The Role of Mediation Intensity Utilization of Academic Information System and Ease of the Use on Task-Technology Fit Influence on Individual Performance (Empirical Study At Mercu Buana University, Yogyakarta)

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ABSTRACT

This study aims to examine : 1) Influence of Task Technology Fit on Individual Performance, 2) Influence of Task Technology Fit to Intensity of SIA utilization, 3) Influence of Intensity of SIA utilization on individual performance, 4) Effect of SIA utilization intensity to ease of the use, 5) Influence of ease of the use to Individual Performance, 6) Influence of ease of the use as mediator between utilization of academic information system on individual performance. Respondents of this study are the Lecturers and Employees at the University of Mercu Buana Yogyakarta and obtained respondents as many as 113 respondents. This research uses survey model and purposive sampling method as sampling technique. In addition, this research also uses Structural Equation Modeling analysis technique with LISREL as an analytical tool. Based on data testing result of this research, it is found that: 1) Task Technology Fit has influence on Individual Performance, 2) Task Technology Fit has influence onIntensity of SIA Utilization, 3) Intensity of SIA utilization has influence on Individual Performance through ease of the use 4) Intensity of SIA utilization has influence on Ease of the Use 5) Ease of the Use has an effect on Individual Performance.

Keywords : **Task Technology Fit, Employees Performance, Intensity of Academic Information System (SIA), Ease of the Use**

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INTRODUCTION

Currently, information technology has been progressing rapidly. It also has a huge impact on global community life. Where many aspects of interest as a basis in decision making, ranging from lifestyle, complementary, and it also used to serve as a tool and as a very important tool. This condition is not only experienced by every individual but this condition is also experienced by organizations in the global scope.

Information technology is not only used in the scope of industry based business sector but also on the public sector. In this case, the use of information technology systems in public sector industries met in many educational institutions such as universities. It is very important for university institutions to support all aspects of facilities and infrastructure during the academic process. In addition, by utilizing information technology will improve the effectiveness, efficiency and productivity of these institutions further.

Before adapting academic information systems in an institution, it is important to consider several aspects that determine the effectiveness of the use of academic information systems. In this case, these aspects are related to task technology fit and ease of the use. Task technology fit is defined as the suitability of tasks run by individuals with academic information systems that will be adopted. In addition, the academic information system should be easy to operate by each individual so it can be used optimally. When these two important aspects are contained in the academic information system that is adopted, it will increase the intensity of utilization of academic information system and will directly affect the productivity level of individuals and organizations.

Several previous studies relevant to the topic in this study were conducted by Alpar and Kim (1990), Barua, et. al. (1995), and Brynjolfsson and Hitt (1996) mentioned that information technology is an investment that will produce excellent benefits in improving the performance and productivity of an organization. In addition, Burton, et. Al., (2003) revealed that information systems have a very important role as a link of performance and the results can be widely understood at the level of analysis, group or organization. Thus, when the organization adopt information technology, it is very important to notice the effectiveness level of the system in generating benefits related to the performance of individuals and organizations.

Goodhue and Thompson (1995) in their study revealed that the use of information technology has an influence on individual performance. Furthermore, Darwin (1999) in his study revealed that information technology has an influence on the individual performance. The results are in line with the previous study conducted by Diana (2001) which provides evidence that the use of information technology has a positive and significant influence on the performance of accounting employees.

THEORITICAL REVIEW

Basic Theory of Information Technology Utilization

This theory was developed by Fishbein and Ajzen (1975) which is based on social psychology. According to Theory of Reasoned Action, the individual performance of the predetermined behavior will be determined by the intent of the action to be performed with the purpose of behavior collectively determined by the individual's attitude and subjective norms.

***Technology Acceptance Model* (TAM)**

Technology Acceptance Model (TAM) was developed by Davis (1989) by relying on Theory of Reasoned Action (TRA). Technology Acceptance Model (TAM) focuses on attitudes toward information technology users, the users develop it based on perceived benefits and ease of the use of information technology. The objective of the Technology Acceptance Model (TAM) is to provide an explanation of the common determinant factors of thecomputer reception. The Technology Acceptance Model (TAM) is less common than the theory of Reasoned Action (TRA). Technology Acceptance Model (TAM) is designed only for computer use behavior, but because it combines the accumulated findings of research in decades, the Technology Acceptance Model (TAM) is appropriate as a computer reception modelling.

