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Innovativeness Differences of Studentpreneurs Based on Entrepreneurship Experiential Learning

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Abstract

This study aims to analyze the individual innovativeness differences of studentpreneurs based on their entrepreneurship experiential learning in higher education. The term of studentpreneurs refers to a person who own start-up business and studying entrepreneurship at the same time. Many studies argue that entrepreneurship education contributes to excellent entrepreneurial mindset, competences and innovation. Therefore, start-up business owners who have entrepreneurship education may have different innovativeness as the result of learning. The population of the study consists of 361 studentspreneurs who were registered in 2013/2014 academic-year, at the International Business Management Study Program, Universitas Ciputra, Indonesia. Data were collected through questionnaire to 190 samples and analyzed using The Analysis of Variance (ANOVA). The result indicates there are differences in the individual innovativeness of the studentpreneurs based on their academic grade. This also shows a relation between the individual innovativeness of studentpreneurs and the entrepreneurship education. This study suggests that interaction with various communities, activities that promote creativity and experiential learning are important to reinforce studentpreneurs individual innovativeness and their competence in innovation.

Keywords: Studentpreneurs, Innovativeness, Start-Ups, Entrepreneurship Education, Experiential Learning.

Introduction

Entrepreneurs should have the abilities to create opportunity, take risks, to be creative and innovative. Therefore, entrepreneurship education should provide learning that encourages creative and innovative characters, able to recognize business opportunities, which at the end enable its graduates to establish business careers (Maina, 2013). Entrepreneurship learning is necessary to be designed in the form of experiential learning that involves students in simulated real business situation (Arvanites, Glasgow, Klingler, & Stumpf, 2006). At the International Business Management (IBM) study program, Universitas Ciputra, Indonesia, entrepreneurship course is embedded in business management curriculum and delivered in the form of

experiential learning. Entrepreneurship course is delivered through business practice course, named Entrepreneurial Project (EP), while the other business management courses are delivered in classes using active learning or more traditional model. The courses in IBM study program are designed to deliver business management knowledge and entrepreneurship practice simultaneously.

For more details, the term studentpreneurs are used in this study to address students who owned start-up business while studying entrepreneurship. The IBM students are considered studentpreneurs because they create and develop start-up businesses individually or in small groups as part of entrepreneurship experiential learning in EP course. In specific, the learning objectives of EP course is to develop entrepreneurial characters, provide the experiences of being an entrepreneur, such as creating start-ups, developing their business and create innovation. The EP course is organized into seven levels, given continuously from EP-1 in the first semester to EP-7 in the seventh semester. The EP-1 aims to establish an entrepreneur mindset, EP-2 aims to guide students in opportunity creation and business idea development, EP-3 sets start-up experiences and market their valued products or services, EP-4 enables students to communicate their products or services, while in EP-5, students will be guided to create innovation in their business, in terms of products, business systems, or business model, then EP-6 directs the students to perform business development and EP-7 enables students to develop strategies to sustain and win competition. Students must manage and develop their business during their study periods and they are expected to sustain or expand their business after they graduated.

Entrepreneurs always seek, respond to changes then turn them into opportunities (Bessant & Tidd, 2007; Drucker, 1993). They create changes, valuable outcomes and competitiveness by performing the process of innovation (Kearney & Hisrich, 2014). Accordingly, the IBM studentpreneurs learn the innovation process through experiential learning in the EP-5 course, here the experiences become the source of learning and then transformed into knowledge (D. Kolb, 2006). The process of learning starts with students experiencing, reflecting, assimilating reflections into concept that lead to actions, then result in new knowledge and understanding (A. Y. Kolb & Kolb, 2005). Moreover, the course coordinator of EP-5 explained that the innovation theme being studied referred to the Ten Types of Innovations (Keeley, Walters, Pikkell, & Quinn, 2013). By the end of the course, the IBM studentpreneurs were expected to create and execute creative business solution, demonstrate competence to adopt, apply and generate innovation in their businesses. The EP-5 academic grade represents the evaluation of IBM the studentpreneurs' experiential learning, which comprises of innovation idea and development, business operation and comprehension of knowledge. Finally, the evaluation of the EP-5 course shows the success rate of students in creating and executing innovation were approximately 40% of the total students. In fact, even though EP-5 course teaches variety of strategies to generate innovation, there are still numbers of students who have not been successful in innovation.

