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Effect of Technology Readiness Towards Acceptance Technology in Using Information System

A.Rahayu[1,*] S.Sulastri[2], L.A Wibowo[3], V.Gaffar[4]

[1] *Universitas Pendidikan Indonesia*
[2] *Universitas Pendidikan Indonesia*
[3] *Universitas Pendidikan Indonesia*
[4] *Universitas Pendidikan Indonesia*
[*] *Corresponding author. Email: sulastri@upi.edu*

ABSTRACT
The purpose of this study is to obtain an overview of the level of technological readiness, acceptance and interest in using information systems in universities and the influence between these variables. Based on the purpose of the research method used is descriptive and verification. The sample in this study was administrative staff at one of the state universities in Bandung, Indonesia as many as 108 respondents who were taken by simple random sampling technique. The data analysis technique used to test the hypothesis is Partial Least Square (PLS) which is processed using Smart PLS 3.0 software. Based on the results of the study, it was found that there was an influence of Technology Readiness on Perceived Usefulness through Perceived Ease Of Uses and its Impact on Use Intention. Variable perceived ease of use has a higher influence on perceived usefulness compared to readiness technology. And the effect of perceived usefulness on use intention is compared to perceived ease of use.

Keywords: *Technology Readiness, Acceptance Technology, Use Intention*

1. INTRODUCTION

Education is one of the most affected by Covid-19. The Covid-19 pandemic has disrupted higher education. In the United States, more than 200 universities are canceling face-to-face classes and going online. Asian countries are also experiencing the same trend. In Southeast Asia, some schools have closed. Many universities are also shifting face-to-face classes to online learning to limit the transmission of Covid-19.

Based on data from the Central Bureau of Statistics in 2020, it is currently estimated that around 3251 universities are under the auspices of the Ministry of Research, Technology and Higher Education and the Ministry of Education and Culture and 826 under the Ministry of Religion. The number of lecturers includes 261,827 who teach under general education institutions and 40,762 under religious education institutions. Meanwhile, the number of students under the Ministry of Research, Technology and Higher Education and the Ministry of Education and Culture is 7,339,164 people and at the Ministry of Religion 1,151,262 people. By looking at the number of lecturers, administrative staff, and students, of course, the Covid-19 pandemic has caused disruption, especially in the learning process, academic services and various related activities.

With online lectures, several problems arise, not only from the side of students, lecturers but also administrative staff. According to the Policy Brief: Education during COVID-19 and beyond published by the United Nation in August 2020, higher education is very vulnerable as a result of the low level of digitalization and weak organizational structures that can support changes in administrative challenges and teaching modalities from face to face. online and hybrid teaching. In fact, there are many cases where universities stop teaching due to low access to information technology and the unavailability of connection to the internet.

In general, the Covid-19 pandemic has opened a reality that access to universities, lecturers, administrative staff, and students to educational support facilities that are responsive to pandemics is uneven. Higher education is also still not fully prepared for a pandemic disaster management system, both from online teaching tools, the readiness of lecturers and administrative staff.

Administrative staff as a supporting element in a university have a very important role for the continuity of well-managed academic and administrative services. As part of a university, of course, distance learning policies have a very big impact on administrative employees because everything has to be done from home.

Currently, information technology (IT) has become a necessity for every individual, IT can help every individual in carrying out their activities and increase effectiveness and efficiency in work. The importance of the use of information technology is recognized by universities in Indonesia as the demands of the globalization era to be more competitive and competitive, but in practice there are still many applications that have not been used optimally by lecturers, students and administrative staff. When the Covid-19 pandemic occurs and most work is done at home, this information system becomes very useful.

In adopting information systems, individual readiness is a very important factor, it is in response to changes in organizational culture in universities. Individual readiness is more likely to be confident, optimistic and confident in adopting new technology. The number of models that examine causal relationships to measure the level of technology readiness and acceptance of information systems by users, researchers are interested in using the Technology Acceptance Model (TAM) to support the research conducted. The TAM model was developed by [1] which adapted the Theory of Reasoned Action (TRA) model. This theory was developed by [2]. The basic difference between TRA and TAM is the placement of attitudes from TRA, where in TAM theory there are two key constructs, namely perceived usefulness and perceived ease of use, while in TRA the main construct is attitude towards behavior and subjective norms.

