The Impact of Entrepreneurship Sustainability 4.0 on Social Learning towards Students' Entrepreneurial Attitude and Behavior

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Abstract: This research aims to describe the impact of Entrepreneurship Sustainability 4.0 on Social Learning towards students' entrepreneurship attitude and behaviour in higher education. This study uses a quantitative approach with a survey method on 245 students of the Faculty of Social Sciences Education, Indonesian University of Education having an entrepreneur background. Data collection method used Likert scale questionnaire and attitude scale in which the alternative answers positive values 5 to 1. The scattered questionnaire was tested by the instrument twice to produce validity and good reliability. Then it is processed and analyzed using Structural Equation Model (SEM) analysis. The results of this study indicate that: 1) Entrepreneurship Sustainability 4.0 Model on social learning includes structured curriculum, methods, media, material, sources and evaluations designed to contain the value of entrepreneurship in a sustainable manner in the digital age; 2) campus environment is an independent variable that influences student entrepreneurial attitudes and behavior both macro and micro; 3) the model of Entrepreneurship Sustainability 4.0 on social learning has a positive effect on entrepreneurial attitudes of 18.2% and entrepreneurial behavior of 19%.

1 INTRODUCTION

In the end of the 21st century, higher education meets a difficult and critical period because it is necessary to include education for sustainability (EfS) in all educational programs. Despite the success in incorporating the digital innovation in campus programs, it is indicated that higher education is improving sustainability slowly. Education is required to promote behavior change and to provide main competencies for all citizens in order to achieve sustainable development. Success in reversing unsustainable trends will largely depend on quality education for sustainable development at all levels of education, such as the use of energy and sustainable transportation systems, consumption habit and sustainable production, health, media competence and responsibilities global citizenship.

The aspects of sustainability on the economic side are sensitivity to the limitations, potential of economic growth, and its impact on society and the environment. It is associated with commitments to evaluate the level of individual consumption and communities as a concern for the environment and social justice. In other words, sustainable development needed now is economic development satisfying the needs of the current generation without reducing the ability of future generations to accommodate their needs (Pezzey, 1992). There are two things that implicitly concern: First, the importance of paying attention to natural resource and environmental constraints on consumption patterns; Second, attention to the wellbeing of future generations. The assumption of sustainability lies at least in three basic axioms; (1) present and future treatments giving a positive value in the long run; (2) realizing that environmental assets contribute to economic wellbeing; (3) knowing the constraints because implications arising on environmental assets (Heal, 1998). Thus, the three principles emphasize individual policy in changing a paradigm of life that life is a cycle that will synergistic ally interrelate and provide praxis in real life.

The industrial revolution created a person's working conditions, economic living conditions, and economic status. This revolution brought changes in consumer behavior through mass production and compatibility distribution. In line with the development, manual production is now undergoing changes in nanotechnology for mass production, automation, and factory worker replacement. Some fresh graduates are interested in building business networks and jobs that lead to ICT skills. In accordance with the demands

of future jobs at the level of digital technology, computing, automation, and digital humans. Thus, education responds challenges by learning about trends and changes. It gives new views about future economic opportunities (Moberg, 2014).

The higher education curriculum adjusts the influence of socio-economic and techno-economic developments for future employment needs (Tejedor, Segalàs and Rosas-Casals, 2018). One of them is entrepreneurship education based on fourlevel structures. At the first level, a student is involved with information (supply). At the second level, there are involvement and questions (demand). At the third level, there is supply and demand (competence). At the last level, teaching is designed to be a hybrid model combining all levels of entrepreneurial teaching (Ismail, Sawang and Zolin, 2018). Entrepreneurial teaching and learning are very important to understand economic opportunities and to find the best ways to explore them (Jensen, 2014).

