The Influence of Personality on the Decision to Use a Technology (Study at Lecturer Profession)

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— *Review of* —
Integrative Business & Economics
— *Research* —

ABSTRACT

This study aims to determine the influence of personality in the decision to use the technology. This study uses TAM (Technology Acceptance Model) that will be tested in a personality variable from Big Five Personality. The samples in this study were lecturers. These samples were selected as representatives of educated people who have the technological ability to adapt quickly. The data were processed using the Partial Least Squares (PLS). The result shows that personality does not influence the decision to use the technology. The decision to use the technology is dominated by considerations of technology usefulness and ease of using the technology. Those factors are the person's cognitive processes. This study shows that the ease of using a technology affects the decision to use the technology on the lecturer profession. This indicates that there are similarities needs to use an easy technology among highly educated people and those who are not educated.

Keywords: Personality (Big Five Personality), TAM (Technology Acceptance Model), Cognitive Style, Partial Least Squares (PLS).

1. INTRODUCTION

Acceptance of technology is an important factor for the successful implementation of technology. It is to be attractive to many researchers to explain several factors that may affect technology acceptance. Technology acceptance or rejection is important because it has an impact on the success or failure of system or technology implementation (Hu et al., 1999). The failure of Technology implementation can make company's losses because of much money that's invested in the technology.

Research on technology acceptance have been conducted by Davis et al. (1989). Davis et al. (1989) developed the technology acceptance model (TAM). This model explains that the technology can be accepted if the technology is useful and easy to use. The perception that the technology is useful and easy to use will affect the user's attitude. This perception will affect an attitude to use the technology which comes from the intention to use the technology. In the process, a lot of research try to develop the technology acceptance model to supplement deficiencies in TAM (Lee et al., 2003). However, in some studies of TAM, there is a difference opinion between Benbasat and Barki (2007) with Straub and Burton (2007). The difference opinion is about construct from TAM. The problem is related to useful factor that will affect information technology (IT) acceptance.

Benbasat and Barki (2007) found that TAM is too wide or bias in assessing the factors that influence the acceptance of IT. This is because the TAM does not explain what caused the technology to be useful. Straub and Burton (2007) explain that the bias in the

construct of perceived usefulness and perceived ease of use in TAM is due to the perception of technology usefulness may differ from the actual use of the technology itself. This can be caused from the respondent or the methods used. Therefore, Straub and Burton (2007) suggest to test the constructs in TAM, while Benbasat and Barki (2007) suggest to dig acceptance factor technology uses Theory Behavior Planning (TPB).

Taylor and Todd (1995) have built an advanced model of TAM by combining with the theory of planning behavior (TPB). This is done to explain the factors that are lacking in TAM, the influence of social factors in the acceptance of the technology. Social factors have been studied previously and shown significant results to influence technology acceptance (Compeau and Higgins, 1991; Hartwick and Barki, 1994; Thompson et al., 1991). However, combining TAM and TPB does not eliminate the problem about the usefulness of TAM constructs itself (Benbasat and Barki, 2007).

Hu et al. (1999) examine TAM on technology users who works as a doctor at the hospital. The study showed that the usefulness factor has more influence on attitudes that form the intention to use technology than ease of use factor. Thus, not all constructs in TAM appropriate to explain the factors that affect a person to use a technology so in that study were advised to test TAM in other professions. Based on Hu et al. (1999) study, in this study, TAM will be tested on lecturer's profession.

Another factors that can affect user acceptance of the technology are characters or personal trait (Lucas, 1973; McElroy, 2007; Tsao, 2013; Landers and Lounsbury, 2006; Abdilah, 2013). McElroy et al. (2007) study about the influences of personal traits in the internet usage by using a group of personality factors (Big five personality) and cognitive style as independent variables. This research was done because it has been a lot of research in the field of technology acceptance using perception as an independent variable, thus dominating the technology acceptance research. The results showed that personality factors are better in predicting acceptance of the technology than cognitive style.

Based on a study (Mc Elroy, 2007), this study aims to examine the effect of the user personality on the user perception of technology acceptance. This study uses TAM as a model. This model was chosen to get the validation constructs of TAM in character or personality trait in different users that may affect user perceptions in receiving technology. Getting validation on TAM constructs still needed to gain a deeper understanding, whether the personal traits of the respondent may affect acceptance of the technology. From this research, it can be seen how big the influence of perceived usefulness and perceived ease of use in shaping attitudes and interest in using the technology. Thus, it can be seen other factors that may affect the perception of acceptance of the technology. In this study, TAM will be tested in a group of personal traits of different users using five personality factors (big five personality).

2. LITERATURE REVIEW
2.1. Technology Acceptance Study

Ajzen and Fishbein (1980) developed a theoretical model of reasoned action, theory reasoned action (TRA), to explain the factors that affect the interests and behavior. The factors were the attitude toward behavior and subjective norms. In its development, this model has used to examine the factors that affect technology acceptance. However, this model does not specifically intended for acceptance technology (Hu et al., 1999). Based

on this model, Davis et al. (1989) developed the technology acceptance model (TAM). Unlike previous theories, TAM simply and directly explains the person's desire to receive and use the technology.

