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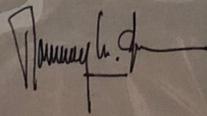
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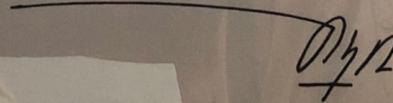
**THE EFFECT OF AN ENTREPRENEURSHIP PROGRAM ON ATTITUDES AND INTENTION : A FIELD TESTING USING ONE-GROUP PRETEST POSTTEST DESIGN**

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**Dr. Tommy Christian Efrata, S.E., M.Sc.**  
Conference Chair of The 6<sup>th</sup> ICOEN 2019



**Ir. Yohannes Somawiharja, M.Sc.**  
Rector of Universitas Ciputra

# The effect of an entrepreneurship program on attitudes and intention: A field testing using one-group pretest-posttest design

Denny Bernardus<sup>1</sup> Fulgentius Danardana Murwani<sup>2,\*</sup>  
Imanuel Deny Krisna Aji<sup>1</sup> Liesty Padmawidjaja<sup>1</sup>  
Djoko Dwi Kusumojanto<sup>2</sup> Cipto Wardoyo<sup>2</sup> Stefan Yudana Jatiperwira<sup>1</sup>

<sup>1</sup> Universitas Ciputra Surabaya, Indonesia

<sup>2</sup> Faculty of Economics, Universitas Negeri Malang, Indonesia

\*Corresponding author: Fulgentius Danardana Murwani; Email: [f.danardana.fe@um.ac.id](mailto:f.danardana.fe@um.ac.id)

## Abstract

In this study, we examined the effect of entrepreneurship program on attitudes and intention. We used one-group pretest-posttest design. Data were collected by questionnaire from a sample of 200 students attending in an entrepreneurship program. Our results indicate that entrepreneurship program significantly improved students' innovativeness, entrepreneurial self-efficacy, and entrepreneurial intention.

**Keywords:** entrepreneurship program; pre-experimental design; innovativeness; entrepreneurial self-efficacy; entrepreneurial intention

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## **Introduction**

Entrepreneurship plays a crucial element in economy and well-being (e.g., Sánchez, 2013; Karimi et al., 2016; Murwani, 2016). Entrepreneurship can be taught and entrepreneurship education can be recommended for improving entrepreneurial outcomes (e.g., Sánchez, 2013; Karimi et al., 2016; Murwani, 2016). Further, learner can be considered as one of the key elements of entrepreneurship education (Murwani, 2016). In the context of learner who carries out the role as an entrepreneur or who runs the entrepreneurial process is inseparable from the learner's characteristics (cf. Murwani, 2016). The relevant learner's characteristics for entrepreneurship education are entrepreneurial characteristics (cf. Murwani, 2016).

Referring to Murwani (2016, p. 43), entrepreneurial characteristics include a set of personality traits of entrepreneur. The existence of entrepreneurial characteristics is needed in relation to the role of an entrepreneur or the role of running the entrepreneurial process (cf. Murwani, 2016). The entrepreneurial characteristics of learner contribute to learner in learning entrepreneurship successfully (cf. Murwani, 2016). The researchers agree on a set of personality traits such as innovativeness (Murwani, 2016) as well as entrepreneurial self-efficacy (Sánchez, 2013). Therefore, this study focuses on innovativeness and entrepreneurial self-efficacy as entrepreneurial characteristics. Referring to theory of planned behavior (Ajzen, 1991), entrepreneurial characteristics can be categorized as attitudes.

On the other hand, entrepreneurial characteristics are a key factor of entrepreneurial intention (Sánchez, 2013). Entrepreneurial intention is a determinant of behavior (Ajzen, 1991), in this context entrepreneurial action, which is able to act as an entrepreneur or to play a role in the entrepreneurial process (cf. Murwani, 2016). The entrepreneurial characteristics of learner and entrepreneurial intention are prerequisites for achieving entrepreneurial competency (cf. Murwani, 2016). Referring to theory of planned behavior (Ajzen, 1991), entrepreneurial characteristics (or attitudes) and entrepreneurial intention are generally known as 'the attitude-intention link' (Souitaris et al., 2007).

Further, Souitaris et al. (2007, p. 586) examined ‘the attitude-intention link’ “by testing the effect of an ‘exogenous influence’ (education) on attitudes and intention”. Therefore, the study is intended to examine the effect of an entrepreneurship program on students’ attitudes (in term of innovativeness and entrepreneurial self-efficacy) and intention (in term of entrepreneurial intention). In this context, the research questions is “Do students improve significantly in innovativeness, entrepreneurial self-efficacy, and entrepreneurial intention before and after following an entrepreneurship program?”.

