

Antecedent and Consequence of ICT Utilization in Education: Voices from Private University Lectures In Indonesia

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Abstract: Antecedent and Consequence of ICT Utilization in Education: Voices from Private University Lecturers In Indonesia. Objective: This research tested the factors empirically as antecedent in utilization of information technology such as social factor, affect, complexity, job fit, long term consequence, facilitating condition, and consequence of utilization of information technology to performance. **Methods:** Sampels in this research were private university's economics lecturers in Indonesia. The lecturers of private universities in Maluku considered to represent private university's lectures outside of Java and private university's lecturers in Malang represented private university's lecturers who was created to a control group. **Findings:** The result of this research found that private university's lecturers in Indonesia perceived that utilization of information technology significantly gave positive influence to their performance. While utilization of information technology for half of lecturers were not influenced by six tested factors, and the others perceived that utilization of information technology were influenced by social factor, affect and facilitating condition.

Keywords: education, ICT utilization, private university.

Abstrak: Antecedent dan Konsekuensi Pemanfaatan TIK Dalam Pendidikan: Pandangan Dosen Perguruan Tinggi Swasta (PTS) di Indonesia. Tujuan: Penelitian ini ingin menguji secara empiris faktor-faktor yang merupakan antecedent dalam pemanfaatan teknologi informasi yaitu, faktor sosial, affect, kompleksitas, kesesuaian tugas, konsekuensi jangka panjang dan kondisi yang memfasilitasi, serta konsekuensi pemanfaatan teknologi informasi terhadap kinerja. **Metode:** Sampel dalam penelitian ini adalah dosen-dosen PTS bidang ilmu ekonomi di Indonesia. Dosen PTS di Maluku di anggap mewakili dosen PTS di luar pulau Jawa dan dosen PTS di Malang mewakili dosen PTS di Indonesia yang di jadi kan kelompok kontrol. **Temuan:** Hasil penelitian menemukan, dosen-dosen PTS di Indonesia mempersepsikan pemanfaatan teknologi informasi berpengaruh positif secara signifikan terhadap kinerja mereka. Tetapi pemanfaatan teknologi informasi bagi sebagian dosen tidak di pengaruhi oleh keenam faktor yang di uji, sementara sebagian lainnya mempersepsikan pemanfaatan teknologi informasi di pengaruhi oleh faktor sosial, dampak dan kondisi yang memfasilitasi.

Kata kunci: pendidikan, pemanfaatan TIK, universitas swasta.

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■ INTRODUCTION

The data from Directorate General of Higher Education (Dikti) indicate that awareness in utilization of information technology in process of study still very low. Analysis to grant teaching proposal, only 24,6% which utilization media base on computer technology. Availability of media base on information technology also still limited. Only 15,54% private university and 16,09% state university which have media base on information technology. The result of survey which used utilization of information technology in the year 2004 showed only 17,01% state and 15,44% private university, 9,65% lecturer and 16,17% student utilize information technology better. As a whole this matter showed information technology adoption in the world of education in Indonesia still lower (Wahid, 2005).

Existence and development of technology, specially computer in university expected can improve performance all parties which related to university generally, and lecturer performance specially. Lecturer claimed to capable to utilize computer well, because computer can be used as tools to accelerate and facilitated the activity of learning and teaching, and also made process learning and teaching became more interesting, easier, more fun, more diverse, more motivating for the pupils and more enjoyable for lecturer and pupils (Cox, al. 1999 et). Further, computer can be used to support execution Tri Dharma Perguruan Tinggi.

Utilization of information technology during the time in execution of process learning and teaching and other activity of three dharma perguruan tinggi in private universities in Maluku did not optimal yet. There were some instructor staff which did not expert in information technology (computer), and though used computer but did not utilize the technology in an optimally to support the activity as a lecturer. The

other problem is, though lecturer used computer, but the institution did not provided facility which supported utilized of computer for process of learning and teaching, for example the limited availability of LCD and internet. As a result, the process of learning and teaching and transfer of knowledge could not be executed optimally. Further, lecturer less motivated to do research and devotion to society.

