

# **Identifying the Effectiveness of Business Incubator Training among UPN Veteran Jakarta Undergraduate Students: An Application of Randomized Controlled Trial Approach**

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## **Abstract**

Today, the Covid-19 Pandemic is a global issue and affected day-to-day life. The Covid-19 makes slowing down Indonesia's economy. One of the consequences is that many workers have been laid off from their job. In response to the situation, a business incubator is one of the platforms to facilitate the prospective tenant to have the ideas to start up the business. This study is written to identify the effectiveness of business incubators training among the Nutrisociotechnopreneur. The quantitative research designed with One-blind Randomized Controlled Trials (RCT) through pre-test and post-test for the control group. The population

was all Nutrition Undergraduate students UPN Veteran Jakarta, batch 2018, 2019, and 2020 then got 90 students as the sample. The sample divided into two groups, namely intervention and control group, namely: 60 students were interested in business incubator training, then they were given the marketing strategy training and Nutrisociopreneur, and 30 students were not. The results showed that business incubator training effectively developed the Marketing Strategy and the Nutrisociotechnopreneur with the significance  $p<0.05$ . In conclusion, this study has successfully identified that the business incubator training effectively facilitated the nutrition students of UPN Veteran Jakarta to plan the marketing strategy and develop a start-up in the Nutrisociotechnopreneur.

## Keywords

Business Incubator Training, Nutrisociotechnopreneur, Marketing Strategy, Randomized Controlled Trial

### 1. Introduction

The industrial revolution 4.0 or the digital revolution is a new era for entrepreneurs as an opportunity to develop a business (Fadhloli, 2018). The presence of industry 4.0 is a stage of a technological revolution that changes the way of human activities are carried out in scale, scope, complexity, and transformation from previous life experiences, even humans can also live in uncertainty (Yahya, 2018). In addition, this new era has brought more competitive products and services. The presence of this digital revolution backfired itself. This revolution brings opportunities such as ecosystem innovation, a competitive industrial base, investment in technology, and the integration of Small and Medium Enterprises (SMEs). On the other hand, there are accompanying challenges such as industrial readiness, reliable workforce, ease of socio-cultural arrangements, and diversification and job creation (Irianto, 2017). If these are not properly prepared, various impacts will arise in people's lives, one of which is unemployment (Yahya, 2018).

Based on data from Badan Pusat Statistik (2018), Unemployment rate in Indonesia in February 2018 was 5.13%, or more than 6.7 million people from a total of 133.94 million people in the workforce. Although this figure has decreased compared to 2017, the government encourages universities to adapt and prepare graduates to become ready to face these challenges. One of the steps chosen was to encourage students to be brave in making the latest breakthroughs by looking at the needs and problems that developed in the community (Harususilo, 2019). Also, we are also required to be able to implement entrepreneurship in the nutrition profession (Susilo, 2019). Moreover, Indonesia is currently undergoing an epidemiological transition where deaths from non-communicable (degenerative) diseases are increasing compared to infectious diseases (Mafaza et al, 2016). The results of Riskesdas (2018) show that diseases such as stroke, hypertension, diabetes mellitus, and heart disease have increased compared to 2013. This is also supported by an increase in obesity in adults as a risk factor for non-communicable diseases (Riskesdas, 2018).

These problems can be a business opportunity for a nutritionist. In addition, lifestyle changes that occur in the community can be used as a business opportunity for a nutritionist (Susilo, 2019). As one of the state universities that organize nutrition study programs, the presence of entrepreneurship courses is expected to be able to prepare graduates from undergraduate nutrition science programs who can implement entrepreneurship and compete in the current digital era. Therefore, this research was compiled on the role of business incubator training in developing sociotechnopreneur nutrients based on social science and technology as capital for graduates to be able to compete. It is expected to be one of the supporting instruments that can direct students to be ready to face today's competition, especially in creating breakthroughs in the field of goods and services as well as being a hallmark of entrepreneurship in the field of nutrition.

#### 1.1 Objectives

The research aim was to know the effectiveness of business incubators training to plan the marketing strategy and develop Nutrisociotechnopreneur in nutrition undergraduate students of UPN Veteran Jakarta.

