**1.755 *** **	**2.664*** **
One-tailed probability	0.039	0.003
Two-tailed probability	0.079	0.007
Result	No significant	Fully Mediation

Based on the direct effect, career adaptability (β=0.587***, t=3.276) was identified to influence career choice positively and was not influenced through mediation (self-efficacy). This is supported by the Sobel test results for each construct (independent vs mediating and dependent). The Sobel test result is insignificant for career adaptability (Sobel=1.755***) with less than 1.96, and the two-tailed probability is higher than 0.05. In other words, self-efficacy has no mediation effect between Career adaptability and Career Choice. Contradictory from hypothesis 5, the mediation of self-efficacy between Vocational Employability and Career Choice shows some positive indicators. The mediating variable (self-efficacy) introduction reduces the direct effect between vocational employability (β=0.227***, t=2.377) with career choice, which leads to a full mediation effect. In sum, hypothesis six is accepted.

IMPLICATIONS AND CONCLUSION

Findings from this study found several factors and influences that impact the technical and vocational institute students' career selection. Adaptability factor is found to positively influence students' career choice in Bakery and Pastry course. This can be seen from direct effect testing on career choice that positively impacts students' career choice. However, the findings for the factor of vocational employability were the opposite. Analysis result demonstrated vocational employability factor could not influence students' career selection

through direct effect testing. Both analysis results above are supported with indirect effect testing with self-efficacy factor as a mediation factor for the selection of career of Bakery and Pastry students. This mediating test result concluded that self-efficacy is less stimulating between adaptability and career choice. In contrast, self-efficacy becomes a contributor of positive stimulation towards vocational employability and career choice. Notably, career employability will enhance students' self-efficacy to make their own career choices.

Based on the above findings, it can be summarised that bakery and pastry students' adaptability obtained from formal and informal education will open more spaces for them in career choice. This is accurate with the study by [53] which revealed that graduating students choose jobs according to their favour and the choice they feel is exact with the course they enrolled in. And this finding poses little doubt towards the mistake in choosing a field as pointed out by [6] that students may make wrong choices in their career if they are not equipped with enough information. Meanwhile, vocational employability factor showed very positive findings: career choice of bakery and pastry students will yield much better result from their high self-efficacy once they have mastered the knowledge of both hard and soft skills. This finding supported the statement by [54] that the ability of knowledge, skill and attitude will enhance students' confidence to be more competent in the industry later.

Findings from this study implicate stakeholders in several measures that must be administered to develop skilled human resources. The institution must give more knowledge about career to students so that the extra information gained will help them to build early comprehension about their career adaptability. On the other hand, the industry can be invited to the technical and vocational institutions as one of many learning approaches by bringing real-life situations into students' learning activities. By bringing the industry into the academic field, students' gap of knowledge and skills can be reduced, making the students more competent with the industry's demands. Students also need to enhance their knowledge and skills related to real work to compete with other more confident students to be in the industry later. With the effort from various parties, it will surely help reduce the issue of career incompatibility that the nation is currently facing.

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