

Preliminary Study: Validation of Measure for Psychology Students Employability Skills

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ABSTRACT

The purpose of this study is to validate the measure of Psychology students Employability Skills. This research used quantitative method by conducting two studies, exploratory and confirmatory studies. The sample used in this study was 206 Psychology students. The references in developing this measurement are SCANS (1992), the Conference Board of Canada (1992), Cotton (1993), Robinson (2000), Rosenberg (2012), Hamid (2014) which produced 87 questionnaire items with six aspects. The result of the Exploratory Factor Analysis (EFA) showed 27 items that are grouped together into five factors namely thinking skills, basic academic, interpersonal skills, technology skills, and personal qualities. The Confirmatory Factor Analysis (CFA) yields 16 items ($CR = 0.81$) with three factors namely Basic Academic ($CR = 0.74$), Thinking Skills ($CR = 0.70$), Sociability ($CR = 0.64$). The model of measurement is fit for the first-order ($Chi-Square = 105.95$, $df = 93$, $p-value = 0.12$, $RMSEA = 0.029$) and for second-order ($Chi-Square = 101.21$, $df = 83$, $p-value = 0.066$, $RMSEA = 0.034$). This measurement is able to provide an evaluation for Psychology students employability skills. Implication of this evaluation can be used to design intervention in enhancing employability skills among Psychology students.

Keywords: Employability, Employability Skills, Psychology.

INTRODUCTION

Though the number of college graduates in Indonesia each year reach 250,000 people, Willis Towers Watson who conducted a survey from 2014 to 2016 found that eight out of ten companies in Indonesia had difficulty finding domestic college graduates who were ready to use. Although 3.98 million new companies were appearing in Indonesia in the last decade, there is still an imbalanced number between new company and fresh graduates, attributable to the fact that every company has standards for employee recruitment, while not every graduate has the qualities needed by the hiring companies.

The issue of unqualified graduates has been linked to their employability skills. The term employability refers to the ability of individuals to secure certain jobs after completing certain educational standards (Dearing, 1997). The Conference Board of Canada (2000) mentions that employability skills are the skills one needs in order to enter, survive and develop in the world of work. This is applicable to those who work alone or work as part of a team. SCANS (Packer, 1992) identified what they called the "foundation" of the skills needed for high work performance, namely Basic Skills, Thinking Skills, and Personal Qualities. SCANS also identified five competencies that must be built on these "foundations" namely Resources, Interpersonal Skills, Information, Technology, Systems. The

Conference Board of Canada (McLaughlin, 1992) said that employability skills can be seen from three main skill elements, namely (1) Academic Skills, (2) Personal Management Skills, (3) Teamwork Skills. Robinson (2000) also states that employability skills consist of three skill sets which include basic academic, higher-order thinking skills, and personal qualities.

Past findings show that lack of the employability skills result in low employment level. Wakeling (2010), for instance, showed that unemployment for Psychology graduates is (7.4%), which is much higher than graduates from other programmes such as medical science (0.3%). This is still the case although Psychology is an important field in the workforce for it studies and discusses individuals' condition with regard to self-awareness, growth and development, social behavior and cognition in the workforce (e.g organizational behavior, recruitment, talent management, and selection).

The present study examined the validation of a measure for student employability skills which can be used to identify the gap between the job specification set by employing company and the qualities of psychology students. While previous studies examined employability skills in general (Yusof, 2012 & Wickramasinghe, 2010), the present ones assesses if employability skills needed for Psychology graduates. This study examined several existing measures on employability skills and modify it according to the skills needed by the Psychology graduates.

METHOD

Participants: Crocker and Algina (1986), suggested the number of 200 respondents as a sufficient number of samples. Gable (Azwar, 2013) said that if respondents to obtain trial data were 6 to 10 times the number of items to be analyzed. In this study, respondents were 206 students from the Faculty of Psychology at the one of private university in Jakarta.

Design: In a preliminary study of the development of Measure for Psychology Students Employability Skills, researchers used quantitative research and conducted two studies. The first study is exploratory study to explore or build a structural model consisting of a set variable or many variables and the second study is to confirm the instrument items with the main objective is to test whether the indicators that have been categorized based on the latent variables (constructs) are consistent with the construct or not.

