

EFFECT OF SELF EFFICACY ICT ON TECHNOPRENEURSHIP INTENTION OF TECHNOPRENEURIAL LEARNING MEDIATION: THE CASE YOUNG GENERATION IN INDONESIA

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ABSTRACT

This study aims to analyse the effect of ICT Self Efficacy on Technopreneurship Intention that is mediated by Technopreneurial Learning. ICT Self Efficacy is measured through Computer Self Efficacy and Internet Self Efficacy. Technopreneurial Intention is measured through Desire, Preference, Plans and Behaviour Expectancies indicators. Technopreneurial Learning is measured through Contextual Learning, Personal and Social Emergence, Negotiated Enterprise.

The research method used was the Explanatory Survey method, with data collection techniques through a questionnaire distributed to the young generation of Indonesia in the West Java region of 222 people from a population of 501 people. Data analysis techniques used descriptive statistics, inferential statistics and regression analysis.

The results of the study show that ICT Self Efficacy has a significant effect on Technopreneurship Intention, Technopreneurial Learning has a significant effect on Technopreneurship Intention, and Technopreneurial Learning mediates the relationship between ICT Self Efficacy and Technopreneurship Intention. These findings imply that to improve Technopreneurship Intention will be more effective by increasing ICT Cell Efficacy and Technopreneurship Intention Learning.

Keywords: ICT Self Efficacy, Technopreneurship Intention, Technopreneurial Learning.

INTRODUCTION

Technopreneurship Intention is very important to study because it leads to increasing economic efficiency, bringing innovation to the market, creating new jobs and maintaining job levels (Koe et al., 2018; Harlanu & Nugroho, 2015). Especially when connected with the phenomenon of the Industrial Revolution 4.0 which is characterized by the unification of several technologies so that we can see a new area consisting of three independent fields of science namely physics, digital and biology (Pereira & Romero, 2017). New technologies such as the internet have become a strategic point in the process of the industrial revolution 4.0, especially in entrepreneurship today-often referred to as the electronic business revolution or Electronic Business-(Rojko, 2017). The industrial revolution 4.0 brings the concept of combining digital technology and the internet with conventional industries which ultimately aims to significantly

increase productivity, efficiency and customer service (Prasetyo & Sutopo, 2017; Gilchrist, 2016).

Technopreneurship is a future trend in the era of the industrial revolution 4.0 (IR 4.0). Technopreneurship requires innovation and individuals who understand information communication technology (ICT) (Osman et al., 2018; Koe et al., 2018; Scarlet, C., 2014; Alahakoon & Somaratne, 2018a). Changes in technology produce opportunities where entrepreneurs or entrepreneurial organizations can properly exploit and explain how entrepreneurial behaviour can be a driver of change in adopting business technology (Blanka et al., 2019; Darlington, 2019). Technopreneurship talks about the combined concepts of creativity, innovation, entrepreneurship and technology. While technopreneurs are individuals who have expertise in mastering technology so they can see business opportunities in the field of technology (Irene, 2019). Technopreneurs must be successful on two things, namely ensuring that technology that is a business object can function according to needs, target customers and can be sold for profit and provide benefits or impacts economically, socially and environmentally (Kusmaul et al., 2006; Bryant, 2006). A technopreneur can be defined as an adult entrepreneur who has hybrid competence and who uses technology to create something new for modernization or some innovation (Talib et al., 2018; Hoque et al., 2017).

technopreneurship declaration program in 2014. But the number of entrepreneurs in Indonesia only reaches 3.1% of the population and it is estimated that only about 0.43 present is based on technology (Machmud & Ahman, 2019). The data shows that there is still a lack of interest in doing entrepreneurship, especially an interest in doing technology-based entrepreneurship. The low quantity of Indonesian entrepreneurs needs to be pushed quickly, the article is for a country like Indonesia, entrepreneurs can have a positive impact, including adding heterogeneity to new businesses, providing employment while absorbing labour, and can increase national output per capita (Darwanto, 2012) And to foster interest in entrepreneurship and achieve targets or achieve the goals of the existence of technopreneurship, there are factors that support the desired success such as personality factors and external factors.

