

# Measurement of Usability and Adoption Rate in Academic Information Systems

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## **Abstract**

E-learning is widely used as a learning medium that utilizes computer technology, computer networks or the Internet. Indonesia is the 8th country for e-learning users based on the total e-learning market each year, which is 25%. Student. The purpose of this research is to make the system more effective and efficient so that many students find it easy to collect data and re-register at SIA UNIMA, provide solutions to make SIA into an integrated system and an appropriate design in the UNIMA Campus Academic Information System. The method used to determine the level of acceptance of the Academic information system used at UNIMA can be analyzed using the TAM model. The results of this study indicate that the majority of students have been able to use e-learning well and will continue to use it in the future. The results of this study recommend that the learning process is better using e-learning so that the learning process becomes more effective.

Keyword : e-learning, TAM, usability, UNIMA, SIA

## **Introduction**

E-Learning is an application of information technology in learning whose main technology is computer technology, multimedia and other modern communication technologies. E-Learning consists of two kinds, computer software and web-based applications. Web-based E-Learning system, basically has a multi-layer structure. E-learning is widely used as a learning medium that utilizes computer technology, computer networks or the Internet. Indonesia is the 8th country for e-learning users based on the total e-learning market each year, which is 25%. Data on users of the UNIMA Academic Information System (E-Learning) In 2017 there were 18,289 students. The information system (e-learning) is organized by the main directory on the web server, including sub-directories, virtual directories, and a large number of documents and databases that are the source of E-Learning.

Academic Information System is a Technology used to support Operations and Data management. With Information Systems, Data Processing and Academic Services on Campus become more effective and efficient. However, there are many obstacles in the UNIMA SIA for that we made a Usability Measurement and adoption rate on the Academic Information System at UNIMA, which should have an integrated Information System and make it easier for users to understand the functions of the SIA and the use of SIA in re-registration.

Through the description of the background above, in this case we can see the problems faced in SIA UNIMA. The formulation of the problem in this research is as follows. 1). Can users easily use SIA? 2) Did SIA UNIMA not happen?

## Method

### Technology Acceptance Model (TAM)

To find out the level of acceptance of the Academic information system used at UNIMA, it can be analyzed using the TAM model. Thus, TAM is an analytical knife that is used to determine the attitude of user acceptance of the presence of technology.

TAM is one type of theory that uses a behavioral theory approach that is widely used to examine the process of adopting information technology. However, a good model should not only predict, but ideally should also be able to explain. It seems that the TAM model and its indicators have been proven to be able to measure technology acceptance. Thus, using TAM will be able to explain why the Academic information system used at UNIMA can be accepted or not by users.

TAM provides a basis for knowing the influence of external factors on the beliefs, attitudes, and goals of its users. Besides being built on a strong theoretical basis, one of the advantages of other TAM models is that it can answer the confusion of questions from the many technological systems that have failed to be implemented in SIA. In accordance with the term TAM, that "A" stands for "Acceptance" which means acceptance. So it can be said that TAM is an analytical model to determine user behavior towards technology acceptance. If you look at the definition of TAM from Wikipedia, "TAM is an information systems theory that models how users come to accept and use a technology". Through TAM, the assumption is that when a user will use a new information system, there are 2 (two) factors that influence it, namely:

#### 1. Perceived Ease of Use (Ease of Use Perceived)

In Davis (1989) it is stated that "ease" means "freedom from difficulty or great effort." Furthermore, "ease to use perceived" is defined as "the degree to which a person believes that using a particular system would be free of effort"

If it is applied to an Academic information system, it means that users believe that the Academic information system is easy to use so that it does not require hard effort and will be free from difficulties. This includes the ease of use of the information system according to the wishes of its users. The results of Davis' research (1989) show that perceived ease of use can explain the user's reasons for using the system and can explain that the new system can be accepted by users.

#### 2. Usefulness Perceived

In Davis (1989) it is stated that "the degree to which a person believes that using a particular system would enhance his or her job performance." This means that users believe that using the Academic information system will improve their performance. This describes the benefits of the system from its users related to various aspects. So, in this perception of usefulness, it forms a belief for decision making whether to use the information system or not. Initially, Davis used 14 initial scale items as indicators in Perceived Usefulness and Perceived Ease of Use. Next, start with the 1st study which

is an initial trial / pre-test study conducted to determine reliability and validity and obtain results in the form of 10 kinds of indicators. Regarding what the indicators are as in the following picture.

