

Development of Employability Model 4.0 Higher Education Graduates in Indonesia

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Abstract: University graduate unemployment remains an unsolved phenomenon, especially in developing countries-Indonesia is no exception. The emergence of the industrial era 4.0 brought many changes to business processes towards the digitalization of technology, including competence in the job market. This shift in incompetence requires graduates to be able to improve their employability. This study aims to re-identify explicitly relevant competencies to increase the employability of university graduates in Indonesia. Data were collected through online questionnaires distributed to 279 alumni of Universitas Terbuka in seven provinces in Indonesia. This study shows that employability is a multidimensional model, including adaptability and the ability to change. This study successfully integrated Bloom's Taxonomy theory and the USEM model to form the Indonesian Employability 4.0 Model (IEM 4.0). The study can be used as initial information on employability for curriculum restructuring in Indonesian higher education.

Key words: ability change to work, adaptability, curriculum, employability.

1. Introduction

The relatively high unemployment rate is a phenomenon that cannot be solved over time. Bps data in the last five years shows fluctuations in undergraduate unemployment in the range of 4%-6% of the total open unemployment in Indonesia. Statistical data in 2019 showed that 5.67% of the total open unemployment was 7.05 million. In addition, some conditions indicate a shift in qualifications and skills as required in the needs of the industrial era 4.0 to encourage universities as superior human resource producers to try to adapt their strategies to those needs (Ministry of Education 2018).

As one of the entities that must play a role in providing skilled labor and following the labor market needs, universities must make various adaptations to prepare work readiness to contribute after graduation (Qenani et al., 2014). In this case, universities as suppliers of human resources to the job market produce prospective trained and educated workers (Bakari et al., 2017). One aspect that can be

connected with these needs is the curriculum that can accommodate the competence and needs of the industrial world so that graduates can be absorbed in the job market. As Marope et al. (2017) point out, the future curriculum should reflect the competencies that prepare learners to be futuristic in the face of a highly dynamic environment. Therefore, the curriculum designed by higher education must have elements that can produce holistic graduates with technical, non-technical, ethical, and moral good skills (Yusof et al. 2013) to measure the curriculum's effectiveness.

The success of universities in terms of learning outcomes is the level of availability of graduates in the job market. This condition can be interpreted that the competence obtained by graduates in universities must be able to meet the needs of the industry so that conformity between the curriculum and the needs in the world of work (link and match). Therefore, higher education must produce graduates who have employability through the learning process. However, a common problem faced by higher education is the speed of technological change that changes the work process in the business sector is not able to be balanced by the speed of curriculum changes in higher education. This is more due to the limitations of internal resources.

Seeing the phenomenon of curriculum applied in universities today, especially the Faculty of Economics, Open University (UT), reflects that students are only equipped with hard skills and very minimal curriculum content that forms or builds the soft skills needed today. This is confirmed by excerpts from the author's interview with the Head of the Open University Research and Innovation Center and the Head of UT Cyber Development Center, who stated that the current curriculum content is required by the content of institutions and faculties (courses) so that the content that forms soft skills cannot be accommodated in it. This condition is in stark contrast to the demands of the job market, especially in the 4.0 era. With very fast and unsparing changes, it becomes a demand for graduates to have adaptability and the ability to change to deal with it. Both of these soft skills need to be owned by higher education graduates whose implementation can be done in the form of a curriculum. In fact, the demands of skills and qualifications of the 4.0 era are increasingly complex, thus demanding higher education to be able to produce graduates with competencies that suit the needs of the job market. As stated by Aulburt et al. (2016) that one of the requirements and qualifications required for era 4.0 is adaptability and the ability to change.

In the perspective of workability, Yorke (2006) further explains that the set of competencies consisting of knowledge, skills, and attitudes are integral to getting a job. To combine the definition of employability with the existence of higher education implemented in the curriculum, Knight and Yorke (2004) have produced a model that explains the elements of employability, namely: Understanding, Skills, Efficacy Beliefs, and Meta cognitive under the name USEM Model.

The application of the USEM model in the curriculum is reflected by the synergy between the knowledge, skills, and attitudes that graduates have when they graduate so that supply and demand between higher education and the job market can be formed. The USEM model is in line with Bloom's explanation (1956) which provides an explanation of the suitability between the learning process and the environmental conditions faced by graduates. This study integrates Bloom's thinking, the USEM model, and environmental conditions in Indonesia in the face of changing job market needs and business processes occurring in the industry as a result of rapid technology.