The conceptual framework of this study is anchored in the interrelationship between elements of entrepreneurship education and the continuing industrial revolution. Sustainable entrepreneurship education is related to some themes such as ICT infrastructure, policy and regulatory governance, human resource development, and innovation-based economy. This is the complexity of the digital knowledge economy. The sustainability paradigm should then reflect the interactions of various systems which are complex, dynamic, non-linear, and self-regulating (Funtowicz et al., 1999). We also remind that a sustainable knowledge society is not a society filled with a myriad of digital technologies but that is collectively infrastructure, applications and literacy (Sharma & Mokhtar, 2006). Some research questions focused on this study, including: (1) How can the best implementation of sustainable entrepreneurship 4.0 model be implemented in social learning? (2) What are the students' perceptions toward the implementation of digital enterpreneurship? (3) How can social learning through the sustainable entrepreneurship model 4.0 effectively influence entrepreneurial attitudes and behavior?

2 METHOD

The research used a quantitative approach with a survey method explaining causal relationships between variables along with testing hypotheses, such that relative events, distribution, and relationships between Obtained sociological and physicological variables (Singarimbun and Effendi, 1995). There are three characteristics of the survey method. The first one is the objectives can be descriptive as well as verification, explanatory or confirmatory. The second one is collected data from predetermined samples. The last one is the captured research variable data (Kerlinger, 1990)(Gall et al., 2003) (McMillan and Schumacher, 2001).

Participants in this study were students of the Faculty of Social Sciences Education, Indonesian Education University consisting of the Department of Citizenship Education, Department of History, Department of Geography, Department of Social Sciences Education, Department of Sociology Education, Department of Tourism Marketing Management, Department of Catering Industry Management, Department of Resort and Leisure Management, Department of Communication Studies, Department of Islamic Religious Education, and Department of Mapping Survey and Geographic Information. A total of 12 study programs / departments have a number of students ranging from 3393 people. Thus, the sample used was based on a sample distribution of students having an entrepreneur background (245 people).

The data collection technique used in this study was giving a questionnaire to the students. Data collection is done by submitting a list of questions to a number of individuals and they were asked to write the answers. This study uses a closed questionnaire, because the questions in the questionnaire have provided alternative answers. The data processing technique of the questionnaire results uses a Likert scale where alternative answers to positive values are 5 to 1. The scoring is done based on the respondents' answers and then scored using the Likert scale and attitude scale. The questionnaire processing using Microsoft Excel for coding data. The data obtained is then processed through the process of editing, scoring, data entry, and data analysis. For the analysis of respondent data and respondent categories, we used a LISREL software tool. Hypothesis testing in this study uses a structural equation modeling or commonly called (Structural Equation Model / SEM). SEM statistical techniques are used to test a series of relationships between several variables (Hair et al., 1998).

The stages of SEM process according to (Cooper and Pamela,) are written as follows: (1) model specifications, (2) estimation, (3) compatibility test, (4) re-specification, (5) interpretation and communication. Structural Equation Model (SEM) starts with specifying the research model to be estimated. The specification of the research model, reprisenting the problem of the study is important in SEM. The model specification is carried out on the measurement model and

structural model which will eventually be described in the path diagram, represented a combination of the measurement model and structural model.

3 RESULTS AND DISCUSSIONS

3.1 Results

3.1.1 Entrepreneurship Sustainable 4.0 Model on Social Learning

This paper provides insights on the implementation of social learning in collaboration with the Industrial Revolution 4.0 on Continuing Entrepreneurship education. Entrepreneurship is one element of economic development and improvement of life in the future (Kirby, 2004). The subjects in social learning refer to the Higher Education curriculum adapted to the social, economic, and industrial revolution 4.0 themes which can be seen as follows.

Topic		
Entrepreneurship	Sustainable Development	Industry 4.0
• Social entrepreneur • Infopreneur • Entrepreneurial marketing • Social Innovation • Entrepreneurship and Gender	• Green Marketing • Green Consumer • Green supply chain • Green entrepreneurship	• Technopreneur • Social Media • Digital Bussinnes • E-Commerce • 3D animation • 3D Digital Printing

Source : Processed by researchers

Figure 1: Topic on Social Learning with entrepreneurship, sustainable and industry 4.0.

Some of the topics above become a reference for lecturers in providing understanding related to entrepreneurship, sustainable development, and the industrial revolution 4.0. The application that must be considered in

- The curriculum design of teaching and social learning must be designed to deliver students about complex socio-technological transformation problems.