[3] definition technology readiness as people propensity to embrace and use new tecnologies for accomplishing goals in home life an at the workplace. One's perception of technology has a positive side and a negative side, causing the emergence of four dimensions in technology readiness, namely optimism, innovation, discomfort, and insecurity. Behavioral intention is the willingness to recommend services to others and the willingness to reuse them. In interacting with consumers like today's era, service providers must carefully observe consumer behavior patterns if service providers do not want to lose consumers. Consumer behavior can give a signal to service providers whether consumers want to stay in touch with service providers.[4] Intention to use is influenced by two basic factors, namely personal factors and social influence factors. Both of these factors have a positive effect on individual behavioral intentions that positively cause a behavior. Behavior is an individual's actual action as a result of the factors that influence it [2].

H1 : There is an influence of Technology Readiness on Perceived ease of use

H2 : There is an Influence of Readiness technology on Perceived Usefulness through Perceived Ease of Usefullness

H3 : There is an Influence of Perceived Ease of Usefulness on Use Intention through Perceived Usefulness

2. METHODS

Based on the research objectives, the method used in this research is descriptive and verification. Descriptive research aims to obtain an overview of the variables of technology readiness, perceived ease of use, perceived usefulness and use intention. While the verification method aims to examine the effect of technological readiness on perceived ease of use and perceived usefulness and its impact on use intention. The research instrument in the form of a questionnaire was used to collect data from respondents. The sample in this study were administrative employees at one of the state universities in Bandung, Indonesia as many as 108 people who were taken using simple random sampling technique. Partial Least Square is used as a data analysis technique to test the effect between variables. Figure 1 shows the relationship between technology readiness, perceived ease of use, perceived usefulness and use intention.

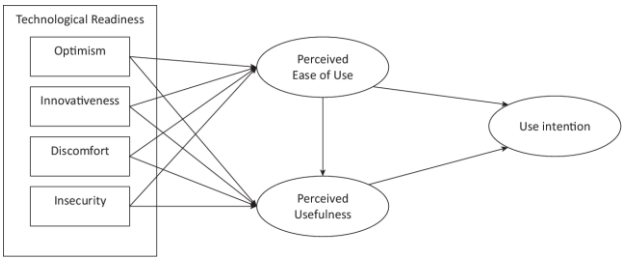

Figure 1. Research Model

3. RESULTS AND DISCUSSION

Outer Model

Evaluation of the indicator measurement model includes checking individual item reliability, composite reliability, convergent validity, and discriminant validity.

Testing the reliability of items seen from the value of the loading factor. It is said to be ideal if it is above 0.7, meaning that the indicator can be said to be valid as an indicator to measure the construct. However, standardized loading factor values above 0.5 are acceptable. Meanwhile, the standardized loading factor value below 0.5 can be excluded from the model [5].

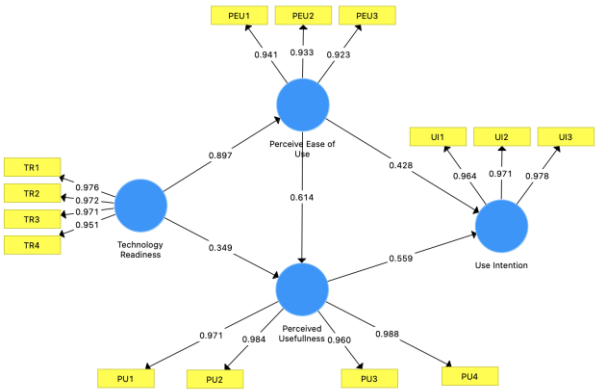

Figure 2. Standardized Loading Factor

Based on Figure 2, it can be seen that all indicators in each variable have a loading factor value above 0.7. so it can be said that all indicators are very good in shaping the variables.

Next is composite reliability test. The statistics used in composite reliability or construct reliability are Cronbach's alpha and D.G rho (PCA). Cronbach's alpha and D.G rho (PCA) values above 7.0 indicate the construct has high reliability or reliability as a measuring instrument. The limit value of 0.7 and above means it is acceptable and above 0.8 and 0.9 means very satisfying [6].

Table 1. Composite Reliability

Latent variable	Cronbach's alpha	D.G. rho (PCA)
Technology Readiness	0,977	0,979
Perceived Ease of Use	0,925	0,925
Perceived Usefulness	0,983	0,984
Use Intention	0,970	0,970

Based on table 1, it can be seen that all variables have Cronbach's alpha and D.G rho (PCA) values > 0.7 so they are said to have very satisfactory reliability.

