

INITIATION OF THE ESTABLISHMENT OF A TECHNOLOGY BUSINESS INCUBATOR AT UNIVERSITY FOR AGRIPRENEURSHIP (STUDY CASE AT BENGKULU UNIVERSITY, INDONESIA)

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Novanda, R. R. (2022). Initiation of the establishment of a technology business incubator at university for agripreneurship (study case at Bengkulu University, Indonesia). *Journal of Innovations and Sustainability*, 6(1). 04. <https://doi.org/10.51599/is.2022.06.02.04>.

Purpose. This paper aims to analyze aspects related to the establishment of business incubators at Bengkulu University as well as what factors are most expected by students towards the establishment of technology business incubators at this university.

Results. The results of data collection were processed using the partial least square method to analyze aspects related to the establishment of business incubators at Bengkulu University as well as factors are most expected by students towards the formation of technology business incubators at this university. This research show that support variables were found had a significant effect on the initiation of the Technology Business Incubator at Bengkulu University. Support is providing research and business development assistance and access to technology used for students in agripreneurship. Support is the latent variable requested by five manifest variables: (1) access partnership programs from the ministry, (2) professional network access, (3) technology access, (4) access international relations, and (5) job creation.

Scientific novelty. Support variables were found had a significant effect on the initiation of the Technology Business Incubator at Bengkulu University. This research explains a lot about the novelty of the type of establishment of pilot incubators in universities in poor areas.

Practical value. The results are useful in initiating the creation of a business incubator that meets the requirements. The results of this study can be used as a reference in establishing a business incubator at the university level. It is important to ensure access to funding, to professional services, to technology, to international relations, and an understanding of the importance of creating jobs.

Key words: university, technology, support, innovations.

Introduction. The business incubator is one of the models in growing technology-based entrepreneurs. Currently, Indonesia is aggressively building business incubators to improve the entrepreneurial skills of its people (Soba et al., 2018). Compared to other countries, business incubators in Indonesia have not been well developed. The business incubation program is a policy mechanism to support innovation and bridge universities and industry(Wonglimpiyarat, 2016). The incubation pattern through universities in Indonesia is supported by the Ministry of research and innovation to increase the capacity of universities to create entrepreneurs through research technology.

Bengkulu University, as one of the universities that need advancement in the field of *agripreneurship*, so it is necessary to form a business incubator. The

establishment of business incubators in universities is used for commercialization of ideas (Patton et al., 2009). Business incubators at universities are established based on technology that utilizes the flow of university knowledge to industry (Rothaermel et al., 2005). The business incubator is a useful place to grow the entrepreneurial spirit that is creative, innovative, resilient and professional so that it can develop business (Hayati & Wijayanti, 2019). Activities undertaken by the business incubator in fostering an entrepreneurial spirit are training and coaching as well as the formation of business units at the university (Ardiansyah et al., 2019).

The establishment of a business incubator at a university has an essential role in encouraging student creativity and innovation in *agripreneurship*. Higher education provides the concept of link and match that aims to make students comfortable learning in business incubators (Lutfiani et al., 2020). Business incubators at the university have been proven to have increased student entrepreneurial interest (Ardiansyah et al., 2019; Mayasari et al., 2019; Miller & Acs, 2017). Business incubators have been able to change the mindset of students to be more creative and continue to innovate in agricultural sector.

In addition to developing student competencies and interests, business incubators can develop more networks for technology-based student businesses (Cooper et al., 2012). Business networks can be acquired through incubators with the benefit of being able to create innovative university research results to companies (Sutanto & Hendraningsih, 2011). Helix Tripel theory states that business incubators can connect universities, industry, and government in one mutually beneficial forum. Many studies suggest that the industry is pleased to collaborate with universities through business incubators because it can increase the number of jobs and sales (Lasrado et al., 2016).

The initiation of the establishment of a Technology Business Incubator at Bengkulu University began at the end of 2019. However, it is not confident what function is expected of students as prospective tenants at Bengkulu University. What are the needs of students for technology business incubators to be formed? So, it is essential to analyze aspects related to the establishment of business incubators at Bengkulu University as well as what factors are most expected by students towards the establishment of technology business incubators at Bengkulu University for *agripreneurship*.