Self-efficacy becomes important in fostering entrepreneurial interest (sources). Self-efficacy relates to people's judgments about their ability to organize and carry out the actions needed to achieve their goals, namely people's judgments about belief in their ability to successfully perform certain behaviors (Bandura, 1986). If connected with technopreneurship, confidence will be linked to the concept of ICT. The concept of ICT self-efficacy is used to describe students' belief in their own ability to use two media successfully (Mfon et al., 2018; Fraillon et al., 2014, Alahakoon & Somaratne, 2018a, 2018b).

A person can act on his intentions or intentions only if he has control over his behaviour (Ajzen, 1987; Ajzen & Manstead, 2007). Interest is an ability to be courageous in fulfilling the integrity of life, advancing business and creating new businesses with a strength that is in yourself (Moore, 2008). Interest can also grow with high desire and hard work in opening a new business with no fear of the risks to be faced. Factors that influence interest in entrepreneurship can be seen factors of education, relations with external parties and structural support (Ajzen, 1987; Turker & Sonmez Selçuk, 2009). Entrepreneurship education is an important factor in fostering and developing entrepreneurial interests, souls and behaviours among the younger generation because education is a source of attitude and overall intention to become successful entrepreneurs in the future. (Kurzewska et al., 2018; Fatoki, 2014a, 2014b).

Studies on the relationship of ICT Self Efficacy, Technopreneurship Intention, Technopreneurial Learning have been widely studied before (Koe et al., 2018; Ajjan et al., 2019; Lending & Dillon, 2007; Crittenden et al., 2019; Bandera et al., 2018; Papastergiou et al., 2011; Baroncelli & Landoni, 2019; McAdam & Cunningham, 2019; Fatoki, 2014a, 2014b; Rae & Carswell, 2000; Jones & Matlay, 2019; Rae, 2005; Okorie et al., 2014; Shirokova et al., 2016; Dorf & Byers, 2005; Susetyo & Sri Lestari, 2014; Daviddson & Brynell, 1998; Therin, 2007; Hmieleski & Baron, 2008; Alahakoon & Somaratne, 2018a, 2018b). However, studies that link between the three variables are still rarely conducted, so this study aims to analyse the effect of ICT Self Efficacy on Technopreneurship Intention that is moderated by Technopreneurial Learning.

This research hopes to enrich and increase knowledge of the ICT Self Efficacy, Technopreneurial Learning and Technopreneurship Intention literature and contribute further to the understanding of Technopreneurship Intention. To achieve these objectives the research method used is the Explanatory Survey method, with data collection techniques through questionnaires distributed to the younger generation of Indonesia. Data analysis techniques used descriptive statistics, inferential statistics and regression analysis.

LITERATURE REVIEW

ICT Self Efficacy

ICT self-efficacy in the use of information systems is the user's belief that he is able to use information systems, which will show a strong influence on users in adopting such information systems (Ajjan et al., 2019; Lending & Dillon, 2007). ICT self-efficacy talks about one's personal judgment about his ability to use computers and the internet (Crittenden et al., 2019; andera, Collins, R & Passerini, K., 2018, Alahakoon & Somaratne, 2018a, 2018b.). ICT Self Efficacy consists of two capability domains, namely computer and internet Self Efficacy (Papastergiou et al., 2011).

Technopreneurial Learning

Entrepreneurship education is an important factor in growing and developing entrepreneurial desires, souls and behaviours among young people because education is a source of overall attitude and intention to become successful entrepreneurs in the future (Baroncelli & Landoni, 2019; McAdam & Cunningham, 2019; Fatoki, 2014a, 2014b). Technopreneurial learning indicators that will be used are (Rae, 2005):

1. Contextual Learning is a mental process of the acquisition, storage and use of entrepreneurial knowledge in the long run which in turn is influenced by motivation, emotional, attitude and personality (Jones & Matlay, 2019).
2. Personal & Social Emergence is an interactive exchange of ideas and goals with other individuals carried out in a business context (Griffin et al, 2007).
3. Negotiated Enterprise is the development of entrepreneurial identity, including early life and family experience, education and career formation and social relations (Rae, 2005).

Technopreneurship Intention

Technopreneurship is a process in an organization that prioritizes innovation and continuously finds the organization's main problems, solves its problems, and implements ways of solving problems in order to increase competitiveness in global markets (Okorie et al., 2014). Indicators of business interest that will be used based on Shirokova et al. (2016).

