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Research Paper

Reliability of self-employment intentions instrument among international students in Indonesian university

Mhd Subhan[1,2], Mas'ud Zein[2], Akhyar[2], Mohd Hakimie Zainal Abidin[1], Sallehudin Ali[1], Salleh Amat[1], Mohd Izwan Mahmud[1], Aida Hanim A. Hamid[1] and Abu Yazid Abu Bakar[1*]

[1]Univerisiti Kebangsaan Malaysia
[2]UIN Suska Riau
**Corresponding author E-mail: yazid3338@ukm.edu.my*

Abstract

This paper examines the validation instrument used to measure the psychometric status of the self-employment intentions. Self-employment intentions are crucial to identify the university students in order to confirm their decision making. They are a questionnaire to measure graduation in university to start choice on their careers. This instrument is composed of 11 items and was carried out to 115 international students studying in one Indonesian higher education. There were 49 male and 66 female respondents involved in this study. The Cronbach's Alpha value was .94 which strongly suggest that the instrument has an excellent reliability. This study points out that self-employment intentions are suitable to be used by college personnel and counselors to examine and identify self-employment intentions among international students in Indonesian higher education. Implications for future study will also be discussed.

Keywords: *Self-Employment Intentions, Psychometric Evaluation, Reliability, Validity*

1. Introduction

The Career decision making is most of college students' stress and difficulties confronted in a daily basis [1] . The Institutes of Higher Learning in Indonesia are producing an ever-increasing number of graduates every year. Reference BPS [2] reported students graduating from higher education institutes in Indonesia have been increasing firmly over the years to about 787,000 in 2016. The number of students graduated from bachelor's program takes a big portion comparing to other levels of study. The increased in the numbers of the institute of higher learning may contribute to this scheme. Although it gives the chances to more students to continue their study, according to the graduates' tracer study by Ministry of Higher Education Department, seven percent of students graduated from bachelor's program is still jobless within three to four months after completion of the study. The graduate oversupply contributed to the inequality of many graduates in related to the job vacancies available in the market.

Self-employment is described as the intention to work on oneself [3], the intention to start a business [4] or the intention to own a business [5]. Thrikawala [6] found some young graduates were not in favor to choose entrepreneurship as their career choice. According to Akmaliah [7], the decision to choose an entrepreneur as a career can sometimes depends on personality traits of individuals. Past studies of entrepreneurial intention mostly used Theory of Planned Behavior [8] as theoretical framework.

Theory of Planned Behavior (TPB) emphasizes three kinds of considerations that guide human actions: behavioural beliefs that connects the outcomes and evaluations, normative beliefs that connect motivation and compliance of these motivations and control beliefs that may assist or impede performance and the perceived power [8]. Behavioural beliefs make an individual is in favor or unfavor of particular behavior while normative beliefs create pressure in society or the norms in society. In addition, control beliefs make an individual aware of the anticipated behavioural control. In general, intention is determined by the attitude towards behavior, subjective norm, and perception of behavioural control [9]. The greater the perceived control, the attitude and subjective norm, the greater the individual's intention to perform the behavior [10].

1.1. Measurement of Self-Employment Intentions

Most of the measurement to examine self-employment intentions have been expanded and applied in the West [11]. However, those measures are not widely accepted and no one scale was elected as the preferred one [12].

1.2. This Study

According to Akmaliah and Hassan [13], self-employment intentions have been well examined in the West but they are less examined in Asian countries. This is to imply that less instruments were used to measure self-employment intentions due to reliability issues. One of the validity issues is the use of the instrument in the non-western population when it is originally developed in the western culture. The purpose of this study is to report the reliability of the Self-Employment Intentions Measure for international students studying in Indonesia.

2. Methodology

2.1 Participants

This study employs 115 international undergraduate students

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studying in one public university in Indonesia. The selected participants were informed about the purpose of the study in evaluating the self-employment intention [14]. Among 115 participants, 49 (43%) were male and 66 (57%) were female. The mean age of the involved participants is 22.4 years old. Purposive sampling procedure [15] was utilized in this study where the researchers gather the participation of international students at the International office, library, and international student residence.