Review of literature. A business incubator is a place to develop an entrepreneurial spirit within the university. Through business incubators, the university can commercialize research results. Business incubators in universities are models for developing technology-based businesses (Soba et al., 2018). *agripreneurship* model, through the business incubator, has integrated various aspects on an ongoing basis. At the pre-business incubator stage, entrepreneurial knowledge and necessary skills are not only obtained from the material presented. Every prospective entrepreneur has experience in the mentoring and coaching stages. The practice of creativity combined with digital media mastery is beneficial at that

stage.

Business incubators play an essential role in the University to encourage entrepreneurial creativity and innovation. Business incubators can improve the performance of universities to achieve the best rank in national higher education. The business incubator concept is a link and match concept that aims to make students comfortable and follow learning in business incubators (Lutfiani et al., 2020). The main task of a business incubator is to provide business space, assistance, monitoring and evaluation, capital access, and network access. With this program, universities are expected to produce innovative products that are ready to compete in the industry as technology-based startups (Putra et al., 2015). A university incubator is a type of incubator that produces good technological innovation (Barbero et al., 2014).

The success of students in developing business must be followed by strong interests & motivation. The concepts that must be met are: 1. Able to make business plans; 2. Work hard; 3. Dare to take risks; 4. Has the ability and skills (Komara & Bagus Setiawan, 2020).

Business incubators work to increase student interest in entrepreneurship. The results showed differences in student interest in entrepreneurship before and after participating in business incubator activities (Mayasari et al., 2019; Miller & Acs, 2017). The average student interest in entrepreneurship after participating in business incubator activities increased by 1.960 points compared to before taking part in business incubator activities. The results also found that business incubator activity has changed the mindset of some students. Similar research carried out by Ardiansyah et al. (2019) shows that business incubator activities include training and coaching as well as the formation of business units. Students cannot be separated from obstacles originating from internal and external factors.

The business incubator is a useful place to foster an entrepreneurial spirit for new entrepreneurs. They are creative, innovative, resilient, and professional, so that they can develop micro-businesses in Indonesia (Hayati & Wijayanti, 2019). In addition to urban communities, business incubators can drive small-scale business success in the countryside (Messeghem et al., 2013). This can be done if the business incubator has professional facilities and infrastructure in business development (Patton, 2014; Patton et al., 2009). Companies incubated by the university have more sales than those who are not incubated (Lasrado et al., 2016). Furthermore, we observed that companies incubated by the university grew faster (in terms of the number of jobs and sales) compared to non-incubation companies above and beyond the incubation period.

The business incubator is one solution to commercialize university research results and connect them with industry (Rothaermel & Thursby, 2005). The incubation program is one of the main policy mechanisms to support innovation. Business incubators can act as intermediaries liaising between universities and industry to provide networking and promote research results (Wonglimpiyarat, 2016). The proximity of industry and universities can be an advantage and can be a

disadvantage (McAdam & Marlow, 2008). But without good cooperation, a business will be challenging to develop. Tenants created by business incubators are innovative and can enhance networking to industry (Soetanto & Jack, 2013). Industry and MSME have high motivation to collaborate with business incubators (Cooper et al., 2012).

Materials and methods. This paper aims to analyze aspects related to the establishment of business incubators at Bengkulu University as well as what factors are most expected by students towards the establishment of technology business incubators at this university.

This research was conducted at Bengkulu University with 100 agripreneurs contributing questionnaires to respondents using an online survey.

The results of data collection were processed using the partial least square method to analyze aspects related to the establishment of business incubators at Bengkulu University as well as what factors are most expected by students towards the formation of technology business incubators at this university for agripreneurs. Aspects and factors used in this study are explained in Table 1. This study consists of eight latent variables and 31 indicators that are drawn in a solid 1. Measurements were carried out using a Lik-ert scale which is a type of ordinal data. Data collection was carried out in January 2020 involving 100 student respondents. Research Variables and Measurement Models can be explained in Fig. 1 and Table 1.

Table 1

Research Variable

Variable	Explanation
1. X1	Space
X11	Basic business training
X12	Comparative study / internship
X13	Extracting business ideas
2. X2	Share
X21	Conference room
X22	Discussion room
3. X3	Service
X31	Business management consultancy
X32	Marketing system consulting
X33	Financial management consultancy
X34	Legal consultation
X35	Technology consultation
4. X4	Skill development
X41	Business plan
X42	Market research
X43	Business management
X44	Business negotiations
5. X5	Seed capital
X51	Access research grant funding sources
X52	Access revolving credit
X53	Private investor access

Continuation of the Table 1

6. X6 X61 X62 X63 X64 7. X7 X71 X72 X73 X74 X75 8. I I1 I2 I3 I4	Synergy Collaboration with universities Cooperation with the private sector Cooperation with the government Collaboration with the community Support Access partnership programs from ministries Professional network access Technology access Access international relations Job creation Investment initiation of the establishment of a technology business incubator at the Bengkulu University Reducing business failure Human resources development Commercialization facilitator Attractor of business interests
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Source: author's own development (2022).