1. Desires, which is something in someone in the form of a desire or a high desire to start a business.
2. Preferences, which is something in someone who shows that having an independent business or business is a necessity.
3. Plans, refers to the hopes and plans that exist in a person to start a business in the future.
4. Behaviour Expectancies, i.e. a review of a possibility for entrepreneurship followed by a target for the start of a business venture.

Technopreneurial Learning and Technopreneurship Intention

Self-Efficacy is a key element of effective technopreneurial behavior that leads to entrepreneurial learning (Dorf & Byers, 2005). Furthermore, trust in one's ability (Technopreneurial Self Efficacy) has a strong influence on one's intention to build a new business (Susetyo & Sri Lestari, 2014). Meanwhile, Technopreneurial Self Efficacy encourages individuals to seek knowledge in achieving their goals. Research shows that Technopreneurial Self Efficacy is important for influencing learning outcomes in technopreneurship (Daviddson & Brynell, 1998). Technopreneurial Self Efficacy is also about attitudes and views on successful life (Therin, 2007). As a result, exposure to Technopreneurial Learning will help to understand technopreneurship better. Technopreneurial Learning is very important to improve Technopreneurial Self Efficacy especially to promote technopreneurial competence (Hmieleski & Baron, 2008). This consequently, will support to strengthen Technopreneurship Intention. Therefore, it is projected that Technopreneurial Learning (TL) mediates the relationship between Technopreneurial Self Efficacy (TSE) and Technopreneurship Intention (TI).

ICT Self Efficacy and Individual Entrepreneurial Orientation (IEO) have direct and indirect effects on Technopreneurial Intention (Koe et al., 2018). There is a positive and significant influence between Technopreneurial Self Efficacy towards Technopreneurial Intention, Technopreneurial Self Efficacy towards Technopreneurial Learning and Technopreneurial Learning on Technopreneurial Intention. (Hoque et al., 2017). ICT Self Efficacy directly affects ICT anxiety and ICT training has a direct relationship to Electronic Information Resources (Barbeite & Weiss, 2004). Self-Efficacy partially has positive effect on Technopreneurship spirit and Entrepreneurial Intention partially has positive effect on Technopreneurship spirit (Trihudyatmanto, 2017). Technopreneurial Learning has a significant effect on Technopreneurship Intention (Singhry, 2015). Technopreneurship learning partially has a positive effect on Technopreneur Intention (Lee & Wong, 2004). Partial and simultaneous learning of entrepreneurship has a positive effect on technopreneurship intention (Chang & Liang, 2016).

The thinking framework used to analyse the Effects of ICT Self Efficacy on Technopreneurship Intention which is mediated by Technopreneurial Learning is illustrated in Figure 1.

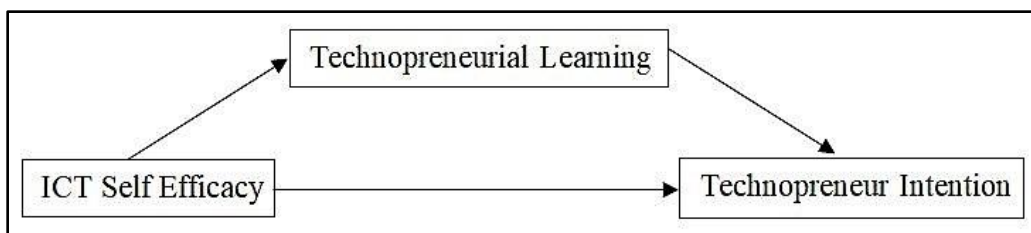


FIGURE 1
THINKING FRAMEWORK

H1: Technopreneurial Learning mediates the effect of ICT Self Efficacy on Technopreneurship Intention.

RESEARCH METHODS

The dependent variable in this study is Technopreneurship Intention (Y), while ICT Self Efficacy (X) as the independent variable and Technopreneurial Learning (Z) as a mediating variable. To measure Technopreneurship Intention indicators used refer to research Rosly et al., 2015, namely preferences, plans, desires and behaviour expectations. Measurement of ICT Self Efficacy refers to research by Koe et al. (2018), namely Internet Self Efficacy and Computer Self Efficacy. Technopreneurial Learning measurement uses indicators that refer to the research model (Rae, 2005), namely contextual learning, personal and social training, and negotiated enterprise.