Since developing by Davis et al. (1989), TAM has been widely used to explain and predict the factors that affect the acceptance of the technology (Hu et al., 1999; Lee et al., 2003). TAM explains that the perceived usefulness and perceived ease of use will affect the attitude that ultimately affects the intention to use. Perceived usefulness is a belief that these technologies can improve a person's performance. Several studies have examined TAM found that the model is valid to explain technology acceptance (Adam et al., 1992; Hendrickson et al., 1996; Szajna, 1994).
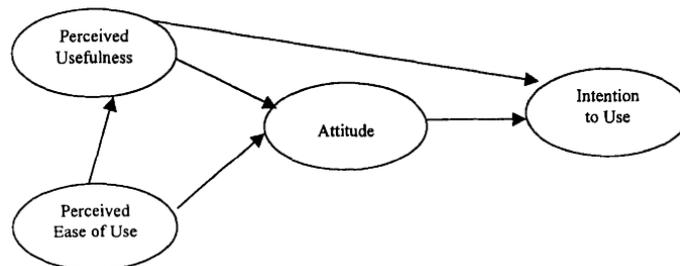

Figure 1: Technology Acceptance Model (TAM)

From figure 1, we know that, first, perceived ease of use will influence toward an attitude and intention to use. Basically, the technology is used to help people in various fields. Ease perceived is the belief that the use of information technology will not require a lot of effort (Davis et al., 1989). This means that information technology is not inconvenient for the user. With the technology that is easy to use, people will be helped with all of their activities. This will increase the usefulness of the technology. Thus the perceived ease of use affects positively toward perceived usefulness (H1). In addition, the perceived ease of use will increase a positive assessment of the technology that will be forming a positive attitude user. Thus the perceived ease of use positively affects the attitude (H2). Some research suggests that the perceived ease of perceived usefulness and attitude affects users of information technology (Davis et al., 1989; Venkatesh et al., 2003; Yi et al., 2006).

Second, perceived usefulness influence toward the attitudes and intentions to use. Perceived usefulness is the belief that a technology will be able to support or improve performance (Davis et al., 1989). Various studies have tested this perceived usefulness and their research showed a positive effect on the use of information technology (Davis et al., 1989; Igbaria et al., 1996, Venkatesh et al., 2003). Perceived usefulness is regard to the assessment of the functionality and benefits of information technology that will affect the attitudes of the users (H3). These benefits will also increase the intention to use the information technology because technology can help people conduct their activities (H4).

Third, attitude gives influence on the intention to use the technology. Davis et al. (1989) defines attitude as positive or negative feelings of the users of the technology. Attitude can also be interpreted as an evaluation of user interest (Mathieson, 1991). A positive attitude toward technology will make people interested and intend to use the technology (H5). Intend to use it is used to predict the use of technology. Intention to use is the underlying desire of the individual to act (Davis et al., 1989).

Although TAM is widely used to describe the technology acceptance, TAM it is still too wide and does not touch the core of the problem in explaining the behavior of technology acceptance (Benbasat and Barki, 2007). Benbasat and Barki (2007) found variables perceived usefulness and perceived ease of use does not explain what makes the IT useful. Another problem is the assessment of the usefulness can differ from one person to another. In TAM, technology usefulness is defined and operated as the number or frequency so it ignore the factors of basic beliefs, for example: trust, cognitive absorption, and enjoyment (Agarwal and Karahanna, 2000; Gefen et al., 2003; Van der Heijden, 2004). Besides that, TAM also ignores the other factors, such as social and behavioral control factors, which may affect the intention to use technology (Compeau and Higgins, 1991; Hartwick and Barki, 1994; Thompson et al., 1991). Several studies have tried to develop models of TAM by adding some variables lacking in TAM. However, these additional variables do not explain what factors make IT is useful. Therefore, Benbasat and Barki (2007) recommend the TPB as a model that can be developed to gain an understanding about the factors that affect the acceptance of IT.

Straub and Burton (2007) did not fully agree with Benbasat and Barki (2007). Straub and Burton (2007) found that TAM bias occurs because of the respondent and not to construct on TAM. The problem occurs because the acceptance of present technology may differ from the actual use so that testing of the constructs use the TAM remains to be investigated. Research conducted by Hu et al. (1999) showed that the construct of perceived ease of use is not significant at experienced users. Hu et al. (1999) using the physician as the study sample that is representative of an experienced user. Therefore, testing the TAM in the context of an experienced user still needs to be done to obtain the construct validity of TAM.

2.2. Personality Research In Technology Acceptance

Basically, the technology and the system were made or in-design perfectly by experts or technicians. However, in the creation or development of the system, the system designer is not too considering human psychological factors. Problems arise when there is interaction with the human system as a user (Davis et al., 1989; Jahng et al, 2002; Wheeler et al, 2004; Tsao, 2013).

Zmud research (1979) has showed that there is an interest among researchers to examine the influence of the role of personality with the successful application of information technology. However, Huber (1983) has a different opinion. Huber (1983) suggests that personality cannot be applied to study the application of technology because it has a low number of variant explanations of the results. Another problem is that the theory of personality is difficult to generalize and it has the low size of reliability and validation. The number of users' characteristics of personality makes it difficult to make conclusions about the proper personality in the study of information systems.

Robey (1983) has a different opinion with Huber (1983). Robey (1983) argues that the human factor cannot be ignored in relation to the acceptance of the technology. Accepting or rejecting the use of technology is one of the decision-making processes is done by humans in today's technological era. Personality is a part of human. Decision-making involves psychological processes (Wheeler et al., 2004).

Traits or individual character can describe how people receive information and process the information. Jung (1921) explains that personality psychology sees the human mind

as a medium to cultivate an external stimulus that ultimately influence the actions or behavior of a person. In Jung's theory (1921) (Jungian Theory), the integrated character of a factor in the process of psychology to digest the information and decision-making. Characters will show the consistency from thoughts, feelings and attitudes in an individual (Liu and Arnet, 2002; Korzaan and Boswell, 2008).

