MODELLING CREATIVITY AND INNOVATION OF STUDENT ENTREPRENEURSHIP: EMPIRICAL STUDY OF SOCIAL COGNITIVE THEORY

Muhammad Feriady, Universitas Negeri Semarang
Dedi Purwana, Universitas Negeri Jakarta
Setyo Ferry Wibowo, Universitas Negeri Jakarta
Khasan Setiaji, Universitas Negeri Semarang

ABSTRACT

This study aimed to explore the dominant factors that affect the innovation and creativity of student entrepreneurship in Indonesia. This study used Social Cognitive Theory as a grand theory. The samples used in this study were 276 Students of Universitas Negeri Semarang. The results showed that the model built in this study showed model fit, namely there was compatibility between the theoretical model and the empirical model. The findings in this study indicated the student engagement in the entrepreneurial organization had a significant effect on the creativity and innovation of student entrepreneurship but the entrepreneurship class was not. Other findings showed that student engagement in organizations had a greater effect than student engagement in classroom. Furthermore, the N-Ach factor had a positive effect on student engagement as well as student creativity and innovation. Through the results of this study, it is expected that policy makers in Higher Education do not neglect the learning process of students outside the classroom, but can combine it with learning in the classroom.

Keyword: SCT, Creativity, Innovation, Student Entrepreneurship.

INTRODUCTION

Based on data released by the Global Innovation Index (GII) in 2019, Indonesia ranked 85th out of 129 countries. This position is still far compared to other countries in the Asia Pacific such as Singapore which ranked 8th (Dutta et al, 2019). One of the measurement parameters carried out by GII is innovation input which includes Human capital and research and innovation output in the form of Knowledge and Technology output and creativity output (Dutta et al, 2019). Based on this explanation, we can conclude that innovation and creativity in Indonesia are still low.

Innovation in a country is closely related to the level of creativity possessed by the country's human resources. Boden (2014), Damanpur (1996) explained that innovation is an implementation of creative thinking; this shows that the ability to make innovation requires creativity, both of which cannot be separated. Furthermore Sarooghi (2015) explained in his research the relationship between innovation and creativity that is affected by several factors. Sarooghi's findings at the same time confirmed the research conducted by Taylor and Grave (2006) which explained the very close relationship between creativity and innovation.

As an outcome in the world of education, creativity and innovation can be determined by several factors. Based on the social cognitive theory proposed by Albert Bandura (1967) the changes in learning behaviour cannot be separated from individual internal factors, behaviour and environment. Bandura in Rubenstein (2017) also emphasized the role of the learning environment that can affect learning behaviour. As behaviour, creativity and innovation are also

affected by the existing educational process. Li, et.al., (2018), Pratiwi (2019) explained the importance of the educational process in realizing creative and innovative students. This confirms the role of education in affecting the creative attitude of students.

So far, research related to creativity and innovation of student entrepreneurship as an outcome in Higher Education is still very limited. There is a need for empirical research to know the determinants that affect creativity. In addition, the application of social cognitive theory from Albert Bandura also has not fully tested creativity as an educational outcome. This research is intended to empirically test Albert Bandura's social cognitive theory to investigate the determinants of creativity and innovation as educational outcomes.

LITERATURE REVIEW

Social Cognitive Theory

The Social Cognitive Theory by Albert Bandura (1986) explains the learning process is affected by personal characteristics, habits and the environment (Rubenstein, 2018). This indicates the learning outcomes obtained by someone during the learning process will be affected by the habituation done in the learning environment. In line with this, Beghetto & Kaufman (2014) explained that the environment is the main driving factor of creativity. This opinion is in line with the view of Rhodes (1961), which places creativity with components in the form of Person, Process, Press, and Product where Press and process are determined by the creative environment.

