

Contributions of Understanding of Entrepreneurship, Interest in Entrepreneurship, and Self Efficacy to Entrepreneurial Readiness in the Age of the Industrial Revolution 4.0

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Abstract— The purpose of this study was to determine the contributions of understanding of entrepreneurship, interest in entrepreneurship, and self efficacy to entrepreneurial readiness in the age of industrial revolution 4.0. The study was designed using a quantitative descriptive approach. The samples of the study were 261 students of vocational education program of Informatics Engineering in Malang both in public and private universities. Hypothesis was tested by using multiple regression analysis with significance $\alpha = 0.05$. The results of the study showed that entrepreneurship understanding, entrepreneurship interest, and self efficacy had significant contributions to entrepreneurial readiness (68.4%).

Keywords : entrepreneurship, self efficacy, interest, industrial revolution 4.0.

I. INTRODUCTION

Currently, we enter industrial revolution 4.0, in which creativity, entrepreneurship, leadership, and speed through the use of borderless technology are currently considered as important things [1]. The Industry 4.0 began to change dramatically the working ways in the Industry 3.0 such as making more efficient communication and transportation, and leading people to solve problems using "one stop shopping" or "one stop solution" system. Industrial era 4.0 requires a business atmosphere that is free from bureaucratic obstacles in terms of work and mentality of employees and workers. Therefore, vocational education institutions need to adapt their curriculum to the needs of the current community and even the future community. Outputs of the industrial revolution 4.0 bring benefits and prosperity to the society such as easily getting cheap stuff and increasing the quality of health, instead of increasing the economic burden of society and increasing unemployment. The positive value of Industry 4.0 can simplify supply chain production through engineering system in order to reduce labor costs that gradually increased.

The industrial age of 4.0 requires the pooling of cross-disciplinary science, the use of internet-based technologies, and entrepreneurial innovation. The Industrial Revolution 4.0 brings the concept of a combination between digital technology in the form of Internet and conventional industries aimed at increasing productivity, efficiency and customer service significantly [2], [3] and [4].

Based on BPS data [4] showed that the average unemployment rate of university graduates in Indonesian was still quite high (5.33%) [5]. One of the ways to increase employment opportunities for university graduates was through entrepreneurship learning program. The strategy is expected to change the trend of graduate orientation from job seeker to job creator. Thus, the entrepreneurship readiness of graduates will increase. However, the number of entrepreneurs in Indonesia is still low. The changing from the global business environment to the digital era or the Industrial Revolution 4.0 requires companies and non-profit organizations in Indonesia to adapt and align strategies with their organizational human capital [6], [7].

The entrepreneurship readiness in industrial era 4.0 is characterized by many factors (1) being self-confidence to be successful, (2) understanding of entrepreneurial risks, (3) having ability to create different things, (4) keeping the spirit and hard work, (5) being discipline, (6) having high motivation, and (7) having ability to utilize the Internet-based information technology. In addition, it is found that engineering students have high attitude towards entrepreneurship compared to other factors such as support and resistance, locus of control, the need for achievement, entrepreneurship intentions, instrumental readiness and subjective norms [9]. Self-efficacy is capable to influence interest in entrepreneurship among students [7]. Other studies show that understanding of entrepreneurship has a significant positive impact on entrepreneurial attitudes and perceived social norms [8]. Hence, vocational education institutions

should prepare graduates to have capability in innovating entrepreneurship. It is known that increasing the readiness of entrepreneurship is not enough only through the entrepreneurship learning program in institutions which mostly takes 3 hours for each meeting, in which it only increases the knowledge of entrepreneurship.

First observations from various vocational universities in Malang showed the following facts: (1) interest in entrepreneurship owned by the students of Informatics Engineering Study Program was still low, (2) innovation products created by the students still imitated the existing ones, (3) the students had not understood well a product's market share that resulting in unsold products.

Self efficacy is an important factor in improving the entrepreneurial readiness [10]. Confidence towards the business success will encourage the students to innovate and work hard to produce a specific product [11]. Various studies have found the fact that understanding of entrepreneurship, social norms, and behavioral control influences entrepreneurial readiness [8]. Various studies [9] show that self-confidence and the locus of control have a significant effect on the entrepreneurial spirit.

Based on some previous explanations, factors of understanding, interest, and self efficacy affect the readiness of entrepreneurship, especially in the field of information technology. The significance of the study related to the understanding of entrepreneurship, interest in entrepreneurship, and self efficacy is to determine whether the three variables can change the readiness of students for entrepreneurship in the era of industrial revolution 4.0 so that the products produced by students, especially students of Information Engineering, meet the expectations of the era industrial revolution 4.0.

II. METHODS

This research used a quantitative approach with correlational survey method. The independent variables of this research were understanding of entrepreneurship (X1), interest in entrepreneurship (X2), and self efficacy (X3), while the dependent variable was entrepreneurial readiness (Y). The conceptual model of the research is presented in Diagram 1.

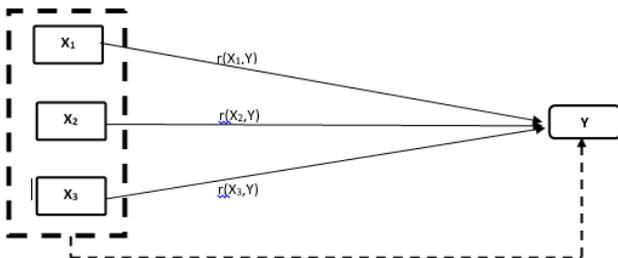


Figure 1. Conceptual Model of Relationship between Variables

Information:

- X1: understanding of entrepreneurship,
- X2: interest in entrepreneurship,

X3: self efficacy, Y: entrepreneurial readiness.