Several studies (e.g., Souitaris et al., 2007; Sánchez, 2013; Karimi et al., 2016) found a positive effect of entrepreneurship program on attitudes and intention. Further, Karimi et al. (2016) confirmed that the recent meta-analysis successfully confirmed the positive effect. Thus, we propose a hypothesis that “At the end of an entrepreneurship program, students will have higher (average) innovativeness, entrepreneurial self-efficacy, and entrepreneurial intention than at the beginning of the entrepreneurship program”.

## **Method**

One-group pretest-posttest design was conducted by implementing the treatment to the subjects only in one group without a control group (Hatten & Ruhland, 1995; Tuckman & Harper, 2012). The design involved the administration of a pretest to measure the outcome variables or dependent variables; the next step was the treatment; and finally, the posttest was administered to measure the outcome variables again (Hatten & Ruhland, 1995; Tuckman & Harper, 2012).

The subjects consist of 200 college students of Universitas Ciputra Surabaya, Indonesia. Participants received an entrepreneurship program based on experiential learning, namely the

Entrepreneurship-2 program (or usually called by *Reboan E-2*). The focus of the Entrepreneurship-2 program is ability of student to create a business model for a venture or ability of student to become a business model creator (Murwani, 2016). The Entrepreneurship-2 program was based on the four key elements of David A. Kolb's experiential learning (Kolb, 1984) and was also conducted by using a guidebook composed by Bernardus et al. (2018) as follows:

- Week 1 to week 3: concrete experience (e.g., students implemented field work to find the entrepreneurial opportunities).
- Week 4: reflective observation (e.g., students implemented class discussions based on field work to describe what experiences were gained).
- Week 5 to week 7: abstract conceptualization (e.g., students associated field work experiences with relevant theories or concepts to formulate the best entrepreneurial opportunity and to create a business model design based on Business Model Canvas or BMC).
- Week 8 to week 14: active experimentation (e.g., students tried out new concepts by implementing field work again such as market trials).

A Likert scale questionnaire was used as an measurement instrument to the outcome variables. Innovativeness was assessed by using eight items adapted from Mueller and Thomas (2001). Entrepreneurial self-efficacy was measured by using ten items of the Indonesian version questionnaire from Murwani et al. (2017), which originally came from Kickul et al. (2009). Measurement of entrepreneurial intention used six items adapted from Liñán and Chen (2009).

$$Y_i = \beta_1 + \beta_2 D_{2i} + \beta_3 D_{3i} + u_i \quad (9.2.1)$$

where  $Y_i$  = (average) salary of public school teacher in state  $i$

$D_{2i} = 1$  if the state is in the Northeast or North Central

$= 0$  otherwise (i.e., in other regions of the country)

$D_{3i} = 1$  if the state is in the South

= 0 otherwise (i.e., in other regions of the country)

## Results

The two tests conducted for assessing the normality were the Shapiro-Wilk and Kolmogorov-Smirnov tests (e.g., Kim, 2013). The result of normality test is presented in Table 1. All the significant values (or *p* values) of two tests were found to be lower than 0.05. If a significant value is lower than 0.05, it interprets that the data is not normally distributed (e.g., Kim, 2013). As the normally distributed of the data sets were not met, the Wilcoxon Signed Ranks Test was used to analyze the data (Siegal, 1956; Roscoe, 1969; McClave et al., 2014).

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 Insert Table 1 about here  
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Table 2 presents the results of the Wilcoxon Signed Ranks Test. A comparison of the pretest scores with the posttest scores indicated that the three outcome variables were statistically significant at the .001 level. From Table 1 that all *z* values are based on negative ranks. The *z* value based on negative ranks shows that the differences (posttest scores minus pretest scores) are positive, and the sum of positive ranks is greater than the sum of negative ranks (Siegal, 1956; Roscoe, 1969; McClave et al., 2014). The Wilcoxon Signed Ranks Test refers to the smaller sum (Siegal, 1956; Roscoe, 1969; McClave et al., 2014), in this context the sum of negative ranks.

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 Insert Table 2 about here  
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At the end of the entrepreneurship program, a statistically significant difference was found as the effect of the entrepreneurship program on innovativeness of students,  $z = -12.434$ ,  $p < 0.001$  (Table 2). While the mean of innovativeness of students was 25.77 at the beginning of the entrepreneurship program, it has been increased to 30.92 at the end of the entrepreneurship program (Table 1).

At the end of the entrepreneurship program, it was seen that the effect of the entrepreneurship program on entrepreneurial self-efficacy of students had statistically significant difference,  $z = -11.581$ ,  $p < 0.001$  (Table 2). While the mean of entrepreneurial self-efficacy of students has been increased from 34.42 at the beginning of the entrepreneurship program to 41.80 at the end of the entrepreneurship program (Table 1).

At the end of the entrepreneurship program, a statistically meaningful difference was found as the effect of the entrepreneurship program on entrepreneurial intention of students,  $z = -4.749$ ,  $p < 0.001$  (Table 2). While the mean of entrepreneurial intention of students was 21.52 at the beginning of the entrepreneurship program, it has been increased to 23.23 at the end of the entrepreneurship program (Table 1).

