Influence Of Organizational Support And Digital Literacy On Lecturer Acceptance Of E-Learning In Indonesia: A Modification Of Technologi Acceptance Model

Muhammad Feriady Ahmad Nurkhin Nurazree Mahmud Rediana Setiani Dwi Puji Astuti

Abstract: The purpose of this research is to investigate the factors that influence the lecturer acceptance of using E-learning in University. Technology Acceptance Model (TAM) as a Grounded theory and has been modified by adding another factors namely organizational support and digital literacy as the external factor. This research using Structural Equation Model (SEM) as a tool to analyses the model with number of respondent 277 lecturers in Universitas Negeri Semarang, Indonesia. The result showed that the modified TAM model with digital literacy and organizational support as external factors is appropriate for analyzing relationship among external factor, Perceived Usefulness, Perceived Ease of Use, Attitude toward using E-learning and behavioral intention E-learning. It means that the model can be used to develop the intention of using E-learning. Meanwhile the regression analysis show that the digital literacy has a significant influence to perceived usefulness and perceived ease of use. Another external factor, organization have a significant effect to perceived usefulness but insignificant to perceived easy to use. In addition, attitude toward using E-learning effectively mediates the lecturer perceived to behavioral intention E-Learning.

Key Word: TAM, E-Learning, Organizational Support, Digital Literacy

1 INTRODUCTION

One of efforts made by the ministry research, technology and higher education in an effort to accelerate the improvement of the quality of higher education in Indonesia is to optimize the use of blended learning. This aspect explained by research, technology and higher education secretary in official website that was published in Ministry of Research, Technology and Higher Education (2018). According to him, the effort to optimize cyber university can be initiated by optimizing blended learning or E-learning, this answers the challenge of the entry of foreign university into Indonesia. Furthermore, using blended learning by university is one of seven main focuses of acceleration and innovation carried out by Ministry of Research, Technology and Higher Education (2018) in facing of industrial revolution 4.0 (retrieved from ristekdikti.go.id). In education field, the development of E-learning is one of the utilizing technology in disruption era. E-learning is growing and predicted to reach averages of 23% in 2017. Based on the research from elearningindustry.com, the country with the highest growth rate of E-learning adoption is India (55%), followed by China (52%), Malaysia (41%), Indonesia itself is in number 8 with a growth of 25% in every year. This report is higher than South East Asia average of 17.3%. (retrieved from dailysocial.id. in February 2018). Meanwhile, a research conducted by Cambridge University United States found that students in Indonesia ranked second after United States in the use of device in interest learning.

- Muhammad Feriady Faculty of Economics, Universitas Negeri Semarang, Semarang mferiady@mail.unnes.ac.id
- Ahmad Nurkhin Faculty of Economics, Universitas Negeri Semarang, Semarang Indonesia
- Nurazree Mahmud Faculty of Business Management, Universiti Teknologi MARA, Melaka, Malaysia
- Rediana Setiani Faculty of Economics, Universitas Negeri Semarang, Semarang Indonesia
- Dwi Puji Astuti Faculty of Economics, Universitas Negeri Semarang, Semarang Indonesia