This condition is similar to a study about students' innovativeness by (Kistova, Pimenova, Reznikova, Seredkina, & Zamaraeva, 2015) that only 1/3 of the sample being studied indicated high innovativeness. In fact, one factor affecting the students' ability to innovate is the level of innovativeness of each individual student. Rogers (2003) argued that there are different categories of quality within the individual to accept, adapt to new development and innovations. He identified five categories of individual innovativeness: Innovators, Early adopters, Early Majority, Late Majority, and laggards, that may lead to different reaction and result of innovation

process. There is relation between innovation creation process and the degree of individual innovativeness, in which the higher the individual innovativeness, the more efficient the process of creating innovation that result in successful outcome (Yilmaz & Bayraktar, 2014).

Therefore, this study aims to examine the individual innovativeness of the IBM studentpreneurs and the relation to their experiential learning of innovation in EP-5 course. The following research question is addressed in this study:

Are there significant differences in the IBM studentpreneurs individual innovativeness based on their Entrepreneurial Project (EP-5) grade?

The result of this study will indicate the possibility of the EP-5 course related to the IBM studentpreneurs' individual innovativeness. This will provide the faculty and the IBM Study Program with description on the diffusion of students' individual innovativeness, and consideration to develops learning that may contribute to students' innovativeness. This study will also enrich the understanding of the importance of individual innovativeness in entrepreneurship education and contribute to the entrepreneurship and innovation studies.

Literature Review

Innovation is defined as the implementation of original ideas and insights that have value, accepted and used by significant number of people (Miller, 2011). Similar to this, Treffinger, Isaksen, & Dorval (2003) explains the innovation as the commercialization of new ideas. Innovation allows creative problem solving (Wagner & Compton, 2015) and generates results by doing new process (Miller, 2013).

There are varieties on how people react to and adopt new ideas from their environment. The degree of an individual relatively early in adopting new ideas from other members of the system, is defined as Individual Innovativeness (Rogers, 2003). In this matter, the environment in which the individual is located and a few other factors can also affect individual innovativeness. (Rogers, 2003) states that the individual performing the different reactions to the change based on their personal inclinations - each individual. Accordingly, innovation and innovativeness are affected by many factors surrounding an entrepreneur. For example, leader is the central of the innovation in an organization, as the leader must help their people innovate as part of their job, limit and direct the search for innovation (Miller & Wedell-Wedellsborg, 2013). Moreover, positive stress and any practical influence how the reflective self-understanding, perception and perspective of an entrepreneur (Tikkamäki, Heikkilä, & Ainasoja, 2016), and perfectionist character makes negative impact on the innovativeness, while high individual innovativeness may have low motivation (Cocco & Quttainah, 2015). It is also stated that creativity behavior may results in or become a part of innovation (Treffinger, Schoonover, & Selby, 2013). Meanwhile, (D. Treffinger et al., 2003) argued that innovation is the result of the implementation of creativity. Accordingly, a high-level innovativeness is influenced by creativity and risk-taking attitudes (Kistova, et al., 2015).

Each individual is grouped into the following five different categories, based on the level of the individual innovativeness (Rogers, 2003). The individual innovativeness categories are as follows:

1. Innovators.

These persons have interest in newness, and tend to have higher social level than other people. These persons have higher acceptance to uncertainty or willing to risk them selves for having new information. However, they tend to be underappreciated by their

surrounding, but they play an important role as recipient of the first innovation. Most innovations discovered by the innovators.

2. Early Adopters

These persons usually able to assess and provide feedback for innovation in the community and they have a tendency to give the first opinion, thus become trusted by many people. In addition, they are capable of facilitating the dissemination of innovation and able to move the masses towards new innovations. They tends to be the personality of the most.

3. Early Majority

These individuals do a lot of interaction with various groups, but they have a very low opinion toward innovation. This is because they need longer time to determine good or bad innovations. They'd rather not to be experimental, neither be the last to try new things. This category is most widely available in the community and plays an important role as a connecting link between early adopters with Late Majority.

4. Late Majority

These individuals tend to accept innovation after the masses start using the new innovation. They accept the new innovations with full of uncertainty, suspicion, and very careful and need more evidence to be convinced.

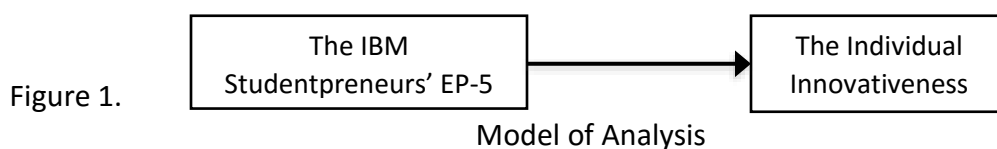
5. Laggards

These persons tend to isolate themselves from the surrounding environment, very suspicious in new innovations, nor willing to argue that there is a new innovation. Their opinions are based on personal experiences and tend doing things traditionally.