2.2. Instruments

The instrument was developed based on the modification of previous instruments which are developed by several authors such as Ajzen and Fishbein [16], Kolvereid [17], Krueger [18], Chen, Green and Crick [19], Hassan [20] and Akmaliah and Hassan [13]. The instrument of self-employment intentions were applied in this study. The self-employment intentions are composed of eleven items; all positive items. According to Hassan and Akmaliah [13], items 1-11 are stated positively. Respondents were asked to answer each item by using the following 5 point Likert Scales with 1 demonstrating "strongly disagree" to 5 demonstrating "strongly agree". The items which were written negatively are regraded so that higher scores resonated its mean. Akmaliah and Hassan [13] also affirmed the reliability and validity of the instrument. The instrument showed the value of Cronbach's alpha ranging from .65-.96. Convergent validity and discriminant predictive validity were also explored by Akmaliah and Hassan [13] as part of the validation analysis.

2.3. Data Analysis

The data were analyzed using SPSS 22.0. The primary analysis is to examine: *first*, the reliability, *secondly*, factor structure, and *finally*, the validity of the instrument. The factor structure was investigated by principal component analysis (PCA) and the internal consistency was measured by using Cronbach's Alpha.

3. Results and discussion

At the beginning stage, we determined mean and standard deviation of the self-employment intentions. Analysis resulted the mean value of self-employment intentions is 2.69 and the standard deviation of the scale is 7.95. There were significant inter-item correlations discovered in the self-employment intentions. The analysis showed that the values of inter-item correlation are between .33 and .96 (Table 1). All values are found positive, indicating that the items shared similar characteristics or constructs. According to Field[21], a correlation value between .30 and .90 is agreeable to implement deeper analysis. The data demonstrated that there are no multicollinearity issues.

Based on Table 1, Principal Component Analysis (PCA) was carried out. As shown in Table 2, the Bartlett Sphericity Test is strongly significant, $\chi 2$ (55) = 1243.534, p = .000, therefore factor analysis is appropriate. The Kaiser Mayer Olkin that measure a sample of adequacy (MSA = .864) was bigger than the minimally agreed level of .5. This result shows that the study has completed the sampling adequacy requirement for factor analysis [21, 22, 23]. According to Bartlett test of Sphericity and the Kaiser Mayer Olkin, it can be achieved that Self-Employment Intentions met the precondition for the application of PCA.

The validity of the Self-Employment Intentions was tested by using PCA [24]. Factor analysis method was used to access the construct validity of the instrument. Principle component analysis (PCA) decides the factors accounting for the total variance of the specific construct. The factor analysis indicates that there was a single factor of eigenvalues above 1.0. This carries 65.37% of the total variance (Table 3). The values of factor range from .60 to .90 (Table 4). All eleven items were found agreeably well in a single factor. In general, a factor value of .40 is accepted in factor analysis which suggests that the items can be involved in the scale [22, 25]. The coherent characteristics of a scale can be examined by its internal consistency. Streiner proposed, "One of the central tenets of classical test theory is that scales should have a high degree of internal consistency, as evidenced by Cronbach's Alpha" (p. 217). Meanwhile, the Cronbach's Alpha value was .94 showing that the scale has excellent reliability [22]. No item was erased as the value of the coefficient alpha is relevant. Table 5 shows the value of Cronbach Alpha if items were removed.

4. Conclusion

To summarize this study, the self-employment intentions established by Ajzen and Fishbein [16], Kolvereid [17], Krueger [18], Chen, Green and Crick [19], Hassan [20], and Akmaliah and Hassan [13] is considered as a reliable and valid scale for the measurement of self-employment intentions among international students in Indonesian university. Principle component analysis produced a single component of self-employment intentions which is suitable with the single factor of self-employment intentions expanded by Ajzen and Fishbein [16], Kolvereid [17], Krueger [18], Chen, Green and Crick [19], Hassan [20] and Akmaliah and Hassan [13]. The reliability of the scale was high because the value of Cronbach alpha was .94.