and even use them more in doing homework (81%), retrieved from BBC (bbc.com/December 12th 2018). This figure is becoming prevalent because the number of internet user in Indonesia up to the year 2018 reached 143.26 million in the last year, 49.52% of this internet user were those aged from 19 to 34 years. The use of technology in assisting in teaching and learning is highly related with the acceptance of lecturer in practicing a digital technology. The concept of acceptance is explained by Davis in TAM model (Technology Acceptance Model). Davis (1989) explained that the acceptance of technology used in the field of work would be influenced by two main variables, namely ease of use and usefulness. Moreover, David in his model explained some factors that influence the acceptance of technology, namely: 1) Perceived usefulness, 2) Perceived easy to use, 3) Intention to use, 4) external factor. The use of TAM model has been conducted by previous researcher to identify factors that influence the user of online course. For instance, Wingo (2017) stated that TAM model can be used to investigate factors that influence the level of online course users in Alabama University. This is also consistent with other studies namely, Fatheema (2015), Tarhini (2017) and Luna (2009) who also conducted study that focusing the use of TAM model in investigating reaction of utilization learning system through IT basis. The support and commitment provided by the management of higher education and institution is to spur innovation in teaching and learning and it is in fact hampered by many things. One of obstacle faced by university in implementing blended learning is the ability to adapt academic community which is slow in responding to blended learning. This can be seen from percentages of Elena’s users in 2017 which only reached 27.8% of all lecturers in Semarang State University and rise to 40.2% in 2018. Lecturers and university students in disruption era should have good digital literacy and be able to implement this technology in learning. This is explained in several researches results that prove that the users of digital
technology in learning contribute in output learning. For instance, Prior (2016) explained that the important role of digital literacy in influencing students’ self-efficacy in their interaction in learning environment. The other research by Chan (2017) and Frazel (2010) emphasize on the important of digital literacy in improving university students’ competencies. The other research conducted by Hobbs (2015) explained that the educator has complex set of digital literacy. Having similar with that, Getter (2018), explained the positive attitude of educator in accepting digital literacy as a something that assist in learning. In addition, Brandon (2015) also elaborated the important of digital literacy in supporting educational innovation. Besides, Baker (2015) explained the massive educator motivation in grasping digital media and technology, but its use has not been sustainable. In addition, the existence of digital literacy is a must by academic community. Other than that, lecturers’ perception on the policies implemented by the organization is also important factor to encourage interest in using Elena. This is based on certain reason in which there is still no optimal policy of using blended learning to be fully implemented by university or faculty. As a result, many of lecturers seemed to ignore the fast track effort (fast track) that was promoted by Kemenristekdikti, and socialization carried out by quality assurance agency for blended learning. In addition, the opinion proposed by Rhoades and Eisenberger (2002), perception of organization support point out on perception of employees of the extent to which organization assesses their contributions and cares about their prosperity. This means that organization’s support is an encouraging factor for employee in conducting this new learning environment within the organization. Regarding the description of the problem, the researchers intend to analyze the use of ELENA Semarang’s online using TAM model approach. The modification made by the researchers is to add the other antecedent namely digital literacy and organization’s support in extending the body of knowledge with respect to this field of study.

2 LITERATURE REVIEW

Technology Acceptance Model (TAM)

The concept of Technology acceptance model (TAM) was first popularized by Davis in 1989. Basically TAM is the development from previous theory namely Theory reasoned action (TRA) and Theory Planed Behavior (TPB) which both probe about reasoned behavior performed by someone (Marangunic, 2015). TAM was further developed when the researcher started to question someone’s perception about ease to use and the usefulness aspect that arise from using computer in their daily life (Wingo, 2017). Someone’s perception on ease to use in technology or in original term is perceived ease to use (PEU) and according to Davis, is considered as determined of technology use (Wingo, 2017). Other factors analyzed in this model is perception in technology usefulness (perceived usefulness = PU) toward activities owned by users (Wingo, 2017). Both factors are important that have led to the acceptance of new technology in someone’s lives (Davis as cited in Marangunic, 2015). In addition, Davis as cited in Marangunic (2015) explained several components contained in TAM’s model are as follows: 1) Perceived usefulness (PU), 2) Perceived easy to use (PEU), 3) Attitude Toward Using (ATT), 4) Behavioral Intention (BI), 5) Actual Usage 6) External and factor. Those factors are the main factor that influence the use of technology in human’s life.

Perceived Ease of use (PEU)

Perceived ease of use (PEU) is defined by Davis as cited in Wingo (2017) as the extent someone believes that by using technology he/she will get the ease of use in every activity. It means that by using technology, the activities performed become easier. Shea, Pickett, and Li as cited in Wingo (2017) explained that PEU has a very close relationship with the university students’ satisfaction in utilizing online learning. Fathema (2015) explained that Perceived Ease of Use is a factor that causes perception about the use of technology. In her research, it was explained that PEU has significant influence toward Perceived Usefulness (PU). Besides that, it becomes very important for both factors in influencing someone attitude on the use of technology.