In education world (specially university) properly if connected utilization of information technology (computer) in university environment with improvement of lecturer performance. If lecturer can utilize information technology as the supporter of their activities, so lecturer performance were expected increased.

The increasing of lecturer performance which were resulted of utilization of computer related to work expected gave added value for private university, specially organizer of Institution, because increased performance would affected to satisfaction of student, expected would increased to student candidate enthusiasm to be able to go through education in private university the pertinentness. In order to information technology could be utilized effectively gave contribution to performance, so the member in organization have to earn to use the information technology better. Therefore very necessary for organization to understood and predicted usefulness of information technology.

One of the important aspect to comprehended utilization of information technology was understood factors that able to influence utilization of information technology. Research conducted by Thompson et al (1991) which was adopted attitude and behavior theory of Triandis (1980) put into six factors influencing utilization of personal computer that is social factor, affect, complexity, job fit, long-term consequence and facilitating condition.

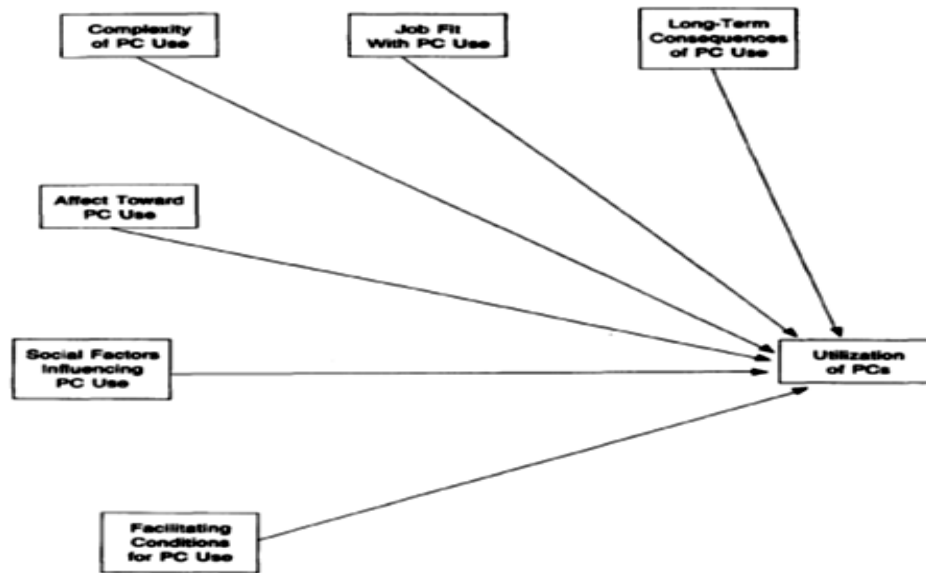


Figure 1. The model of utilization of personal computer (Thompson *et al* 1991)

In the case of utilization of information technology and the effect to performance, Goodhue and of Thompson (1995) testing the effect of utilization of information technology to individual performance from some service firm types (insurance and transportation), and from the test result proved that utilization of information technology have positive effect to performance. There are seventh hypotheses in this research:

H1: Social Factor have positive effect to utilization of information technology.

H2: Affect have an effect on positive to exploiting of information technology.

H3: Complexity have negative effect to utilization of information technology.

H4: Job fit have positive effect to utilization of information technology.

H5: Long-term consequence have positive effect to utilization of information technology.

H6: Facilitating condition which have positive effect to utilization of information technology.

H7: Utilization of information technology have positive effect to performance.