These categories have also been used in individual innovativeness measure (Hurt, Joseph, & Cook, 1977)

Research Framework

In this study, the independent variable is the EP-5 academic grade of the IBM studentpreneurs and the dependent variable is their individual innovativeness. The model of analysis is shown in Figure 1.



Research Method

Population in this study are 361 IBM studentpreneurs who had passed the EP-5 course. The sample size consists of 190 IBM studentpreneurs, determined using Slovin formula with the reflectivity level of 95% ($e = 1 - 0,95$). Respondents are chosen using simple random sampling. Data is collected using questionnaire, which refers to the individual innovativeness scale by Hurt, Joseph, and Cook (1977). The questionnaire contains statements that must be valued using the Likert scale from 1 (Strongly disagree) to 5 (Strongly agree). Data is analysed using the Analysis of Variance (ANOVA) and processed using SPSS 16.0 software. When the result shows any significant difference, further examination is conducted using LSD Post Hoc Test. In this study, test for normality uses the Kolmogorov-Smirnov test.

Ep-5 Academic Grade

The EP-5 academic grade is used to represent entrepreneurship experiential learning, which are focused on innovation idea, development and implementation in studentpreneurs' business. The academic grade is ranked into seven categories based on students' learning achievement. The following are the academic grades, listed from the extraordinary to fair achievement: A, A-, B+, B, B-, C+ and C.

Individual Innovativeness Score

The individual innovativeness scale that contains 20 statements is used to measure the degree of orientation of individual adaptation to changes that occur in the vicinity (Hurt et al., 1977). This Individual Innovativeness questionnaire is found to be valid and reliable. The result of each questionnaire is processed according to the following steps:

Step 1 : sum the result of question number 4,6,7,10, 13, 15, 17, and 20

Step 2 : sum the result of question number 1,2,3,5,8,9,11,12,14,16,18, and 19

Step 3 : Calculate the final score using the formula of Individual Innovativeness (II):

$$\text{II score} = 42 + (\text{Total score of step 2} - \text{Total score of step 1})$$

Step 4 : Determine the Individual Innovativeness category:

II score < 46, respondent is categorized as *Laggards*.

II score 46 – 56, respondent is categorized as *Late Majority*.

II score 57 - 68, respondent is categorized as *Early Majority*.

II score 69 - 80, respondent is categorized as *Early Adopter*.

II score > 80, respondent is categorized as *Innovators*.

Result and Discussion

Sample of 190 studentpreneurs consist of 120 male respondents (63.2%) and 70 female respondents (36.8%). All students who pass EP 5 course earn final academic grade from A to C. The number of studentpreneurs who earns A is 40 students (21%), A- is 40 students (21%), B+ is 40 students (21%), B is 40 students (21%), B- is 19 students (10%), C+ is 6 students (3%) and C is 5 students (3%).

While the average Individual Innovativeness score of all studentpreneurs is 64.42 (from 0 to 80), indicates the early majority. Based on the academic grade, Individual Innovativeness score of studentpreneurs with academic grade A is 66.42, A- is 67.68, B + is 61.05, B is 62.7, B- is 63.47, C+ is 65.33, and C is 65.6. Furthermore, the number of studentpreneurs who are categorized as innovators are 5 students (3%), early adopter are 53 students (28%), early majority are 108 students (57%), late majority are 24 students (12%) and none is categorized as laggard (0%). Standard deviation of the Individual Innovativeness score in each category is high due to the diversity of the answers from the respondents. The lowest standard deviation is 5.8 at in category B+, showing that the answers in this group are the more uniform than other groups.

In order to address the research question, Normality Test One-Sample Kolmogorov-Smirnov shows sig 0.163 > $\alpha = 0.05$, indicates that the data is normal, the ANOVA shows the value of F statistic is 4.12 > F_{table} (2.15) with sig 0.001. Furthermore, data is processed further using LSD Post Hoc test to look for individual innovativeness average score differences among academic grades. The LSD Post Hoc test reveals that significant differences exist among the following academic grades: A and B+, A and B, A- and B+, A- and B, A- and B-. These data reveals that there are

significant differences in the IBM studentpreneurs' individual innovativeness based on their EP-5 grade, thus answer the research question.