Perceived Usefulness (PU)

Usability perceptions are perception that explain about the degree which users can believe in employing a technology, and it will increase its performance (Davis, 1989). According Yudanto as cited in Hariyo (2013) perceived ease of use emphasizes in the system of ease of use or that technology. A system that is difficult to be controlled; it will give negative degree in perceived ease of use. It can be interpreted that the degree of the use of technology by someone, and it will be influenced starting from easy or the difficult of technology accessed by users. Tarhini et al (2017) explained that perception on a system usefulness or a technology is a determinant that massively influence on the use of system. The research findings of Tarhini et al (2017) explained that the use of perception to ease of someone’s work in fact influencing toward someone’s interest in using system or technology.

Attitude Toward Using (ATT)

Davis (1989) stated that attitude toward behavior is defined as positive and negative feelings of someone if it has to do the behavior to be determined. It means that someone’s behavior toward the use of technology can be measured either good or positive, and reverse is less or negative. It relates on how someone responds for using or not using. Ong and Lai Hariyo (2013) state that someone can accept a technology because he/she has highly good attitude even though he/she does not have positive behavior toward its use.

Behavioral Intention

Behavioral intention to use is the tendency of behavior to employ a technology. The level of computer technology used in someone can be predicted from the attitude of attention toward technology, for instance, the desire to add several things support, motivation to keep using, and the desire to motivate other users (Lihawa as cited in Hariyo 2013).

Digital literacy

Digital literacy is defined as an ability to reach and employ information in various format supported by the critical
capability of thinking and utilizing information technology (Glitser as cited in Chan, 2017). Furthermore, digital literacy according to Gee as cited in Chan (2017) is seemed as an ability to read and interpret digital text. Meanwhile, Kress (2003) explained that digital literacy as the important part in communication. Regarding several definitions, we can conclude that digital literacy is an ability owned by someone in good communication whether in digital text or managing digital information through technology utilization. The digital literacy indicator regarding to Prior, et. al (2016) have measurable indicator dimensions, namely as follows: 1) Able to operate computer, 2) Familiar with website, 3) Familiar with social media, 4) Know different technologies 5) Able to using technology for presentations 5) Familiar with web issue. Those indicators point out on how person has the ability and flexibility toward digital and technology equipment.

Organization support
The perception of organization’s support involved by various aspects of employee handling by the organization, which in turn will influence employees’ interpretation toward organization that underlies the motive of the handling (Eisenberger et al., 1986). The support organization theory assumes that on the basis reciprocal norms, employees will feel obligated to assist organization to reach its goal because organization cares on their prosperity (Eisenberger et al., 1986). So that perception of organization is defined as a belief in the extent which organization provides contribution values and cares on their prosperity. According to Rhoades and Eisenberger (2002) perception toward organization’s support refer to employees’ perception of the extent which organization assesses their value contribution and cares on their prosperity. The development of indicators from organization’s support according to Eisenberg (1986) are as follows: 1) Award, 2) Development, 3) Working condition, 4) Employees’ prosperity.

3 RESEARCH METHODOLOGY

Data used in this research is primary data obtained in the distribution of questionnaires to the respondents consisting of lecturers in Semarang state university. This research employs random sampling method with the total sample of 277 respondents. The sampling is based on Krijcie and Morgan table and referred to population of 1000-1100 respondents (Ferdinand, 2012). Data analysis technique in this research employs path analysis using analysis tool of SEM (Structural Equation Models). The model employed in this research is to examine the relationship or influence and to test the proposed hypothesis. In order to prove that relationship, the analysis technique namely SEM was employed. This is because, SEM can identify the dimensions of a construct and at the same time being able to measure the influence or degree among factors that have been identified its dimensions (Ferdinand, 2014).