### 2. Literature Review

#### 2.1 Business Incubator in Industry Revolution 4.0

According to Entrepreneur Asia Pacific, a business incubator is a program or organization that provides sponsorship to accelerate the growth and success of a start-up or business. In addition to assisting in terms of capital, this program also helps start-up businesses in terms of work facilities, training, mentoring, and much more. Simply, an incubator will help direct a small-scale company to be formed with good organizational and financial management. The hope is that the business can work and develop sustainably and generate the desired profit. So in the era of the

industrial revolution 4.0, it is the fourth major industrial era from the journey of the industrial revolution that began in the 18th century, in the role of the Business Incubator.

The concept of the industrial revolution 4.0 was built based on the transformation of three previous technologies such as the steam engine which became the main component in the industrial era 1.0, electrical energy was used as the basis for the development of other technologies in the industrial era 2.0, and the use of computers as IT and internet advancements that support mass production in the industrial era 2.0. industrial era 3.0 (Cordes & Stacey, 2017; Klingenberg, 2017). Meanwhile, the main technology in industry 4.0 is the Cyber-Physical System (CPS) which is defined as a combination of physical and cybernetic systems, or a combination of technologies that blurs the boundaries between the physical, digital, and biological fields. CPS stems from several important technical advances in the internet, embedded systems, computer science, and artificial intelligence (Klingenberg, 2017).

## 2.2. Marketing Strategy

According to Hartono (2012: 889) marketing strategy is a set of goals and objectives, policies and rules that give direction to marketing efforts from time to time from each level and location. Tjiptono Fandy (2008) defines marketing strategy as a fundamental tool that is planned to achieve company goals by developing a sustainable competitive advantage through the market entered and marketing programs used to serve the target market. A marketing strategy provides direction in terms of variables such as market segmentation, identification of target markets, positioning of marketing mix elements, and marketing mix costs. Marketing strategy consists of making decisions about the company's marketing costs, marketing mix, and marketing allocation. Marketing strategy is done by developing competitive advantages and marketing programs used to serve the target market.

## 2.3 Nutrisociotechnopreneur

According to King K (2009) in Andreou (2016), a Nutripreneur is a nutritionist innovator (nutritionist or dietitian) who uses the process of changing the current situation of existing products and services to be transformed into new products and services. Nutripreneur is a practice and process that results from the creativity, innovation, development, and growth of nutrition-related businesses (Andreou, 2016). Andreou (2016) states that the qualities of a nutripreneur include being able to see opportunities (opportunity-seeking), persevering, taking risks, demanding efficiency and quality (demanding for efficiency and quality), seeing information (information seeking), setting goals (goal setting), planning (planning), persuasion and networking (persuasion and networking), forming self-comfort (building self-confidence), listening (listening to others), and demonstrating leadership (demonstrating leadership). In addition, there are three main reasons for a nutritionist to become an entrepreneur, namely the desire to be your boss, the desire to realize ideas, and financial rewards. The prospective entrepreneurship field for a nutritionist includes two fields, namely in goods (nutrition) and service products (nutrition) (Susilo, 2019). Items that can be developed include, for example, food service, specific food products (functional, additional food, etc.), nutrition-specific souvenirs, and nutritional aids. Meanwhile, the areas of service products that can be developed include educators (nutrition counselors, counseling, home care, and independent practice), nutrition research, and product design (nutrition).

In addition, several entrepreneurial opportunities can be developed in the field of nutrition, such as the field of catering services, the field of information technology, and the fields of animal husbandry, agriculture, and fisheries. The development of Nutrition Socio Technology Entrepreneurs in the Entrepreneurship Model is that Social entrepreneurship is a crucial element in the world (Gandhi and Rishav, 2018). Social entrepreneurship consists of two words, namely social which means community, and entrepreneurship which means entrepreneurship. A social entrepreneur is someone who understands social problems and uses entrepreneurial skills to make the social change (Widiastuti and Meily, 2011). Meanwhile, social entrepreneurship is the creation of social value resulting from collaboration with other people and organizations from the community who are involved in creating social innovations in economic activities. The definition provides four criteria of socio entrepreneurship, namely social value (Social Value), community environment (Civil Society), innovation (Innovation), and economic activity (Economic Activity) (Hulgard, 2010 in Widiastuti and Meily, 2011). Meanwhile, Technopreneurship comes from the combination of the words "technology" and "entrepreneurship" which is concluded as a process of formation and collaboration between business fields and the application of technology as a supporting instrument and as a basis for business including processes, systems, parties involved, and the resulting product (LP2KHA). , 2015). Another opinion states that technopreneurship is a combined term of technology and entrepreneurial abilities where technopreneur is an entrepreneur who uses technology with the aim of entrepreneurship (Selladurai, 2016).

