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Analysis of the Effect of the Educational System and Student Motivation in Creating Workforce Competitiveness (A Case Study Facing the Industrial Revolution 4.0)

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Abstract. The purpose of this study was to determine the effect of the Education System and Student Motivation in Creating Labor Competitiveness (A Case Study Facing the Industrial Revolution 4.0. This study used a quantitative analysis method, namely research using the output of the statistical analysis process towards primary data, which is the answer or feedback (feed back) from respondents who collected through a questionnaire (questionair).This research was conducted at Bhayangkara University, Jakarta Raya, Bekasi. The number of samples determined was 87 respondents using purposive sampling method. Data processing techniques using PLS 3.0 tools. Based on the results of the tests that have been carried out, it shows that the indicators are valid and reliable. The coefficient of determination shows the number of 0.352 which means that the variable of Labor Competitiveness is influenced by the Education System and Student Motivation by 67%. The results of the hypothesis test show that the Education System and Student Motivation have a positive and significant effect on the competitiveness of the workforce.

Keywords. Education System, Student Motivation, Labor Competitiveness and Industrial Revolution 4.0

I. Introduction

Today, the world as we know that in the next fifteen to twenty years will come to the Industrial Revolution 4.0. This fourth generation revolution is marked by technological advances that are colored by artificial intelligence. The industrial revolution 4.0 is the fourth phase of the historical journey of the industrial revolution where previously there has been an industrial revolution, 1.0, industrial revolution 2.0 and industrial revolution 3.0 which began in the 18th century.

The industrial revolution 4.0 is built on the digital revolution, where humans have found new ways when technology becomes embedded in society and even the human body. The current fourth industrial revolution, which began in the 2000s, has made automation more advanced, especially in cyber-physical production systems (cyber only with barcode scans that have been carried out by several physical industries). The development of the industrial revolution 4.0 such as supercomputers, smart robots, driverless vehicles, genetic editing and

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neurotechnology developments that allow humans to further optimize brain function. Prof. Klaus Schwab, who is a world-famous Economist from Germany, Founder and Executive Chairman of the World Economic Forum (WEF) is the person who introduced the concept of the Industrial Revolution 4.0. In his book which entitled "The Fourth Industrial Revolution", Prof. Schwab explained that the Industrial Revolution 4.0 has fundamentally changed human life and work.[1]

Where at this time a lot of changes in the workforce are replaced by technological advances. Many companies have produced products and services that are much more efficient, such as the role of using electronic money (e-money) in toll payments, cash deposits at ATM machines, and the use of electronic tickets or transportation in Indonesia.

Indonesia's success in facing the Industrial Revolution 4.0 is also determined by the quality of educators, lecturers, and other teaching staff. Through education, people can be well educated. Especially in the various skills needed to be competitive in the face of increasingly fierce competition.

Education is one of the means to create quality and competitive human resources. The development of education in the world indirectly helps change the economic order in a country However, Indonesia is faced with educational problems

education that occurs in Indonesia today has not achieved optimal success as expected. Dismantling the curriculum, formulating educational standards, improving the competence of teachers and lecturers as well as many other educational policy issues.

Bhayangkara University Jakarta Raya is one of the leading private universities. As a leading university, Bhayangkara continues to strive to improve the education system implemented by continuously improving the quality of teaching staff. Many things are

should be improved by Bhayangkara University, Greater Jakarta in terms of the education system. Currently, Bhayangkara is still using the old method, namely the face to face system, or if absent less than 75% cannot take the exam, as well as supporting theories, both used by teachers and available in the library, there are still many old theories that are not adapted to the curriculum. and existing developments.

In addition to being faced with the problem of the existing Education System, Bhayangkara University is also faced with the problem of learning motivation from the students themselves. Student learning motivation cannot only be driven by self-will. However, it must also be encouraged from external factors, in this case the existing teaching staff must know how to increase student learning motivation. So that existing students have high learning motivation which will have an impact on the quality possessed by the students themselves. In addition, Bhayangkara University, Greater Jakarta will also be considered capable of creating quality graduates who will be able to compete in the world of work. Where competitiveness is the strength possessed by both a person and an organization in achieving its goals.

One mistake that is happening today is that it is difficult for graduates of national universities to be absorbed in the world of work. This is due to the gap between the profile of university graduates and the qualifications of ready-made workers needed by the company.