The results above show that there has been an increase in innovativeness, entrepreneurial self-efficacy, and entrepreneurial intention scores before and after the field testing. In other words, field testing has a significant effect on positive changes in innovativeness, entrepreneurial self-efficacy, and entrepreneurial intention. After participating in the entrepreneurship program, the participants perceive themselves to be stronger in innovativeness, entrepreneurial self-efficacy, and entrepreneurial intention than before joining the entrepreneurship program.

## **Discussion**

The results are consistent with a lot of similar studies examining the effect of entrepreneurship education on a set of outcome variables (e.g., Hatten & Ruhland, 1995; Hindle & Cutting, 2002; Souitaris et al., 2007; Sánchez, 2013; Karimi et al., 2016), in which

entrepreneurship education has had an effect (change) on a set of outcome variables; in this context innovativeness, entrepreneurial self-efficacy, and entrepreneurial intention. Robinson et al. (1991) argue that entrepreneurship education is dynamic, so that it can produce the effect (or change) to a set of outcome variables.

The subjects were students participating in the Entrepreneurship-2 program who had undertaken the Entrepreneurship-1 program. The Entrepreneurship-1 program is designed to build an entrepreneurship mindset, while the Entrepreneurship-2 program focuses on designing a business model (Murwani, 2016). The mindset of entrepreneurship may have been embedded in the participants as a result of the Entrepreneurship-1 program. The contribution of the mindset of entrepreneurship is believed to be a reinforcement for participants in designing a business model.

As found by Souitaris et al. (2007) and also by several studies that have followed them (e.g., Sánchez, 2013; Karimi et al., 2016), the results of this study confirm 'the attitude-intention link' by examining the effect of the entrepreneurship program on attitudes and intention. Hence, the study contributes to theory of planned behavior (Ajzen, 1991) in the context of entrepreneurship education by offering insights into how an entrepreneurship program affects attitudes and intention. Theory of planned behavior states that the more positive attitudes, the more positive intention (Ajzen, 1991). This study found that an entrepreneurship program positively affects attitudes and also affects intention in the same direction.

Referring to Robinson and Doueck (1994), the results of this study indicate the benefit of the one-group pretest-posttest design for testing the Entrepreneurship-2 program with the significant evidences in enhancing a set of outcome variables. The design are also relatively inexpensive and easy to implement (Robinson & Doueck, 1994). However, the design cannot substitute for other complex designs such as factorial design and randomized design (e.g., Robinson & Doueck, 1994; Tuckman & Harper, 2012).

Again, the participants have been achieved improvement in innovativeness, entrepreneurial self-efficacy, and entrepreneurial intention after they participated in the

Entrepreneurship-2 program. Referring to Hatten and Ruhland (1995), the stakeholders of Entrepreneurship-2 program (e.g., management board of university and curriculum developer of university as well as researchers, lecturers, and students) should recognize that students are likely to develop a more positive attitudes and intention.

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**Table 1 Descriptive Statistics and Test of Normality**

Outcome Variables	Pretest scores (pre) or posttest scores (post)	n	Mean	Std. Dev.	Min.	Max.	Kolmogorov-Smirnov Test of Normality		Shapiro-Wilk Test of Normality	
							Statistic	Sig.	Statistic	Sig.
Innovativeness (INV)	preINV	200	25.77	.422	25	26	.477	.000	.520	.000
Innovativeness (INV)	postINV	200	30.92	1.055	29	32	.332	.000	.756	.000
Entrepreneurial Self-Efficacy (ESE)	preESE	200	34.42	4.282	29	40	.222	.000	.834	.000
Entrepreneurial Self-Efficacy (ESE)	postESE	200	41.80	4.687	37	48	.316	.000	.759	.000
Entrepreneurial Intention (EI)	preEI	200	21.52	2.751	18	25	.291	.000	.798	.000
Entrepreneurial Intention (EI)	postEI	200	23.23	3.458	19	28	.226	.000	.836	.000

**Table 2 Wilcoxon Signed Ranks Test of Field Testing**

Outcome Variables	Posttest scores (post) minus pretest scores (pre)	Subjects with		Mean of Negative Ranks	Mean of Positive Ranks	Sum of Negative Ranks	Sum of Positive Ranks	z value	
		Negative Ranks	Positive Ranks						
Innovativeness (INV)	postINV - preINV	0	200	0	100.5	0	20100	-12.434	***
Entrepreneurial Self-Efficacy (ESE)	postESE - preESE	21	174	21	107.29	441	18669	-11.581	***
Entrepreneurial Intention (EI)	postEI - preEI	56	116	77.61	90.79	4346	10532	-4.749	***

\*\*\* p < 0.001