Information Technology as an Influence on Motivation in order to Increase Lecturer Performance

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Lecturer performance influences the quality of higher education so that lecturer performance needs to be maintained so as not to decrease standards. One of the things that can affect lecturer performance is motivation, the higher the motivation possessed by the lecturer, the likelier the performance can also increase. Motivation can be influenced by the ability to use IT, which can be measured through UTAUT and CSE. This study uses 150 lecturers as research samples and is processed using Warppls software. The resulting path analysis shows that there is a significant influence between UTAUT variables on lecturer performance through motivation, the opposite occurs in CSE which does not have a significant effect on lecturer performance through motivation.

Key words: *Information Technology, Education, University Lecturers*

Introduction

Performance is the work of an individual to achieve predetermined goals both in quantity and quality (Mangkunegara, 2012), (Abdullah, 2013). In the world of higher education, lecturer performance influences the success of higher education in carrying out its vision and mission (Indrarini, 2009). Lecturers' performances can be seen in carrying out their duties, namely teaching, public service, and research. One of the things that affects the quality of a college lecturer is performance . Lecturers' performances can be judged by their ability to carry out their duties and responsibilities under the higher education standards, namely teaching, research, and service (Yahya and Hidayati, 2014). Factors that significantly affect an individual's work performance include motivation (Gibson et al., 2014; Sewang, 2016; Mustafa and Othman, 2010).

Motivation is an attitude in the form of encouragement that affects individuals in doing their work because of the feelings they have (Maslow, 1947). Individuals who have high motivation will optimally complete their work, thereby increasing performance results (Oktavian, 2011). Several previous studies have shown a significant influence between motivation on the resulting performance (Sahilmi and Mahdani, 2014; Sufianti and Permana, 2015; Cahyono, 2012; Bungawati and Syafaruddin, 2016). It shows that if individual motivation can be maintained or increased, then the resulting performance will also increase. One of the things that influences an individual's performance is adaptability in using information technology.

Information technology is the effort made in managing information including storing, collecting, processing, analysing and disseminating information. Information technology includes software components, hardware, and networks used in information processing (Fajri, 2011). Information technology in an organisation serves as a tool in solving a problem or job to increase productivity and overall organisational performance (Hariyanto, 2012), (Nugroho, 2016). The use of information technology for lecturers in tertiary institutions can help improve the creativity of lecturers in the learning process and increase the productivity of lecturers in carrying out tri dharma of tertiary institutions (Cox et al., 1999; Sudibyo, 2011; Maharsi, 2011). To find out how much influence the use of information technology has in motivating the performance of college lecturers, two approaches are used, namely CSE and UTAUT.

Computer self-efficacy (CSE) is an assessment of a person's ability to use computers. Computer self-efficacy is an important variable in measuring the relationship between an individual's behaviour and information technology (Bandura, 1994), (Higgins and Compeau, 1995). System users are humans who psychologically have a certain behaviour attached to themselves so that aspects of behaviour in the human context as users of information technology become important as a determining factor in everyone who runs information technology (Agarwal et al., 2000). There are three parameters used in measuring CSE, namely magnitude, generalisability, and strength.

Unified Theory of Acceptance and Use of Technology (UTAUT) is a theory of acceptance of the use of information technology, and consists of five parameters that include long-term consequences, social influence, complexity, task suitability, and facility conditions used in measuring the acceptance of the use of information technology in individuals (Vankatesh et al., 2003), (Hamrul et al., 2013). UTAUT aims to help organisations understand how individuals behave in the face of new technology.

This research will discuss the effect of information technology using CSE and UTAUT as its variables on the performance of college lecturers through motivation. It is expected that this

research can show the influence of the use of information technology in motivating university lecturers to improve their performance.

Method

This research is a quantitative study with a survey method using a questionnaire as a data collection technique. The questionnaire contained four variables consisting entirely of 43 question indicators with each lecturer performance variable totalling ten questions representing three parameters, motivation with eight question indicators representing five parameters, and UTAUT and CSE each with ten and 15 question indicators representing five and three parameters. A total of 150 respondents who were lecturers at Semarang state university were randomly selected. The data that has been collected will then be processed using WarpPLS software with SEM path analysis techniques to see the direct and indirect effects between variables. Convergent validity, discriminant validity, and composite reliability are used to assess the validity and reliability of indicators for each variable used before SEM path analysis.

Results and Analysis

The analysis uses two stages in PLS-SEM, namely measurement model which is divided into convergent validity, composite reliability, and discriminant validity. Then in the structural stage, the assessment model is calculated by looking at the value of the path coefficient, the significance level, and the value of R^2. Based on data collected from 150 respondents containing 43 indicators of the four variables studied, data processing was carried out as follows.