Measure: The classification of skills in Measure for Psychology Students Employability Skills refers to the domains suggested by Secretary's Commission on Achieving Necessary Skills or SCANS (Packer, 1992). Researchers also used five other instruments to determine the aspects used in the development of Measure for Psychology Students Employability Skills measurement. The measurement is based on SCANS (1992) itself, The Conference Board of Canada (1995), Cotton (1993), Robinson (2000), Rosenberg (2012), Hamid (2014). Based on the six measurements the researchers examined and defined aspects that will be the basis for the development of Measure for Psychology Students Employability Skills, 87 items have been constructed. The items serve to measure 6 domains, namely Basic Academic (SCANS, 1992. Cotton, 1993 and The CBC, 1992), Personal Quality (SCANS, 1992 & Robinson, 2000), Thinking Skills (SCANS, 1992) Interpersonal Skills (SCANS, 1992 & Rosenberg, 2012), Technology Information Skills (SCANS, 1992 & Rosenberg, 2012), and Entrepreneur Skills (Hamid, 2014). Researchers used a 5-point Likert Scale where 1 = *Very incapable*, to 5 = *Very Capable*.

Data analysis. This research adopted factor analysis to test the construct validity of the Measure for Psychology Employability Skills. Two types of factor analysis can be used, namely Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

RESULT

Based on the 87 items used in the exploratory factor analysis, the researchers decided to consider items that contain numbers under the terms of absolute value, cross-loading, items that are not valid, the items in the group cannot be interpreted, and repetition of items that have been represented by another item. The results showed 27 items containing five factors without cross-loading, having groups with some items from the first alleged factor move to other factors and some items became new groups.

To measure the adequacy of the sample in analyzing exploratory factors, we can see it in the Keizer-Meyers-Okin (KMO) table which shows a result of 0.844 and is included in the high category. Factor extraction was carried out on 27 items in the Measure for Psychology Students Employability Skills variable to determine the right number of factors. In the first factor extraction, there are 8 factors, but the factor component is still cross-loading and is difficult to categorize, so the researchers decide to extract the factor with a specified number of factors, the number of factors is 5 (five) factors with a cumulative value of 52.59%.

The researchers also interpret these group of items to give the name of each factor to provide a meaningful understanding as can be seen in Table 1. The first factor is called Thinking Skills, the second factor is called Basic Academic, the third factor called Interpersonal Skills, the fourth factor is called Technology Skills, and the fifth factor is called Personal Quality. The reliability test results on the Thinking Skills factor showed Cronbach Alpha at 0.824, the second factor was the Basic Academic factor showed Cronbach Alpha at 0.791, the Interpersonal Skills factor showed Cronbach Alpha at 0.706, the Technology Skills factor showed Cronbach Alpha at 0.744, and the fifth factor was Personal Qualities showed Cronbach Alpha of 0.711.

After exploratory factor analysis which produced 27 items and five factors, the researcher then tested confirmatory factor analysis to validate the construction of the Measure for Psychology Students Employability Skills. First-order testing was conducted on 27 items to the latent variable, namely Measure for Employability Skills Psychology as a construct in this study. The results of the first-order confirmatory analysis factor that have been modified leave 16 items (can be seen in appendix A.) and obtained Chi-Square = 105.95, $df = 93$, $p\text{-value} = 0.12$, $RMSEA = 0.029$. This value indicates that this model is fit because it meets the criteria of fit which the probability value is more than 0.05 and the RMSEA value is less than 0.08, therefore, it is stated if empirical data is identical to the theory or model and the suitability of the model is accepted. The values of GFI, NFI, NNFI, IFI, RFI, AGFI, CFI have met the fit criteria because the value is more than 0.9 which means that all items measure the construct of Employability Skills in Psychology. Model fit can be seen as shown in Figure 1.

The validity of the Measure for Psychology Students Employability Skills model can be seen with the loading factor value on each item. The loading factors indicated a value greater than 0.3 (Bahiyah and Savitri, 2018), so all items have valid criteria. The reliability value calculated by the formula proposed by Bagozzi and Yi (Ghozali & Fuad, 2012) with the criteria for a fairly good Construct Reliability is 0.60. The calculation results show if the CR value generated is 0.81 which means that all items provide a reliable measure for the Psychology Students Employability Skills model.

