

# The Effects of Self-Efficacy on the Competency of Cadets in Aviation Polytechnic of Surabaya

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## ABSTRACT

This research purposes to analyze the effects of self-efficacy on the Competency of Cadets in Surabaya Aviation Polytechnic. This study uses the quantitative approach. The researcher decided to use a polytechnic institution located in Surabaya namely Surabaya Aviation Polytechnic which has competence in air flights. The population taken for this study is a total of 96 cadets, with a saturated sampling technique in which the researcher will be able to get a sample of all 96 cadets from the population pool. To collect the data, the researcher uses a questionnaire that is distributed to respondents by the specified number of samples. This research used a linear regression with questionnaire. It processed into quantitative values using a choice of questionnaires using a Likert value scale. The results show that significant value in the F-test self-efficacy variable of 0,031 or smaller than the level of significance is positive, ( $\alpha$ ) which means that the higher the self-efficacy, the higher the Competency. The conclusion of this research is there is a significant positive effect of Self Efficacy towards Competency in Surabaya Aviation Polytechnic.

**Keywords:** *Self Efficacy, Competency, Saturated Sampling*

## 1. INTRODUCTION

Education is an important focus in every country around the world, including Indonesia. Indonesia has an obligation in educating its nation's citizens, following the nation's goals in the constitutional opening. The existence of these goals gave birth to many institutions or educational institutions that play a role in actualizing the ideals or goals of the Indonesian people under the constitutional. The establishment of many educational institutions and institutions in Indonesia is none other than wanting to create people who are ready to become human resources for their country. One of the expected human resources is competent ones. Competence is an essential characteristic of a respective behavior dependent on a skillful and/or excellent performance in a job or situation [1]. Competence is a trait or characteristic needed by incumbents to be able to carry out their position well, or it can also mean in someone's characteristics that are easily observed inclusive of

knowledge, skills, and behaviors that allow them to perform well. Career planning is needed in competencies to identify their different levels. Competencies include knowledge, skills, and attitudes to achieve individual success in an organization [2]. Therefore, competency is an important element in a person's everyday life. Several factors influence someone to have good competence, one of these factors is Self-Efficacy.

Self-efficacy is a very important input variable for competence [3]. Literature shows that the importance of self-efficacy in individuals are directly connected with their performance in which it is related to individual competence. Therefore, self-efficacy determines competence and improves performance in individuals. The results of this study help the human resources department in conducting training programs to improve self-efficacy, where they train individuals to become more competent through development activities. High self-efficacy, in general, drives someone to be competent to produce an outstanding performance. Some research

found a direct contribution of the self-efficacy variable towards competence which is relatively large and has significant effects. Hence, self-efficacy is a good predictor of competence. This finding shows that the self-efficacy variable can predict the competency variable in presenting work performance in the working world [3], [4].

From the background description above, the purpose of this study is to analyze and determine the effects of self-efficacy on the Competency of Cadets in Surabaya Aviation Polytechnic. This study uses a causal analysis technique of two dependent and independent variables that can determine the effects of the objectives of this study.

## **2. THEORETICAL FRAMEWORK**

### **2.1. Self-Efficacy**

Self-efficacy is a person's belief in their ability to exercise some form of control over one's functions and events in the environment. Bandura also describes Self-Efficacy as a determinant of how people sense, assume, inspire themselves, and perform [5]. Self-efficacy is an assessment of a person's capability or competence to carry out an effort, earn targets, and conquered difficulties [6]. Self-efficacy is one of the biggest aspects of expertise about personality in daily human life. This is due to the self-efficacy owned by an individual that can influence themselves in determining the actions to be taken to achieve a goal.

### **2.2. Self-Efficacy Indicators**

According to Bandura, several indicators can be used to measure Self-Efficacy [7], which are:

#### **2.2.1. Magnitude**

This dimension is identified with the level of obstacle in a duty that is considered by someone to be sophisticated. Self-Efficacy can fall on tasks in simple, middle, or crucial. These choices are under the ability limits of someone to meet the behavioural demands needed for each of these levels. The aspect of difficulty has indications in the alternative of the performance, either the ones that are to be tried or the ones to be escaped.

#### **2.2.2. Strength**

This dimension is related to the level of strength or deficiency of a person's beliefs about his/her capability. They never give up and be resilient in increasing their business despite facing obstacles.