Hypothesis

- H1: Synergy has a significant effect on initiation of the establishment of a technology business incubator at the Bengkulu University for agripreneurship.
- H2: Space has a significant effect on initiation of the establishment of a technology business incubator at the Bengkulu University for agripreneurship.
- H3: Share has a significant effect on initiation of the establishment of a technology business incubator at the Bengkulu University for agripreneurship.

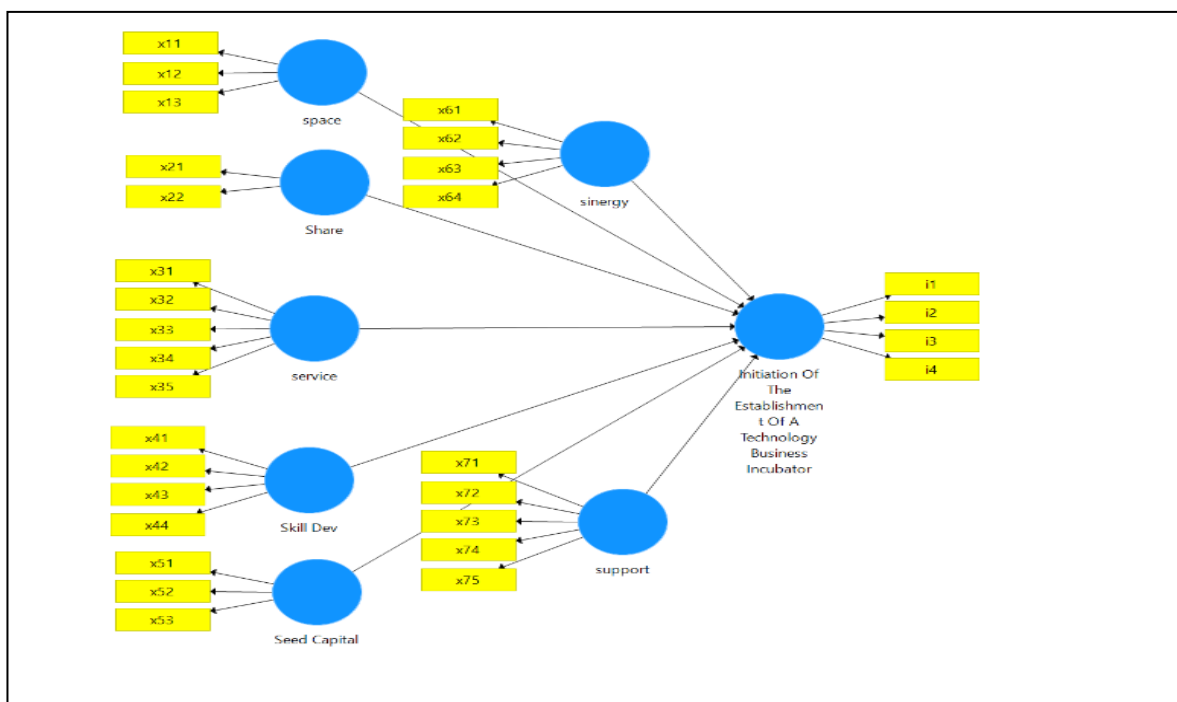


Fig. 1. Measurement Model

Source: author's own development (2022).

- H4: Service has a significant effect on initiation of the establishment of a technology business incubator at the Bengkulu University for agripreneurship.
- H5: Skill development has a significant effect on initiation of the establishment of a technology business incubator at the Bengkulu University for agripreneurship.
- H6: Seed capital has a significant effect on initiation of the establishment of a technology business incubator at the Bengkulu University for agripreneurship.
- H7: Support has a significant effect on initiation of the establishment of a technology business incubator at the Bengkulu University for agripreneurship.

Results and discussion. General description of research respondents.

Research respondents were Bengkulu University students who were still active in academic activities and their final project. The majority of students who have a business are in their 19s and 20s. The number reached 67 %. The age of 19 years to 21 years is a period of self-employment. At that time, students are more likely to occupy them-selves in certain activities, both activities in student organizations, hobby communities, study hard, or have a business. This age is considered to be very productive for students to develop their creativity.