Table 1
The result of Exploratory Factor Analysis (EFA)

	Factors				
	Thinking Skills	Basic Academic	Interpersonal Skills	Technology Skills	Personal Qualities
TS2	.772				
TS4	.694				
TS5	.668				
TS6	.656				
TS3	.645				
TS1	.610				
TS14	.410				
BA20		.796			
BA15		.747			
BA21		.580			
BA16		.566			
BA12		.560			
BA14		.465			
BA17		.415			
IP10			.829		
IP9			.794		
IP11			.720		
IP8			.421		
BA9			.407		
TI5				.818	
TI3				.758	
TI4				.724	
TI6				.611	
BA18				.367	
IP2					.814
PQ19					.740
IP4					.566

Based on the remaining items leaving three factors, namely Basic Academic, Thinking Skills and Interpersonal Skills. These three factors will be used as latent variables in the next test, namely second-order confirmatory analysis factors. The second-order confirmatory analysis after modification resulted in Chi-Square = 101.21, df = 83, p-value = 0.066, RMSEA = 0.034 and the values of GFI, NFI, NNFI, IFI, RFI, AGFI, CFI also met the criteria fit because the value is more than 0.9. This value indicates that the measurement model is fit and can be seen in Figure 2.

The value of construct reliability for the first factor is the Basic Academic factor showing a value of 0.74, the second factor is the Thinking Skills factor showing a value of 0.70, and for the third factor, the Interpersonal Skills factor indicates a value of 0.62. With these results, it shows that the measurement

of Psychology Students Employability Skills has fairly good construct reliability and measurement model, and the 16 items provide a reliable measure for measuring the Employability Skills of Psychology Students.

Table 2.
Mean Score of Psychology Students Employability Skills Indicator

No.	Indicator	Mean	SD	Level
<i>Basic Academic</i>				
1	Basic theory of Psychology	3.51	0.615	Quite High
2	Psychological disorder symptoms	3.49	0.661	Quite High
3	Psychological test administration	3.65	0.780	Quite High
4	Scoring Psychological test	3.72	0.806	Quite High
5	Psychological approaches for relevant issues	3.34	0.602	Quite High
6	Conducting Psychology research	3.39	0.681	Quite High
7	Operating statistical software	2.89	0.831	Quite Low
8	Implementing knowledge from the discipline of Psychology to the data held	3.46	0.709	Quite High
<i>Thinking Skills</i>				
9	Identify the root of a problem	3.60	0.675	Quite High
10	Apply different perspectives or points of view to see a problem	3.63	0.678	Quite High
11	Evaluating problems based on facts or evidence	3.85	0.646	Quite High
12	Reasoning	3.23	0.646	Quite High
<i>Interpersonal Skills</i>				
13	Building a rapport	3.75	0.636	Quite High
14	Friendliness and politeness	4.26	0.669	High
15	Empathy	4.03	0.643	Quite High
16	Exploring information	3.70	0.682	Quite High

Further analysis found that the level of Psychology Students Employability Skills in this private university is medium ($M = 57.50$, $SD = 5.91$). The other result of descriptive analysis (can be seen in table 2) also showed that the lowest indicator is operating statistical software. While the highest indicator is friendliness and politeness. There is a significant (p -value < 0.05) different on Employability Skills based on GPA (p -value = 0.000, $F = 7.996$), participated in internship program (p -value = 0.030, $t = 2.190$), and academic achievement (p -value = 0.003, $t = 2.987$).

DISCUSSION

The results of the present study indicated that the measurement of employability skills is valid with good model fit. This measurement divided the employability skills into three subscales including Basic skills, thinking skills, and interpersonal skills. these subscales in line with the previous studies. Dearing (1997) explains the term of Employability itself refers to the ability of individuals to achieve jobs following their educational standards. The Conference Board of Canada (McLaughlin, 1992) also explains one aspect of Academic Skills is the ability to think with indicators that show being able to access and apply specific knowledge from various fields (for example, technology, physical sciences, arts,

and social sciences). From these explanations, it can be concluded if specific knowledge as in this study shows conformity, and for this measurement, Psychology knowledge is part of the Basic Academic Skills aspects. This explanation shows that the need for this measurement is to measure the abilities and knowledge of academics that they have gone through and they learned during their education.