### **2.2.3. Generality**

This element relevant to the broadness of the field of work achieve. To get the better of problem-solving, some personals have particular confidence in certain enterprises and positions, and some extension on a variety of actions and situations.

## **2.3. Competency**

Competence is an ability to carry out or do a job or task based on skills and knowledge and is supported by the attitude of workers to realize various tasks in their field of work [8]. Competence is a basic characteristic of an individual behaviour related to skilfully and / or excellent performance in a job or situation [1].

Meanwhile, Mc. Clelland defines competency as a foundation component dominated by someone who has a direct impact on or can anticipate, excellent performance [9]. Competence is a skill, skill, ability. The basic word itself is competent, which means capable, adept, or skilled [10]. Competence makes themselves successful in their jobs.

Competency in general can be seen from two perspectives. The first perspective is to describe competencies from the perspective of the organization, where competencies are described as knowledge and abilities, which is an advantage for the organization. Whereas, the second perspective leads to individual competencies [11].

## **2.4. The Indicators for Competency**

4 main aspects can determine labor competency and at the same time, it can also measure work competency [12]. They are:

### **2.4.1. Performance Skills**

Performance skills are a person's ability to present themselves or act on work activity. The skill of presenting oneself or acting in work involves motor, intellectual, mental, and moral aspects. Performance skills are developed through training. The skill of presenting oneself or acting in work involves motor, intellectual, mental, and moral aspects.

### **2.4.2. Performance Knowledge**

Performance knowledge underlies the development and growth of work skills. Good knowledge of performance will support one's skill performance. Performance knowledge starts from factual, conceptual, procedural, to metacognitive knowledge. Procedural performance knowledge is used for routine work. Performance knowledge is developed through studies, exploration, and learning.

### 2.4.3. *Performance Attitudes*

Performance attitude is the action taken by the worker and everything that must be done by the worker in which the results are comparable to their work [13]. Performance attitudes are developed through habituation [12].

### 2.4.4. *Performance Morals*

Performance morals that are loyal to the job, respect for achievement and that cares for the environment are an important part of one's success in work. Performance morals are developed through the practice of values.

## 3. METHOD

### 3.1. *Research Design*

This study is causal research since there is an interrelation between one variable with the others, namely the independent variable and the dependent variable. A causal relationship is a cause and effect relationship, in which it has independent variables (variables that affect) and dependent variables (influenced) [14]. As for the approach, this study uses a quantitative approach which is a research method that uses research data in the form of numbers and analysis using statistics [14].

### 3.2. *Population and Sample*

The population is a generalized area consisting of objects or subjects. The population in this study is a total of 96 cadets from Surabaya Aviation Polytechnic. The sample is part of the number and characteristics possessed by the population [14]. The sampling technique is a technique that is used to determine the sample that will be applied in the research [14]. This research uses a sampling technique in the form of saturated sampling. It means that all members of the population are used as the research samples with a total of 96 cadets from Surabaya Aviation Polytechnic.

### 3.3. *Definitions of Variable Operation*

The operational definition is a concept or something that can be measured and can be seen in the dimensions of behavior, aspects, or properties that are shown by the concept. The operational definitions of the variables in this study are:

#### 3.3.1. *Self-efficacy (X)*

Self-efficacy refers to the self-confidence of a person's ability to take ac carrying out certain tasks. Self-efficacy is measured with the following indicators:

- a. Magnitude
- b. Strength
- c. Generality
- d. Competency (Y)

Competency has several indicators in research that has previously been done by Sudira and Purwanto in 2018. These indicators are as follows

- a. Work Skill
- b. Work Knowledge
- c. Work Attitudes and Morals

In this study, aspects of Competency are divided into three to make it independent with an independent variable. The researcher combines work attitudes and works morals because it is considered as the value of attitude that has met the criteria of work morale.

### 3.4. *Data Types and Sources*

The data source used in this study is the primary data. Primary data is data that directly provides data to data collectors [15]. Primary data used in this study are obtained from questionnaires distributed to respondents related to self-efficacy and competency.

### 3.5. *Data Collection Method*

The data collection method used in this study is the direct survey method, which is distributing questionnaires directly to the respondents.