In examining the role of personality in information technology research, Jahng et al. (2002) used Myers-Briggs Type Indicator (MBTI) to test the effect on the effectiveness of the presentation of product information changed by the online consumer's personal style. The results from this study indicated that the assessment of wealth information products are not same for every consumer. It is influenced by the type of consumer personality.

Barkhi and Wallace (2007) conducted a study of online shopping by using the MBTI to test its effect on TAM constructs. In this study, personality traits extroversion, intuition, thinking, and perceptual are used as an independent variable that affect TAM constructs. Barkhi and Wallace (2007) built the hypothesis that positive thinking effect on perceived of usefulness and intuitive personality positive effect on perceived ease of use. These results indicate that personality has a positive correlation to the perceived of convenience and perceived of usefulness.

More comprehensive study conducted by Wheeler et al. (2004). Wheeler et al. (2004) show that the MBTI has been widely used in research in the field of accounting with significant results. However, Wheeler et al. (2004) also describe some of the weaknesses in the MBTI. Some disadvantages include: first, the MBTI is not suitable for experimental research to examine the effects of the condition or before and after the experiment. Second, interpretation of MBTI results is to study at that time, but some researchers use the interpretation of previous studies (Landry et al., 1996). Third, there is a risk about reliability and validity because the instrument does not provide variable differences in relation to the other. This problem is because the instrument cannot capture the personality of a person, especially when someone makes a decision. Thus, the comparison to other instruments are still needed.

Several studies make individual personality classification based on five personality factors (Big Five Personality) to examine the relationship and the influence of personality in the process of technology acceptance by humans. In the study of information system technology, personality traits have widely used as an independent variable that affects the perception of the individual (Korzaan and Boswell, 2008; Tsao, 2013; Landers and Lounsbury, 2006; Abdilah, 2013). In this study, Big Five Personality will be used as a continuous moderating variable to test TAM. SInce MBTI has been widely used and because of its limitations, this study will use the Big Five Personality to test technology acceptance factors.

2.3. Big Five Personality and Hypothesis

Big five personality classifies the character's personality into five groups, namely: extraversion, agreeable, conscientious, neuroticism, openness of experience. Extraversion is personality traits that see an individual approach with the environment.

This relates to the quality of social interactions (McCrae and Costa, 1989). Individuals with character traits of extraversion has good self-confidence, active, and like to speak a lot. Individuals with extraversion trait are easier to build relationships with the environment (Pervin et al., 2004). Extraversion characters have a tendency to easily adapt to new environments.

Extraversion trait uses more technology to communicate and build relationships with the environment (Amiel and Sargent, 2004). With a good adaptability extraversion, the character will be good to adopt new technologies. Based on this concept, the constructed hypotheses:

> H1a: On a person who has an extraversion character, perceived ease of use will influence positively on perceived usefulness.
> H2a: On a person who has an extraversion character, perceived ease of use will influence positively on the attitude.
> H3a: On a person who has an extraversion character, perceived usefulness will positive influence on the attitude.
> H4a: On a person who has an extraversion character, perceived usefulness to be an influence positively on intention to use a technology.
> H5a: On a person who has an extraversion character, attitude will influence positively on intention to use a technology.

Agreeable is a personality with sympathetic characters to others, more easily trust in others or easily make a deal with someone else (Pervin et al., 2004). Individuals with these characters more easily interact with the environment because this character is an individual who is not selfish (McCrae and Costa, 1989; Tsao, 2013).

In the study of information systems, unified understanding between manufacturers and users of the system is an important factor in the success of technology acceptance. With an attitude that easily interact and adapt to the environment, agreeable character will be able to accept the application of technology. Therefore the hypothesis that will be built are:

> H1b: On a person who has agreeable character, perceived ease of use will influence positively on perceived usefulness.
> H2b: On a person who has agreeable character, perceived ease of use will influence positively on attitudes.
> H3b: On a person who has agreeable character, perceived usefulness will influence positively on the attitude.
> H4b: On a person who has agreeable character, perceived usefulness will influence positively on intention to use a technology.
> H5b: On a person who has agreeable character, attitude will influence positively on intention to use a technology.

Conscientious is the rational individual character and strong principles. Individuals with these characters have a tendency to be careful and analyze in adopting the opinions of others. Rationality be the paramount consideration in making decisions (McCrae and Costa, 1989; Tsao, 2013; Korzaan and Boswell, 2008).

People rationally always look for, or choose a things that benefit him. Application of technology aims to maximize human performance. Usability and convenience are a factor that rational technologies related to technology acceptance (Davis et al., 1989; Venkatesh et al., 2003). Individuals with this character use technology to support performance (Tsao, 2013), therefore, the hypothesis that will be built are

> H1c: On a person who has conscientious character, perceived ease of use will influence positively on perceived usefulness.
> H2c: On a person who has conscientious character, perceived ease of use will influence positively on attitudes.
> H3c: On a person who has conscientious character, perceived usefulness will influence positively on the attitude.
> H4c: On a person who has conscientious character, perceived usefulness will influence positively on intention to use a technology.
> H5c: On a person who has conscientious character, attitude will influence positively on intention to use a technology.

Neuroticism is the individual character who has a tendency to be easily depressed and difficult to control the stress or worry (McCrae and Costa, 1991). Individuals with these characters have a tendency to be difficult to adapt to the new environment.

