

Computer Anxiety and Computer Attitude towards Computer Self Efficacy (CSE) Polsri Telecommunication Engineering Student on Writing the Final Report

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Abstract— Various attitudes emerged and shown by individuals for the presence of computer. Although many benefits are felt by the computer, but there are some people who feel anxious with the computer (computer anxiety). Computer attitude showed no reaction or behave the computer by pleasure or displeasure against the computer. The phenomenon that arises is computer anxiety and computer attitude can affect a person's expertise in the use or operate the computer. This study aims to examine how the effect of computer anxiety and computer attitude towards computer self efficacy on the 6th semester student telecommunications engineering POLSRI. Samples taken in this study were all students of telecommunication engineering 6th semester POLSRI totaling 89 people. The results showed computer anxiety and computer attitude not affect the computer self-efficacy 6th semester student of telecommunications engineering POLSRI. This is due because the 6th semester student of telecommunications engineering POLSRI have positive feelings to learn the computer either by themselves or through a learning courses. They also realize that the computer provides many benefits. With the computer, the information can be obtained more quickly and efficiently. Computer is a necessity, can enhance human life, and was instrumental in education and employment.

Keywords—computer anxiety, computer attitude, computer self efficacy

BACKGROUND

The use of computers in education is needed. Almost all elements of the college requires a computer as a tool in completing the work. Lecturers as teachers demanded to be able to use a computer to provide course materials to students, making research as part of a tri dharma college. Students were always dealing with computers in their tasks, to complete assignments and thesis / final report or searching data via the internet.

Changes in the use of software and computer programs in the completion of the thesis also often cause pressure (stress) within the student [6]. One of the psychological distress experienced by students is computer anxiety. Computer anxiety can be defined as rejection to change. Rejection can be a symptom or something else like a fear of the unknown, fear of failure, or unwillingness to change current state [6].

Computer Anxiety is a person's tendency to be hard, worry, or fear about the use of computers in the present or in the future [11]

Literature review

Previous Research

Research relating to computerphobia has never been done. The study conducted by [8]; [2]; [13], and [6]. [8] conducted a study titled "The Effect of Computer Anxiety Factor, Computer Attitude and Math Anxiety against Expertise in End User Computing (Survey on Student Programs Accounting Education Yogyakarta State University class of 2004 and class of 2004). The sample used in this study is 61 people. The results showed a significant effect between computer anxiety and End User Computing, significant effect between computer attitude with expertise End User Computing, significant effect between Math anxiety, computer attitude, Math anxiety towards expertise in End User Computing. The study has similarities with this study that use the same independent variables namely Computer Anxiety and Computer Attitude. While the difference is [8] adds another independent variable namely Math anxiety. [2] conducted a study with the title "Computer Anxiety and Characteristics of Personality Type in Student Accounting." The study was conducted on 139 accounting student at the Faculty of Economics and Business Universitas Gadjah Mada. The conclusion of this study showed no anxiety of computer on accounting students. There is a significant correlation characteristics of students with type sensing-intuitive (sensing-intuitive) and mind-feelings (thinking-feeling) with computerphobia on accounting students. Gender and the IPK does not affect a student computer anxiety.

Research Saiful [2] have in common with this study in one variable computer anxiety. The difference seen from the other independent personality type. Subjects were accounting students of Gadjah Mada University. While in this study conducted in telecommunication engineering students POLSRI.

The study was conducted [13] with the title "Affect of Computer Anxiety, Gender, and Curriculum Universities to

Skills Computer Use." The sample was D-III student majoring in accounting Polytechnic of Malang and D-III Accounting Department of Brawijaya University . The results showed computer anxiety has significant effect on computer use. There are differences in computer anxiety between male and female students. Female students have a computer anxiety level higher than the male students. The results showed that curriculum has a significant effect on the of computer use. The study has similarities with this study that in one independent variable namely Computer Anxiety. While the difference is another independent variable that is gender and curriculum.