The research method used is the Explanatory Survey method, with data collection techniques through a questionnaire distributed to the young generation of Indonesia. The population of this research is high school student in Bandung Regency, West Java, Indonesia totaling 501 students. With the Slovin method a sample of 222 students was obtained. Based on gender, female students are 51% and male students are 49% and age is dominated by 18 years by 59%, 17 years by 35.4%, 16 years by 5.5%, and 15 years by 0.61%.

Data collection was performed using a questionnaire, then analysed using descriptive statistics and inferential statistics. The collected data were analysed using a 5-point Likert scale scoring system from strongly disagree (1) to strongly agree (5) to get interval data and given a score or value. The research instrument was tested through validity and reliability testing. Hypothesis testing is carried out by multiple regression regression moderate analysis (MRA). The equation model used follows equations (1), (2), (3) and (4)

Direct Effect of X on Y

$$c=[\hat{Y} | (X=x, M=m)]-[\hat{Y} | (X=x-1, M=m)] \dots\dots(1)$$

Indirect Effect of X on Y

$$a=[M | (X=x)]-[M | (X=x-1)] \dots\dots(2)$$

$$b=[\hat{Y} | (M=m, X=x)]-[\hat{Y} | (M=m-1, X=x)] \dots\dots(3)$$

Total Effect of X on Y

$$c=[\hat{Y} | (X=x)]-[\hat{Y} | (X=x-1)] \dots\dots(4)$$

RESULTS AND DISCUSSION

The variables in this study are ICT Self Efficacy, Technopreneurial Learning and Technopreneurship Intention. Description of the results of the study is based on calculating the score of each respondent's answer, so that the results obtained score of respondents' answers. General description of the ICT Self Efficacy level, Technopreneurial Learning and Technopreneurship Intention level obtained from the results of a research questionnaire consisting of 27 statement items, the following results on Bandung District High School students can be seen in Table 1.

Based on the results of research that has been done that the general description of the ICT Self Efficacy level is in the high category, the level of Technopreneurial Learning is in the effective category and the level of Technopreneurship Intention is in the high category. This indicates that the level of ICT Self Efficacy and Technopreneurial Learning that has been done by students has been effective so that it has a high level of Technopreneurship Intention. This is to find out how much influence the ICT Self Efficacy and Technopreneurial Learning has on Student Technopreneurship Intention.

Variable	Mean	Category
ICT Self-Efficacy		
Internet self-efficacy	3.08	High enough
Computer self-efficacy	2.92	High
Average	3.00	High
Technopreneurial Learning		
Contextual learning	4.22	Very effective
Personal and social training	3.31	Effective
Negotiated enterprise	3.19	Very effective
Average	3.57	Effective
Technopreneurship Intention		
Preference	4.03	High
Plan	3.65	High
Desire	4.03	High
Behavior expectation	3.51	High
Average	3.80	High

Evaluation of model assumptions is done through data normality and multicollinearity. The normality test is carried out by the Kolmogrov Smirnov method in Table 2.

	Unstandardized Residual
Asymptotic Significance (2-tailed)	0.087

Based on Table 2, the residual value of 0.087 is known. Provisions that apply to the normality test using Kolmogrov Smirnov, namely if the residual value is above the significance value of 0.05, then the data are declared normally distributed. So, it can be concluded that the

data of this study are normally distributed because the residual value is $0.087 > 0.05$. Multicollinearity test functions to see whether a regression model is found to have a correlation between independent variables or not. A good regression model is a model that does not occur correlation between independent variables. The results of the multicollinearity test in Table 3.

Variable	Tolerance	VIP
ICT self-efficacy	0.606	1.650
Technopreneurial learning	0.683	1.563
Technopreneurship intention	0.664	1.505

Based on Table 3, the results of multicollinearity test can be concluded that all variables are free from the presence of multicollinearity. All variables have a VIF value < 10 and tolerance value > 0.10 which means that all variables are free from the correlation between independent variables. The results of multiple regression analysis with hierarchical regression are summarized in Table 4.

