THE ROLE OF INFORMATION QUALITY ON TASK TECHNOLOGY FIT AND STUDENT ACADEMIC PERFORMANCE

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ABSTRACT

The aim of this research is analyzing influence between the quality of information on student academic performance and the appropriate technology assignment as a mediator. The research sample was 162 College Student at Mercu Buana University of Yogyakarta that at least in their second year. The data analysis technique used is Structural Equation Modeling (SEM) analysis with SmartPLS program. Based on the results of the analysis, it is known that the coefficient of direct influence of information quality on academic performance is greater than the indirect effect of Student Information Quality on academic performance through Task Technology Fit. Thus the results of this study confirm that Task Technology Fit acts as a partial mediator of the influence of Student Information Quality on academic performance.

Keywords*: Information Quality, Task Technology Fit, Academic Performance*

INTRODUCTION

The role of technology in human daily life is increasing. Various human activities will not be separated from the presence of technology. The presence of this increasing technology does not entirely provide the user's perception of conformity with the technology used. This is what then presents the concept of task technology fit. According to Goodhue and Thompson (1995) the concept of task-technology fit (TTF) is used to explain the relationship between technology use and task performance. The fit between a particular task and technology is measured by systematic evaluations conducted by technology users. User perceptions of technology suitability range from positive to negative. Where a positive perception of fit indicates that the technology achieves the expected performance results; meanwhile, a negative perception of fit indicates that users are dissatisfied with the technology (Schrier et al., 2010)

The same applies to the presence of technology in higher education in Indonesia. The presence of information technology, which is realized in the form of internet services at various agencies, is expected to be able to provide convenience for internet users, including in the world of education (Amri & Surya, 2013). The popularity of ICT in the education sector is increasing and changing is great. ICT has become an integral part of the interaction between academic stakeholders and the learning system (Zhou et al., 2020).

Online learning is a necessity in the development of Indonesian higher education. By implementing e-learning, it can provide interactivity, flexibility, and visualization compared to offline learning (Elyas, 2018). Therefore, this study develops how the technology task fit mechanism in supporting academic performance. .

Various studies have been developed to examine technology task fit, including the quality of information. The definition of information quality is the belief that

internet users have that internet information is in accordance with developments, the information conveyed is accurate, relevant and precise and complete with a good display and format, easy to understand and easy to interpret (Abrego et al, 2017). This study developed from testing the quality of information on technology task fit (Isaac et al 2019).

In other cases, the use of technology that is in accordance with user perceptions is expected to support performance. In the context of higher education, the suitability of technology users with students will support the improvement of student academic performance. Yi et al. (2016) confirmed that task-technology fit has an effect on student academic achievement. Widagdo and Susanto (2015) found that task-technology fit is a factor that causes users to adopt or use an information technology service so that it can support performance. The relationship between tasks, technology and individuals, of course, will not directly produce optimal individual performance if an individual does not have confidence in the benefits of using technology itself. Someone will use technology if they feel there are positive benefits derived from using the technology (Brown et al., 2015).

This study will use the basis of Technology-to-Performance Chain (TPC) theory as a comprehensive model to explain how technology and its users interact as a predictor of performance. This theory is built from two complementary research streams, namely user attitude as a predictor of utilization (utilization) and technological task suitability (task-technology fit) as a predictor of performance (Huang & Chuang, 2016).

In this study, researcher will examine the effect of information quality on student academic performance with technology task fit as a mediator.