While [6] conducted a study on 110 students majoring in accounting Yogyakarta State University is implementing a thesis. The results show computer anxiety and computer attitude affect the use of computer skills of students in the writing.

Computer Anxiety Vs Computer Self Efficacy

Computer anxiety is fear or excessive anxiety to cause physiological consequences to students. Computer anxiety is a picture of the emotional fear, anxiety, and phobias are perceived by the individual to the interact with the computer or when thinking about using a computer.

According [11] definition of computer anxiety is a person's tendency becomes difficult, worry, or fear regarding the use of information technology (computer) in the present or in the future. According [13], the definition of computer anxiety is a particular type of stress was associated with negative beliefs about computers, the problem - a problem in using computers and the rejection of the machine.

According to [15], computer anxiety is a technophobia, where the computer is one of the growing technology in human life.

Computer Anxiety a person's tendency to be difficult, worry, or fear about the use of computers in the present or future [4]. According to [7] computer self efficacy is defined as *"an individual's judgement of their capability to use a computer."* Research model shown in fig. 1

Computer anxiety associated with computer self efficacy. A person with a high level of anxiety computing will strive to avoid all things computer so will result in lower computing capabilities. Computer anxiety is one of technophobia [12]. Individuals who have a high sense of anxiety that shows a lack of self-efficacy [3]. If individuals feel anxious in the use of computers, then he has a reason to feel anxious that show low self-efficacy. Based on the description above hypotheses can be constructed are as follows:

H_1 : computer anxiety affect towards computer self efficacy Polsri telecommunication engineering student

Computer Attitude Vs Computer Self Efficacy

A number of experts giving a definition of computer attitude. According [16] computer attitude is defined as "a reaction or judgment to the computer by the pleasure or displeasure of the computer." In this case there is a group of people who happy (optimistic) with the development of the computer world. On the other hand a group of people unhappy (pessimistic) with these developments. According

[5] computer attitude shows "reaction or judgment to the computer by the pleasure or displeasure of the computer." The computer attitude shows feeling happy or not happy that involves a person's behavior. It is associated with behavioral theory by [1], which explains that a person's attitude is influenced by external stimuli. In the Theory of Planned Behavior (TPB) by [1] explained that "the motivation to behave in a certain person with the behavioral intention the best starting behavior and finally can make a person act (Attitude)." TPB focuses on conception attitude (attitude), subjective norms and perceived control explains the differences between the behaviors. [1] add one construct that does not exist in the TRA, which is perceived behavioral control. These constructs are added in an attempt to understand the limitations of the individual in order to perform certain behaviors [4]. If someone believes that the outcome is positive then the execution behavior will have a positive attitude as well. Subjective norms determined by the normative beliefs which is important to referent Individual [17]. Behavior is not only determined by the attitude and subjective norms, but also the individual's perception of control that can be done which is based on control beliefs [9]. Connection with the computer attitude, the attitude theory can explain that the computer attitude is determined by the value of the benefit perceived usefulness and social norms, where these factors are factors that contribute to the acceptance of the technology computer.

Computer attitudes show a reaction or judgment against the computer by pleasure or displeasure against computer [10]. Computer attitude is indicated from the attitude of optimism, pessimism, and intimidation. Computer attitude affects a person's ability to computing. Computer attitude with high aspect optimistic will cause high computing capability, while computer attitude with high the aspects of pessimistic and intimidation that would cause low computing capability. Based on the description above hypothesis can be constructed are as follows:

H_2 : computer attitude affect towards computer self efficacy Polsri telecommunication engineering student

RESEARCH METHODS

The research population is all students of 6th semester telecommunications study program State Polytechnic Sriwijaya. Totaling 89 student consisting of 2 regular classes and two non regular classes. The type of data collected is primary data and secondary data. The primary data obtained through interviews with students of 6th semester POLSRI telecommunication techniques, using questionnaire that has been provided. Secondary data is data obtained from the academic Electrical Engineering Department. the model in this research is :