When observed from the major taken by students, most took the major of agribusiness with a 34 %. Students from the agribusiness study program have a high interest in entrepreneurship. Business lessons are taught from the first level to graduation. The main output of the agribusiness department is to print business people or workers in the business field. A study conducted by Novanda et al. (2020) states that agribusiness students have a firm intention to do business in agriculture. Business sciences did not only emerge from the back of business education. Other respondents spread from agriculture, chemistry, sociology, law, social welfare, animal husbandry, biology, and others.

Initiation of the establishment of a technology business incubator at university.

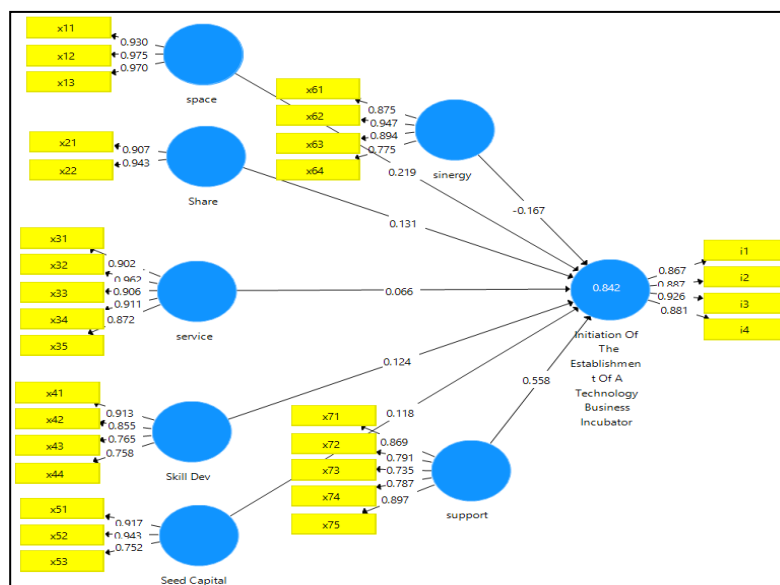


Fig. 2. PLS Test result

Source: author’s own development (2022).

The results of the analysis using Partial Least Square produce an initial measurement model with a distribution of loading factors, as shown in Fig. 2. The default loading factor is 0.7 and does not meet the standard under 0.7. Based on the results of the analysis, all manifest variables are at the limit of 0.7. So, that the manifest variable no manifest variable is excluded from the model. Next, analyze the value of discriminant validity by comparing the average extracted value (AVE) with the correlation between construct and other constructs in the model. AVE values have standards above 0.5, and the measurement results indicate that all latent variables meet the criteria (Table 2). The AVE value reflects the reliability of component scores that are already feasible. So, it continues to assess convergent reliability in Table 2. Composite reliability values are above 0.6 so there is no convergent validity problem.

Table 2

AVE Value and Composite Reliability

Variable	AVE	Composite Reliability
Initiation of the establishment of a technology business incubator	0.793	0.939
Seed capital	0.765	0.906
Share	0.857	0.923
Skill development	0.681	0.895
Service	0.830	0.961
Sinergy	0.766	0.929
Space	0.919	0.971
Support	0.669	0.909

Source: author's own development (2022).

Evaluation of inner models can be done by calculating the value of GoF (Goodness of fit). The Gof value obtained is 0.813 and is included in the broad category, which means that the model is fit and suitable for use. Hypothesis testing is done to analyze the factors that influence latent variables. Based on the results of hypothesis testing, it is found that Support affects the Initiation of forming a business incubator with a calculated T-value of 2.914 and a P-value of 0.004 (Table 3).

Based on the results of testing the hypotheses in Table 3, only support variables were found that had a significant effect on the initiation of the Technology Business Incubator at Bengkulu University for agripreneurship. The supported variable has a T-value of 2.914 and a P-value of 0.004 shows that support is crucial in forming a business incubator. Support is providing research and business development assistance and access to technology used for students. Variable support is the latent variable requested by five manifest variables:

1. Access partnership programs from ministries;
2. Professional network access;
3. Technology access;
4. Access international relations;
5. Job creation.