Despite its high value of psychometrics properties, further validation studies are needed to support this findings, in a wider population. Additionally, this self-employment intention could be developed by correlating this instrument with other instruments that measure self-employment or entrepreneurship career. The findings of this study are restricted with convenience sampling of international students in a public university in Indonesia. Future study suggests that a larger population involving several other universities in Indonesia should be examined.

In summary, this Self-Employment Intentions is highly recommended for college personnel and counselors to examine the decision making choice career self-employment intentions among university students. The questions are user-friendly because the items are easily understood and it does not take long to complete the instrument. The university counselors could use this instrument to gain initial information about career choices made by the students. Hence, suitable support and counseling services could be designed to cater the needs of these students.

Table 1: The Self Employment Intentions

Correlation Matrix												
		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11
Correlation	Item 1	1.000	.469	.460	.442	.453	.480	.427	.457	.329	.464	.487
	Item 2	.469	1.000	.535	.712	.526	.642	.739	.589	.615	.611	.631
	Item 3	.460	.535	1.000	.708	.367	.682	.680	.967	.647	.661	.624
	Item 4	.442	.712	.708	1.000	.563	.773	.758	.742	.818	.671	.683
	Item 5	.453	.526	.367	.563	1.000	.505	.551	.461	.433	.532	.431
	Item 6	.480	.642	.682	.773	.505	1.000	.677	.706	.693	.695	.841
	Item 7	.427	.739	.680	.758	.551	.677	1.000	.692	.693	.664	.638
	Item 8	.457	.589	.967	.742	.461	.706	.692	1.000	.658	.699	.611
	Item 9	.329	.615	.647	.818	.433	.693	.693	.658	1.000	.593	.744
	Item 10	.464	.611	.661	.671	.532	.695	.664	.699	.593	1.000	.664
	Item 11	.487	.631	.624	.683	.431	.841	.638	.611	.744	.664	1.000

Table 2: KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.864
Bartlett's Test of Sphericity Approx. Chi-Square	1243.534
df	55
Significant	0.000

Table 3: Total variation that can be determined

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.190	65.368	65.368	7.190	65.368	65.368
2	.860	7.814	73.182			
3	.707	6.426	79.608			
4	.588	5.350	84.957			
5	.448	4.070	89.027			
6	.387	3.515	92.542			
7	.275	2.502	95.044			
8	.234	2.123	97.167			
9	.197	1.793	98.960			
10	.092	.835	99.795			
11	.023	.205	100.000			

Table 4: Component matrix

Component Matrix[a]	
	Component Item
1. I will choose a career as an entrepreneur	.595
2. I prefer to be an entrepreneur rather than be an employee in a company	.797
3. I am prepared to do anything to be an entrepreneur	.836
4. I'll make every effort to start and run my own business	.895
5. I have thought seriously to start my own business after completing Study	.640
6. I have a strong intention to start a business someday	.874
7. I'm determined to create a firm in the future	.853
8. I put effort to make more money	.863
9. I want to be my own boss	.825
10. I will start my business in next 5 years	.820
11. I will start my business in next 10 years	.835

Extraction Method: Principal Component Analysis.

Table 5: The Self-employment Intentions: Cronbach's Alpha if item deleted

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Question 1	28.36	59.725	.541	.946
Question 2	26.75	53.769	.752	.938
Question 3	26.61	52.188	.786	.936
Question 4	26.62	49.975	.869	.932
Question 5	27.84	52.537	.577	.947
Question 6	26.56	50.897	.839	.934
Question 7	26.64	51.723	.818	.935
Question 8	26.54	51.338	.822	.934
Question 9	26.51	51.270	.784	.936
Question 10	26.62	53.271	.778	.937
Question 11	26.57	51.580	.788	.936

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