This study identifies explicitly relevant competencies to improve the employability of UT graduates with the necessary curriculum content of the job market. Thus, this study will produce a new competency framework that can be used by universities in Indonesia in general.

2. Method

This research uses a quantitative approach. The data sources used to answer the objectives in this study are primary and secondary data. Primary data is obtained by filling out questionnaires and interviews with respondents, namely alumni of The Open University who have not worked. The questionnaire presented as a survey tool in the form of statements using the Likert scale with several alternative answers for respondents with a range of five points. For adaptability and ability to change variables, use an option where the response points show the result: 5= Very agree/very necessary to 1= strongly disagree/very unnecessary.

Sampling in this study using a convenience sampling method. Respondents as one of the samples to be used provide feedback or clarification on questionnaires sent through online interviews, while alumni samples are taken randomly from data provided by the Bureau of Academic, Student Affairs and Planning of Open University. The population used in the research is users and alumni of Open University period 2015-2019, both of whom have worked and have not worked.

The research object used in this research is graduates (alumni) of the Faculty of Economics, Open University located in Java Island, including Banten, Jakarta, Bogor, Bandung, Semarang, Yogyakarta, and Surabaya. The number of respondents who have responded to the questionnaire is 279 of the required number of questionnaires by data analysis using SEM-PLS.

3. Results and Discussion

Evaluation of the measurement model is performed on each latent variable by testing the validity and reliability of the construct. Validity is an instrument used to measure the correctness of measurement. The SEM-PLS validity test analysis is divided into two: convergent validity test and discriminate validity test. Table 1 shows that outer loading and AVE are re-estimated, all variables have an AVE value of > 0.5 , and all indicators have an outer loading value of > 0.7 . so that the reflective model indicator has a valid convergent, it is also known that the indicators used to measure variables are valid, and the value of the indicator that measures the variable has a value of more than 0.7 so that the model is declared valid discriminate.

Table 1.
Outer Loading, AVE, and ROOT AVE

Latent Variable	Indicators	<i>outer loading</i> $> 0,7$	AVE $> 0,5$	Akar AVE $> 0,7$	Description
<i>Attitude towards individual (AI)</i>	AI1	0,8231	0,7360	0,8579	Valid
	AI2	0,9028			
	AI3	0,8761			
	AI4	0,8268			
<i>Career planning & confidence (CP)</i>	CP1	0,8007	0,6023	0,7761	Valid
	CP2	0,8362			
	CP3	0,7297			

	CP4	0,7322			
Generic skills (GS)	GS3	0,9048	0,8155	0,9031	Valid
	GS4	0,9013			
Profesional skills (PK)	PK1	0,8283	0,7210	0,8491	Valid
	PK2	0,8788			
	PK3	0,8845			
	PK4	0,8641			
	PK5	0,7858			
Personal skills (PS)	PS2	0,7863	0,6175	0,7858	Valid
	PS3	0,8155			
	PS4	0,7377			
	PS5	0,8016			

Based on Table 2 above it is known that the variable used in this study has an alpha cronbachs value of more than 0.6 and the value of composite reliability is more than 0.7. So it can be concluded that the variables used in this study have been reliable.

Table2 .

Cronbach Alpha and Composite Reliability

Latent Variable	Cronbachs Alpha>0,6	Composite Reliability>0,7	Description
Attitude towards individual	0,8798	0,9176	Reliable
Career planning & confidence	0,7794	0,8579	Reliable
Generic skills	0,7738	0,8984	Reliable
Professional skills	0,9026	0,9280	Reliable
Personal skills	0,7934	0,8658	Reliable
Employability	0,9327	0,9414	Reliable

Hypothetical Test Results and Model Analysis

The advantage of the SEM-PLS method is that it can estimate direct and indirect effects. Table 3 shows the test of the relationship between constructs.

Table 3.