Convergent Validity

Convergent validity can be seen from the value of the loading factor between the indicator and the latent variable that it forms. The value of the loading factor shows the level of correlation between each indicator item with its latent variable. The minimum value of the loading factor to be said to be valid is a minimum of 0.7, but in some studies, a loading factor of more than 0.5 is still acceptable. Thus, loading factors that have a value of less than 0.5 must be removed from the model (Hair et al., 2014).

The results shown in Table 1 show that of the 43 indicators of questions prepared, there are 19 indicators of questions that can be maintained and are considered valid because they have a loading factor of more than 0.5.

Table 1: Loading factor

Variable	Indicators	Loading	P-value
KD	KD.1	0.596	<0.001
	KD.2	0.845	<0.001
	KD.3	0.680	<0.001
	KD.4	0.816	<0.001
UTAUT	UT.1	0.835	<0.001
	UT.2	0.775	<0.001
	UT.3	0.729	<0.001
	UT.4	0.615	<0.001
	UT.5	0.644	<0.001
CSE	CS.1	0.693	<0.001
	CS.2	0.683	<0.001
	CS.3	0.859	<0.001
	CS.4	0.738	<0.001
	CS.5	0.662	<0.001
M	M.1	0.673	<0.001
	M.2	0.749	<0.001
	M.3	0.603	<0.001
	M.4	0.808	<0.001
	M.5	0.762	<0.001

Composite Reliability

After convergent validity is evaluated by looking at the value of the loading factor, then the consistency reliability is assessed by looking at the Composite Reliability and Cronbach's Alpha values generated from each latent variable. The Composite Reliability (CR) interpretation is the same as Cronbach's Alpha. Limit values> 0.7 are acceptable, and values> 0.8 are very satisfying. Another measurement is to use the value of AVE (Average Variance Extracted). The use of AVE is recommended for a criterion in assessing convergent validity. AVE value is considered good if it has a minimum value of 0.5 (Fornell and Larcker, 1981).

Table 2: Composite reliability

Variables	Composite Reliability	Cronbach Alpha	AVE	Square Root AVE
KD	0.827	0.719	0.543	0.741
UTAUT	0.845	0.769	0.524	0.724
CSE	0.850	0.778	0.533	0.730
M	0.844	0.768	0.522	0.722

The composite reliability and Cronbach alpha values are shown in Table 2 as a whole show that each latent variable produces a value greater than 0.70. The AVE value generated for each latent variable shows results above 0.5. These results indicate that all of these variables have a high level of reliability.

Discriminant Validity

Discriminant validity is calculated by looking at the value of cross-loading between the indicator with its latent variable and other latent variables. If the loading value between the indicator and the latent variable is greater than the loading value between the indicator and the other latent variable, it can be concluded that the latent variable is able to predict the indicator value better than other latent variables. Discriminant validity measurements are also performed by looking at the square root AVE. The value generated by the AVE square root for its latent variable must be greater than for other latent variables.

Table 3: Cross loading

Indicators	KD	UTAUT	CSE	M	P value
KD.1	**0.596**	0.049	-0.009	0.151	<0.001
KD.2	**0.845**	0.066	-0.011	-0.111	<0.001
KD.3	**0.680**	-0.143	0.009	0.156	<0.001
KD.4	**0.816**	0.015	0.010	-0.126	<0.001
UT.1	0.048	**0.835**	-0.082	-0.112	<0.001
UT.2	-0.009	**0.775**	-0.165	-0.167	<0.001
UT.3	0.000	**0.729**	0.131	-0.057	<0.001
UT.4	0.074	**0.615**	0.141	-0.011	<0.001
UT.5	-0.121	**0.644**	0.022	0.422	<0.001
CS.1	-0.145	0.029	**0.693**	0.073	<0.001
CS.2	0.028	0.029	**0.683**	0.067	<0.001
CS.3	0.031	-0.081	**0.859**	-0.019	<0.001
CS.4	0.033	0.060	**0.738**	-0.121	<0.001
CS.5	0.046	-0.021	**0.662**	0.015	<0.001
M.1	-0.050	-0.202	0.127	**0.673**	<0.001
M.2	-0.032	0.014	-0.171	**0.749**	<0.001
M.3	0.249	-0.006	0.197	**0.603**	<0.001
M.4	0.027	-0.039	0.043	**0.808**	<0.001
M.5	-0.150	0.211	-0.145	**0.762**	<0.001

Table 4: Correlation of square root AVE

	KD	UTAUT	CSE	M
KD	**0.741**	0.219	0.153	0.221
UTAUT	0.219	**0.724**	0.415	0.452
CSE	0.153	0.415	**0.730**	0.200
M	0.221	0.452	0.200	**0.723**

Based on the results shown in Table 3, it can be seen that each indicator has a greater correlation with its latent variable compared with the correlation with other latent variables. In Table 4, which shows the square root AVE relationship between variables, it shows that the square root AVE value on the latent variable to oneself is greater than to other latent variables. From the three results shown, where the cross-loading, AVE and AVE square values meet the criteria, it can be concluded that the discriminant validity is acceptable.