### 3.6. *Data Analysis Technique*

#### 3.6.1. *Validity and Reliability Test*

A measurement scale is valid if it does what it should do and measures what it should measure [16]. The validity test was calculated by considering the correspondent between the scores of each observation with a total score or the so-called Pearson correlation test with an error tolerance level of 0.05. The significance test is done by correlating the r arithmetic with r table. If the r count is greater than the r table and the value is positive, then the item or question, or indicator is declared valid [17].

Reliability is a tool to measure a questionnaire which is an indicator of variables. A questionnaire is said to be reliable if the answer from someone to the statement is consistent or stable over time [17]. Reliability is measured using Cronbach Alpha that stated if a Cronbach Alpha value of  $> 0.60$  [17].

### 3.6.2. Linear Regression Analysis

Linear regression analysis is a linear relationship between the independent variable (Self Efficacy) with the dependent variable (Competency) [18]. The linear regression Equation (1):

$$Y = a + b_1X_1 + b_2X_2 + b_nX_n \quad (1)$$

Information :

- Y = Dependent variable (predicted value)
- a = Constant (value of Y if X1 and X2 = 0)
- b = Regression coefficient (increase or decrease in value)
- X = Independent variable

### 3.6.3. Correlation Coefficient (R) and Determination Coefficient (R2)

The correlation coefficient (R) is used to determine the level of closeness. between the independent variable and the dependent variable. With the results of the correlation coefficient can be known whether or not the relationship between independent variables and the dependent variable (Y).

The coefficient of determination (R2) is used to measure how far the model's ability to explain the variation of the dependent variable [16]. This measurement is carried out using SPSS software. The coefficient of determination is between zero and one. A small R2 value means that the ability of the independent variables to explain the variation of the dependent variable is very limited. A value close to one means that the independent variables provide almost all the information needed to predict the variation of the dependent variable [16].

### 3.6.4. Hypothesis Test.

The F test is used to show whether all independent variables influence on the dependent variable [16].

- a) Determine the statistical hypothesis as follows:

$$H_0: \beta_i = 0 \quad i = 1, 2$$

$$H_1: \beta_i \neq 0 \quad i = 1, 2$$

Or

H0: All independent variables do not have a significant simultaneous effect on the dependent variable.

H1: All independent variables have a significant simultaneous effect on the dependent variable.

- b) Determine the level of significance ( $\alpha$ ) value that is equal to 0,05.

- c) Making decisions (with significance)

- If the significance is  $< 0,05$  then H0 is rejected and H1 is accepted, which means that the independent variable has a significant simultaneous effect on the dependent variable.
- If the significance value is  $> 0,05$  then H0 is accepted and H1 is rejected, it means that the independent variable has no significant effect simultaneously on the dependent variable

## 4. RESULTS

### 4.1. Instrument Test

#### 4.1.1. Validation Test

The validity test for the Self Efficacy against Competency variable uses the Corrected Item Total Correlation statistical test. Criteria are said to be valid if the sig value is less than 0.05 [17].

**Table 1.** Validation Test

Variable	Statement	$r_{hitung}$	Sig	Conclusion
Self-Efficacy (X)	X <sub>1</sub>	0,356	0,000	Valid
	X <sub>1</sub>	0,432	0,000	Valid
	X <sub>1</sub>	0,421	0,000	Valid
Competency (Y)	Y <sub>1</sub>	0,323	0,000	Valid
	Y <sub>2</sub>	0,412	0,000	Valid
	Y <sub>3</sub>	0,342	0,000	Valid

#### 4.1.2. Reliability Test

The construct reliability test was conducted to measure whether the construct was reliable or not [17]. It is said to be reliable if Cronbach Alpha is  $> 0.6$ . The following are the results of reliability testing.

**Table 2.** Reliability Test

Variable	Cronbach Alpha	Alpha	Conclusion
Self-Efficacy (X)	0,631	0,6	Reliable
Competency (Y)	0,721	0,6	Reliable

Table 2 denotes that the reliability test results of all indicators of the independent variable and the dependent variable are reliable because the Cronbach's Alpha value is all greater than 0.6, so it is stated that all indicators have been Reliable.

## 4.2. Data Analysis

### 4.2.1. Linier Regression Analysis.

By using the program SPSS the linear regression result can be shown in Table 3.