Discussion

As we acknowledge the difference in the IBM studentpreneurs' individual innovativeness based on their academic grade, not only it answers the research question, but also suggests a relation between the entrepreneurship course and the individual innovativeness. The experiential learning used in EP-5 course allows the studentpreneurs to experience processes such as information gathering, conceptualizing and planning and making decision to adopt the promising innovations that help solving specific problems. These processes are included in the "initiation" stages (Rogers, 2003), and become an initial part in adopting an innovation (Miles, 2012). Innovations are diffused through organizations in five stages: (1) agenda setting, (2) matching, (3) redefining or restructuring, (4) clarifying, and (5) routinizing. However, due to limited period of study in a semester, the IBM studentpreneurs cannot experience all the stages of diffusing innovation in their businesses, most of them experience the agenda setting and matching stage or initiation and some are able to go further to restructuring stage.

This study also exhibit the average of Individual Innovativeness score of IBM 2013 students is classified as the early majority. In fact, the early majority is the category with the highest number in the society (Rogers, 2003), consistent with the data obtained from this study that reveals more than 50% of the respondents are the early majority. Rogers (2003) explains that individuals or groups of early majority tend to take long time in evaluating and adopting new idea or innovation in their environment and less enthusiastic in terms of giving opinion on innovation. There are possibilities that experiential learning activities in EP-5 course may influence the individual innovativeness and the adoption of innovation in several ways.

First, The IBM studentpreneurs establish interaction within the circles of fellow students, others communities inside or outside the university. EP-5 allows students develop interactions among students and the smallest form of interactions occur involving at least 3 to 5 students in the same business group. Students also develop interaction with teachers as facilitators during mentoring session and with communities outside Universitas Ciputra during business practice session. Rogers (2003) explains that the early majority does a lot of interaction with various circles. The studentpreneurs often try new ideas or new innovations in their business, and they always try not to be the last in trying new ideas or innovations. Students with higher innovation level will pioneer the dissemination of innovation by providing a new outlook, a new mind-set, or inspiring their peers. Therefore, the early majority serves as connector of innovation between the early adopter and the late majority (Rogers, 2003).

Second, in EP-5 course, students are required to attend mentoring sessions with teachers as learning facilitators. In this activity, they discuss their innovation progress and they are given targets and deadlines. At the end of EP 5, students will be evaluated not only based on their learning process, but also their success in innovation. The mentoring process impacts the students as eustress or positive stress that force and empower actions, and ultimately contribute in the adoption of innovations (Tikkamäki et al., 2016). Positive stress may also set a drawback because students are required to make innovation in a relatively quick time, approximately in four months. As a result, the students tend to choose the easier and faster ways to achieve

academic grade by imitating or modifying the existing innovations or focusing on minor incremental innovation.

Furthermore, the experiential learning activities in EP-5 course enable the studentpreneurs to improve some traits that promote higher individual innovativeness. The data of studentpreneurs with academic grade A and A- get higher individual innovativeness score because they consider themselves better in these aspects:

1. Give positive impacts to the environment as many colleagues ask for their opinion.
2. Love to try new ideas and find new ways to manage their business.
3. Improvise when the result of an idea was not optimal.
4. Have confidence and maintain the originality of creativity as they tend to be inventive.
5. Less worry about new ideas and feel less suspicious to new innovations.
6. Enjoy the leadership role in a project.
7. Tend to wait a majority of the society to accept new innovation, but also trying not to become an obstacle to innovation.

On the contrary, studentpreneurs with academic grade B + get the lowest individual innovativeness because they tend to consider to be neutral about themselves being creative individuals, having original way of thinking and action, more likely to follow the majority of people around them as well. Thus, it is necessary to develop learning activities that promote studentpreneurs creativity, especially in business practice.

Conclusion

Finally, this study draws several conclusions. First, with regard to the research question, it can be concluded that there are significant differences in the IBM studentpreneurs' individual innovativeness based on their Entrepreneurial Project (EP-5) grade. This study unfolds the possibility that the individual innovativeness of the IBM studentpreneurs is related to the experiential learning activities. Furthermore, different individual innovativeness may be influenced by interaction with many communities and environment, positive stress, motivation for academic achievement, and students' creativity.

Nonetheless, there is limitation in this study regarding the EP 5 grade. Although the assessment is standardized based on criteria developed by the course coordinator, there are still subjectivities as the evaluations performed by several lecturers. The result of this study cannot determine the relation and the influence of the experiential learning toward the individual innovativeness. Therefore, suggestion for the future research is to test the relation and influence of the experiential learning activities, such as interaction with many communities, positive stress, motivation for academic achievement, and students' creativity, toward the individual innovativeness.

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