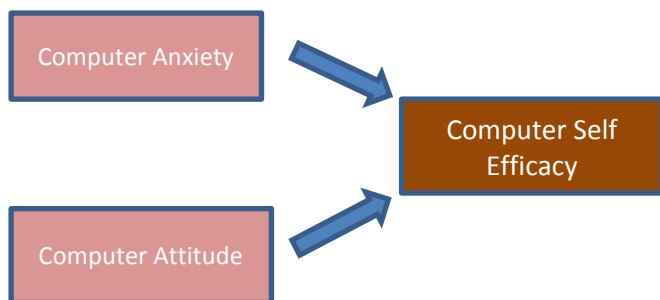


Fig 1. Research model

Measurement of variables in this study done in order for proposed hypothesis can be tested and research questions can be answered. Two main criteria to test how well the measurement instrument used is by validity and reliability testing. The validity testing of this research done by calculating the correlation between the scores with the help of SPSS applications. Validity testing is also done for each of the questions used in the variable. While the reliability test can only be done after a ensured instrument valid. Reliability testing use the SPSS by looking at the value of coefficient Alpha or Alpha Cronbach.

This research has two hypotheses. The hypothesis tested with a simple linear regression analysis. Further, classical assumption testing consist of normality test (Figure 2), multicollinearity and heterocedasticity test (Tables 4 and 5).

CURRENT RESULTS

Validity testing in this research is done by calculate correlation between scores by SPSS 20.0. Validity testing is also done for each of the questions used in the variable. While the reliability testing can only be done after a certain instrument validity. Reliability testing in this study use the SPSS 20.0 to see the value of coefficient Alpha or Alpha Cronbach (Tables 1,2, and 3).

Table 1. Validity and Reliability Computer Anxiety Testing Result

Case Processing Summary				
Cases	Valid	N	%	
	Excluded ^a			
	Total	88	100.0	
		0	.0	
		88	100.0	

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics	
Cronbach's Alpha	N of Items
.617	4

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X1.3	10.5795	2.384	.486	.477
X1.6	10.6591	2.802	.332	.591
X1.7	10.7273	2.339	.530	.444
X1.9	10.7500	2.741	.262	.650

Table 2. Validity and Reliability Computer Attitude Testing Result

Case Processing Summary				
Cases	Valid	N	%	
	Excluded ^a			
	Total	88	100.0	
		0	.0	
		88	100.0	

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics	
Cronbach's Alpha	N of Items
.790	8

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X2.1	24.5114	21.057	.452	.776
X2.2	24.2386	22.644	.381	.784
X2.3	24.5455	22.021	.490	.768
X2.4	25.0568	18.537	.674	.734
X2.5	24.5682	21.099	.543	.759
X2.6	24.1136	24.056	.301	.793
X2.7	24.4886	21.034	.605	.751
X2.8	24.3977	21.047	.525	.762

Table 3. Validity and Reliability Computer Self Efficacy Testing Result

Case Processing Summary				
Cases	Valid	N	%	
	Excluded ^a			
	Total	88	100.0	
		0	.0	
		88	100.0	

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics	
Cronbach's Alpha	N of Items
.914	10

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Y1.1	26.3864	38.079	.627	.909
Y1.2	26.5114	37.977	.674	.906
Y1.3	26.6477	36.231	.726	.903
Y1.4	26.6705	38.155	.670	.907
Y1.5	26.6136	37.136	.640	.908
Y1.6	26.4886	36.988	.712	.904
Y1.7	26.4659	36.987	.754	.902
Y1.8	26.5909	36.359	.702	.905
Y1.9	26.6250	36.007	.692	.905
Y1.10	26.6023	37.530	.661	.907

This study has two hypotheses. The hypothesis tested in this study with a simple linear regression analysis. Further, classical assumption testing consist of normality test (Fig 2), multicollinearity and heterocedasticity test (Tables 4 and 5).