Average Variance Extracted (AVE) describes the amount of variance that can be explained by items compared to the variance caused by measurement error. The standard is if the AVE value is above 0.5, it can be said that the construct has good convergent validity

Table 2. Convergent Validity

Latent Variable	Mean Communalities (AVE)
Technology Readiness	0,936
Perceived Ease of Use	0,870
Perceived Usefulness	0,952
Use Intention	0,943

Based on Table 2 shows that the value of the four variables is above 0.5 so that the construct has good convergent validity where the latent variable can explain the average of more than half the variance of the indicators.

Good discriminant validity will be able to explain the indicator variable is higher than explaining the variance of other construct indicators.

Table 3. Discriminant Validity

	Technology Readiness	Perceive Ease of Use	Perceived Usefullness	Use Intention
TR1	0,976	0,892	0,893	0,907
TR2	0,972	0,873	0,880	0,874
TR3	0,971	0,896	0,899	0,913
TR4	0,951	0,805	0,805	0,822
PEU1	0,882	0,941	0,869	0,891
PEU2	0,820	0,933	0,876	0,881
PEU3	0,866	0,923	0,849	0,875
PU1	0,881	0,894	0,971	0,930
PU2	0,897	0,917	0,984	0,944
PU3	0,856	0,873	0,960	0,906
PU4	0,894	0,933	0,988	0,949
UI1	0,920	0,886	0,923	0,964
UI2	0,863	0,946	0,928	0,971
UI3	0,869	0,924	0,934	0,979

Based on the table above, it can be seen that the discriminant validity value of each indicator has a higher correlation with the latent variable compared to other variables. This shows that each variable is able to explain higher variance with its indicators compared to other indicators.

Inner Model

Table 4. Path Coefficient

Latent Variable	R^2
Perceive Ease of Use	0,804
Perceived Usefullness	0,883
Use Intention	0,939

Table 4 shows that the R^2 value for the perceived ease of use construct is 0.804. This means that technology readiness is able to explain the perceived ease of use variance of 80.4%. The R^2 value for the Perceived usefullness construct is 0.883. This means that technology readiness and perceived ease of use are able to explain the perceived usefullness variance of 88.3%. The value of R^2 for the use intention construct is 0.939. This means that technology readiness, perceived ease of use and perceived usefulness are able to explain the use intention variant of 93.9%.

Hyphotesis Testing

Table 5. Hyphotesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STERR|)	PValues
Technology Readiness -> Perceive Ease of Use	0,897	0,892	0.042	21.227	0.000
Technology Readiness -> Perceived Usefullness	0,349	0,312	0,162	2.157	0.031
Perceive Ease of Use -> Perceived Usefullness	0,614	0,648	0,161	3.819	0.000
Perceive Ease of Use -> Use Intention	0,428	0,443	0.084	5.095	0.000
Perceived Usefullness -> Use Intention	0,559	0,542	0.085	6.558	0.000

Hypothesis 1:
"There is an influence of Technology Readiness on Perceived ease of use"

Based on the Table 5, it can be seen that there is an influence between technology readiness on perceived ease of use, this can be seen from the t_{value} of 21,227 (t_{value}> t_{table} 1.96) with a significance level of 0.000 (sig < 0.05). The original sample estimate value is positive, which is 0.897 which indicates that the direction of the relationship between technology readiness and perceived ease of use is positive. Thus the hypothesis which states that "There is an influence of Technology Readiness on Perceived ease of use" is accepted either simultaneously or partially. The coefficient of influence of technology readiness on perceived ease of use is 0.897.

Hypothesis 2:
"There is an Influence of Readiness technology on Perceived Usefulness through Perceived Ease of Usefullness"

The R^2 value for the Perceived usefullness construct is 0.883. This means that technology readiness and perceived ease of use are able to explain the perceived usefullness variance of 88.3%.

Based on the table above, it can be seen that there is an influence between technology readiness on perceived usefullness, this can be seen from the t_{value} of 2.157 (t_{value}> t_{table} 1.96) with a significance level of 0.031 (sig < 0.05). The original sample estimate value is positive, which is 0.349 which indicates that the direction of influence between technology readiness on perceived usefulness is positive.

There is an influence between perceived ease of use on perceived usefullness, this can be seen from the t_{value} value of 3.819 (t_{value}> t_{table} 1.96) with a significance level of 0.000 (sig < 0.05). The original sample estimate value is positive, which is 0.614 which indicates that the direction of influence between perceived ease of use and perceived usefullness is positive.

Hypothesis 3:
"There is an Influence of Perceived Ease of Usefulness on Use Intention through Perceived Usefulness"

The R2 value for the Perceived usefullness construct is 0.883. This means that technology readiness and perceived ease of use are able to explain the perceived usefullness variance of 88.3%.