Hypothesis Testing results

	Original Sample (O)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (O/STERR)	Hypothesis
<i>Personal skill (PS)</i> → <i>employability (EA)</i>	0,6756	0,0357	0,0357	18,9372	Accepted
<i>Adaptability (AT) →personal skill (PS)</i>	0,5720	0,0608	0,0608	9,4127	Accepted
<i>Ability to change (AK)</i> → <i>personal skill (PS)</i>	0,2467	0,0657	0,0657	3,7554	Accepted

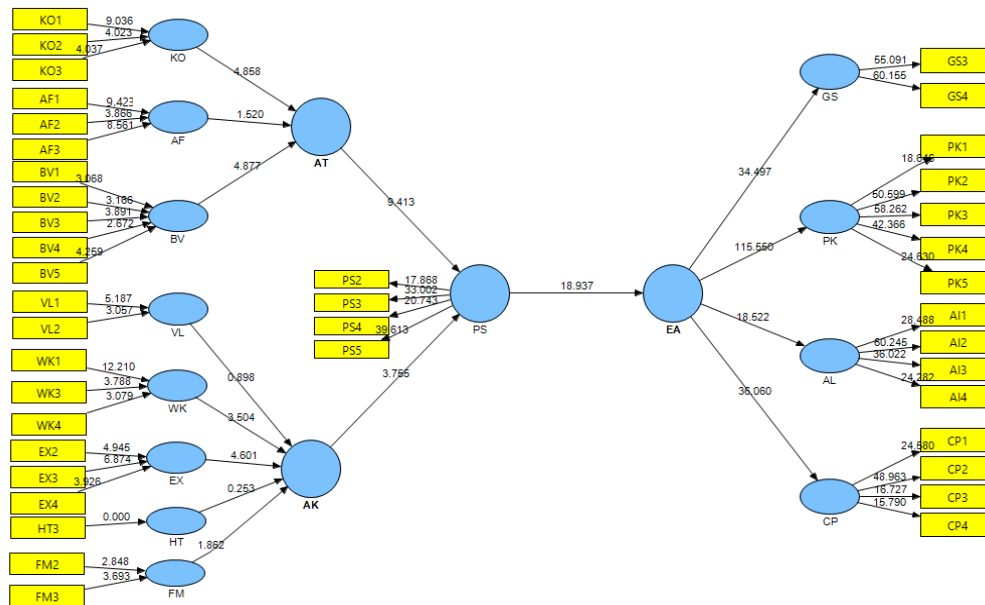


Figure 1

t-statistics results

Based on data processing analysis using SEM-PLS method obtained direct relationship between variables. Where the value of this total influence reflects how much influence a latent change has on other latent modifiers.

4. Theoretical Implications

In line with the results of Salek's research (2019), the education system that is adapted to the requirements of the industrial era 4.0 job market will allow the creation of interdisciplinary skilled workers. In addition, in accordance with the direction of the Directorate General of Belmawa (2015) namely that reciprocal interaction between producers and users of higher education graduates is necessary in order to realize the resilience and competitiveness of the nation as a whole.

The effect of personal skills on employability

Based on the results of the research analysis, it is known that hypothesis 1 of this study was accepted, namely that personal skills (PS) positively affect employability (EA). This is evidenced by the standardized coefficient of estimate (β) of 0.6756 and t -value 18.937 > 1.96. Where personal skills are abilities that have an important role in the acceleration of careers, while employability is a term often used as a measure by employers about the readiness of graduates in the job market so that one's ability can affect the readiness of individuals entering the job market, these results are in line with McQuaid and Lindsay's research (2005). Personal skills and competencies in personal skills are among the factors that influence employability. In addition, Fenta et al. (2019) also state that skills have a statistically significant correlation to employability.

From the analysis of more detailed data can be seen in Figure 1 that there are several dimensions of employability, namely generic skills (GS), professional skills (PK), attitude toward the individual (AI), and career planning & confidence (CP). Of the four dimensions, professional skills (PK) are the most influential to employability. This means that the job skills required to maintain a job are professional. With these skills, graduates can not only maintain their jobs, but they can also develop their careers where they work.

The Effect of Adaptability on Employability

Based on the research analysis results, it is known that hypothesis 2 of this study was accepted, namely that adaptability (AT) affects personal skills (PS). This is evidenced by the standardized coefficient of estimate (β) of 0.572 and t -value 9.412 > 1.96. Adaptability refers to a person's capacity to manage oneself cognitively, behaviorally, and emotionally in response to changes, new circumstances, or uncertain circumstances. This study shows that aspects of behavior become the most critical aspects in the world of work. Thus, the adjustment of behavior made by a person in adapting becomes a priority aspect of integrating with the existing environment and very dynamic in the world of work.