In this study the Social Cognitive Theory is used to explain the general picture of the role of the educational environment on outcomes generated in the learning process. Lucianetti (2016) used SCT as a basis for analysing the relationship between self-efficacy as an internal factor and behaviour innovation as an outcome. Next Jonsdotir (2008) explained the interrelationship of the macro environment in education that affected student innovation and creativity. Both studies were used as a reference in this study to link the environment, internal factors and outcomes in education.

Innovation and creativity

Innovation in the broadest sense is not only related to product problems. Innovation can be in the form of processes, ideas, ways and methods that are perceived as something new. European Innovation Management Academy (2016) describes innovation as an explorative step in finding something new in products, processes, ways, organizational models, business models, market orientation, etc. Meanwhile, Drucker in Dogan (2016) said that innovation is an act of utilizing resources with new capacities to produce prosperity. Further the OECD explained the notion of innovation as an effort to apply something new to a product, process, method and organization (Dogan, 2016). Based on these definitions we can conclude that innovation is an attempt to do something new from what was before.

The existence of innovation is of course very closely related to creativity and even creativity is referred to the seed of innovation (Damanpur, 1996; Boden, 2014; Sarooghi, 2015). According to Dominikus (2016) creativity is an attempt to identify problems, think and exploit potential in oneself. it can be seen from the ways someone faces the challenges that exist by managing time, doing obligations, and learning models that are self-created, looking for various information and taking advantage of opportunities, ability to cooperate, etc.

Creative Environment

The creative environment in Higher Education can basically be divided into two components, namely entrepreneurship class and entrepreneurial organization. Both components then become the learning environment of students in strengthening entrepreneurial characteristics including the character of entrepreneurship. To measure the role of the environment on creativity, this research used a proxy in the form of student engagement in the learning environment (entrepreneurship class and entrepreneurial organization). According to Yanto (2013), Astin (1999) the role of the environment in learning can be measured by using a measure of how much students engage in their learning environment. Furthermore Feriady (2017) measured the engagement of vocational students during internships to determine the role of the internship environment that affected work readiness.

Student engagement is defined as the quality of student independence in paying attention to learning activities in order to achieve the desired results (Hu and Kuh: 2002, Zhou 2010). According to Chapman in Zhou (2010) student engagement is the willingness of students to participate in school activities such as attending classes, sending required work and getting assignments. Student engagement is the amount of physical and psychological energy spent by students to gain academic experience (Astin 1983). Besides that, William in Mizikazi (2006: 13) stated that student engagement is how students go into school and student non-engagement refers to how students withdraw from school directly. In this study, referring to Astin's opinion in Yanto (2013) Student engagement in the learning environment has indicators in the form of: 1) Physical engagement, 2) Cognitive engagement and 3) emotional engagement.

Need for Achievement as Internal Factor

The concept of Need for Achievement was first coined by David Mc Celland (1987). Mc Celland said the need for achievement is a stable learning process where satisfaction will be obtained by striving and reaching the highest level to become an expert in a particular field. Besides this, mc Celland said that Need for Achievement is the key to entrepreneurial behaviour (Chaves 2016). In line with this, Chell in Chaves (2016) argued that achievement motivation has a relationship with entrepreneurial habits.

Another opinion said that need for achievement is a learned motive with the aim at achieving a standard of success and personal excellence in a particular field. This relates to the achievement of a challenge in hard work (Westead in Chaves 2016). Based on this description, it can be concluded that the need for achievement is an impetus for achieving success with difficult challenges, having the right target, choosing to take risky decisions and considering the standard of expertise and skills to be achieved.