Task-Technology Fit(TTF)

Task-Technology Fit was developed by Goodhue and Thompson (1995). The Task-Technology Fit is the level by which technology assists the individual performing duties or functions. Task-Technology Fit is a match between the need for duties or functions. Specifically, Task-Technology Fit is a match between the need for tasks, individual abilities and technological functions.

Technology to performance chain(TPC)

Technology to performance chain (TPC) is a comprehensive model in which the important role of technology affects performance at the individual level. The essence of this model is that in order for information technology to have a positive impact on individual performance, the technology must be used and the technology must be in accordance with the type of work performed.

Perceived Ease of Use

This belief determines a user's attitude toward the use of a system and then determines behavioral intentions and leads to systemic use obviously. Davis (1989) also defined the perception of ease of the use as "the degree which a person believes that a particular system will be freed from effort" that effort is a limited resource for an individual whoallocate their time for various activities.

Individual Performance

Performance is generally defined as the success rate of a person in performing his work (Sunarta, 2005). Goodhue and Thompson (1995) stated the achievement of individual performance is related to the achievement of a series of individual tasks with the support of existing information technology. Higher performance means higher efficiency, effectiveness or higher quality than completion of tasks series assigned to individuals within the organization.

Davis (1989) stated that the use of specific application systems will enhance the performance and also find a definite strong connection between the use of computers and tasks certainly. Montazemi (1996) argued that individuals who have high competence, better trained and more familiar with information systems implemented in the company will be able to identify, access and interpret the better required data. Individuals who are familiar with the use of computers will be able to

use existing information systems better so that they will be better to meet the data needs in completing their tasks.

DEVELOPMENT OF HYPOTHESES

Task-Technology Fit is an important determinant of whether a system is trusted to be more useful, more important or relatively more profitable. A technology will be very useful when it comes to match individual tasks, that suitability will make positive behaviors of the individual by continuing to use and utilize the technology to maximize effort in their work. The study conducted by Jurnali and Supomo (2002) stated that there was a positive and significant relationship between Task-Technology Fit on the performance.

H_1: *Task-Technology Fit* has a positive effect on individual performance.

In the other side, the study also explains that the task fit technology has a positive effect significantly in the utilization of information technology (Staples, 2004, and Diana Rahmawati, 2008).

H_2: *Task-Technology fit* has a positive effect on the intensity of academic information system utilization.

When the utilization of information systems are more optimal, it will be directly proportional to the encouragement of individual performance. Siregar & Suryanawa (2009) stated that the utilization of information technology affects the users whether the technology has a better or worse impact.

H_3:Intensity of the Use of Academic Information System has a positive effect on individual performance.

When an information system to be utilized more frequently, it tends to encourage users to be familiar to use the information system. It reflects that when users are familiar to use the information system, it will make it easier for the users to operate it.

H_4:Intensity ofthe Utilization of Academic Information System has a positive effect on the Ease of the Use.

Ease of the use will encourage the employees to continue to use technology that will influence to increase the employee productivity. When the use of the technology is effective on the basis of perceived ease of the use of technology by the employee itself, then all existing tasks can be done more quickly and efficiently. The higher the perception of the ease of the use of a technology will enhance the employee performance. In a study conducted by Davis (1989) and Pramanda, et al (2016) proved that the ease of the use has a significant positive effect on individual performance.

H_5:Ease of the use positively affects individual performance.

Research Methodology

The sample that is used for this research are the lecturers and employees at Universitas Mercu Buana Yogyakarta who are using SIA while during the process of collecting the data, researcher used survey model and convenience sampling as the sampling technique. Then, at the last step of this research, researcher used LISREL as data analysis tool.

Result and Discussion

Table 1. Reliability Test Result Based on Fit Model

Constructs, Indicators and Dimension	**Estimate (λ ≥ 0,5)**	**Result**
Task-Technology Fit		
Indicator		
TTF1	6,32	**Valid**
TTF2	6,49	**Valid**
TTF3	7,09	**Valid**
TTF4	6,63	**Valid**
TTF5	6,07	**Valid**
TTF6	6,80	**Valid**
TTF7	6,93	**Valid**
TTF8	6,85	**Valid**
Intensity Utilization of Academic Information System		
Indicator		
IUAIS1	5,02	**Valid**
IUAIS2	6,93	**Valid**
IUAIS3	5,15	**Valid**
Ease of the Use		
ETU1	6,13	**Valid**
ETU2	6,32	**Valid**
ETU3	6,89	**Valid**
ETU4	6,25	**Valid**
ETU5	7,11	**Valid**
ETU6	6,71	**Valid**
Individual Performance		
IP1	5,56	**Valid**
IP2	7,05	**Valid**
IP3	7,05	**Valid**