**Table 3.** Results of Linear Regression Analysis

Variable	B	Std.Error
(Constant)	3212	2000
Self Efficacy	0,542	0.458

Based on the results above, we obtain the following significant linear regression equation. Equation (2) is:

$$Y = 3212 + 0.542 X1 + e \quad (2)$$

In which :

Y = Competency

X = Self Efficacy

From the results of the SPSS 24 calculation above, it can be concluded as follows:

- a. Constant 3212 which shows the magnitude of the Competency variable which is influenced by the Self-Efficacy independent variable = 0, then the Competency value is 3212, assuming other variables are constant.
- b. The self-Efficacy variable has a value of 0,542, meaning that if the Self-Efficacy variable rises by one unit will increase Competency by 0,542 units. This value is above zero, meaning that it is positive so the higher the Self-Efficacy, the higher will Competency be.

### 4.2.2. Multiple Correlation Coefficients (R) and Multiple Determination (R<sup>2</sup>)

**Table 4.** Correlation Coefficient and Determination Coefficient

R	RSquare	Adjusted RSquare	Std. Error of Estimate
0,747	0,688	0,710	621,91

The correlation coefficient (R) indicates the relationship between the independent variable (Self-Efficacy (X)) with the dependent variable (Competency (Y)), with the magnitude of the R is 0,747. The value indicates that the relationship between the Self-Efficacy (X) and Competency (Y) variable is very strong because the correlation value of 0,747 approaches one. R<sup>2</sup> is used to measure how far the ability of the model in explaining the variation of dependent variables or dependent variables, name the Competency variable. The results of

the SPSS calculation are R<sup>2</sup> = 0,688 which means that 68,8% of Competency can be explained by the Self-Efficacy (X) variable. While the remaining 31.2% is influenced by other variables outside the model studied.

### 4.2.3. F Test (Simultaneous Test)

Simultaneous test (F test) shows that all independent variables consisting of Self-Efficacy (X) simultaneously affect the dependent variable of Competency (Y).

**Table 5.** F Test Calculation Results

Model	Sum of Squares	Df	F <sub>hitung</sub>	Sig.
Regression	312281	1	0.414	0,031
Residual	687119	1		
Total	100,00	2		

Based on Table 5, the significance value is 0,031 which means it is < 0,05. This shows that H<sub>0</sub> is rejected and H<sub>1</sub> is accepted. Therefore, the independent variables consisting of Self-Efficacy (X<sub>1</sub>) simultaneously have a significant effect on Competency (Y).

## 4. DISCUSSION

The hypothesis testing result using a F test obtained are self- efficacy influences Competency. This can be seen from the significant value in the F-test self-efficacy variable of 0,031 or smaller than the is 0,05. The influence of these two variables is positive, which means that the higher the self-efficacy, the higher the Competency.

The positive and significant influence of self-efficacy on Competency shows that Competency can be formed through high self-efficacy. Aside from that, the results show that the contribution of self-efficacy is a huge factor in Competency with a value of 68.8% while the remaining is influenced by other variables outside the model studied.

Trust in one's abilities, confidence in the success that is always achieved makes someone work harder and always produces the best. Thus it can be said that self-efficacy can improve individual performance. A meta-analysis conducted found there is a positive relationship between self-efficacy and individual performance [19]. Self-efficacy can be said as a personal factor that distinguishes each individual and changes in self-efficacy can cause behavioral changes, especially in the completion of tasks and goals [20].

Self-efficacy is an encouragement for someone in taking action to achieve the desired goals. Self-efficacy in the academic field is related to cadets' belief in their ability to perform tasks, manage work activities, and be able to control work priorities. So it can be concluded that

the higher self-efficacy possessed by a cadet, the cadets will spend a large enough effort so that they can achieve high performance.

The implications of this study can clearly explain that problems related to decreased performance or competence can be detrimental to cadets and stakeholders of graduate users. On the other hand, self-efficacy as a factor in determining the attitude of cadets at work can be improved to complete work properly. As well as an effort to find solutions to improve the knowledge and skills of cadets, it means the abilities and work skills possessed by cadets so that the cadets can carry out work effectively and efficiently according to the desired target. Besides, this study can be used as a reference in further research to develop the topic of self-efficacy and cadet competencies by considering other variables such as locus of control, organizational citizenship behavior, and self-esteem.