Based on adaptability-forming dimensions, the university graduates as newcomers to the labor market can easily socialize and adapt to new jobs and organizations. Savickas et al. (2009) stated that adaptability could accelerate adjusting to new rules, partners, and work environments. The results of this study are also following Savickas and Porfeli (2012), which said that graduates who can adapt could have a variety of additional skills and make it more dynamic in the selection of fields of work. This is also in line with Chan and Mai (2015) which stated that low career adaptability could result in a person wanting to leave or resign from the organization.

The Effect of ability to change on employability

Based on the research analysis results, it is known that hypothesis 3 of this study was accepted, namely that ability to change (AK) affects personal skills (PS). This is evidenced by the standardized coefficient of estimate (β) of 0.2467 and t -value of 3.775 > 1.96. The ability to change is felt to be owned by everyone, including higher education graduates. By having this ability, it is expected that higher education graduates can make adjustments both in the work environment, society, and the broader scope so that they can still influence the readiness of individuals entering the job market. These results are in line with the research of Aulbur et al. (2016), where along with the increase in personal skills,

employability is also increasing. Therefore this dimension is indispensable in the era of 4.0, which is full of uncertainty and quickly changes.

Further research shows that the expertise aspect (Ex) is the first indicator that forms the ability to change, indicated by a loading factor value of 4,601. Other indicators are work (WK) with a loading factor value of 3,503, family (FM) 1,862, value (VL) 0.898, and health (HT) 0.253. Concerning work, the results of this study are following ilmarinen's research (2005) which says that the balance between knowledge and skills in work dramatically affects the promotion and resilience of work. Ilmarinen further explains the ability to change this with one's level of education. People with better educational backgrounds are generally better prepared to accept all conditions in work than those with low education. Similarly, someone who has a better level of education tends to have the ability to change faster than the lower educated.

5. Practical Implications

As explained about the factors that make up the employability of graduates, namely adaptability and ability to change, then higher education in this case FE-UT can make breakthroughs in designing and developing curriculum according to the needs of the world of work. All competencies can be categorized as social competencies. However, if viewed based on the competencies required by the 4.0 era job market, then the competencies required by the 4.0 era job market still need to be improved such as: critical thinking ability, problem solving ability, technology and information capability, data analyzing ability, initiation and team work.

The results of data analysis based on industry type show that the majority of FE-UT graduates work as State Civil Apparatus (ASN) with the type of financial and trade industry. Looking at these results, the upcoming FE-UT curriculum can also adapt to the world of industry that is in great demand. Thus, it is expected that the applicable curriculum content can adjust to the needs of the industrial world so that the availability of graduates in the future, which is more dominated by millennials, and the next generation will be more flexible following the changes that occur.

To be able to apply curriculum development that suits the needs of the industrial world, the management is advised to form a special team that has the task to absorb information from business and industrial world, tracer study results, and other stakeholders relevant to the world of education and the world of work—providing special training for teams formed in collaboration with professional certification bodies—building networking to improve knowledge management in managing programs, faculties, and institutions in acquiring, designing, and disseminating curriculum policies to stakeholders.

6. Conclusion

Based on the analysis and discussion that has been put forward, it can be concluded: first, the core competencies that are successfully identified in shaping employability include adaptability and ability to change. Second, behavior factor is the dominant factor in forming adaptability, while expertise is the dominant factor in forming ability to change. Third, the study successfully integrated the Taxonomy Bloom theory and USEM model to form the Indonesian Employability 4.0 Model (IEM 4.0).

7. Limitation and future research

This study has several limitations: first, the data used is limited to only one university so as to be able to have limitations from the generalization side. Therefore, further studies involving various universities (public and private) in Indonesia are needed to obtain a broader phenomenon so as to draw on the internal and external conditions of higher education nationally. Second, the research design uses cross sectional (data obtained in one period of time) so that it has limitations in terms of claim causality and has the potential of common method bias. Subsequent studies are suggested using longitudinal and cohort designs so that the models developed have predictive validity.

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