THEORETICAL BASIS

Quality of Information

In general, the notion of information quality discusses the quality of the output of the information system (Wardhana & Astuti, 2018). The quality of information is an important element that needs to be considered in determining the success of e-learning (Alam et al., 2021). Information quality is defined as the extent to which internet users believe that internet information is up-to-date, accurate, relevant and precise and complete with a good display and format, easy to understand and easy to interpret (Abrego Almazán, Sánchez Tovar, & Medina Quintero, 2017)

In this study, the quality of information is associated with the quality of learning providers through e-learning. This can be seen from how E-learning can provide up-to-date information, provide accurate information and the ability to provide relevant information

Academic Performance

Academic performance is the result of a student's learning which is the most important part of education. Academic performance shows a change in student learning outcomes within a certain time. Thus, academic performance can be expressed in the form of numbers to function as a comparison of a person's progress both from the level of attitudes, skills, mastery of materials and knowledge (Botoor et al, 2019)

Task Technology Fit (TTF)

Task Technology Fit (TTF) was developed by Goodhue and Thompson which is defined as the degree to which technology helps individuals in carrying out their duties or job duties (Spies et al., 2020). More specifically, TTF is a match between the demands of job duties, individual abilities and technology functions. The priority of TTF is the interaction of task, technology and individual. A definite variety of tasks (for example, the interdependence of tasks and the information needs of several organizational units) requires a definite variety of technological functions (for

example, database integration with all of the company's data accessible to all).

The effect of TTF on technology utilization is shown through the relationship between TTF and trust in the impact of system use. This is because TTF is an important determinant of whether the system is considered to be more useful, more important or relatively more profitable. The effect of performance in this context relates to the performance of the individual task. The high performance has implications for improving efficiency, improving effectiveness and or improving quality (Goodhue and Thompson, 1995). Thompson and Goodhue (1995) argue that the positive performance impact resulting from technological task suitability occurs when technology provides facilities and support that match those required by employees in carrying out their duties. Technology task fit (TTF) offers a solid theoretical basis for a number of issues related to the impact of information technology on individual performance.

Based on the description above, it can be concluded that TTF is the level of compatibility between tasks and technology support. If there is a match between the task and technology support, it will affect the performance and utilization of technology. It can be said that people will accept or use technology if the technology is appropriate or fulfills the need to complete the task

HYPOTHESES

In general, system quality measures concentrate on the specification of system outputs. The higher the quality of the information conveyed, the easier it is for users to adapt the technology (Park 2015). The results of other studies explain that the quality of information can encourage users to believe in the technology used (Zhou, 2012).

H1: There is an influence between the quality of information on technology task fit

Other research shows that task-technology fit affects individual performance (Wardani, 2019). This result is confirmed by Yi, Y. J. & Bae., (2016) that the suitability of users and technology can help users in their tasks so as to improve their individual performance. Task technology fit affects student achievement

H2: There is an influence between technology task fit on academic performance

According to Park and Raven (2015), the quality of information no longer only concerns what is created by the system, but also describes the important content that is stored and managed in the system. This is a fundamental difference, and the role of information quality is more extended to modern systems. This increased role needs to be reflected in the TTF model. Furthermore, the role of information quality in determining TTF has been discussed in the information systems literature. According to DeLone and McLean in Park and Raven (2015) about the success model of information systems, the quality of information has an impact on individual performance.

Based on the description above, the research hypotheses proposed are:

H3: Technology task fit becomes a mediator between the influence of information quality on academic performance

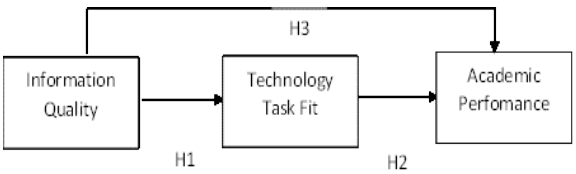

Fig.1 Research Framework

METHOD

The population in this study is College Student at Mercu Buana University of Yogyakarta. The population is infinite because the number is very large. Considering the nature and size of the

population, in this study the sampling technique used is non-probability sampling where each member of the population does not have the same opportunity as the research sample. The research sample was 162 College Student at Mercu Buana University of Yogyakarta that at least in their second year.

The types of data used in this study are primary data and secondary data. Primary data sourced from questionnaires distributed to research respondents. Secondary data is sourced from data published by related institutions and other documentation.