Thinking Framework and hypotheses

The factors that affect the creativity and innovation of students in Higher Education have so far not been identified certainly. Likewise, research that identifies environmental and individual factors as determinants of creativity and innovation. This analysis placed the SCT model to identify the relationship between Need for Achievement factors and the student environment with creativity and innovation. Furthermore, this study also compared the magnitude of the effect of the organization and classroom environment on student creativity and innovation. The relationship framework can be seen as follows (Figure 1):
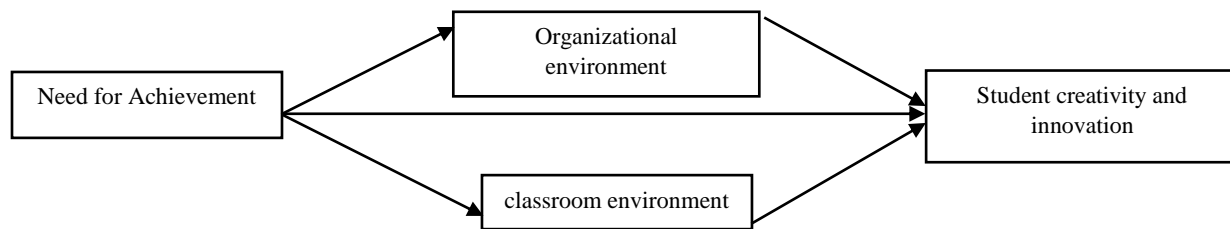
Figure 1
THINKING FRAMEWORK

Furthermore, the hypotheses that are built based on this relationship are:

H1: N-ach affects student engagement in an entrepreneurial organization
H2: N-ach affects student engagement in an entrepreneurship class
H3: Student engagement in an entrepreneurial organization affects the creativity and innovation of student entrepreneurship
H4: Student engagement in an entrepreneurship class affects the creativity and innovation of student entrepreneurship
H5: N-ach affects the creativity and innovation of student entrepreneurship

RESEARCH METHOD

Data analysis techniques in this study used path analysis with the help of AMOS 23.0 tools and modelling measurements. The respondents in this study were 273 Students of the Faculty of Economics, Universitas Negeri Semarang with a total population of 1122 students. The sample size in this study was determined by using the Morgan and Kritcy tables, Ferdinand (2014). The development of variables in this study included: 1) Need for achievement, 2) Organizational Environment (measured by Student Engagement), 3) Classroom Environment (measured by Student Engagement), 4) Creativity and Innovative Behaviour.

RESEARCH RESULTS

Based on Table 1 it is known that the relationship between variables showed a significant condition affecting creativity and innovative behaviour except the SEC variable (Student Engagement in the Classroom Environment). Next through the table, the magnitude of the effect of each variable on creativity and innovative behaviour can be known. The magnitude of the effect showed the great role of SEO (Student Engagement in Organizational Environment) in increasing the creativity of student entrepreneurship.

Based on the results of the study we found out that the relationship between internal factors of students, learning environment and creativity can be explained through SCT (Social Cognitive Theory). The fit model test results found that the model was in fit condition. These results can be seen in the picture. This test emphasized the relationship between internal factors, the environment and one's behaviour. This study also confirms the findings of Lucianetti (2016) and Jonsdotir (2008) that used SCT as a grand theory in research on innovative behaviour.

Hypothesis testing in this study found H1 was accepted with the acceptance rule of C.r 13.146> 1.96 and the value of P = 0.000 for the relationship N-Ach→SEC. H2 testing in this study found H2 was accepted with the acceptance rule of C.r 5.398> 1.96 and the value of P = 0.00 for the relationship N-Ach→SEO. Both of these results are in line with the SCT theory by Bandura (1968) which links internal factors with behaviour and the environment.