Perceived usefulness is a form of confidence in that is useful in the technology. Korzaan and Boswell (2008) show that neuroticism is a positive effect on anxiety. More neuroticism means more anxiety. Anxiety will hinder individuals in adopting new technologies. Therefore, the hypothesis that will be built are:

> H1d: On a person who has neuroticism character, perceived ease of use will influence negatively on perceived usefulness.
> H2d: On a person who has neuroticism character, perceived ease of use will influence negatively on attitudes.
> H3d: On a person who has neuroticism character, perceived usefulness will influence negatively on the attitude.
> H4d: On a person who has neuroticism character, perceived usefulness will influence negatively on intention to use a technology.
> H5d: On a person who has neuroticism character, attitude will influence negatively on intention to use a technology.

Openness of experience is an individual character with a curious nature, have a lot of imagination, like the variety and open to the opinions of others (McCrae and Costa, 1991). Individuals with this character use information technology to seek new ideas (Bosnjak and Tuten, 2001). The rapid development in information technology is the result of new ideas. By being open to new ideas, this character is very easy to accept technological developments and therefore the hypothesis that will be built are:

> H1e: On a person who has openness of experience character, perceived ease of use will influence positively on perceived usefulness.
> H2e: On a person who has openness of experience character, perceived ease of use will influence positively on attitudes.

H3e: On a person who has openness of experience character, perceived usefulness will influence positively on the attitude.

H4e: On a person who has openness of experience character, perceived usefulness will influence positively on intention to use a technology.

H5e: On a person who has openness of experience character, attitude will influence positively on intention to use a technology.

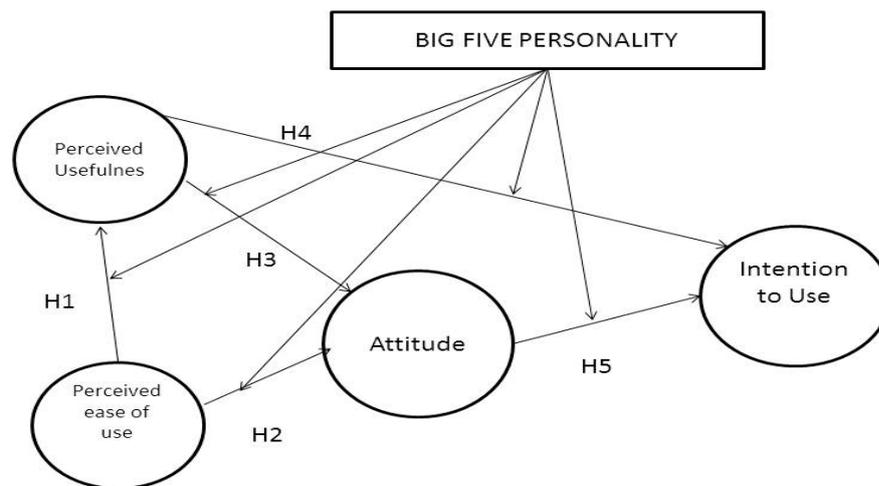The research model in this study can be seen in figure 2.

Figure 2: Research Model

3. RESEARCH METHODS
3.1. Sample Research and Data Collection Techniques

The purpose of this study is to examine the effect of personality in the decision to accept and to use a technology. This study used TAM to examine any factors that can affect an experienced user to use a technology. In a study Hu et al. (1999), in the experienced users, perceived ease of use have no effect on the attitude. Thus TAM needs to test at the level of experienced user. This is required to obtain the consistency from construct perceived ease of use.

The Samples in this study were lecturers at one university in Yogyakarta, Indonesia. The selected samples were the user of course site application. The lecturers have been selected as representative of an experienced users due to the high level of education. Lecturer will able to adapt to new technologies easily.

The technique used in this study was a survey. The survey was conducted by distributing 70 questionnaires to lecturer in a university. Time was used for filling the questionnaire was 3 weeks. From 70 questionnaires distributed, 41 questionnaires were collected and processed.

Analysis method used in this study was Partial Least Square (PLS). This study used WarpPLS 3.0 to execute PLS. Generally, Partial Least Square (PLS) is very suitable for predicting application and theory building, analyzing small samples, and test the overall fit model with either (Gefen et al., 2000). PLS has the advantages more than the ordinary regression because PLS can test multiple variables simultaneously.

PLS is a method of Structural Equation Modelling (SEM) based components that aims to predict. Technique Partial Least Square (PLS) is widely used for the analysis of complex causal-predictive, and poorly supported by the theory with the purpose of exploring (Hartono, 2007; Solihin and Ratmono, 2013).

WarpPLS 3.0 is used because it has several advantages among others software. This software is able to examine the relationship moderating variables directly (Solihin and Ratmono, 2013). Therefore, this software is in accordance with the research model built in this study.

3.2. Reliability and Validity

Reliability testing and validity testing were conducted on the TAM model without the effect of moderating variables. This test was done to determine whether the TAM model tested in this study meet the criteria of reliability and validity and therefore it could be compared whether there was a difference between the TAM without user character influence with TAM models that have been moderated by the variable personality from the user.

3.3. Data analysis

On the user personality variables, as moderating variables, testing multi-collinearity is emphasis on issues that multi-collinearity might occurred on models with moderating variables. Knowing how moderating variables influence the model is important in moderating variables because the effect of different characteristics from user to the acceptance of the technology can be known.

Tests on the whole model will be also conducted. Tests were conducted to look at the overall model. The value used as the indicators standard have to meet with the fit model criteria. The fit model criteria are APC (average path coefficient), ARS (average R-squared), AVIF (average variance inflation factor), and VIF (variance inflation factor). APC dan ARS are significantly at p value under 0.05. The value of AVIF is under 5 and the full value collinearity VIF (variance inflation factor) is under 3.3 (Solihin and Ratmono, 2013).