The data analysis technique used is Structural Equation Modeling (SEM) analysis with SmartPLS program. SEM is a multivariate technique that combines aspects of factor analysis and multiple regression that allows researchers to simultaneously test a series of interrelated dependent relationships between the measured variables and latent constructs as well as several latent constructs (Hair et al., 2018). In this study, the researcher only used a model confirmation strategy, because in this study the researcher only had one model consisting of several relationships between variables ..

RESULTS AND DISCUSSION

Data processing techniques using the Partial Least Square (PLS)-based SEM method require 2 stages to assess the Fit Model of a research model (Ghozali, 2016). These stages are as follows:

1. **Assessing the Outer Model or Measurement Model**

There are three criteria in the use of data analysis techniques with SmartPLS to assess the outer model, namely Convergent Validity, Discriminant Validity and Composite Reliability. Convergent validity of the measurement model with reflexive indicators is assessed based on the correlation between item scores/component scores estimated with PLS software.

a. Indicator significance analysis (convergent validity)

Individual reflexive measures are said to be high if they correlate more than 0.70 with the construct being measured. According to Ghozali, (2016) for research in the early stages of developing a measurement scale for a loading value of 0.5 to 0.6 is considered sufficient. In this study, a loading factor limit of 0.60 will be used.

Table 1

Outer Loadings (Measurement Model)

	Academic Performance	Information Quality	Task Technology Fit
KIN1	**0.770**		
KIN2	**0.670**		
KIN3	**0.783**		
KIN4	**0.605**		
KUAL1		**0.883**	
KUAL2		**0.919**	
KUAL3		**0.985**	
TTF1			**0.887**
TTF2			**0.878**
TTF3			**0.984**

The results of processing using SmartPLS can be seen in Table 1 the value of the outer model or the correlation between the construct and the variable has met convergent validity because there is no indicator that has a loading factor value below 0.60 so that the analysis can be continued in the next step.

b. Indicator correlation analysis (Discriminant Validity)

Discriminant validity is carried out to ensure that each concept of each latent variable is different from other variables. The model has good discriminant validity if each loading value of each indicator of a latent variable has the largest loading value with other loading values on other latent variables. The results of the discriminant validity test are obtained as follows:

Table 2 Nilai Discriminant Validity (Cross Loading)

	Academic Performance	Information Quality	Task Technology Fit
KIN1	*0.770*	0.309	0.355
KIN2	*0.670*	0.158	0.333
KIN3	*0.783*	0.298	0.488
KIN4	*0.605*	0.356	0.149
KUAL1	0.282	*0.883*	0.187
KUAL2	0.388	*0.919*	0.296
KUAL3	0.398	*0.985*	0.303
TTF1	0.396	0.267	*0.887*
TTF2	0.419	0.196	*0.878*
TTF3	0.528	0.322	*0.984*

From Table 2, it can be seen that several loading factor values for each indicator of each latent variable still have the largest loading factor value compared to the loading factor value when associated with other latent variables. This means that each latent variable does not yet have good discriminant validity where some latent variables still have a measure that is highly correlated with other constructs.

c. Evaluating Reliability and Average Variance Extracted (AVE)

The validity and reliability criteria can also be seen from the reliability value of a construct and the Average Variance Extracted (AVE) value of each construct. The construct is said to have high reliability if the value is 0.70 and the AVE is above 0.50. In Table 3, the Composite Reliability and AVE values for all variables will be presented.

Table 3
Composite Reliability dan Average Variance Extracted

	Composite Reliability	Average Variance Extracted (AVE)
Academic Performance	**0.802**	**0.505**
Information quality	**0.950**	**0.864**
Task Technology Fit	**0.941**	**0.842**

Based on Table Composite Reliability and Average Variance Extracted, it can be concluded that all constructs meet the criteria of reliability. This is indicated by the composite reliability value above 0.70 and the AVE above 0.50 as recommended criteria.

2. Structural Model Testing (Inner Model)

Testing of the inner model or structural model is carried out to see the relationship between the construct, significance value and R-square of the research model. The structural model was evaluated using R-square for the dependent construct of the t-test and the significance of the coefficients of the structural path parameters.