- Students need to learn carefully about technological-economic opportunities to be able to develop competitive business ideas.

- Students are invited to develop digital-based learning models and artificial intelligence.

- Entrepreneurship education must offer the recipients the skills to develop business ideas or solutions.

- Entrepreneurship Learning brings an entrepreneur into a guest lecturer in class

- The practice of sustainability needed for social, environmental and economically sustainable solutions are an important consideration for Industry 4.0 and the need for entrepreneurship to instill sustainability.

The 4th industrial revolution content in social learning is also called Industry 4.0 (Morrar et al., 2017). It is based on technological economical, societal transformation, rapid change, sustainability and application of data and artificial intelligence (Bauer et al., 2015). The increased attention for entrepreneurship as a subject in institutions of higher learning followed rapid industrial revolutions and the need to understand the people behind opportunity identification (Ó Grada, 2016).

3.2 Student Perceptions of Integration Entrepreneurship, Sustainable and Industry 4.0 in Campus Environment

The campus environment is an independent variable influencing student entrepreneurial attitudes and behaviour. The measurement of campus environment variables measures the perception of millennial students towards the implementation of digital entrepreneurship leading to sustainable development by using attitude scale measurement. The campus environment variable consists of two indicators, namely the macro environment and the macro environment. Macro environment indicators show how coaching is carried out by the campus or campus activity unit concerned in the process of forming entrepreneurial attitudes and behaviours. Whereas the microenvironment shows how digital entrepreneurship learning is continuously carried out by lecturers in classroom learning.

Following are the results of the percentage of macro environment from some respondents.

No	Statement	%
1	Campus issues policies through real programs related to entrepreneurship	51.02
2	Campus integrates entrepreneurship learning into lectures	40.71
3	The campus provides facilities for entrepreneurship in the form of entrepreneurship seminars	30.98
4	The campus provides supporting web service for entrepreneurship research	20.38
5	The campus provides facilities for entrepreneurship support including business preparation, capital support and business assistance	10.34
	TOTAL	30,69

Figure 2: Student Perceptions of Macro Environmental Indicators.

Based on Figure 2, it can be seen that the description of the indicators rated the highest by respondents in measuring the dimensions of the macro environment is the policy support on entrepreneurship programs on campus with the highest average score of 51.02%, while the lowest rated is campus support in providing facilities for entrepreneurship including business preparation, capital support and business assistance. Rating of these indicators is 10.34%.

While the results of the percentage of micro environment from some respondents can be seen as follows.

No	Statement	%
1	Entrepreneurship learning is carried by taking into account the the needed material for current and future	77.02
2	Entrepreneurship learning is carried out through digital-based experiential learning models	76.71
3	Entrepreneurship learning is carried out based on real-life economic problems	65.98
4	Entrepreneurship learning is carried out based on life skills to shape the character of student entrepreneurs	64.38
5	Entrepreneurship learning carried out to create a Business Plan, mentoring, and monitoring evaluation	62.46
	AVERAGE	69,31

Figure 3: Student Perceptions of Micro Environmental Indicators.

The Figure 3 above shows that the description of respondents' assessment of the dimensions of the microenvironment. The highest rated indicators of entrepreneurship learning carried out to pay attention toward the current and future material needs with the highest average score of 77.02%, while the indicators assessed the lowest by respondents are entrepreneurial learning carried out creating Business Plans, mentoring, and monitoring evaluation with an average score of 62.46%.

No	Campus environment	% Score
1	Macro Environment	30.69
2	Micro Environment	69.31
	Total	100.00

Figure 4: Campus Environment Variable Category.

Based on the Figure 4 above, it is worrying that judging from each forming the campus environment variable, the dimensions of the micro environment (69.31%) are considered higher than the macro environment (30.69%). A description of the overall campus environment variable can be seen in the overall continuum review of the respondents' assessment through the calculation process by finding the ideal

score where the highest score multiplied by the number of items multiplied by the number of respondents. Obtaining a score based on the results of data processing on the campus environment variable is 16,677 or 70.59% of the ideal score, the score can be described continuously as follows:
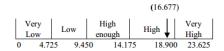

Figure 5: Ideal score.