Based on data that was obtained in 2018, Bhayangkara Raya University, Jakarta Raya, has scored 185 graduates in management study programs. Of the 185 graduates of Bhayangkara Raya University, Jakarta Raya Management, there are still many graduates who have not been absorbed in the world of work, the following is the data that was successfully obtained:

[1] Andrean Candra, 2014, Sistem Pendidikan, www.kompasiana.com

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Table 1.1 Data for Graduates of Bhayangkara University, Jakarta Raya Management Study Program in 2018

No	Information	Total	Percentage
1	Employment	130	70.27%
2	Self Employed	7	3.78%
3	Work and Entrepreneur	6	3.24%
4	Not Working	42	22.70%
Total		185	100%

Source: Interview, May 2019

Based on data from Bhayangkara University, Jakarta Raya, majoring in Management in 2018, as in table 1.1, 130 graduates or 70.27% have worked for companies. Numbers already working for the company is the largest number when compared to the others. However, the problem is that a number of graduates who have worked in companies mostly only work at a low level or only as administrative staff. Where, the field of work can be done by high school graduates. 7 graduates or 3.78% chose to be self-employed and 6 graduates or 3.24% chose to work and the remaining 42 people chose to be entrepreneurs

Literature review

According to Prof. Schwab, The fourth industrial revolution creates a world in which virtual and physical systems of manufacturing globally cooperate with each other in a flexible way. This enables the absolute customization of products and the creation of new operating models. The fourth industrial revolution, however, is not only about smart and connected machines and systems. Its scope is much wider. Occurring simultaneously are waves of further breakthroughs in areas ranging from gene sequencing to nanotechnology, from renewables to quantum computing. It is the fusion of these technologies and their interaction across the physical, digital and biological domains that make the fourth

industrial revolution is fundamentally different from previous revolutions. (The fourth industrial revolution created a world where virtual and physical manufacturing systems globally work together in flexible ways. This allows for absolute customization of products and the creation of new operating models. The fourth industrial revolution, however, is not just about intelligent, connected machines and systems. . The scope is much wider . What is happening at the same time is a wave of further breakthroughs in areas from gene sequencing to nanotechnology , from renewable energy to quantum computing . Is the fusion of these technologies and their interactions across the physical , digital , and biological domains . which makes the fourth industrial revolution fundamentally different from previous revolutions) [2]

The World Economic Forum defines competitiveness as a collection of institutions, policies and factors that determine a country's level of productivity. According to the Regulation of the Minister of National Education Number 41 of 2007 Competitiveness is the ability to show better, faster, or more meaningful results.[3]

According to Z. Heflin Frinces in Sunyoto Competitiveness is conceptually the culmination of various advantages and added values that are owned to make something, whether in the form of an organization, product or service.[4]

[2] Klaus Schwab, 2016, *The Fourth Industrial Revolution*, World Economic Forum
[3] Susi Demaryani, 2018, Wirausaha dan Daya Saing, CV Budi Utama.
[4] Danang Sunyoto, 2015, Keunggulan Bersaing *(Competitive Advantage)*, CAPS.

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Desmaryani Competitiveness is the ability of a sector, industry, or company to compete successfully to achieve sustainable growth in a globalized environment as long as the offset costs are lower than the receipt of the resources used.[5]

According to Jones in Sutrisno, motivation has to do with a process that builds and maintains behavior towards a goal.[6]

According to Fillmore H. Stanford in Mangkunegara Motivation as an energizing condition of the organism that serves to direct that organism toward the goal of a certain class[7].

According to Suwatno and Priansa, motivation is a driving force that will realize a behavior in order to achieve the goal of self-satisfaction[8]. Another opinion states that motivation can also be said as energy to generate drive arousal (Robert A. Baron, et.al in Mangkunegara).[9]

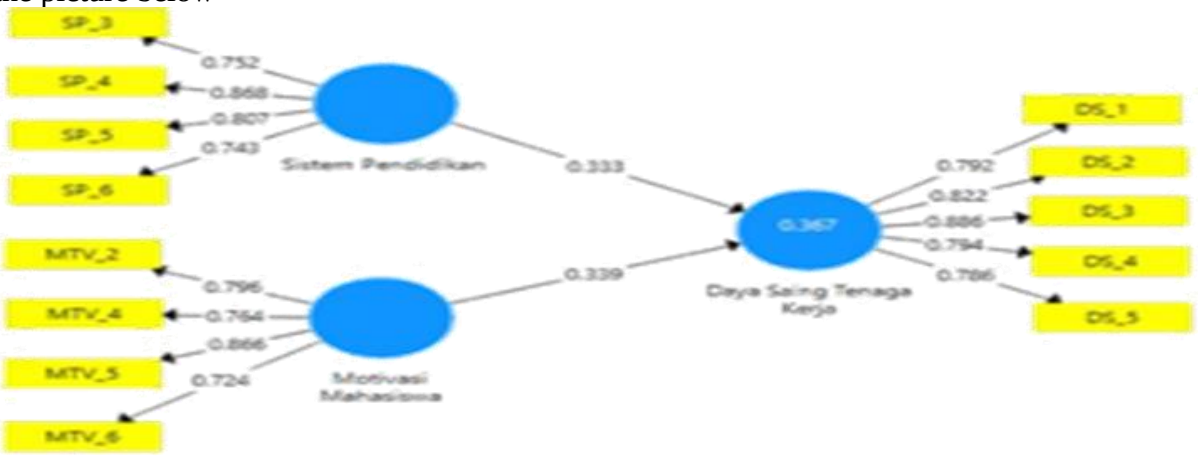
In chapter 1 article 1 of the National Education System Law no. 20 of 2003 it is stated that the National Education System is all components of education that are interrelated in an integrated manner to achieve national education. Departing from the sound of this article, it can be seen that [10]education is a system which is a total structure consisting of components that are interrelated and jointly lead to the achievement of goals (Soetarno in Munirah)