In assessing the model with PLS, it begins by looking at the R-square for each dependent latent variable. The results of the analysis are presented in the following table:

Table 4 R-Square

	R Square	R Square Adjusted
Academic Performance	0.310	0.301
Task Technology Fit	0.084	0.078

The R-Square value table shows the value for the Task Technology Fit variable is 0.084. These results indicate that 8.4% of Task Technology Fit variables are influenced by Information quality. The R-square value for the Performance variable was obtained at 0.310. These results indicate that 31.0% of the performance variables are influenced by Information quality, and Task Technology Fit simultaneously.

The results of the SmartPLS analysis of the effect of product Information quality and Task Technology Fit on performance can be seen in the following figure:

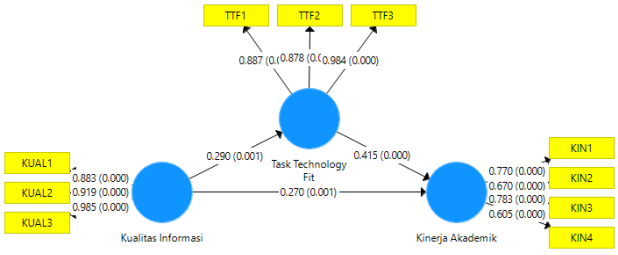

Fig 2 Path Analysis

a. Partial Effect Hypothesis Testing

The significance of the estimated parameters provides very useful information about the relationship between the research variables. The basis used in testing the hypothesis is the value contained in the output result for inner weight. Table 5 provides the estimated output for testing the structural model.

Table 5 Result For Inner Weights

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Information quality -> Academic Performance	0.270	0.286	0.080	3.358	**0.001**
Information quality -> Task Technology Fit	0.290	0.301	0.090	3.233	**0.001**
Task Technology Fit -> Academic Performance	0.415	0.409	0.083	5.012	**0.000**

In PLS statistical testing of each hypothesized relationship is carried out using simulation. In this case, the bootstrap method is applied to the sample. Testing with bootstrap is also intended to minimize the problem of abnormal research data. The results of hypothesis testing with bootstrapping from PLS analysis are as follows:

Table 6 Direct Effect Hypothesis Testing

Hypothesis	P Values	Annotaion
Information quality has a positive and significant impact on performance	0.001	**Accepted**
Information quality has a positive and significant impact on Task Technology Fit	0.001	**Accepted**
Task Technology Fit has a positive and significant impact on performance	0.000	**Accepted**

The table above shows that all of the hypotheses proposed in this study are accepted

b. Mediation Role Hypothesis Testing

The Mediation Role of User Satisfaction and Task Technology Fit can be seen from the value of the indirect effect as follows::

Table 7 Indirect Effect Hypothesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Information quality -> Academic Performance	0.120	0.120	0.036	3.321	**0.001**
Information quality -> Task Technology Fit					
Task Technology Fit -> Academic Performance					

The effect of Information quality through Task Technology Fit on significant performance is indicated by the p-values of 0.001 or <0.05. Therefore, Task Technology Fit is a mediating variable for the influence of Student Information quality on Academic Performance. However, because the coefficient of the direct influence of Information quality on Academic Performance (0.270) is greater than the indirect effect of Student Information quality on Academic Performance through Task Technology Fit (0.120), it can be said that Task Technology Fit acts as a partial mediator of the influence of Student Information quality on Academic Performance.

CONCLUSION

Based on the results of the analysis, it is known that the coefficient of direct influence of information quality on academic performance is greater than the indirect effect of Student Information Quality on academic performance through Task Technology Fit. Thus the results of this study confirm that Task Technology Fit acts as a partial mediator of the influence of Student Information Quality on academic performance.

Suggestions that can be put forward are to encourage student academic performance, the manager should pay attention to the management of the quality of information. What is meant by the quality of information in e-learning is providing up-to-date information,

providing accurate information and the ability to provide relevant information. Thus the quality of information can encourage an increase in the suitability of technology between users. Finally, it affect to academic performance.

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