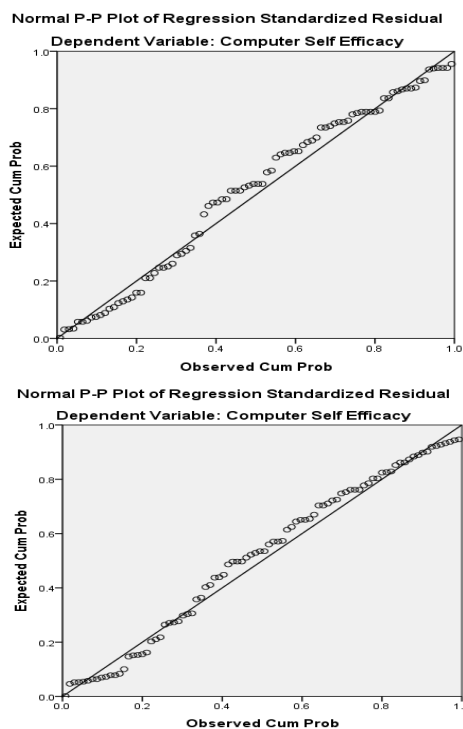


fig 2. Normality Testing Result

Based on the output Normal P-P Plot shows that the distribution of existing data spread evenly all diagonal axis of the graph. In the graph dots spread around the diagonal line, and its distribution follows the direction of the diagonal line. Decision-making, if the data spread around the diagonal line and follow the direction of the diagonal line, the regression model to meet the assumption of normality. Thus the regression model is feasible to used to predict computer self-efficacy by independent variable input.

Table 4. Mulicollinearity Testing Result

Coefficients ^a								
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	30.961	3.430		9.025	.000		
	Computer Anxiety	-.100	.232	-.047	-.432	.667	1.000	1.000

a. Dependent Variable: Computer Self Efficacy

Coefficients ^a								
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	24.539	3.933		6.239	.000		
	Computer Attitude	.178	.138	.137	1.286	.202	1.000	1.000

a. Dependent Variable: Computer Self Efficacy

Multicollinearity test known from VIF value for each predictor. Requirements to be considered free from multicollinearity is when the VIF predictor value does not exceed 10. The results for the third variable coefficients visible VIF figure does not exceed 10, so that does not happen multikolinieritas. Thus the regression models used for prediction feasible computer self-efficacy by independent variable input.

Table 5. Heterocedasticity Testing Result

Nonparametric Correlations

[DataSet1] I:\Regresi CA thd CSE.sav

Correlations				
Spearman's rho	Computer Anxiety	Correlation Coefficient	Computer Anxiety	Unstandardized Residual
		Sig. (2-tailed)	1.000	.175
		N	88	.104
	Unstandardized Residual	Correlation Coefficient	Computer Anxiety	Unstandardized Residual
		Sig. (2-tailed)	.175	1.000
		N	.104	88

Nonparametric Correlations

[DataSet2] I:\Regresi CAAttitude thd CSE.sav

Correlations				
Spearman's rho	Computer Attitude	Correlation Coefficient	Computer Attitude	Unstandardized Residual
		Sig. (2-tailed)	1.000	-.035
		N	88	.743
	Unstandardized Residual	Correlation Coefficient	Computer Attitude	Unstandardized Residual
		Sig. (2-tailed)	-.035	1.000
		N	.743	88

Heterocedasticity testing done using Spearman's rho, from the table above shows that the correlation between computer anxiety, computer attitude, and unstandardized residual generate greater significance value of 0.05. It can be concluded that the regression model did not reveal any problems heterokedasticity.

After the classical assumption testing we do regression analysis (Table 6).