## 5. CONCLUSION

Based on the data analysis results achieved by using linear regression analysis, it can be known that there are significant and positive influences of self-efficacy on Competency. The significant value in the F-test self-efficacy variable is 0,031 or smaller than the level of significance. This case shows that Competency can be formed through high self-efficacy. The implications of this study can clearly explain that problems related to decreased performance or competence can be detrimental to cadets and stakeholders of graduate users.

## REFERENCES

- [1] G. A. Novel, and S. Indarti. "Pengaruh Pendidikan Pelatihan Dan Prestasi Kerja Terhadap Kompensasi Karyawan PT. Bank Rakyat Indonesia Kantor Wilayah Pekanbaru" *Jurnal Tepak Manajemen Bisnis*, vol. 7, no. 1, 2015, pp. 116-129.
- [2] Beheshtifar, Malikeh, H. Hoseinifar, and M. Moghadam. "Effect procrastination on work-related stress" *European Journal of Economics, Finance and Administrative Sciences*, vol. 38, no. 38, 2011, pp. 59-64.
- [3] RAMA, SS, and S. Sarada. "Role of self-esteem and self-efficacy on competence-A conceptual framework" *Journal of Humanities and Social Science*, vol. 22, no. 2, 2017, pp. 33-39.
- [4] Stimik, Makassar Dipanegara, et al. "The Influence of Talent Management and Self Efficacy Against the Employee Competencies and Performance Distributor of Heavy Equipment in South Sulawesi"
- [5] Bandura, Albert, and V. S. Ramachandran. "Encyclopedia of human behavior." New York: Academic Press 4, 1994, pp. 71-81.
- [6] Baron, R. A., and N. R. Branscombe. "Social Psychology: Thirteen Edition", 2012.
- [7] Subaidi, Agus. "Self-efficacy siswa dalam pemecahan masalah matematika." *Sigma*, vol. 1, no. 2, 2016, pp. 64-68.
- [8] Wibowo. "Manajemen Kinerja, Edisi Kelima". Jakarta: PT.Rajagrafindo Persada, 2016.
- [9] Sedarmayanti. "Manajemen Sumber Daya Manusia. Reformasi Birokrasi dan Manajemen Pegawai Negeri Sipil", Cetakan Kelima. Bandung: PT Refika Aditama, 2011.
- [10] V. Rivai. "Manajemen Sumber Daya Manusia Untuk Perusahaan Dari Teori Ke Praktek". Bandung: Rajagrafindo Persada, 2013.
- [11] Kartika, L. Nurbani, and A. Sugiarto. "Pengaruh tingkat kompetensi terhadap kinerja pegawai administrasi perkantoran." *Jurnal Ekonomi dan Bisnis*, vol. 17, no. 1, 2014, pp. 73-90. <https://doi.org/10.24914/jeb.v17i1.240>
- [12] Sudira. *Metodologi Pembelajaran Vokasional Abad XXI Inovasi, Teori, dan Praksis*. Yogyakarta : UNS Press, 2018.
- [13] Purwanto. "Evaluasi Hasil Belajar". *Pustaka Pelajar*, Yogyakarta, 2010.
- [14] Sugiyono. "Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D". Alfabeta, Bandung, 2014.
- [15] Sugiyono, "Metode Penelitian Manajemen (Pendekatan Kuantitatif, Kualitatif, Kombinasi (Mixed Methods), Penelitian Tindakan (Action Research, dan Penelitian Evaluasi)." 2016.
- [16] M. Kunoro, "Metode Riset Untuk Bisnis & Ekonomi, Edisi Keempat." Jakarta: Erlangga, 2013.
- [17] I. Ghozali, "Aplikasi Analisis Multivariete IBM SPSS 23", Badan Penerbit Universitas Diponegoro, Semarang, 2016.
- [18] D. Priyatno, "Mandiri belajar analisis data dengan SPSS." Yogyakarta: Mediakom, 2013.
- [19] Judge, A. Timothy, and J. E. Bono, "Relationship of core self-evaluations traits—self-esteem, generalized self-efficacy, locus of control, and emotional stability—with job satisfaction and job performance: A meta-analysis." *Journal of Applied Psychology*, vol. 86, no.1, 2001, p. 80.
- [20] J. M. Phillips and S. M. Gully, "Role of goal orientation, ability, need for achievement, and locus of control in the self-efficacy and goal-setting process." *Journal of applied psychology*, vol. 82, no. 5, 1997, p. 792.