Path Coefficient

The value of the path coefficient indicates how much influence is produced between the exogenous variables to the endogenous variables.
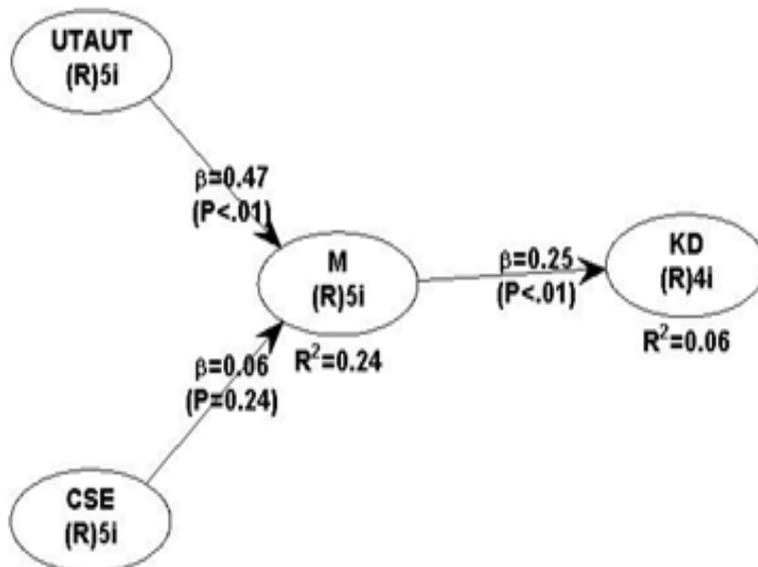
Figure 1. Structural Equation Model

Table 5: Path Coefficient

Path	Path Coefficient	P value
UTAUT -> M	0.466	<0.001
CSE -> M	0.056	0.081
M -> KD	0.249	<0.001
UTAUT -> M -> KD	0.116	0.021
CSE -> M -> KD	0.014	0.405

The calculation results from WarpPLS shown in Figure 1 and Table 5 show the relationship of all significant variables except for CSE variables. The influence of motivation variables on lecturer performance variables is shown by the path coefficient of 0.249 with a P-value <0.01, which means that the influence of motivation variables on lecturer performance variables is significant. It can be explained that the motivational variable influences improving the performance of college lecturers so that with increasing motivation within the lecturer, the results of the performance will be better.

The influence of the UTAUT variable on the motivational variable is shown by the path coefficient value of 0.47 with a P-value <0.01. The value of the influence of the UTAUT variable indirectly on the performance of lecturers through motivation produces a path coefficient of 0.116 with a P-value of 0.021. These results indicate that the influence of the UTAUT variable on motivation is directly, and, on lecturer performance, indirectly significant. It can be explained that the factors in UTAUT such as effort expectancy, performance expectancy, social influence, actual system usage, and facilitating conditions have an influence in motivating college lecturers and in increasing work motivation. When seen in the loading factor values in Table 1, the indicators that have the most influence on the UTAUT variable are the UT.1 and UT.2 indicators which are indicators that represent the task suitability parameters, followed by the UT.3 indicator that represents the complexity parameters, the UT.5 indicator represents the parameters of social factors, and finally the UT.4 indicator that represents the affect parameter. Thus, if the factors contained in the UTAUT model are improved, the motivation of the lecturers will also increase and indirectly will also improve the resulting performance.

While the influence of CSE variables on motivation variables directly by 0.056 with a P-value of 0.081 and on the variable performance of lecturers indirectly through the motivation variable of 0.014 with a P-value of 0.058. The results of the path coefficient and the P-value of the CSE variable indicate that the CSE variable on motivation directly has a low level of significance, and indirectly on the lecturer performance variable has no significant effect. The parameter that has the most influence in CSE by looking at the loading factor value of each indicator, shows the indicators CS.2, CS.3, CS.4, and CS.5 that represent the generalisability parameter has a high value. The results of the CSE variable can be explained if the level of

confidence of a college lecturer in using information technology, has a low influence on self-generated motivation and there is no influence on the performance results obtained.

Conclusion

From the results and analysis conducted on 150 respondents, it can be concluded that motivation has a significant effect on improving the performance of lecturers at Universitas Negeri Semarang. Furthermore, information technology factors have an influence on the level of motivation and performance of lecturers, seen from the positive and significant influence of UTAUT on motivation directly at 0.47 and indirectly on lecturer performance through motivation at 0.116. However, CSE produces an insignificant positive effect on direct motivation at 0.056 and lecturer performance indirectly through motivation at 0.014. This indicates that the factors in UTAUT, in general, have a greater influence on improving the motivation and performance of lecturers than confidence in the use of information technology.

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