Reliability testing is done with the aim to ensure that the research instruments used could present the concept of measurement consistently without any bias. The results obtained can be considered to be consistent if multiple measurements on the same subject obtained different results (Hartono, 2008).

This study uses Cronbach's Alpha Coefficient (Cronbach, 1970, in Hartono, 2008) as a reliability test. Cronbach's Alpha of 0.50 up to 0.60 is considered as adequate value for reliability. Variables can be considered to be reliable if it has Composite Reliability above 0.60.

Validity testing, according to Hartono (2008), shows that the instrument actually measures what it is supposed to measure. The validity of this research was an instrument test to measure that its purpose substantially correct. There are two validity tests, convergent validity and discriminant validity. Convergent validity is tested using loadings factor criteria that should be a significant at a value more than 0.70 and the value of average variance extracted (AVE) for each construct is more than 0.50 (Hartono and Abdillah, 2009). Discriminant validity has the principle that every indicator in the same construct should have a high correlation compared to the other constructs. The parameters that measured by comparing the root of the AVE of a construct should be higher than the correlation between the other latent variables by looking at the cross loading (Hartono and Abdullah, 2009).

3.4. Hypothesis Testing

The confidence level used in this research is 5%. The hypothesis will be accepted if the value of p is under 0.05 (p<0.05). Path coefficient is used to determine the relationship direction of correlation coefficient. The positive correlation coefficient indicates that there is a positive relationship between the constructs.

The model is also tested by looking at the value of the coefficient of determination (R^2) which describes the variation of the dependent variable. R^2 value is between a values of zero to one. If R^2 is zero then it means, the values cannot explain the variation of the dependent variable. Whereas, if the R^2 is one, it means that independent variables explain the variation on the dependent variable hundred percent.

4. DATA ANALYSIS
4.1. Description of data

Respondents in this research are lecturers. The lecturers are chosen because they represent an experienced user (better education levels than average people) or have a better ability to use a technology. The data are obtained by distributing questionnaires for 3 weeks. Number of questionnaires distributed are 70 but there are only 41 questionnaires which can be processed. Questionnaires will be processed using software WarpPls 3.0 by setting Algorithm Analysis: PLS regression and resampling method chosen was jack-knifing.

4.2. Reliability Test

Reliability testing is conducted with the aim to ensure that research instrument used can present the measurement concept consistently without any bias. Cronbach's Alpha 0.50 to 0.60 is considered with a value that is sufficient for reliability. A variable can be considered as reliability if it has Composite Reliability above 0.60 or close to one. Following are the results of the calculation of the Composite Reliability with WarpPls 3.0:

Table 1: Composite Reliability

EXT*TAM		AGR* TAM		CON*TAM		NEU*TAM		OPN*TAM	
PU	0.970	PU	0.970	PU	0.970	PU	0.970	PU	0.970
PEU	0.966	PEU	0.966	PEU	0.966	PEU	0.966	PEU	0.966
ATT	0.952	ATT	0.952	ATT	0.952	ATT	0.952	ATT	0.952
IU	0.976	IU	0.976	IU	0.976	IU	0.976	IU	0.976
EXT	0.901	AGR	0.824	CON	0.894	NEU	0.873	OPN	0.846
EXT*PU	0.977	AGR*PU	0.940	CON*PU	0.961	NEU*PU	0.953	OPN*PU	0.966
EXT*PEU	0.979	AGR*PEU	0.906	CON*PEU	0.966	NEU*PEU	0.943	OPN*PEU	0.963
EXT*ATT	0.956	AGR*ATT	0.921	CON*ATT	0.956	NEU*ATT	0.849	OPN*ATT	0.962

The value of table 1 indicates a value above 0.7. This shows that all value has met the reliability ratings.

Table 2: Cronbach's Alpha

EXT*TAM		AGR* TAM		CON*TAM		NEU*TAM		OPN*TAM	
PU	0.963	PU	0.963	PU	0.963	PU	0.963	PU	0.963
PEU	0.956	PEU	0.956	PEU	0.956	PEU	0.956	PEU	0.956
ATT	0.925	ATT	0.925	ATT	0.925	ATT	0.925	ATT	0.925
IU	0.967	IU	0.967	IU	0.967	IU	0.967	IU	0.967
EXT	0.852	AGR	0.573	CON	0.840	NEU	0.780	OPN	0.724
EXT*PU	0.975	AGR*PU	0.930	CON*PU	0.957	NEU*PU	0.947	OPN*PU	0.961
EXT*PEU	0.977	AGR*PEU	0.887	CON*PEU	0.963	NEU*PEU	0.934	OPN*PEU	0.958
EXT*ATT	0.947	AGR*ATT	0.896	CON*ATT	0.949	NEU*ATT	0.797	OPN*ATT	0.954

Table 2 shows the results of calculation of Cronbach's Alpha. WarpPLS 3.0 calculation result indicates that all values above 0.5 (>0.5), which indicates that the reliability requirements are met. Values of reliability standards used to certify the reliability of the instrument is if Cronbach's Alpha values above 0.5 (Hartono, 2008).

4.3. Convergent Validity

Validity test is done to determine the ability of the instrument to measure what should be measured (Cooper and Schindler, 2006). Convergent validity is used to measure the correlation between its constructs. The standard used to measure convergent validity value are the outer loading and average variance extracted (AVE). The value for outer loading is above 0.7and for AVE is above 0.5 (Solihin and Ratmono, 2013).