Based on the Figure 5 of the continuum value of campus environment variables that the total score for the variable is 16,677 is in the continuum line with a very high category.

3.2.1 The Impact of Sustainable Entrepreneurship 4.0 is a Model towards Entrepreneurial Attitude and Behavior

Based on the structural model testing results, it can be stated the results of hypothesis testing.

" *There is a significant influence of sustainable entrepreneurship 4.0 model on student entrepreneurial attitudes and behavior*"

In testing the hypothesis used a significance level of 0.05, it is used because the value of C.R. $\geq$ 1.96. The estimation parameter between the construct of sustainable entrepreneurship 4.0 models towards entrepreneurial attitudes shows positive significant results with C.R. = 2.443 ($\geq$1.96), while the p value of 0.015 ($\leq$0.05). Thus it can be concluded that hypothesis 1 stating that sustainable entrepreneurship 4.0 models have a significant effect on entrepreneurial behavior can be accepted. Overall a summary of the results of hypothesis testing is presented in the following table:

Hypotesis	Submission of Hypothesis	Statistic Uji (CR> 1.96)	p-value ≤0.05	Criteria
H1	The influence of the Campus Environment on entrepreneurial attitudes	2.443	.015	Accepted
H2	Effect of Campus Environment on entrepreneurial behavior	2.076	.038	Accepted

Figure 6: Research Hypothesis Testing Results.

Referring to the results of data analysis and hypothesis testing shows that the sustainable entrepreneurship 4.0 model has a positive effect on student entrepreneurial attitudes and behaviour. The magnitude of the influence of campus environment variables on entrepreneurial attitudes 18.2% and the

influence of campus environment variables on entrepreneurial behaviour by 19%. Thus it was concluded that besides the campus environmental factors there were other variables influenced entrepreneurial attitudes and behavior. Sustainable entrepreneurship 4.0 model implemented in the campus environment is a determining factor for the development of the personality of students can continue to higher education or work (Hurlock et al., 1990).

4 DISCUSSIONS

The role of higher education for the formation of student entrepreneurial character can be applied through two strategies namely macro and micro strategies (Lupiyoadi, 2018). Based on the data of students' perceptions about the campus environment they feel in the form of support for entrepreneurship showing that the dimensions of the micro environment (69.31%) are rated higher than the macro environment (30.69%).

Micro strategy is at the level of learning in the classroom, especially learning entrepreneurship. Entrepreneurship learning is 1) learning shaping people holistically; 2) learning awakening the five senses of students; 3) experiential learning; 4) reallife learning; 5) life skill based learning shapes entrepreneur's character; and 6) Learning entrepreneurship does not only focus on Business Plan (Siswoyo, 2009).

Macro strategy is at the level of tertiary policy which is the duty and responsibility to foster the spirit and character of entrepreneurship through real programs so that students are expected to become job creators. Higher education policy includes integrating learning entrepreneurship into the college curriculum; developing entrepreneurship centers in tertiary institutions; and creating a national cultural movement and entrepreneurship training for students.

The micro environment on campus is the smallest unit of environment so that the entrepreneurship habits of the students and lecturers are more involved, including interactions in learning and other academic cultures in the classroom. Whereas the macro environment of the wider environment unit so that entrepreneurial habituation is carried out not only by students and lecturers but also by the organization and role of universities involved in the interaction process. Educational institutions themselves are a form of small society and are seen as a system of social organization because it includes goals and values, structural subsystems, and cultural sub-systems (Alma, 2009). Therefore, a healthy campus environment will be able to build a high entrepreneurial culture. These people have an important role in influencing and shaping the character of entrepreneurship and independence of a student.