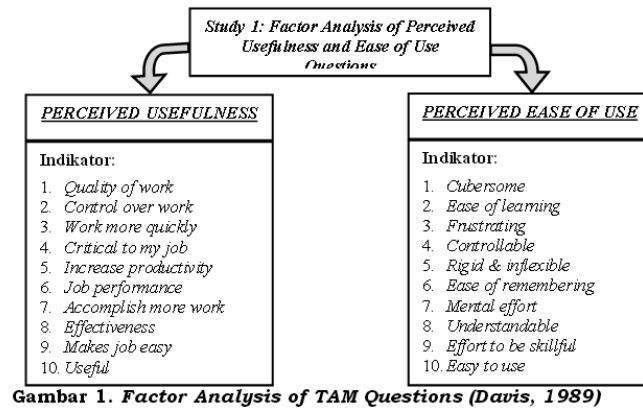


Figure 1. TAM-Questions factor analysis

Furthermore, in the 2nd study, Davis tested prototypes or models by reducing the indicators so that they became better and more practical. The analysis was carried out at that time by calculating the correlation (between Perceived Usefulness, Perceived Ease of Use, and Self-Reported System Usage) and Regression Analysis (Effect of Perceived Usefulness and Perceived Ease of Use on Self-Reported Usage). Regarding indicators of perceived ease of use. use and perceived usefulness as shown in Figure 2 below:

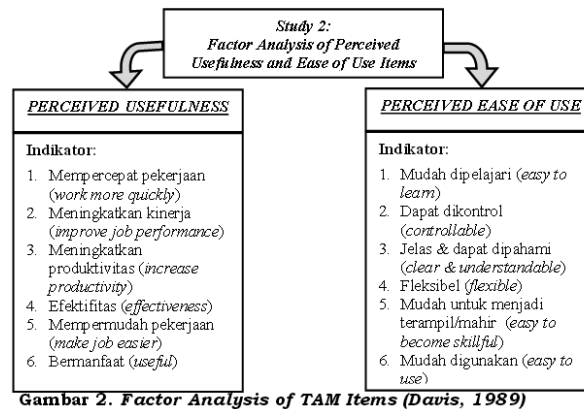


Figure 2. TAM-Questions factor analysis

So to further analyze the acceptance of the academic information system at UNIMA with the TAM model, several variables are used, including:

1. Perceived Ease of Use. Is a statement about the user's perception of the ease or difficulty of using an academic information system. This can be seen from various indicators, including: easy to learn, clear in operation, easy to understand, flexible information system, free from difficulties, easy to

access, easy to control, clarity in information systems, proficient for users, an assessment that in general the system academic information is easy to use.

2. Perceived usefulness. Is a statement about the user's perception of the usefulness of library information systems. The indicators include: speeding up work, increasing work productivity, improving performance, increasing task effectiveness, assessing if the information system used is useful for students and lecturers.

### 3. Reception

This acceptance actually includes the variable intensity of behavior in the use of information systems and the actual use of information systems. To find out if the technology in question, namely the Academic information system, is really accepted by users (Students and Lecturers), it can be seen from the indicators when the user always uses, always accesses, or creates user satisfaction.

The TAM model can explain that the user's perception of a system will affect the attitude of its users. According to Davis in Portner and Donthu (2006), that TAM shows perceptions of ease of use and usefulness is a belief in the existence of new technologies that affect user attitudes towards technology use. In essence, TAM has been tested as a benchmark in user goals and behavior in utilizing technology.

## Results and Discussion

The results obtained from respondents who came from students and lecturers on the use of SIA Unima can be seen through the tables below.

### Display of SIA Unima Academic Information Systems

Table 1. Display of SIA UNIMA

NO	QUESTIONS	DESCRIPTION
1	SIA UNIMA interface is good in terms of design	15 out of 30 agree
2	The display of SIA UNIMA makes it easy to operate	18 out of 30 agree
3	The display on the SIA UNIMA menu is easy and understandable	13 out of 30 agree

### Uses of Sia Unima Academic Information Systems

Table 2. Uses of SIA UNIMA

NO	QUESTIONS	DESCRIPTION
1	Save time in using it	19 out of 30 agree
2	This app is useful	29 out of 30 agree
3	Make ends meet	30 out of 30 agree
4	This application is effective and efficient	21 out of 30 agree

#### Ease of Use of Unima Academic Information Systems

Table 3. Ease of use of SIA UNIMA

NO	QUESTIONS	DESCRIPTION
1	Easy to use	25 out of 30 agree
2	It takes the least number of steps to achieve what I want to do in this application	13 out of 30 agree
3	Always success when using it	10 out of 30 agree
4	Can be used without written instructions	9 out of 30 agree

#### Satisfaction in the Use of Unima Academic Information Systems

Table 4. Satisfaction in the use of SIA UNIMA

NO	QUESTIONS	DESCRIPTION
1	Satisfied with SIA UNIMA	20 out of 30 agree
2	Recommended to others	30 out of 30 agree
3	Fun to use	17 out of 30 agree
4	Work as desired	10 out of 30 agree

The results obtained above have shown that in appearance, SIA unima already has a good appearance and is quite liked by many respondents. In terms of usability, SIA unima has been sufficient to meet the user's academic information needs, although it is still not significant. On the convenience side, some of the functions on the SIA unima tela can function according to their purpose, but there are still certain functions that have not been used by the user according to their designation so that they are still not useful enough. While the level of satisfaction, the majority of users have expressed satisfaction with SIA unima so that it can continue to be used properly and is expected to continue to be used in the future.

## Conclusion

The results of this study indicate that the majority of students have been able to use e-learning well and will continue to use it in the future. The results of this study recommend that the learning process is better using e-learning so that the learning process becomes more effective.

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