The relationship between variables in this study can be seen in Figure 2 as follows:
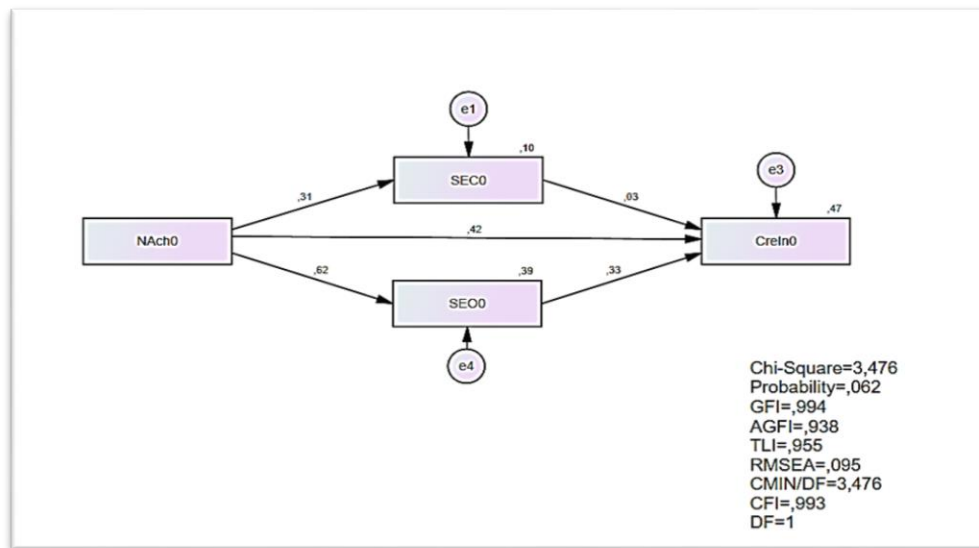
Figure 2
TESTING OF HYPOTHESIS AND FIT MODEL

The results of further hypothesis testing can be known through Table 1 below:

			Estimate	S.E.	C.R.	P	Label
SEC0	<---	NAch0	,276	,051	5,398	***	par_1
SEO0	<---	NAch0	,590	,045	13,146	***	par_2
CreIn0	<---	SEO0	,381	,065	5,879	***	par_3
CreIn0	<---	SEC0	,040	,057	,697	,486	par_4
CreIn0	<---	NAch0	,458	,064	7,207	***	par_5

Table 1
REGRESSION WEIGHT

Student habits to be involved in the environment will be affected by internal factors. Research findings by Yanto (2012), Ani (2013) Ulum (2016) had revealed the effect of internal factors on student engagement in the learning environment.

In this study H3 was rejected with the rejection rule C.r 1.183 <1.96 and p = 0.237 for the relationship SEC→CreIn. H4 in this study was stated to be accepted by the acceptance rule of C.r 5.879> 1.96 and p = 0.00 for the relationship SEO→CreIn. These findings proved the existence of a large role of student engagement in the entrepreneurship class and entrepreneurial organization in enhancing creativity and innovation. The findings of Stol (2010) explained the importance of interaction done by students in learning to improve the quality of learning. Students who have a tendency to ask, explain briefly, respond to questions allegedly have a condition with a high need for achievement.

The next test showed H5 was accepted by the acceptance rule of P = 0.00 for the relationship N-Ach→CreIn. These results are in line with the opinion of Mac Celland who said that Need for Achievement is the key to entrepreneurial behaviour (Chaves 2016). In line with this, Chell in Chaves (2016) argued that motivation has a relationship with entrepreneurial habits. then Kou

(2009) explained the importance of self-achievement in an effort to achieve academic achievement, in line with this, Feral (2010) explained aspects of self-achievement that are very important in improving performance in education.

The multiple tests conducted in this study proved that student engagement in entrepreneurial organizations could have a greater effect on creativity and innovation compared to classroom learning. The findings in the field proved that in entrepreneurial organizations, students got a lot of networking, relationships and learning directly with the real problems. Students were not only given material, but they practiced it directly.

The test results showed that the entrepreneurial organizations provided a greater effect in increasing student creativity and innovation compared to the classroom environment. This finding confirmed the importance of entrepreneurial organizations in improving entrepreneurial habits including the creativity and innovation of student entrepreneurship.