Universitas Pendidikan Indonesia has contributed in the process of civilizing entrepreneurship for students in tertiary institutions. One of the mainstay programs is the Entrepreneurial Student Program (PMW) in the form of supporting programs organized by the Directorate General of Higher Education. The purpose of this program is to improve the skills and the skills of students especially the sense of business so that potential young entrepreneurs will be reached, grow new entrepreneurs highly educated, create IPTEKS-based business units, and build business networks between business people, especially new entrepreneurs with established entrepreneurs. While the benefits expected to be felt by students are providing opportunities to improve students' soft skills by directly being involved in the conditions of the world of work, providing direct opportunities to engage in SMEs and honing entrepreneurial spirit, as well as growing business spirit so that they have the courage to start a business supported by capital given and accompanied in an integrated manner.

Based on the results of several studies revealed that entrepreneurship education has an impact on attitudes, intentions, and entrepreneurial behavior. The effects of entrepreneurship education are obtained from learning innovation programs as a form of involvement in entrepreneurial activities. Support from the campus in organizing entrepreneurship education is necessary to encourage business start-up and encourage employability. This sustainable entrepreneurship 4.0 model describes an educational project resulting in a reduction in student consumption and an increase in their productivity to promote sustainable lifestyles (Fretschner and Weber, 2013) (Escobar-Tello and Bhamra, 2013) (Jones et al., 2017).

In line with Littunen's research, H (2015) regarding "entrepreneurship and characteristics of the entrepreneurial personality" or interpreted as entrepreneurial personality characteristics and their impact on changes in entrepreneurial personality relationships. According to empirical findings, being an entrepreneur and acting as a good entrepreneur is seen from the aspect of the entrepreneurial learning process, which in turn has an effect on the personality characteristics of the entrepreneur. Entrepreneurship pushes to solve problems and control by the strength of others which has declined since the initial phase. Changes in entrepreneurial relationships with others were also observed to have an effect on the personality characteristics of entrepreneurs. Other empir-

ical findings also show that some of the number of partners in cooperation has decreased, control by the power of others has also decreased, and that, since the initial phase, entrepreneurs whose personal relationships have increased also showed a clear increase in terms of mastery.

Thought theory (McClelland et al., 1961) proposed the concept of Need for Achievement (N-Ach) interpreted as a personality virus causing a person to want to do good and move forward, always think to do better, and have realistic goals by taking the right risk actions completely calculated. As for the characteristics of those who have high N-Ach are as follows: (1) Work with realistic risks, (2) Work harder in tasks that require mental abilities, (3) Not work more actively due to financial rewards , (4) Want to work in situations where personal achievement can be obtained (Personal Achievement), (5) Show better performance in conditions that provide clear positive feedback, (6) Tend to think into the future and have long-term thinking.

This entrepreneurial personality is very necessary for a student to support his career in the future. Students instilled in an entrepreneurial spirit demonstrate the existence of a successful person as well as contributing to economic development for the nation and state. If there are many unemployed people, then the nation feels a setback to advance the country's economy. The importance of the world of entrepreneurship is now a big concern for every level of society. Development will be more successful if it is supported by entrepreneurs who can open up opportunities and employment amid limited government capacity.

5 CONCLUSIONS

The contribution of tertiary institutions to shape student entrepreneurial attitudes and behaviour can be implemented through two strategies namely macro and micro strategies. The micro environment on campus is the smallest unit of environment so that the entrepreneurship habits of the students and lecturers are more involved, including interactions in learning and other academic cultures in the classroom. Whereas the macro environment of the wider environment unit so that entrepreneurial habituation is carried out not only by students and lecturers but also by the organization and role of universities involved in the interaction process. Based on the data of students' perceptions of the campus environment that they feel in the form of support for entrepreneurship showing that the dimensions of the micro environment are rated higher than the macro environment. This sustainable en-

trepreneurship 4.0 model is a micro strategy describing an educational project resulting in a reduction in student consumption and an increase in their productivity to promote sustainable lifestyles. The model of entrepreneurship sustainability 4.0 on social learning has a positive effect on entrepreneurial attitudes of 18.2% and entrepreneurial behavior of 19%. Therefore, this model is feasible to be implemented in facing future needs. Thus, the model of entrepreneurship sustainability 4.0 responds challenges by novelty learning about trends and changes. It gives new views about future economic opportunities and future works.

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