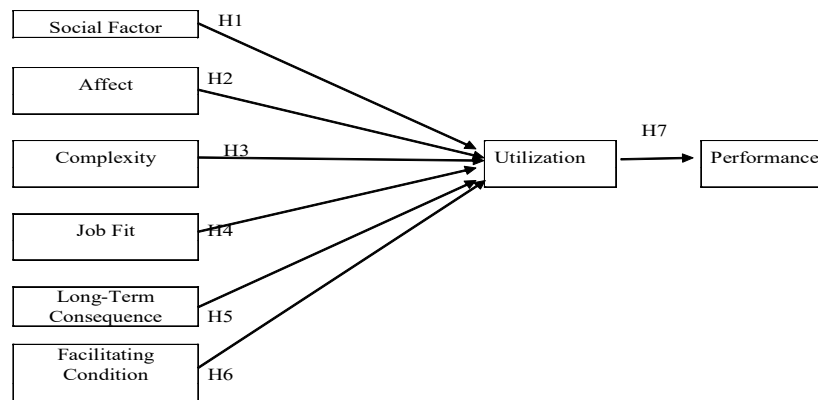


Figure 2. Research Model

■ METHODS

Sampel in this research were 59 lecturers of private universities in Maluku and 65 lecturers of private universities in Malang as a control group. Data collection by survey method. Data was obtained using a questionnaire that was distributed online via email or whatsapp application. Dissemination to re-collection of the questionnaire from 23 August 2021 to 23 September 2021.

The pilot test was carried out before the actual questionnaire was distributed and research to see the validity and reliability of the questions. The pilot test was carried out on 20 lecturers of private lecturers in Ambon. Based on the results of the pilot test, there are two questions that are not included in the questionnaire that will be distributed, it is the long-term consequence variable and the facilitating condition variable.

The independent variable in this study is the antecedent of use the information of technology was adapted from Thompson *et all* (1991). All answer choices for each question item use a five-point likert scale., which consists of six variables: social factors defined as the internalization of subjective group culture and certain interpersonal agreements made by individuals with others in certain situations measured by four items; affect in defined as a form of individual feeling for work, whether it is pleasant or unpleasant, feelings of like or dislike doing individual work using information technology as measured by two question items; complexity is defined as the level of innovation perceived as something relatively difficult to understand and use as measured by four question items; task suitability is defined as an individual's belief that computer use will improve the individual's performance as measured by a six-item question; long-term consequences in d defined as future benefits from the output of computer utilization generated, such as increased flexibility in changing jobs or increasing opportunities for better jobs

measured by a five-item question and facilitating conditions defined as objective factors outside the user-friendly environment in doing a job is measured by four items. The dependent variable in this study is performance. Performance is defined as something that relates to the completion of certain tasks, whether successful or failed to be achieved by workers. Performance is measured using three question items that refer to Goodhue and Thompson (1995).

The validity test in this study used Pearson bivariate correlation analysis with a correlation value > 0.05 . Based on the results of the validity test for data in Maluku, all question items measuring the independent and dependent variables were valid, so that no question items were discarded for validity testing and validity test for data in Malang the question items for the independent variable and the dependent variable are all valid except 1 question item, so the question is not included for reliability testing. Reliability measurement for this research used measuring once (one shot), which uses a statistical test with cronbach alpha (α) with the value in this study cronbach alpha > 0.6 for data in Maluku and Malang.

To test of hypothesis in this research was conducted by using equation of regression. This analysis would tested seven research hypothesis which have been compiled. Especial target of this research was to find the effect between independent variable to dependent variable. The test of this hypothesis was conducted constructively program of SPSS with model analyses multiple linear regression and simple linear regression.

■ RESULT AND DISCUSSIONS

The test of multikolinearity, and heterokedastisity to both group of sampel did not be found by the existence of collision to both of the test appliance. The group of sampel Maluku for multiple regression and simple

regression have normal distribution data, but data for simple regression at group sample Malang, has not normal distribution sample. The transformation data to SQRT conducted

to be data become normally (Hair et al., 1998).