Tabel 6. H₁ and H₂ Testing Result

Coefficients ^a								
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	30.961	3.430		9.025	.000		
	Computer Anxiety	-.100	.232	-.047	-.432	.667	1.000	1.000

a. Dependent Variable: Computer Self Efficacy

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	24.539	3.933		6.239	.000		
	Computer Attitude	.178	.138	.137	1.286	.202	1.000	1.000

a. Dependent Variable: Computer Self Efficacy

For hypothesis 1, T test gives the value -0.432 (< t table, t table = 1.988) with a significance level of 0.667. Because t count < t table with a significance level > 0.05 then partially computer anxiety not affect computer self-efficacy POLSRI students in completing the final task.

For hypothesis 2, T test gives the value 1,286 (< t table, t table = 1.988) with a significance level of 0.202. Because t count < t table with a significance level > 0.05 then partially the computer attitude not affect computer self-efficacy POLSRI students in completing the final task.

From the results of data processing by using SPSS, obtained 2 regression equation: $Y = 30.961 - 0.100 X_1$ and $Y = 24.539 + 0.178 X_2$.

The constanta in this study 30.961. It has meaning if there is no computer anxiety, computer self-efficacy students will increase 30.961. Coefficient regression X1 -0.100, meaning the addition of one factor of computer anxiety, the computer self-efficacy of students will decrease by 0,100.

The constanta in this study 24.539. It has meaning if there is no computer anxiety, computer self-efficacy students will increase 24.539. Coefficient regression X2 0.178, meaning the addition of one factor of computer anxiety, the computer self-efficacy of students will increase by 0,178.

Results of the hypothesis presented in Table 7.

Tabel 7. Hypothesis Result H₁-H₂

Hipotesis H1-H2	Uji T	Sign	Hasil Hipotesis
computer anxiety affect towards computer self efficacy Polstri telecommunication engineering student	t count < t tabel	> 0,05	Not Accepted
computer attitude affect towards computer self efficacy Polstri telecommunication engineering student	t count < t tabel	> 0,05	Not Accepted

Hypothesis H1 is not accepted. These results are not in accordance with the results of research conducted by [6], [13], and [8] who found computer anxiety affect the use of computer skills of students. College students with a low level computer capability have an uncomfortable feeling when interacting with a computer. For POLSRI telecommunications engineering students, the computer is not something to be feared. They anticipate the fear of computers by learning by themselves from the internet or courses. In addition the duties of lecturers generally done by a computer. So that the computer anxiety had no effect in computer capability POLSRI telecommunications engineering students in the final project.

H2 hypothesis is not accepted. These results are not in accordance with the results of research conducted by [6] and [8] who found the computer attitude affect the use of computer skill of students. This is due because the positive feelings to learn computers. They also realize that now is the era of computerization. Computer provides many benefits to human life. With the computer information can be obtained more quickly and efficiently. They do not think the computer will control people in the future, because the computer itself is manmade so the man who will remain in control of the computer. For that computer attitude does not affect the ability of telecommunications engineering students POLSRI the final project.

The influence with a very small percentage of the computer anxiety and computer attitude due to some technical aspects such as computer programming languages. Students tend to be lazy to learn computer programming

languages because they find it difficult to understand. This is why only a fraction of telecommunications engineering students take final POLSRI related to programming languages.

CONCLUSION

This research is described in the structural model to predict the effects of computer anxiety and computer attitude toward computer self efficacy POLSRI telecommunications engineering students. The results show computer anxiety and computer attitude is not affect the ability POLSRI telecommunications engineering students in completing the final task. The percentage student that take the project related computing quite a lot. This is due because the positive feelings to learn the computer either by themselves or through a learning courses. They also realize that the computer provides many benefits. With the computer, the information can be obtained more quickly and efficiently. Computer is a necessity, can enhance human life, and was instrumental in education and employment.

ADVICE

For further research in the same topic can expand the sample to the students POLSRI other departments, develop perspectives studied, for example: testing the effect of the characteristics of respondents to the computer anxiety and computer attitude towards computer self efficacy, and develop variable computer anxiety and computer attitude as the variables that affect the variable computer self efficacy.

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