Table 2. Reliability Test Result Based on Fit Model

Dimension	Construct Reliability ≥ 0,7	Variance Extracted ≥ 0,5	Result
1. Task -Technology Fit	0,94	0,72	Reliabel
2. Intensity Utilization of AIS	0,89	0,76	Reliabel
3. Ease of the Use	0,92	0,71	Reliabel
4. Individual Performance	0,70	0,53	Reliabel

Table 3: Structural Parameter Estimates: Path Analysis Model (N=245)

Hypothesis	Structural Path	Standardized path coefficients	t value	Prob.	Results
H_1	Task-Technologi Fit → Individual Performance	0,25	1,96	0,00	Significant
H_2	Task-Technologi Fit → Intensity Utilization of AIS	0,84	10,24	0,00	Significant
H_3	Intensity Utilization of AIS → Individual Performance	-0,10	-0,14	0,00	Not Significant
H_4	Intensity Utilization of AIS → Ease of the Use	0,90	11,68	0,00	Significant
H_5	Ease of the Use → Individual Performance	0,89	4,60	0,00	Significant

1. First Hypothesis

Based on the hypothesis testing result on structural equations above, researcher obtained a t_{hitung}value of 1,96 = 1,96. Thus, the value proves that Task-Technology Fit has a significant impact on individual performance so that the first hypothesis can be declared as **acceptable.**

2. Second Hyphotesis

Based on the hypothesis testing result towardsstructural equations above, researcher obtained at_{hitung}value of 10,24> 1,96. Thus, the value proves that *Task Technology Fit* has a significant impact on Intensity of Academic Information System Utilization so that the second hypothesis can be declared as **acceptable.**

3. Third Hyphotesis

Based on the hyphotesis testing result on structural equations above, researcher obtained at_{hitung}value of -0,44< 1,96. Thus, the value proves that Intensity of Academic Information System Utilization doesn't have any significant impact towards individual performance so that the third hyphotesis declared **rejected.**

4. Fourth Hyphotesis

Based on the hyphotesis testing result on structural equations above, researcher obtained a t_{hitung} value of 11,68> 1,96. Thus, the value proves that Intensity of Academic Information System Utilization has significant impact towards perceived easy of the use, so that the fourth hyphotesis can be declared as **acceptable.**

5. Fifth Hyphotesis

Based on the hyphotesis testing result towards structural equations above, researcher obtained that perceived easy of use has significant impact on individual performance so that the fifth hyphotesis can be declared as **acceptable.**

6. Direct and Indirect Impact

Based on hyphotesis testing result, researcher found that variable intensity of the usage and variable of perceived easy of use mediates the impact of *Task-Technology Fit* on Individual Performance. This statement also being supported by the calculation results, where the number obtained from the indirect impact resulted total multiplication in the each variable of 0,67 (*Task -Technology Fit*, the Intensity of SIA Utilization and Ease of the Use). That number is bigger comparing to the direct impact of *Task- Technology Fit* on the Peformance in the amount of 0,80, so that the utilization of the variable intensity and the convenience of mediation role impacts *Task-Technology Fit* on Individual Performance.

Furthermore, the variable of the ease of the usemediates the impact of the intensity of the SIA utilization on Individual Performance. This statement also being supported by the calculation results, the number obtained from the indirect influence of total multiplication each in the amount of 0,80 (the intensity of the SIA utilization and ease of the use). That number is bigger comparing to direct impact of the intensity of the SIA utilization on Individual Performance in the amount of -0,10 so that the convenience of mediation role impacts Task-Technology Fit towards Individual Performance.

Discussion

Based on the hyphotesis testing result, researcher obtained the utilization of the academic information system does not give any impact towards individual performance. That condition explains that the level of intensity of utilization in the academic information system does not give any impact on individual performance. This matter caused by many factors, which one of them is when a system intensely and optimally being utilized but the system does not fit with either any needs or duties of the employees so that the utilization of this system will not bring any positive impacts or transformation on the employee performance.