Robinson (2000) mentions that Thinking Skills is the ability to think, reason, and make good decisions is very important for employees who want to do well and progress. Someone who can think critically, act logically, and evaluate situations to make decisions and solve problems is a valuable asset. Based on the explanation of Robinson (2000) it can be concluded if this is following the items contained in the Thinking Skills factor, namely explaining analytical, critical, and logical thinking. The need for aspects of thinking skills shows that psychology students need critical, logical and analytical thinking skills to be able to solve a problem they face, just as it would be required by psychology graduates when faced with their research data and also when helping clients solve their problems.

SCANS (Packer, 1992) states that Personal Qualities is defined as the ability to show responsibility, self-esteem, self-management, sociability, self-management, integrity, and honesty. From this theory, it can be seen that the aspect of sociability indicates the ability to demonstrate understanding, friendliness, adaptability, empathy, and politeness in group settings. The explanation from SCANS (Packer, 1992) corresponds to the items in the Interpersonal Skills factor such as building closeness, showing friendliness, understand feelings, and digging information. Researchers finally named the Interpersonal Skills factor as a Sociability factor. This explanation shows if the need for this measurement is to measure how far Psychology student basic academic abilities and knowledge, critical and logical thinking skills to solve a problem, and to measure psychology students' socializing abilities by looking at their abilities in building closeness, showing friendliness, understand feelings, and digging information.

Result of descriptive analysis found that students with academic achievement ($M = 59.88$ $SD = 4.792$) and internship experience ($M = 58.42$ $SD = 5.883$) showed higher employability skills. This finding is in line with previous study by O'Connor and Bodicoat (2016) who stated that paid internship perceived as a good indicator in promoting employability skills among students. Other results found that Psychology students with a higher GPA ($M = 58.71$ $SD = 5.45$) showed a higher employability skill as well. These findings indicated that internship program, academic achievement and maintaining GPA could improve the employability skills among Psychology students.

CONCLUSION

With these results, it can be concluded if the Measure for Psychology Students Employability Skills produces 16 items consisting of three factors, namely Basic Academic, Thinking Skills, and Sociability. The results of this study indicate the difference between the general employability measurement with the Psychology Employability Skills measurement, where all items on this measurement show more specific indicators of the discipline of Psychology with a fairly good level of validity and reliability. This measuring was also proven capable of testing a hypothesis and describing the abilities of students of the Faculty of Psychology after the statistical data analysis. In addition, to improve the employability skills among Psychology students, university needs to encourage student to participated in internship program, motivate students to gain high academic achievement, maintain high GPA and enhancing skills on operating the statistical software.

This research is still far from perfect, with limitations such as the amount of sample this research gained is still in a handful amount, with only 206 participant who are participated in this research, which is below the ought amount of sample for this research which is 6 to 10 times more than the total amount of items in this questionnaire. Even so, in this preliminary study has proven the measurement model is fit, valid and reliable of the Psychology Students Employability Skills measurement. The development and the validation of the measurement in this preliminary study can be used for further research with a more appropriate number of samples. The variables in this study are very interesting to be continued and to be developed and researched. In the future, this research can be useful for the Psychology discipline in evaluating students to improve the quality of their graduates and to produce a better and more qualifiable human resources in the workforce.

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APPENDIX A: PSYCHOLOGY STUDENTS EMPLOYABILITY SKILLS MEASUREMENT

Aspects	Items
Basic Academic	
1	Understand the basic concepts and theories of Psychology
2	Capturing the symptoms of Psychology disorders
3	Conducting individual and group Psychological test administration
4	Scoring or managing Psychological test result data
5	Recognize Psychological approaches that are relevant for relevant issues
6	Conducting Psychological research
7	Operating statistical software
8	Implementing knowledge from the discipline of Psychology to the data held
Thinking Skills	
9	Identify the root of a problem
10	Apply different perspectives or points of view to see a problem
11	Evaluating problems based on facts or evidence
12	Find a principle that underlies the relationship between two or more objects
Sociability Skills	
13	Building a good rapport to clients
14	Showing friendliness, and politeness to others
15	Understanding other people's problems, emotions, distress, and feelings
16	Exploring information owned by clients related to the problem