Table 3: Validity convergent

Construct	Outer Loading	AVE
Perceived usefulness		0.844
PU1	0.901	
PU2	0.953	
PU3	0.955	
PU4	0.941	
PU5	0.833	
PU6	0.924	
Perceived ease of use		0.851
PEU1	0.911	
PEU2	0.951	
PEU3	0.902	
PEU5	0.930	
PEU6	0.919	
Attitude		0.869
ATT1	0.919	
ATT2	0.925	
ATT3	0.952	
Intention to Use		0.911
IU1	0.939	
IU2	0.970	
IU3	0.973	
IU4	0.935	

Source: Raw data was processed

From Table 3, it can be seen that the outer loading values is more than 0.7 and AVE is more than 0.5. These results indicate that the convergent validity criteria have been met by the TAM model. The results are obtained after the indicator PEU4 removed because the values is under 0.70. AVE value from the variable extraversion, agreeable, neuroticism, conscientious, openness are as follows:

Table 4: Values AVE personality variables

Variable	AVE
Extraversion	0.697
Agreeable	0.701
Conscientious	0.678
Neuroticism	0.698
Openness	0.648

Source: Raw data was processed

Based on the results of the data above, the value has met with a convergent validity value with AVE values above 0.5. This value was obtained after removing several indicators that were Ext1, EXT5, EXT7, EXT8, AGR1, AGR3, AGR4, AGR6, CON2, CON3, NEU1, NEU2, NEU3, NEU4, NEU8, OPN1, OPN4, OPN5. These indicators are removed because its content is difficult to understand by the respondent. It makes problem in the convergent validity.

4.4. Test Validity Discriminant

Validity test is done to TAM. Discriminant validity is used to measure different indicator constructs that should not correlate with height. Discriminant validity is assessed based on the value of cross loading more than 0.7 (>0.7). The results of calculations loading factor from WarpPLS 3.0 is as follows:

Table 4: Factor loading

	PU	PEU	ATT	IU
PU1	0.901	-0.211	0.160	-0.094
PU2	0.953	-0.118	-0.170	0.158
PU3	0.955	0.114	-0.009	-0.172
PU4	0.941	-0.028	-0.025	-0.047
PU5	0.833	0.425	-0.305	0.375
PU6	0.924	-0.144	0.328	-0.185
PEU1	0.089	0.911	-0.124	-0.102
PEU2	0.205	0.951	-0.204	-0.008
PEU3	0.339	0.902	0.174	-0.071
PEU5	-0.267	0.930	-0.033	0.216
PEU6	-0.362	0.919	0.198	-0.039
ATT1	0.013	-0.226	0.919	0.290
ATT2	-0.070	0.289	0.925	0.016
ATT3	0.056	-0.063	0.952	-0.295
IU1	-0.155	0.064	0.002	0.939
IU2	-0.056	-0.060	0.429	0.970
IU3	0.119	0.053	-0.151	0.973
IU4	0.089	-0.058	-0.290	0.935

Source: Raw data was processed

From Table 4, it can be seen that the value of the loading factor of each indicator variables is above 0.70. The results were obtained after the indicator PEU4 was removed because of values below 0.70 that was 0.677. Discriminant validity assessment can also be seen by comparing the square root of average variance extracted (AVE) and the correlation of the latent variables. The bases used to assess the discriminant validity is the square root AVE above or more than latent variable correlation.

Table 5: The square root of AVE

	PU	PEU	ATT	IU
PU	0.919	0.708	0.691	0.623
PEU	0.708	0.923	0.616	0.519
ATT	0.691	0.616	0.932	0.799
IU	0.623	0.519	0.799	0.955

Source: Raw data was processed

From table 5, it can be seen that the square root AVE value is greater than the correlation between constructs. The results obtained in Table 6 indicates that the value from the variable loading factor personality has reached 0.7, thus discriminant validity assessment requirements for the variables in the model TAM have been met.

Table 6: Loading Variable Factor Personality

EXT		AGR		CON		NEU		OPN	
EXT2	0.893	AGR2	0.837	CON1	0.840	NEU5	0.884	OPN2	0.701
EXT3	0.732	AGR5	0.837	CON4	0.755	NEU6	0.882	OPN3	0.853
EXT4	0.797			CON5	0.909	NEU7	0.730	OPN6	0.860
EXT6	0.904			CON6	0.782				

Source: Raw data was processed

4.5. Model Structural Test

Structural model testing is conducted to predict the causal relationships between variables or hypothesis testing. In this, structural model testing will compare the calculation results between a pure TAM and TAM with user characteristics as moderating variables.

Table 7: Coefficient of determination (R-squared)

TAM		EXT*TAM		AGR*TAM		CON*TAM		NEU*TAM		OPN*TAM	
R-squared coefficients		R-squared coefficients		R-squared coefficients		R-squared coefficients		R-squared coefficients		R-squared coefficients	
PU	0.501	PU	0.525	PU	0.504	U	0.552	PU	0.507	PU	0.525
PEU		PEU		PEU		PEU		PEU		PEU	
ATT	0.509	ATT	0.518	ATT	0.524	ATT	0.546	ATT	0.526	ATT	0.529
IU	0.648	IU	0.692	IU	0.675	IU	0.652	IU	0.679	IU	0.710

Source: Raw data is processed

The coefficient of determination (R-squared) shows the relationship any endogenous latent variables. Value of 0.75; 0.50; 0.25 can be interpreted as relations substantial, moderate and weak. Thus, the greater the value of coefficient determination (R-squared) shows the better value.