Model	<i>R</i>	<i>R</i> ² (Adjusted <i>R</i> ²)	<i>R</i> ² Change (<i>p</i>)	<i>B</i>	<i>SE</i>	<i>Beta</i>	<i>T</i>	<i>Sig.</i>
Model 1	0.360 (< 0.000)	0.130 (0.121)	0.130 (< 0.000)				(14.243)	
Constant					0.865		82.807	0.000
X					0.039	0.329	4.872	0.000
Z					0.104	0.153	2.270	0.012
Model 2	0.361 (0.002)	0.131 (0.117)	0.170 (0.002)				(9.507)	
Constant					0.867		82.603	0.000
X					0.039	0.329	4.858	0.000
Z					0.104	0.151	2.223	0.014
X*Z				71.649	0.005	0.210	1.798	0.034
				0.190				
				0.236				
				71.642				
				0.190				
				0.232				

Based on the results of Table 4 the following information can be obtained:

1. Model 1 is a model without interaction variables while model 2 is a model after the interaction of the mediating variables entered into the model. The percentage of R^2 in model 1 is 13% and the remaining 87% is influenced by other variables outside the model, while the percentage of R^2 change in model 2 after the interaction variable is 17% and the remaining 83% is influenced by other variables outside the model. It can be concluded that model 2 has a positive effect, meaning that model 2 is a model of the presence of interaction variables more effectively describing the phenomenon of Y compared to model 1. 2. In model 1 the variable X has a significant effect on Y because $p < 0.05$ is $0.000 < 0.05$ and the variable Z has a significant effect on Y because $p < 0.05$ is $0.012 < 0.05$. In model

2. information can be obtained that after the interaction of moderator variables, the results obtained can be declared significant, which means moderating the relationship between X and Y because $p < 0.05$, namely p of 0.034. It can be concluded that model 2 is trusted or suitable to be used as a mediating variable to be used in explaining the phenomenon of Y.
3. Simultaneous testing Technopreneurial Learning (Z) strengthens the relationship between ICT Self Efficacy (X) and Technopreneurship Intention (Y). The interaction between students ICT Self Efficacy and Technopreneurial Learning obtained t count of 1.798 > from t table of 1.652 with a significance value of 0.034 < 0.05 then it can be concluded that H_0 was rejected and H_a was accepted. That is, there is a moderating effect or Technopreneurial Learning mediating the relationship between ICT Self Efficacy with students' Technopreneurship Intention.

The research findings show that ICT self-efficacy has a positive and significant influence on technopreneurship intention and technopreneurial learning to strengthen the relationship between the two. This finding is in accordance with the findings of Hoque et al. (2017) who examined the effect of ICT self-efficacy on technopreneurship intention that shows a positive relationship and is mediated by technopreneurial learning. This indicates that students must have the will to learn and explore to direct students to become technopreneur as their career choices. The belief in the use of the internet and computers that are driven by entrepreneurial learning strengthens students' technopreneurship intentions. Other findings similar to Ainul et al. (2016), Pihie & Bagheri (2013) that student self-efficacy has the most significant and positive impact on students' intention to become a technopreneur. Several studies on ICT self-efficacy and technopreneurial learning have shown a positive relationship with attributes such as personality, nature, self-confidence, and communication skills influencing students' decisions in choosing their careers. If students feel they have the ability to be able to perform technopreneurial tasks based on their abilities, willingness, and confidence, it will produce good results (Ainul et al., 2016).

These findings indicate that the importance of higher education institutions and entrepreneurship centers to review technopreneurial programs that are not only focused on theory alone. A technopreneur can learn through direct experience, practice, success, failure, and relationships with others (Rae & Wang, 2015; Rae & Carswell, 2000). Digital-based and entrepreneurial activities must help students make technopreneur their career choices. Incubation resources can be another input that can be considered for technopreneurial learning because it can facilitate students to form teams with the help of their lecturers to start their technology business (Hoque et al., 2017).

CONCLUSION

Based on the results of data processing and analysis, it can be concluded that the level of ICT self-efficacy is in the high category, the level of technopreneurial learning of students is the effective category, and the level of technopreneurship intention is in the high category. These findings indicate that the ICT self-efficacy hypothesis has a positive and significant effect on technopreneurship intention proved correct and technopreneurial learning is able to strengthen the relationship between the two. This shows that the high level of ICT self-efficacy and technopreneurial learning will affect students technopreneurship intentions better, so that students Science and Technology abilities must always be improved.

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