### 3. Methods

This study was a one-blind experimental study with a Randomized Controlled Trials (RCT) design. The design of this study was carried out using a pre-test-post-test randomized controlled trial method to determine the effectiveness of a business incubator in developing Nutrisosiotecnopreneur in nutrition students at Universitas Pembangunan Nasional Veteran Jakarta. The population was all students on Nutrition Undergraduate Program UPN Veterans Jakarta batch 2018, 2019, and 2020 totaling 268. The Participants were divided into two, namely: 60 participants that were interested in business incubator training and 30 who were not interested in business incubator training. The sampling technique used a random sampling method that meets the criteria. Sources and types of data that became the author's reference came from primary data by distributing questionnaires through a google form.

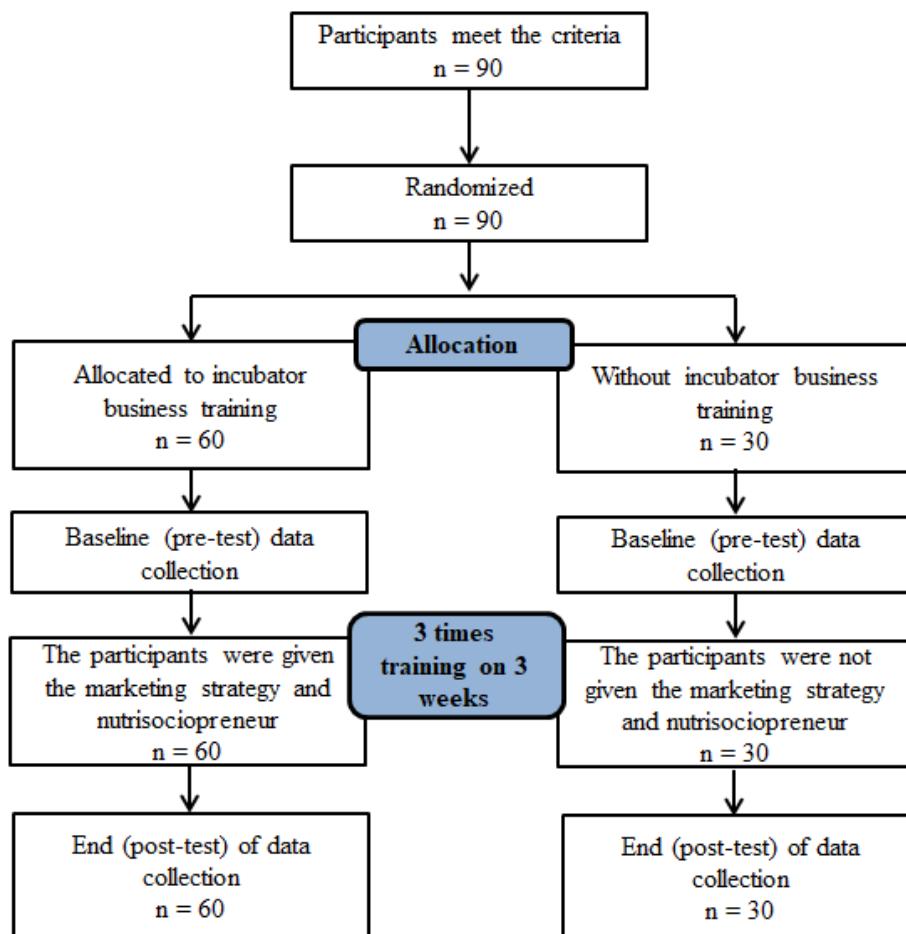


Figure 1. Participants flow diagram

The questionnaire is consisted 2 categories of questions. Strategy marketing included 11 questions and nutrisociopreneur was 12 questions. The detail of questions in the questionnaire was following:

No.	Questions
<b>Marketing Strategy</b>	
1	In joining a business incubator, you are asked to create the idea.
2	In joining a business incubator, you are asked to create the creativities such as a product.
3	In joining a business incubator, you are asked to create an innovation such as a product.
4	In joining a business incubator, you develop an innovation refers to others product (observe, duplicate, modify)
5	In joining a business incubator, your product will charge a price according to the cost of sale.