From the values in table 7, it can be interpreted as a whole if there is no difference in value between pure TAM and the model of TAM with the character as a moderating variable that still remain at a moderate level of relationship. From table 7, it can be seen that the value of the variable coefficient perceived usefulness (PU) for pure TAM is 0.501.

It means that the variable perceived usefulness (PU) can be explained by the perceived ease of variables (PEU) of 0.501 (50.1%) and 49.9% explained by other variables. The coefficient of variable attitude (ATT) for pure TAM is 0,509. It indicates that the attitude variable (ATT) can be explained by perceived usefulness (PU) and perceived ease (PEU) of 0,509 (50.9%), the rest is explained by other variables. The value of attitudinal variables (ATT) on TAM with character extraversion is 0.518. The coefficient of the variable intention to use (IU) on TAM pure is 0.648. This means that the intention to use (IU) variable can be explained by the attitude (ATT) and perceived usefulness (PU) of 0.648 (64.8%) while the rest is explained by other variables.

4.6. Fit Model Test

Fit model test is performed to determine that the overall model is fit. This test has done by looking at the value that will be used as a standard assessment that the fit model indicators have been met. The indicators are APC (average path coefficient) and ARS (average R-squared). The indicators is significantly at p value under or below 0.05 (p<0.05) while the value of AVIF (average variance inflation factor) is under 5 (<5) and the full value collinearity VIF (variance inflation factor) is under 3, 3 (Solihin and Ratmono, 2013).

Table 8: Fit Model

	TAM		EXT*TAM		AGR*TAM	
	Coefficient	P	Coefficient	P	Coefficient	P
APC	0.463	< 0.001	0.282	0.087	0.280	0.003
ARS	0.553	0.003	0.578	0.008	0.568	0.004
AVIF	1.959	< 5	2.436	< 5	2.081	< 5
	CON*TAM		NEU*TAM		OPN*TAM	
	Coefficient	P	Coefficient	P	Coefficient	P
APC	0.284	<0.001	0.298	<0.001	0.317	0.023
ARS	0.583	0.003	0.571	0.004	0.588	0.008
AVIF	2.367	< 5	1.910	< 5	3.505	< 5

Source: Raw data was processed

Based on data from Table 8, it can be seen that the APC and ARS have been below 0.05, except for the p-value at the TAM model with extraversion moderating variables (0.087). It shows that extraversion personality variables were not suitable for used as a moderating variable in the TAM model.

4.7. Hypothesis Testing

P-value is used to test the hypothesis in WarpPls 3.0. The hypothesis would be acceptable if the p-value less than 0.05. Here is a comparison table with the pure TAM and TAM models with personality as a moderating variable.

Table 9: Comparison TAM Model

	TAM		TAM*EXT		TAM*AGR	
	Coefficient	P	Coefficient	P	Coefficient	P
PEU*PU	0.708	< 0.001	0.686	<0.001	0.713	<0.001
PEU*ATT	0.255	0.181	0.281	0.070	0.240	0.210
PU*ATT	0.510	0.042	0.463	0.039	0.527	0.048
PU*IU	0.136	0.179	0.041	0.406	0.073	0.302
ATT*IU	0.705	< 0.001	0.804	<0.001	0.811	<0.001
	TAM*CON		TAM*NEU		TAM*OPN	
	Coefficient	P	Coefficient	P	Coefficient	P
PEU*PU	0.679	<0.001	0.692	<0.001	0.624	<0.001
PEU*ATT	0.218	0.236	0.238	0.220	0.180	0.258
PU*ATT	0.468	0.065	0.491	0.069	0.555	0.044
PU*IU	0.119	0.185	0.179	0.208	-0.051	0.396
ATT*IU	0.731	<0.001	0.690	0.002	0.843	<0.001

Source: Raw data was processed

The calculation result WarpPls 3.0 (table 9) shows that the positive effect on the perceived ease of use to perceived of usefulness with p<0.001. Another positive relationship is perceived usefulness effect on attitude (p= 0.042) and attitude affect the intention to use (p<0.001). From Table 9 above can also be known that perceived ease of uses has no effect on the attitude (p=0.181) and perceived usefulness has no effect on the intention to use (p=0.179).

Based on the results of the calculations in table 9, it can be seen that personality variables have no effect on the relationship between variables in the model TAM. This is proved by the lack of the p-value improvements in the relationship of these variables in TAM. The addition of moderating conscience and neuroticism variables does not make any effect on the perceived of usefulness to user attitude because p-value becomes greater than 0.05.

Table 10: Value Coefficient moderating variables

	TAM*EXT		TAM*AGR		TAM*CON		TAM*NEU		TAM*OPN	
	Coefficient	P	Coefficient	P	Coefficient	P	Coefficient	P	Coefficient	P
PEU*PU	-0.156	0.130	0.056	0.338	0.226	0.043	-0.080	0.196	0.175	0.127
PEU*ATT	-0.122	0.365	-0.033	0.464	0.056	0.414	0.007	0.486	-0.141	0.377
PU*ATT	0.039	0.467	0.146	0.372	0.164	0.267	-0.139	0.287	0.247	0.338
PU*IU	0.003	0.493	-0.055	0.353	0.096	0.396	-0.217	0.182	-0.043	0.434
ATT*IU	-0.224	0.181	-0.141	0.269	-0.081	0.438	0.245	0.057	0.314	0.144

Source: Raw data was processed

Based on WarpPls 3.0 calculations in table 10, it can be seen that largely hypothesis are unsupported. This is shown by the majority of the p-value coefficient above or higher

than 0.05. The hypothesis is supported only on the character H1c conscientious. This study also indicates that perceived ease of use positive influence on perceived usefulness.