- ▶ : relationship between variables partially.
- - - - -▶ : relationship between variables simultaneously.

The population of this research was 405 students of vocation in the field of informatics engineering in Malang who had taken entrepreneurship course from Malang State Polytechnic, Merdeka University Malang, STIKI, Brawijaya University, and Polytechnic of Malang City. Then, sampling technique was determined by using proportional random sampling in which the data showed there were 275 students from study programs accredited B, and 130 from study programs accredited C. Finally, it was obtained that there were 261 respondents of the study who were randomly decided using Slovin formula. Data collection was conducted by using instrument in the form of questionnaire with likert scale. The instrument was validated using validity and reliability tests. Then, the instrument was tried out to 30 students to calculate the validity and reliability of the items before being disseminated for the actual research. Data analysis used descriptive and inferential analysis, and hypothesis was tested by multiple linear regression with significance $\alpha = 0,05$.

III. RESULTS AND DISCUSSION

The results of data analysis showed that the average value interval for each variable were as follows. (1) data of the understanding of entrepreneurship was obtained 67.55 included as fair category, (2) data of the interest of entrepreneurship was obtained 59.33 included as fair category, (3) data of the self efficacy was obtained 63.71 included as high category, (4) data of the entrepreneurial readiness was obtained 126.76 included as high category.

The assumption test showed that (1) normality test of the data was normally distributed (0.583), (2) linearity test showed that the four variables had relationship linearly with $\text{sig} < 0.05$, (3) multicollinearity test showed that all variables were not shown to have multicollinearity with tolerance value > 0.10 and VIF values < 10 , (4) autocorrelation test indicated that the regression model did not contain autocorrelation as the value of DW $1.813 > \text{upper limit (dU)}$ was 1.812 and less than $(4-1,812) = 2.188$, (5) heteroscedasticity test indicated that there was no heteroscedasticity as the significance value > 0.05 .

Table 1. Analysis Results of Regression

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	6.740	6.215		1.084	.279			
1 Understanding of Entrepreneurship	.168	.077	.080	2.188	.030	.310	.135	.077
Interest in Entrepreneurship	.284	.104	.137	2.747	.006	.649	.169	.096
Self Efficacy	1.434	.104	.698	13.768	.000	.817	.652	.483

a. Dependent Variable: Entrepreneurial Readiness

Based on the result of multiple regression analysis showed that there were significant relationship between three

variables –the understanding of entrepreneurship, the interest in entrepreneurship, the self efficacy- simultaneously and the entrepreneurial readiness in industrial revolution era 4.0 of the students of informatics engineering in Malang. The relationship of the independent variables and the dependent variable were included in the strong category. Moreover, the result of multiple regression analysis showed that each of the independent variables had a linear and significant influence to the dependent variable. The results of this study showed that knowledge and self-efficacy of entrepreneurship can ultimately affect the intention of the students for entrepreneurship [12] [13].

This was according to the result of the research that had been conducted [14], it was obtained that the self efficacy significantly influenced the readiness of entrepreneurship. [15] To state that someone who intended to enter the business world, they had prepared themselves with various supplies needed in doing business starting from the beginning. A person who had entrepreneurial knowledge tended to apply their knowledge by entering the business world; one of the ways is by creating their own business [16].

R Square analysis or coefficient of determination was used to determine how big the influence percentage of the independent variables to the dependent variable.

Table 2. Analysis Results of Determination Coefficient

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.827 ^a	.684	.680	6.12348

a. Predictors: (Constant), Self Efficacy, Understanding of Entrepreneurship, Interest in Entrepreneurship

From the outputs of SPSS Model Summary shown in Table 2 above can be known that coefficient of determination (R Square) = 0.684 or equal to 68,4%. It means that the contributions of the understanding of entrepreneurship (X1), the interest in entrepreneurship (X2), and the self efficacy (X3) simultaneously to the readiness of entrepreneurship (Y) were 68.4% and among other variables that contributed to the readiness of entrepreneurship (Y) were 31.6%.

The research [17] revealed that there was a positive contribution between the understanding entrepreneurship and entrepreneurial readiness with effective contribution of 50.1%. Hence, it can be concluded that the higher the level of mastery of understanding, the higher the readiness to entrepreneurship. Therefore, it is necessary to support and encourage entrepreneurs to start their business through entrepreneurship education [18].

Self efficacy during entrepreneurship could influence one's actions as well as the number of attempts that had been issued [19]. The self efficacy was also a contributor that had influence in determining how much the intention for entrepreneurship. Thus, the intention of one's entrepreneurship was influenced by low or high self efficacy that existed in each individual. This was also supported by several studies which suggested that self-efficacy had a positive effect on the entrepreneurship aspect [20]; [21]. This explanation also showed that the readiness of

entrepreneurship in the era of industrial revolution 4.0 required self efficacy should be supported by the students themselves.

IV. CONCLUSION AND SUGGESTION

Based on the research data and the results of data analysis, the following conclusions can be drawn: (1) levels of understanding of entrepreneurship, interest in entrepreneurship, self efficacy, and entrepreneurial readiness in the era of industrial revolution 4.0 are high, (2) understanding of entrepreneurship, interest in entrepreneurship, and self efficacy had contribution simultaneously to the entrepreneurial readiness in the era of industrial revolution 4.0; and (3) it is recommended that universities should strengthen the capabilities for entrepreneurship in learning activity.

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