CONCLUSION

Social Cognitive Theory by Albert Bandura empirically proved to be able to analyse the relationship between individual internal factors, the environment and habits of student entrepreneurship in Higher Education in Indonesia. High student engagement in entrepreneurial organizations could increase the creativity and innovation of student entrepreneurship, while student engagement in the classroom did not significantly increase the creativity and innovation of student entrepreneurship. Need for achievement needed to be built through the student engagement in the organizations, the role of students as actors in the organization required them to be more active than just learn in the classroom. There was a need for variation in learning that made entrepreneurship classes more active and emphasized student engagement so students were more creative and innovative.

REFERENCES

Ani Risa, A. (2013). Model pengembangan sikap wirausaha. *Journal of Economic Education Universitas Negeri Semarang*.

Astin, A.W. (1984). Student involvement: A developmental theory for higher education. *Journal of Collage Student Development*

Bandura, A. (1989). Human agency in social cognitive theory. *American psychologist, 4*4(9), 1175.

Beghetto, R.A., & Kaufman, J.C. (2014). Classroom contexts for creativity. *High Ability Studies, 25*(1), 53-69.

Benhabib, J., & Spiegel, M.M. (1994). The role of human capital in economic development: Evidence from aggregate cross-country data. *Journal of Monetary Economics, 34*, 143–173.

Damanpour, F. (1996). Organizational complexity and innovation: Developing and testing multiple contingency models. *Menag.sci 42* (5) 693-716.

Dutta, S., Lanvin, B., & Wunsch-Vincent, S. (2018). *The Global Innovation Index*, 2018.

Doğan, E. (2016). The effect of innovation on competitiveness. *Ekonometri ve İstatistik e-Dergisi,* (24), 60-81.

Jónsdóttir, S.R., & Macdonald, A. (2008). Regulation and innovation: stimulating students' creativity and thinking through innovation education in Ingunnarskóli.

Li, W., Li, G., Mo, W., & Li, J. (2018, July). The Influence of STEAM Education on the Improvment of Students' Creative Thinking. In 4th International Conference on Arts, Design and Contemporary Education (ICADCE 2018). Atlantis Press.

Mizikaci, Fatma. (2006). A system approach to program evaluation for quality in higher education. Emerald Jurnal

Müsiad (2012). R&D and Innovation for Global Competition, Müsiad Research Reports: 76, İstanbul.

Nelson, R.R., & Phelps, E.S. (1966). Investment in humans, technological diffusion, and economic growth. *American Economic Review, 56,* 69–75.

Ng, T.W., & Lucianetti, L. (2016). Within-individual increases in innovative behavior and creative, persuasion, and change self-efficacy over time: A social–cognitive theory perspective. *Journal of Applied Psychology, 101*(1), 14.

Pratiwi, R.D., Ashadi, A., Sukarmin, S., & Harjunowibowo, D. (2019). Students' creative thinking skills on heat phenomena using the pogil learning model. *Al-Biruni's Journal of Physics Education, 8*(2), 217-227.

Rhodes, M. (1961). An analysis of creativity. *The Phi Delta Kappan, 42*(7), 305-310.

Rubenstein, L.D., Ridgley, L.M., Callan, G.L., Karami, S., & Ehlinger, J. (2018). How teachers perceive factors that influence creativity development: Applying a Social Cognitive Theory perspective. *Teaching and Teacher Education, 70*, 100-110.

Sarooghi, H., Libaers, D., & Burkemper, A. (2015). Examining the relationship between creativity and innovation: A meta-analysis of organizational, cultural, and environmental factors. *Journal of business venturing, 30*(5), 714-731.

Taylor A. Grave.H. 2006. Superman or Fantastic Four. Knowledge combination innovative teams. *Acad.manag.J*, 49 (4)

Yanto, Mula & Kavanagh. (2012). Developing student's accounting competencies using Astin's I-E-O model: An identification of key educational inputs based on Indonesian student perspectives. International Journal: University of Soutern Quensland Australia

Zou, Juan. (2010). The impact of engagement on academic performance and presistance of first year collage student at public institution.