The result of this calculation indicates that the majority of a person's personality does not affect a person's intention to use the technology. In other words, over-billed the individual cognitive factors in the decision to use the technology. This is related to decisions on the profit and loss of the use of technology. These results are consistent with research conducted by Abdillah (2013) which shows that more cognitive factors influence the decision to use the technology. These results also support the use of cognitive variables as the variables used in the model acceptance of a technology.

5. DISCUSSION

This study uses a lecturer as a sample. These samples were selected as representative of the system of higher education. These samples were selected to test the variables in the model TAM if applied to users who have the ability to quickly adapt to new technologies. The results of this study (table 9) shows that, in the profession of lecturers, the ease factor becomes the factors that influence the perceived usefulness. The factors affect the usefulness of the technology forming attitudes toward technology and user attitudes affect the intention to use the technology. From these results, it indicatea that the lecturers prefer or will use the technology that is easy to use.

At the lecturer profession, intention of using the technology is strongly influenced by the attitude of users. Attitude itself is a form of evaluation of a thing that would underlie a person's actions (Davis et al., 1989; Mathieson, 1991). The results of this study indicate the attitude of the profession lecturer prefer to use an easy technology. This is possible due to the high complexity of tasks, thus requiring an easy to use technology to support their work.

These results are contrast to studies of Hu et al. (1999). That study revealed that perceived usefulness has a significant effect on the intention to use the technology, compared to the perceived ease of use. Hu et al. (1999) used the physician as the study sample in terms of use telemedicine. Physicians have a high education background that is same as a lecturer. In the medical profession, the factors that encourage them to use the technology is useful, while the factors of ease of use does not affect the intention to use the technology. This study result shows that different professional groups have different attitudes toward technology. This is possible because of the different technology's needs. In other side, this results indicates that there is no correlation between education and technology needs.

This study shows that personality of users does not affect the correlation between variables in TAM model. This result suggests that a person's personality does not affect one's intention in using the technology. Technology acceptance is about cognitive process and not personality process. In Table 9, it is known that there is no difference coefficient value and the p-value at the TAM model in each user personality. This was confirmed on the calculation results in Table 10. The results in Table 10 shows almost all p values were not significant. These results suggest that, in the acceptance of the technology, cognitive factors determine the decision to use or not to use the technology more than personality factors.

6. CONCLUSION

Acceptance of the technology is the first step the successful application of new technologies. Accept or reject to use the technology is a decision of any technology user. Several studies have shown that there are many factors or variables which can affect the using of technology. Its factors are ease of use and usefulness. The ease of use and usefulness of the technology stated in the TAM model. This is a model of acceptance of the technology that has been used in many studies to explain the factors that influence the decision of the use of technology.

Besides these factors, Mc Elroy (2007) explains that the acceptance of the technology is also influenced by the characteristics of the user. Based on that study, this study aims to clarify the effect of the perceived ease of user characteristics and perceptions of the usefulness of the technology users. This study also aims to explain the influence of variables perceived convenience and perceived usefulness, in the model TAM, the lecturer profession. This profession was chosen to represent experienced users, or users who have the ability to quickly adapt to technology.

These results indicate that a person's character or personality does not affect the perception of convenience and usability to the users of technology. Thus the decision to use the technology is a cognitive decision or judgment that does not involve a person's character. The decision to use the technology is the human thinking process. This process of weighing the result of the decision. It can be either profit or loss in the use of technology. Thus, cognitive engagement dominate the decision-making process of the characteristics of a person. Whatever the characteristics of a person, everyone will tend to choose options that benefit him or her.

The results of this research also show that the perceived ease profession more influential to form the intention of using the technology than the perceived usefulness in lecturers profession. These results are different from research results from Hu et al. (2004). That study has shown that the ease of use will no longer be a factor that affects the intention to use a technology in an experienced user. In other words, even if the technology is difficult, people will continue to use technology because it is useful for them. This also shows that the different professions require different technologies.

This difference also indicates that it is difficult find a construct that is sure to explain the factors that affect the acceptance of technology by someone. In general, many studies have shown that the ease and usefulness in using the technology affect the interest in using the technology. However, this study explains that the factors that affect a person's interest in using the technology could be a contextual factors, one of which is influenced by the profession.

7. RESEARCH LIMITATIONS AND FUTURE RESEARCH

The research was limited to a single institution. So that the conclusions obtained are within one agency. The same research needs to be done with various institutions in order

to obtain a more precise picture of the results to illustrate the technological requirements for the profession of lecturers.

This study uses a questionnaire from the International Personality Item Pool (IPIP) to test the characteristics of technology users. Questionnaires have been since been widely used to describe the character's personality according to the big five personality, besides that this Questionnaires is free and easy to obtain. However, in this study many indicators of statements that do not meet the test of validity and therefore some of the statements need to be removed to be able to meet the test validity. The indicators were invalid due to any statements that are not easy to understand for Indonesian who appears to be logical because the questionnaire was made with western cultural background and therefore it is very different from eastern cultures. Thus, further research needs to take into account the characteristics of the validity of this questionnaire. Several other questionnaires about the big five personality can be tested first to locate the appropriate questionnaire for use in the eastern culture. This result also indicates that there is no correlation between education and technology need. The future researchers could test this indication.

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