6	In joining a business incubator, your product will charge according to sold cost = Cost + (% Mark up x Cost).
7	In joining a business incubator, your product will use delivery services such as JNE, J&T, and others.
8	In joining a business incubator, your product will use social media platforms, such as Instagram, Facebook, Line, Twitter.
9	In joining a business incubator, your product will use the promotion through advertisement.
10	In joining a business incubator, your product will use the promotion when you launch a new product.
11	In joining a business incubator, your product will use the promotion through direct marketing.
<b>Nutrisociopreneur</b>	
1	You have understood about Nutripreneur.
2	You are proud to take a part in Nutripreneur.
3	You have understood about sociopreneur.
4	You are proud to take a part in creating a business in the sociopreneur.
5	You have understood what technopreneur is.
6	You are proud to take part to create an opportunity in the technopreneur field.
7	You know that the prospective entrepreneurship field for a nutritionist covers two fields, namely in goods (nutrition) and service products (nutrition).
8	The product can be developed, for example, specific food products (functional, additional food, etc.), nutrition-specific souvenirs, and nutritional aids.
9	The service products can be developed include educators (nutrition counselors, counseling, home care, and independent practice), nutrition research, and product designer (nutrition).
10	Social entrepreneurship is a social value that is resulted from the collaboration with others or organizations to create social innovation in economic activities.
11	Socio entrepreneurship has four criteria, including social value, civil society, innovation, and economic activity.
12	Technopreneur is a process of formation and collaboration between business fields and the application of technology as a supporting instrument and as the basis of the business including processes, systems, parties involved, and the resulting product.

#### 4. Data Collection

Data was collected using a questionnaire that was applied in Google Form. The marketing strategy data was collected by using 11 questions, while nutrisociopreneur data was 12 questions. The samples were given a score with a range of 1-5 for every response to every question. The category of scoring following:

- a. Score 5 was given for answering very agree
- b. Score 4 was given for answering agree
- c. Score 3 was given for answering uncertain
- d. Score 2 was given for answering disagree
- e. Score 1 was given for answering very disagree

After answering all the questions both marketing strategy and nutrisociopreneur, the results of each variable were calculated, then, the value of each scale scored by samples for each question were summed.

#### 5. Results and Discussion

The characteristics of the participants are depicted in the Table 1. A total of 90 students (60 in the training and 30 in the without training group) were participated. On the characteristics of the participants, most of the participants was female in detailed at 91,8% of training group and 93,3% of control group. The age of training and control group showed quite similar with the average at 19,7 and 19,1, respectively. All the batches represented the training, expect batch of 2018 in the without training group. As we can see from the characteristic results, the female participants were more enthusiasm to follow the training than male participants. The enthusiasm is essential to create entrepreneurship passion in the nutrition undergraduate students in Universitas Pembangunan Nasional Veteran Jakarta. The results supported by Alberti, Sciascia, and Poli (2004) who explain in "Entrepreneurship Education" that the successful person in the business is triggered by business passion which is supported by education, environment, and country. Besides, Welsch (1993) concluded that there are two factors which can be implemented in the class to increase the

entrepreneurial ability, are from within the school and outside the school. Factor from within school is the training to foster the entrepreneurial spirit. While, factor from outside the school is the participation of industry to training the students' entrepreneurial skill, whether students go directly to companies, or companies visit schools to give the training.

Table 1. Characteristics of the Participants

Characteristics	Group	
	Training	Control
<b>Gender</b>		
Male (%)	4 (6,6)	2 (6,7)
Female (%)	56 (91,8)	28 (93,3)
Age (years) mean SD	19,7 (1,12)	19,1 (0,90)
<b>Batch</b>		
2018	20 (32,8)	0
2019	20 (32,8)	19 (63,3)
2020	20 (34,4)	11 (36,7)

## 5.1 Numerical Results

The results of both groups which are training and control (without training) groups are depicted in Table 2, following:

- a. In the training group, the score of marketing strategy before the training was 44,76, and after training was 46,73. The results showed that the increasing of the score with 1,97 difference was significant ,  $t(59) = -2,29$ ,  $p < 0,05$ . Meanwhile, the nutrisociopreneur score before training was 47,25, and after training was 49,97. These results showed that 2,72 difference of the score significantly increased between before and after training,  $t(59) = -2,42$ ,  $p < 0,05$ .
- b. In the control (without training) group, in the marketing strategy, the baseline score was 44,76 and then we did not give the training for the participants in the control group. After 3 weeks, we collected the second score, the mean score was 43,73 in which these results showed there is a decrease in score. The -0,67 difference of score was not significant,  $t(59) = 0,52$ ,  $p > 0,05$ . In the nutrisociopreneur, the baseline score was 46,33 and after 3 weeks the score showed the decreasing trend in which the score became 45,93. The -0,4 difference was not significant,  $t(59) = 0,20$ ,  $p > 0,05$ .