Table 1 and table 2 showing the result of hypothesis test for the group of Maluku sample:

Table 1. Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.110	5.688		.371	.712
	TSF	-.091	.205	-.075	-.447	.657
	TAF	.512	.532	.158	.963	.340
	TC	-.123	.149	-.121	-.822	.415
	TJF	.200	.158	.193	1.262	.213
	TLT	.107	.155	.109	.690	.493
	TFC	-.022	.167	-.020	-.134	.894

a Dependent Variable: TU

Table 2. Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.877	1.016		9.724	.000
	TU	.305	.087	.420	3.490	.001

a Dependent Variable: TP

The result of sixth hypothesis did not be supported for the group of Maluku, hypothesis 1 a positive relationship between social factors and the use of information technology is not supported, because the value of sig (0.657) is greater than alpha (0.05). These result contradicted with the results of previous studies by Thompson et al (1991), Jin (2002), Dewi (2004) and Basuki (2005). Hypothesis 2 a positive relationship between affect and the use of information technology is not supported, the value of sig (0.340) which is greater than alpha (0.05). These results support the research from Thompson et al (1991), Jin (2002) and Basuki (2005), there is no effect between affect and the use of information technology. However, this result contradicts the results of Dewi's (2004)

research. Hypothesis 3 a negative relationship between perceived complexity and the use of information technology, is also not supported, the value of sig (0.415) which is greater. This result contradicted with research results of Thompson et al (1991), but supports the results from Jin (2002), Dewi (2004) and Basuki (2005). Hypothesis 4 there is a relationship between task suitability and the use of information technology, is also not supported, the value of sig (0.213) which is greater than the value of alpha (0.05). These results contradicted with results of Thompson et al (1991), Dewi (2004) and Basuki (2005), but these results support the results of Jin's (2002) research. Hypothesis 5 a positive relationship between long-term consequences and the use of information technology, is not

supported, the value of sig (0.493) which is greater than the value of alpha (0.05). These results contradicted the result of Thompson et al (1991) and Dewi (2004), but these results support the results of Jin (2002) and Basuki (2005). Hypothesis 6 a positive relationship between facilitating conditions and the use of

information technology is not supported, the value of sig (0.894) which is greater than the value of alpha (0.05). This result contradicted with the result of Dewi (2004). Thompson et al (1991) also succeeded in proving a relationship between facilitating conditions and the use of information technology, although the relationship was

Table 3. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	Df1	Df2	Sig. F Change
1	.398(a)	.158	.061	2.68134	.158	1.628	6	52	.158

a Predictors: (Constant), TFC, TAF, TJF, TC, TLT, TSF

negative. On the other hand, the results of this study are in accordance with the results of Jin (2002) and Basuki (2005).

Looking at the statistical results, respondents thinking that there are still many others factors outside the model that have been put forward which are the driving force of utilizing information technology. This is reinforced by the

results of the statistical test in table 3 which show a very small adjusted R square value only 0.061 or the six variables stated only affect the use of information technology by 6.1%, while the other 93.9% in influenced by other variables outside the proposed model. The small influence of the six independent variables on the dependent variable is also seen from the value of sig F (0.158)

Table 4. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.420(a)	.176	.162	1.84259	.176	12.181	1	57	.001

a Predictors: (Constant), TU

which is greater than alpha (0.05), this means that the six independent variables have no effect on the dependent variable.

Consequences the use of information technology on performance, in this study put forward as hypothesis 7 which states is a positive relationship between the use of information technology with performance. The results of the statistical test conclude that

hypothesis 7 is supported. This can be seen from the level of sig (0.001) which is smaller than alpha (0.05). Based on these results, it can be concluded that the sample of lecturers in Ambon perceives the use of information technology to have an effect on their performance, although the utilization variable only affects performance by 0.162 or 16.2%. While the remaining 83.8% is influenced by

Table 5. Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.993	3.462		.576	.567
	TSF	-.249	.092	-.306	-2.717	.009
	TAF	1.301	.316	.545	4.119	.000
	TC	-.017	.121	-.017	-.140	.890
	TJF	.004	.107	.005	.041	.967
	TLT	-.085	.121	-.099	-.703	.485
	TFC	.306	.079	.409	3.880	.000

a Dependent Variable: TU

other variables outside the model.