In this case when preparing the program utilization system that considered new, we need to do evaluation towards any needs or suitability of employee duties. Thus, this suitability and employee duties so that this system can bring positive

transformation on the employee's performance. This statement is also being revealed by Jurnali and Supomo (2002) where in their research, they found positive relation and significant between suitability of employee's duties towards individual performance.

According to the perception Sidarta, et. al (2014) about perceived easy of use, a technology that is being defined as a measurement of an individual believes that computer can be easily understood and used. This believe determines the user behavior towards the use of a system then determines the motive behavior and leads to the obvious system usage. However, in this context will explain that the utilization towards an information system in which an information system regularly being utilized will tend to encourage the user to commonly use that information system. This then reflects that when a user is wonted on using an information system then will allow the user to operate it easier. This statement is in line with the result that showed in this research which the utilization of information system have a significant impact on perceived easy of the use.

Perceived easy of the use gives encouragement toward employee to keep on using technology that later will give an impact to the productivity encouragement of the employee. This result in line with Davis (1989) in his research, showed that perceived easy of the use gives significant positive impact towards individual performance. This statement is being supported by Pramanda, et. al (2016) which revealed that perceived easy of the use gives significant impact on the employee performance. This shows that perceived easy of the use gives encouragement toward employee to keep on using technology that later will give impact on the improvement of employee's productivity. When the use of technology is effective on behalf of perception of perceived easy of technology use by the employee itself, then every work activity can be done faster and efficient. The higher the perception of perceived easy of the use on a technology will directly proportional with an increasing of the employee's performance.

A system that suits to the need intensely and optimally being utilized by an invidual, then will encourage a person to get more familiar on the system which allows system to be easier to be operated or being used. In this case, when a perception on perceived easy of the information use is higher, then it will give an encouragment towards employee to keep on using technology that later will gives impact toward employee's productivity. When the use of a technology effective on behalf of the perception of perceived easy of information by the employee itself, then every work activity can be done faster, precise and effecient.

CONCLUSION

In the first hypothesis, *Task Technology Fit*, positvely affects Individual Performance. When a technology is considered as individual assignment, there will be an encouragement of attitude or motation to keep enhancing the performance.

In the second hypothesis, *Task Technology Fit*, positvely affects Intensity of Academic Information System Utilization. *Task Technology Fit* is an important determine whether it can be trusted could be more useful, more imporatnt or could

give relatively more advantages. When this trust is higher, it will encourage the individual behaviour to utilize those systems intensely and optimally.

In the third hypothesis Intensity of Academic Information System has no significant effect to individual performance. High or low intensity of academic information system does not give any impact to individual performance. It is caused by some factors, while one of a system intensely and optimally utilized but those systems does not match with the needs and duties of the employee that the system utilization will not affect positively or bring any change of the employee performance.

In the fourth hypothesis, Intensity of Academic Information System affects significantly to the Ease of the Use. When an information system more often to be utilized, it will tend to encourage users to commonly use information system and ease the user to operate more.

In the fifth hypothesis, Ease of the Use affects significantly to individual performance. When the use of technology is effective based on the perception of the ease of technology use by those employee, those performances can be performed faster and more efficient. The higher perception of the ease of technology use will be in line with the employee performance.

In the sixth hypothesis Intensity of Academic Information System Utilization can affect individual performance through ease of the use variable. When a system seems fit to the needs is utilized by an individual intensely and optimally, it will encourage an individual to be more familiar of those systems and possibly easemore to be operated or used. In this case, when a perception of the ease of the system use will be higher, it will give an encouragement to the employees for using technology that will affect to the improvement of the employees productivity.

SUGGESTION

This research is expected to give the contribution to the decision-functionary of Mercu Buana University of Yogyakarta as a basic of decision making. In this case, there are some important aspects to be noticed by some decision functionary before deciding to adapt new Academic Information System as a step to keep enhancing the lecturers and employees performances. The aforementioned aspects consist of *Task-Technology Fit*, Intensity of SIA Utilization and Ease of the Usse. But, these three aspects are the most dominant to be concerned by the decision-functionary related to the utilization of Academic Information System. The first and third indicator of intensity utilization AIS (IUAIS1) and (IUAIS3) are seemed to have a bigger value than the other indicators. In the aforementioned system utilization is refer to how often the system intensity level is used whether the included menu in the academic information system can be understood easily by the users.

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