Table 2. Within-Group Change Scores between Pre-test and Post-test Training and Without Training (Control) Measurements

Group	Outcomes	
	Marketing Strategy	Nutrisociopreneur
<b>Training</b>		
Baseline	$44,76 \pm 6,60$	$47,25 \pm 7,15$
End of Training	$46,73 \pm 4,57$	$49,97 \pm 5,92$
Within-Group Change	1,97	2,72
<i>p</i> -value	0,026	0,018
<b>Control</b>		
Baseline	$44,40 \pm 4,86$	$46,33 \pm 5,45$
Without Training	$43,73 \pm 5,93$	$45,93 \pm 10,80$
Within-Group Change	-0,67	-0,4
<i>p</i> -value	0,605	0,844

\*Data are given as mean  $\pm$  SD

The current results were supported by the study from Winslow, Solomon, and Tarabishy (1997) who concluded that the entrepreneurial education and the practice to create a business advised by the teacher does not only increase the students' entrepreneurial ability but also the entrepreneurial learning using self-directed learning can increase the students' ability. Wahyu (2011) also explained that Assessment of the level of program suitability is one way to measure program effectiveness. Program effectiveness can be determined by comparing program objectives with program outputs, meanwhile, the opinion of program participants can be used as a measure to determine program effectiveness.

The Table 3 described the results of between group effect sizes, the following:

- In the baseline comparison of the Pre-test, the baseline score in the marketing strategy was 44,76 for the training group and 44,40 for the control group. The baseline showed 0,36 difference. It means that there was no significant result,  $t(88) = 0,26, p > 0,05$ . For the nutrisociopreneur, the baseline score of the training group was 47,25, while the control group was 46,33. The 0,92 difference between group did not show the significant result,  $t(88) = 0,62, p > 0,05$ . These results mean that all the participants had the homogeneity before the intervention.
- In the comparison in end (post-test), the post-test score in the marketing strategy was 46,73 for the training group and 43,73 for the control group. These results showed that the score of the training group was higher than the control group and significant difference,  $t(88) = 2,65, p < 0,05$ . Furthermore, in the nutrisociopreneur, the training group was 49,97 compared to the control group which was 45,93. The results addressed that the training group got a significantly higher score than the control group,  $t(88) = 2,29, p < 0,05$ . It means that the current study explained that the business incubator training was effective and beneficial to trigger the students to create a Start-Up in the Nutrisociopreneur.

Table 3. Between Group Effect Size (Training versus Without Training)

Group	Outcomes	
	Marketing Strategy	Nutrisociopreneur
<b>Comparison in Baseline (Pre-test)</b>		
Training	44,76 $\pm$ 6,60	47,25 $\pm$ 7,15
Control	44,40 $\pm$ 4,86	46,33 $\pm$ 5,5
Between-Group Change	0,36	0,92
p-value	0,798	0,538
<b>Comparison in End (Post-test)</b>		
Training	46,73 $\pm$ 4,57	49,97 $\pm$ 5,9
Control	43,73 $\pm$ 5,9	45,93 $\pm$ 10,80
Between-Group Change	3	4,04
p-value	0,009	0,024

\*Data are given as mean  $\pm$  SD

The results of the current study were supported by the model of the research about "Origins of Entrepreneurial Opportunities in e-Banking" which is initiated by Kordnaeij, et al. (2011). The model was adopted from one of the models which were used by Plummer (2007:368 in Kordnaeij, et al. (2011)). It explained that the development of an entrepreneurial model can be started by: sensing the existence of entrepreneurial opportunities, developing entrepreneurial strategies, determining new opportunities that can be done to start a business, and executing those opportunities in the form of business exploitation that is believed to be profitable. Besides, the results were also supported by Hadiyanti, Badarudin, Kariono (2018) about "Business Incubator Effectiveness in the Implementation of Small and Medium Community Business Development". The study addressed that the development of business can be done by two approaches, such as (1) Goal Approach measured through (a) Profitability (b) Resource search and (2) Process Approach through various internal organizational indicators (a) Productivity (b) Adaptability or flexibility (c) Job satisfaction.

## 6. Conclusion

The overall results indicated that the business incubator training was effective to develop the nutrisociopreneur for the nutrition undergraduate students in Universitas Pembangunan Nasional Veteran Jakarta.

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