Table 3

Hypothesis Test Result

Criteria	T Statistics	P Values	Result
Seed capital -> Initiation of the establishment of a technology business incubator	0.531	0.595	No significant effect
Share -> Initiation of the establishment of a technology business incubator for agripreneurship	0.598	0.550	No significant effect
Skill development -> Initiation of the establishment of a technology business incubator for agripreneurship	0.368	0.713	No significant effect
Service -> Initiation of the establishment of a technology business incubator for agripreneurship	0.261	0.794	No significant effect
Sinergy -> Initiation of the establishment of a technology business incubator for agripreneurship	0.544	0.587	No significant effect
Space -> Initiation of the establishment of a technology business incubator for agripreneurship	1.419	0.157	No significant effect
Support -> Initiation of the establishment of a technology business incubator for agripreneurship	2.914	0.004	Significant effect

Source: author's own development (2022).

1. *Access partnership programs from ministries.* Indonesia is a country that has assistance for business development in several ministries. The Ministry provides business assistance to entrepreneurs in the capital, training, network access, and more. The program was obtained with several conditions proposed by the relevant ministries. The Republic of Indonesia's Ministry of Research and Technology assists in the development of new entrepreneurs and technology-based start-up entrepreneurs with a total of 250 million rupiahs. For students, this amount is large and can only be obtained through the Bengkulu University business incubator. The process of selecting and preparing proposals is not easy. They need knowledge from university business incubators to provide training. Besides, the Village Ministry, the Agriculture Ministry, and the Youth-sports Ministry also do the same thing. Some grants for entrepreneurs are very likely to be obtained by students through business incubators.

The linkage to the government and university business incubators can increase the opportunities for student business development. Through access to assistance, students can have the capital to continue or establish a business. As a Business Development Service, the incubator has a positive and significant influence on business development (Putri et al., 2014).

2. *Professional network access.* A professional network is in a relationship with a professional group. The process has the aim of building mutually beneficial relationships with other entrepreneurs and potential clients or customers. De Klerk (2010) stated that networking is essential for business success, and they will benefit from training on building relationships. Network and owner awareness influences business growth (de Klerk & Kroon, 2008).

Through business incubators, students will be taught to open business networks with industry, government, and others. The high expectation of students if a university business incubator is formed is to improve their business networks. The

limitations of students in building business networks are caused by the lack of knowledge to do so. This will relate to the ability to conduct business negotiations. Based on a study conducted by Novanda & Wahyu (2017) which states that one of the hardest things for entrepreneurs is building business negotiations. So, increasing student capabilities in accessing professional networks is essential to do in a business incubator.

3. *Technology access.* The business incubator acts as a place to commercialize research results at the university. So, that students whose businesses are well-rounded in the university's business incubators can access the technology owned by the university. Respondents stated that they need access to technology at Bengkulu University to continue their business. Or access to technology development for the company. Improving student skills in utilizing technology is very important to save costs, save time, and increase productivity (Wilburn & Ralph, 2018).

4. *Access international relations.* Respondents stated that the importance of access to international relations for product development in the future. The dream of being able to export products abroad, so that the desire to get international relations is also high. Respondents expect that in the future, Bengkulu University's business incubator can be a liaison with foreigners.

5. *Job creation.* One effort to overcome the increasing number of unemployment today is by way of entrepreneurship. Entrepreneurship is known to have a positive influence on the economic activities of a society. With increased economic activity, employment opportunities can be created or expanded. Entrepreneurship is aimed at a solution to reduce unemployment. Judging from the independence of entrepreneurship will provide opportunities for yourself to earn income and achieving success. Viewed in terms of social entrepreneurship will create jobs for the environment and people who are looking for work. Through business incubators, respondents have hopes to be able to recruit workers properly. Business incubators can provide direction in the process of recruitment of workers through training therein.

Conclusions. Based on the results of the research, this study show that support variables were found had a significant effect on the initiation of the Technology Business Incubator at Bengkulu University. Support is providing research and business development assistance and access to technology used for students in agriprenurship. Support is the latent variable requested by five manifest variables: (1) access partnership programs from the ministry, (2) professional network access, (3) technology access, (4) access international relations, and (5) job creation. Collaboration between local government and tertiary institutions is needed to spur students into entrepreneurship. Capital assistance, entrepreneurship training is necessary to improve their talents and interests in opening a business.

The limitation of research – this study is conducted only at the Bengkulu University which will have a business incubator. A more detailed explanation in the section above shows that the importance of meeting the needs of incubators at

Bengkulu University must be carried out immediately. Future research is expected to provide further analysis on how to meet the requirements and open more access for business incubators. Apart from this, how the business incubator strategy can survive various kinds of Indonesian economic conditions.

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