4 FINDINGS

Semarang state university has an online based learning system called ELENA. The use of ELENA in learning at Semarang state university has not been fully carried out by lecturers. The percentages of lecturers who employ this system can be seen as follows (UNNES’s lecturers = 1,033 people)

<table>
<thead>
<tr>
<th>Year</th>
<th>Users</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>287</td>
<td>27.8 %</td>
</tr>
<tr>
<td>2018</td>
<td>416</td>
<td>40.2 %</td>
</tr>
</tbody>
</table>

Source: this research

Before analyzing the research data, data quality testing is carried out first, by looking at the data normality. The data in this research are professed normal if the value of c.r. in output assessment of normality shows the results are less than required Critical Ratio which is 2.58 (Ferdinand, 2014). The results of normality testing in this research show that the distributed normally data in numbering 1.84. Furthermore, in multicollinearity testing there is also no multicollinearity issue. In testing relationship model among variables, it can be seen that this testing model need to employs various index fit in order to measure how the suitability of research model can be developed. From the analysis of AMOS 21.0, the following results are obtained:

<table>
<thead>
<tr>
<th>No</th>
<th>Criteria</th>
<th>Recomendation value</th>
<th>Final analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chi-square (X )</td>
<td>Expected small</td>
<td>21.124</td>
</tr>
<tr>
<td>2</td>
<td>X - significance probability</td>
<td>≥ 0.05</td>
<td>0.087</td>
</tr>
<tr>
<td>3</td>
<td>Relative X (CMIN/DF)</td>
<td>≤ 2.00</td>
<td>5.024</td>
</tr>
<tr>
<td>4</td>
<td>GFI (Goodness of Fit Index)</td>
<td>≥ 0.90</td>
<td>0.946</td>
</tr>
<tr>
<td>5</td>
<td>AGFI (Adjusted Goodness of Fit Index)</td>
<td>≥ 0.80</td>
<td>0.877</td>
</tr>
<tr>
<td>6</td>
<td>Tucker-Lewis Index (TLI)</td>
<td>≥ 0.90</td>
<td>0.835</td>
</tr>
<tr>
<td>7</td>
<td>Normed Fit Index (NFI)</td>
<td>≥ 0.90</td>
<td>0.940</td>
</tr>
<tr>
<td>8</td>
<td>Comparative Fit Index (CFI)</td>
<td>≥ 0.90</td>
<td>0.945</td>
</tr>
<tr>
<td>9</td>
<td>RMSEA</td>
<td>≤ 0.08</td>
<td>0.074</td>
</tr>
</tbody>
</table>

Source: SEM Output by Amos 21.0

Regarding table 1, it can be seen that all requirements used to construct research model has required with goodness of fit. Furthermore, this result can be concluded that TAM model is very compatible with the empirical evidence in this research. This shows that the behavior of users with regards to online learning by the lecturers of Semarang State University can be explained fully with TAM model. Hence, it can explain the relationship among variables based on the design of theoretical model of this study. This finding is in line with research conducted by Adros (2017) that shows TAM model can explain university students’
acceptance behavior in utilizing E-learning ELENA in Semarang state university. These findings confirm the results of findings related with the use of TAM model that conducted by Tarhini (2017), Fatema (2015), Wingo (2017), and Luan (2009). In this study, the model of TAM was able to explain relationship among the users of online learning system with the factors that its influences. In the next step of this research tries to prove the relationship among factors that the influence of behavior using ELENA by lecturers in Semarang state university. In this research, the result from output AMOS is presented as follows:

**Graphic 1. Path Diagram**

According to the path diagram, we know that digital literacy have to contribute the perceived ease of use higher than digital literacy to Perceived usefulness. It can be seen by estimate of DL → POU = 0.49, higher than DL → PU = 0.36. It means that lecturer who has higher digital literacy assume the ELENA system is easy to use and usefulness. Organizational Support has contributed to improving perceived ease of use higher than perceived usefulness. Path Estimate of DO → POU = 0.31 higher than DO → PU = 0.02, and have no significant effect. In fact lecturers are easier to understand the use of online learning if their digital literacy is high. Organizational support is able to improve the ease of lecturers in understanding online learning, but does not improve the perception of the use of online learning. Lecturers can operate online learning, but don’t use it. This conditions same with the argument from Fallon (2018) who say that digital capability in students that will support them to use new and emerging technologies in their future classrooms. Another research comes from Negunadi et al (2018), in which related to inclusive digital literacy. Based on the research finding, it show that the digital literacy improving the digital inclusion in education.