Research methods

This research was conducted at Bhayangkara University, Greater Jakarta, which is located at Jalan Raya Perjuangan Marga Mulya, North Bekasi. And the sampling was carried out at Bhayangkara University, Greater Jakarta. The time of the research was carried out from September 2019 to March 2020, 87 respondents. The statistical method used to test the hypothesis was to use Partial Least Square (PLS) and Structural Equation Modeling (SEM) with the SmartPLS 3.0 program.

Discussion result

The variables used in this variable are the education system variable (X1), the motivation variable (X2), and the competitiveness of the workforce (Y) which can be seen in the picture below



Test Validity and reliability

[5] Susi Demaryani, 2018, Wirausaha dan Daya Saing, CV Budi Utama.
[6] Edy Sutrisno, 2017, Mananjemen Sumber Daya Manusia, Kencana.
[7] Anwar Prabu Mangkunegara, 2013, Manajemen Sumber Daya Manusia Perusahaan, Remaja Rosdakarya.
[8] Suwanto dan Donni Juni Priansa, 2016, Manajemen SDM dalam Organisasi Publik dan Bisnis, Alfabeta.
[9] Anwar Prabu Mangkunegara, 2013, Manajemen Sumber Daya Manusia Perusahaan, Remaja Rosdakarya.
[10] Munirah, 2015, Sistem Pendidikan di Indonesia : Antara Keinginan dan Realita, UIN Alauddin Makasar.

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The validity test with the SMART PLS 3.0 application is described by the outer loading value, then it is said to be valid if the outer loading value > 0.7 (Heir et al, 2014) the results of the model analysis in Figure 1 have several invalid and reliable questions, then some questions will be answered. deleted to obtain valid data, then the results of the validity and reliability are met can be seen in Figure 1[11]

Variabel	Cronbach's Alpha	Composite Reliability	Kriteria	Kesimpulan
Daya Saing Tenaga Kerja	0.876	0.909	> 0.7	Reliable
Motivasi Mahasiswa	0.798	0.868	> 0.7	Reliable
Sistem Pendidikan	0.803	0.872	> 0.7	Reliable

Figure 1 SMART PLS 3.0

Variabel	Averange Variance Extracted (AVE)	Kriteria	Kesimpulan
Daya Saing Tenaga Kerja	0.667	> 0.5	Valid
Motivasi Mahasiswa	0.623	> 0.5	Valid
Sistem Pendidikan	0.631	> 0.5	Valid

Outer Model

The outer model test describes the relationship between each indicator and the latent variable, the structural model for the outer loading model to predict indicators, the outer loading test consists of

1. Discriminant validity

Discriminant validity aims to describe an indicator that is represented by other indicators. This is measured by the cross loading value, the variable is said to be valid if the cross loading > 0.7 and the cross loading value must be greater than the others (Hair at al 2016). The results of the discriminant test can be seen in Figure 2 which can show that the average valid variable mean[12]

2. Average Variance Extracted

Average Variance Extracted aims to evaluate the discriminant validity for each construct and latent variable, the variable is said to be eligible if the AVE value > 0.5 (Wednesday et al, 2016) the results of the discriminant validity test can be seen in Figure 2 shows that the average is valid[13]

3. Cronbach's Alpha

Cronbach's Aplha test aims to strengthen the composite results of the reliability of a variable. The variable is eligible if the value of Cronbach's aplha > 0.7 (Hair et al, 2016). The results of Cronbach's alpha can be seen in Figure 2 showing that the average variable can be relied on[14]