Table 5 and table 6 depicting result of the test of hypothesis for the group of Malang sample as a group control. Hypothesis 1 which states is a positive relationship between social factors and the use of information technology is not supported. This can be seen from the social factor coefficients which show a negative direction, even though the hypothesized direction is positive. These results are not in accordance with the results of previous studies of research by Thompson et al (1991), Jin (2002), Dewi (2004) and Basuki (2005). However, this result is in accordance with the results sample of lecturers in Ambon. Hypothesis 2 which states is a positive relationship between affect and the use of information technology is supported. Can be seen the value of sig (0.000) which is smaller than alpha (0.05). This result contradicts with the results of research by Thompson et al (1991), Jin (2002) and Basuki (2005), there is no effect between affect and the use of information technology. However, these results support the results of Dewi's (2004) research. The results from the sample Lecturers in Malang are also the opposite of the sample of Lecturers in Ambon. Hypothesis 3, which states is a negative relationship between perceived complexity and the use of information technology, is not supported. Can

be seen from the value of sig (0.908) which is greater than alpha (0.05). This result contradicts with results of Thompson et al (1991), but supports the results of Jin (2002), Dewi (2004) and Basuki (2005). This result is the same as the sample result Lecturers in Ambon. Hypothesis 4, which states is a relationship between task suitability and the use of information technology, is also not supported. Can be seen from the sig value (0.451), greater than alpha value (0.05). These results contradict with results of Thompson et al (1991), Dewi (2004) and Basuki (2005), but these results support the results of Jin's (2002) research. However, this result is the same as the result of the sample lecturers in Ambon. Hypothesis 5, is a positive relationship between long-term consequences and the use of information technology, is not supported. Can be seen from the value of sig (0.091) greater than value of alpha (0.05). These results contradict with results of Thompson et al (1991) and Dewi (2004), but these results support the results of Jin (2002) and Basuki (2005). This result is also in accordance with the results of the sample Lecturers in Ambon. Hypothesis 6 is a positive relationship between facilitating conditions and the use of information technology is supported. Can be seen from the value of sig (0.004) smaller than value of alpha (0.05).

This result is accordance with the results of Dewi (2004). Thompson et al (1991) also succeeded in proving a relationship between facilitating conditions and the use of information technology, although the

relationship was negative. On the other hand, the results of this study contradict the results of research by Jin (2002) and Basuki (2005). This result contradicts the result of the sample of Lecturers in Ambon.

Table 6. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.658 ^a	.433	.374	1.66506

a. Predictors: (Constant), TFC, TJF, TC, TSF, TAF, TLT

Based on the results of the statistical test in table 7, respondents from the control group sample of lecturers in Malang perceive that there are other factors outside the model are proposed which their driving force in utilizing information

technology. This can be seen in the adjusted R square value of 0.374 or the six variables stated that only affect the utilization of information technology by 37.4%, while the other 62.6% are influenced by other variables outside the model.

Table 7. Model summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	Df2	Sig. F Change
1	.484(a)	.234	.222	1.27550	.234	19.232	1	63	.000

a Predictors: (Constant), TU

b Dependent Variable: TP

The consequences of the use of information technology on performance for the sample of lecturers in Malang in this study were forward as hypothesis 7 which states that there is a positive relationship between the use of information technology and performance. The results of the statistical that hypothesis 7 is supported. This can be seen from the level of sig (0.000) which smaller than alpha (0.05). This means that respondents from the control group perceive the use of information technology to have an effect on their performance.

■ CONCLUSIONS

Based to research result, utilization of information technology by lecturer's private university in Indonesia represented by lecturers

of private universities in Maluku as lecturer sample outside Java which did not utilize maximally information technology, in the reality have affect to their performance. It mean lecturer have true feeling that utilization of information technology can improve performance. But, utilization of information technology did not affected by social factor, affect, complexity, job fit, long-term consequence and facilitating condition.

Utilization of information technology by lecturer's private university in Indonesia represented by lecturers of private universities in Malang as a control group, in the reality affect to their performance. Utilization of information technology affected by affect and facilitating condition, but did not affected by social factor, job fit, long-term consequence and complexity.

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