**Table 3. Regression Weight**

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>POU ←← DL</td>
<td>0.426</td>
<td>0.055</td>
<td>7.712</td>
<td>***</td>
<td>par_3</td>
</tr>
<tr>
<td>POU ←← DO</td>
<td>0.263</td>
<td>0.051</td>
<td>5.156</td>
<td>***</td>
<td>par_10</td>
</tr>
<tr>
<td>PU ←← DO</td>
<td>0.018</td>
<td>0.064</td>
<td>0.274</td>
<td>.784</td>
<td>par_1</td>
</tr>
<tr>
<td>PU ←← DL</td>
<td>0.377</td>
<td>0.073</td>
<td>5.152</td>
<td>***</td>
<td>par_2</td>
</tr>
<tr>
<td>PU ←← POU</td>
<td>0.413</td>
<td>0.072</td>
<td>5.721</td>
<td>***</td>
<td>par_4</td>
</tr>
<tr>
<td>ATU ←← PU</td>
<td>0.227</td>
<td>0.032</td>
<td>7.055</td>
<td>***</td>
<td>par_5</td>
</tr>
<tr>
<td>ATU ←← POU</td>
<td>0.274</td>
<td>0.037</td>
<td>7.466</td>
<td>***</td>
<td>par_6</td>
</tr>
</tbody>
</table>

According to table 3, it can be recognized that most of variables in the model has a significant influence toward another variable. This can be recognized by observing probability column (P) in table 3. The relation among the variable of digital literacy toward perceived ease of use and perceived usefulness recorded significantly with a value of P=0.000. This condition can be concluded that the presence of digital literacy owned by lecturers can assist lecturers to be more interested in using online learning because of ease of use and its aspects in their function. This finding is in line with the opinion of Glitser as cited in Chan (2017) which states that digital literacy is an ability to reach and employ information in various formats supported by critical thinking skills and the use of information technology. The higher of digital literacy, that are possibilities a system user to know the more benefit and also the function of that system. The relationship between organization’s support and perceived ease of use are stated significant with P= 0.000, but it does not give significant impact toward perceived usefulness. The finding found that the support given to lecturers toward program provide by organization surely improves abilities of the users’ online learning. This is in line with the statement Eisenberg (1986) that stated one of the benefits from organization’s support is to generate employees’ feedback to organization and one of them is through the development of employees’ capabilities. In the measurement of the variable organization support did not significantly influence toward perceived usefulness. The significance value of the regression weight in table 3 presents P = 0.784, in which this value is bigger than 0.05. This can be interpreted that organization’s support is not able to improve lecturers’ perception on the importance of utilizing online learning. In several variables that are not significantly related between organization support toward perceived usefulness and perceived usefulness toward intention to use. The probability values in the relationship between them can be seen as P= 0.000, significant with C.R = 7.055 and 7.466 > 1.6. This means that lecturers’ perception in ease of use of ELENA and perception of the usefulness of ELENA have a positive effect on attitude toward using. Furthermore, the higher lecturers’ perception about the usefulness of ELENA and ease of use, it will increase a positive or negative feeling from someone if you have to use ELENA. This finding is in line with a research conducted by Bazelaiz (2017), Mohamad (2018), Salloum (2018) which explained that Perceived Usefulness and Perceived ease of use influenced on Attitude toward intention. Attitude toward using significantly influence on intention to use with a significant values P= 0.000 and C.R is 6.656. It means that positive and negative feeling from someone on the system significantly influence on the use of online learning intention. It is in line with a research conducted by Bazelaiz (2017), Mohamad (2018), Salloum (2018) which explained that attitude toward using significantly influence on intention to use.
5 CONCLUSION
This research concludes that the model of Technology Acceptance Model is suitable to describe the acceptance of ELENA online learning system in UNNES (Universitas Negeri Semarang, Indonesia). The modification model in this research is adding digital literacy and organizational support as antecedent and both of these variables are suitable with the prime model. Digital literacy has a higher contribution to improving perceived ease of use and perceived usefulness than organizational support. Finally, to improving intensively of using Elena online learning in UNNES, the University should to improving the digital literacy of lecturer. Organizational support must be improving by University to make sure that the online learning system is easy to use by lecturer.

6 REFERENCES