[11]Ardy Kristianto[1], Ni Nyoman Sawitri[2], Raden Achmad Harianto [3], influence analysis of price, service quality and marketing relationship on repurchasing interest with customer satisfaction as intervening variable in cv. bekasi unggas, E-jurnal
[12] Ardy Kristianto[1], Ni Nyoman Sawitri[2], Raden Achmad Harianto [3], influence analysis of price, service quality and marketing relationship on repurchasing interest with customer satisfaction as intervening variable in cv. bekasi unggas, E-jurnal
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Variabel	Daya Saing Tenaga Kerja	Motivasi Mahasiswa	Sistem Pendidikan	Kriteria	Kesimpulan
DS_1	0.792			> 0.7	valid
DS_2	0.822			> 0.7	valid
DS_3	0.886			> 0.7	valid
DS_4	0.794			> 0.7	valid
DS_5	0.786			> 0.7	valid
MTV_2		0.796		> 0.7	valid
MTV_4		0.764		> 0.7	Valid
MTV_5		0.866		> 0.7	valid
MTV_6		0.724		> 0.7	Valid
SP_3			0.752	> 0.7	valid
SP_4			0.868	> 0.7	valid
SP_5			0.807	> 0.7	valid
SP_6			0.743	> 0.7	Valid

Figure 2 SMART PLS 3.0

Inner Model

Inner model aims to predict the relationship between variables used in this study. The inner model test consists of discriminant coefficient, predictive relevance and effect size criteria.

1. Discrimination Coefficient (R2)

Coefficient discrimination aims to assess the level of prediction accuracy for endogenous constructs, the value of R2 can be declared strong if the value is more than 0.7, moderate if the value is > 05, weak if the value is > 0.25

Konstruk	Adjusted R Square	Tingkat Keakuratan	Keakuratan Prediksi
Daya Saing Tenaga Kerja	0.352	> 0.20 Lemah > 0.50 Menengah > 0.75 Tinggi	Lemah

Figure 3 SMART PLS 3.0

1. Predictive Relevance (Q2)

Predictive Relevance (Q2) aims to measure how well the observation value is said to be relevant if the observation value is said to be relevant if Q2 > 0 (Hair et al, 2016) the results of predictive relevance (Q2) as below[15]

Konstruk	SSO	SSE	Q2
Daya Saing Tenaga Kerja	435.000	343.817	0.210
Motivasi Mahasiswa	348.000	348.000	
Sistem Pendidikan	348.000	348.000	

Figure 4 SMART PLS 3.0

2. Effect Size Criteria (f2)

Effect criteria (f2) aims to measure the relative impact of independent variables that affect related variables, the value of f2 can be said to be strong if the value is more than 0.35, it is said to be moderate if the value is > 0.15, it is said to be weak if the value is > 0.02 (heir et al 2016), the results of the effect size criteria test can be seen in Figure 5

[15] Ardy Kristianto[1], Ni Nyoman Sawitri[2], Raden Achmad Harianto [3], influence analysis of price, service quality and marketing relationship on repurchasing interest with customer satisfaction as intervening variable in cv. bekasi unggas, E-jurnal

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Konstruk	Daya Saing Tenaga Kerja	Kriteria	Hasil Uji
Daya Saing Tenaga Kerja			
Motivasi Mahasiswa	0.110	> 0.02 Lemah > 0.15 Menengah > 0.35 Kuat/Besar	Motivasi Mahasiswa memprediksi Daya Saing Tenaga Kerja = Lemah
Sistem Pendidikan	0.106	> 0.02 Lemah > 0.15 Menengah > 0.35 Kuat/Besar	Sistem Pendidikan memprediksi Daya Saing Tenaga Kerja = Lemah

Figure 5 SMART PLS 3.0

Conclusion

Based on the results of the research analysis and discussion of the Effect of the Education System and Student Motivation on Labor Competitiveness. Then the following conclusions can be drawn:

1. Based on the results of the study that the first hypothesis (H1), namely the Student Motivation variable, has a positive and significant effect on Labor Competitiveness.

2. Based on the results of the study that the second hypothesis (H2), namely the Education System variable has a positive and significant effect on Labor Competitiveness.

Suggestion

Based on the results of the study, the results of the discussion and the conclusions obtained, the suggestions that can be put forward are as follows:

1. Based on the results of the Education System, universities should be able to improve and continue to improve systems and teaching methods in order to produce graduates with the best quality who are able to compete in the era of the Industrial Revolution 4.0.

2. Based on the results of Student Motivation, students as

the younger generation should make competitiveness a motivation for themselves to develop their potential and continue to hone their own abilities, both hard skills and soft skills so that they can become a generation that is able to compete in the era of the Industrial Revolution 4.0.

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