Based on the table above, it can be seen that there is an influence between Perceived ease of use on perceived usefullness, this can be seen from the t_{value} of 5.095 (t_{value}> t_{table} 1.96) with a significance level of 0.000 (sig <0.05). The original sample estimate value is positive, which is 0.428 which indicates that the direction of influence between Perceived ease of use and perceived usefullness is positive.

There is an influence between perceived usefullness on use intention, this can be seen from the t_{value} of 6.558 (t_{value}> t_{table} 1.96) with a significance level of 0.000 (sig < 0.05). The original sample estimate value is positive, which is 0.559 which indicates that the direction of influence between perceived usefulness on use intention is positive.

A person's willingness to use a technology or system is the main measure of interest in using it in the construct of a technology acceptance model. According to [7] states that the perception of ease of access and convenience where a person believes that using a technology will provide more benefits than business. The higher a person's perception of the ease of access and convenience of a system, the higher the level of utilization of the system.

4. CONCLUSIONS

The technological readiness of administrative employees at one of the public universities in Bandung, Indonesia is good in terms of the dimensions of optimism, innovativeness, discomfort, and insecurity. In the dimension of optimism, the information system is considered to help ease/facilitate the respondent's work because previously all data recorded manually was the indicator that was rated the highest, while the indicator that was rated the lowest was the respondent's belief in the information system working in accordance with what was instructed by the respondent. In the Innovativeness dimension, the indicator that is rated the highest is the respondent's desire to find out in more detail if there is a new information system. While the lowest rated is an indicator of feeling more free in activities that are felt by respondents using information systems. For the dimension of discomfort, the indicator that is rated the highest on the dimension of discomfort is the feeling of the respondent when entering data into the information system, because it is possible that the data can be wrong. While the lowest rated is the respondent's feeling that the information system complicates the work due to signal constraints. And on the insecurity dimension, the indicator that is rated the highest is the respondent's re-check when entering data to ensure that there are no errors. While the indicator that is rated the lowest is the respondent's disbelief that data sent online through the information system can reach the destination.

The description of perceived ease of use is quite good, where the indicators that are rated the highest are the ease of information systems to learn and the ease of information systems to understand. Meanwhile, those that are rated the lowest are indicators of the ease of information systems in work.

The description of perceived usefulness is quite good, where the indicator that is rated the highest is that the overall information system has benefits for respondents. While the lowest rated is the indicator of the use of information systems to improve the performance of respondents at work.

The description of use intention is quite good, where the indicator that is rated the highest is the respondent's expectation that the information system can be used in future work. While the indicator that is rated the lowest is the respondent's intention to use the information system

There is an influence of Technology Readiness on Perceived Usefulness through Perceived Ease Of Uses

and Its Impact on Use Intention. Variable perceived ease of use has a higher influence on perceived usefullness compared to readiness technology. And the effect of perceived usefulness on use intention is compared to perceived ease of use.

REFERENCES

[1] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS Q. Manag. Inf. Syst.*, vol. 13, no. 3, pp. 319–339, 1989, doi: 10.2307/249008.

[2] A. I. Hill R, Fishbein M, "Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research.," *Contemp. Sociol.*, vol. 6, no. 2, p. 244, 1977, doi: 10.2307/2065853.

[3] A. Parasuraman, "Technology Readiness Index (Tri): A Multiple-Item Scale to Measure Readiness to Embrace New Technologies," *J. Serv. Res.*, vol. 2, no. 4, pp. 307–320, 2000, doi: 10.1177/109467050024001.

[4] A. P. Valarie A. Zeithaml, Leonard L.Berry, "The Behavioral Consequences of Service Quality," *J. Mark.*, vol. 60, no. 2, pp. 41–52, 1996, doi: https://doi.org/10.2307/1251929.

[5] W. W. Chin, "The partial least squares approach for structural equation modeling.," *Mod. methods Bus. Res.*, no. April, pp. 295–336, 1998.

[6] I. H. Nunnally, Jum C; Bernstein, *Psychometric Theory*. New York: McGraw Hill, 1994.

[7] R. P. Bangkara, N. Putu, and S. Harta, "Pengaruh Perceived Usefulness Dan Perceived Ease of Use Pada Minat Penggunaan Internet Banking Dengan Attitude Toward Using Sebagai Variabel Intervening," *E-Jurnal Akunt. Univ. Udayana*, vol. 16, no. 3, pp. 2408–2434, 2016, [Online]. Available: https://ojs.unud.ac.id/index.php/Akuntansi/article/view/21551/15419.