Investigating The Role of the use of computer Hardware , software and lecturer involvement on online universities student satisfaction

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ABSTRACT

The purpose of this study is to investigate the role of the use of computer hardware in online learning has a positive effect on online student satisfaction, investigate the role of The use of computer software in online learning has a positive effect on online student satisfaction and investigate the role of Lecturer involvement in online learning has a positive effect on student satisfaction learning online. This research will use exploratory descriptive method. This means that the research will begin by providing an overview about each variable studied descriptively, then study the relationship pattern and its influence exploratively. Based on the formulation of the problem and objectives to be achieved, this study uses a survey method. In taking the sample, the researcher used a sample of level 1 and 2 students filled out the Google Form questionnaire as many as 168 people. Because learning is online, the distribution of questionnaires is also carried out using existing technological facilities using Google Drive with the Google Form application. In this case, SEM with SmartPLS is an alternative technique in SEM analysis. The data used does not have to be multivariate normal distribution. In SEM with SmartPLS the value of the latent variable can be estimated according to the linear combination of the manifest variables associated with a latent variable and is treated to replace the manifest variable. According to Monecke & Leisch (2012) in Sarwono and Narimawati (2015), SEM with SmartPLS consists of 2 components, namely: (1) Inner Model and (2) Outer Model.The results of data processing with SmartPLS show that The use of computer hardware in online learning has a positive effect on online student satisfaction, The use of computer software in online learning has a positive effect on online student satisfaction, Lecturer involvement in online learning has a positive effect on student satisfaction learning online

Keywords: The use of computer Hardware ,online student satisfaction, The use of computer software, Lecturer involvement.

INTRODUCTION

The emergence of the industrial era 4.0 has become a challenge and opportunity that can encourage innovation and creativity in all sectors of work,the world of education is no exception. Therefore the Government needs to consider the relevance of implementing distance learning (online) and respond to changes, challenges and opportunities while taking into account the humanities aspect. One approach that can be applied in the implementation of learning in Higher Education (PT) is distance learning (PJJ)

through online learning (Elearning). The concept of e-learning is becoming an era transformation of conventional educational activity processes into digital form both in content and system. Model This learning is believed to be able to help and encourage educational institutions to be able to improve services and the learning process more flexibly without being limited by time, location geography and student presence on campus. Higher education in 2020, to be precise in early March, experienced a panic when the COVID-19 outbreak entered Indonesia. The Central Government establishes an alert status, disaster emergency, non-natural disasters, extension of disaster emergency status to Social Restrictions Large-Scale (PSBB) and finally today the Implementation of Restrictions on Micro Community Activities (PPKM). Since then, efforts to prevent COVID-19 have been implemented in the form of social and physical distancing in various lines of life. The public is also required to wear masks, diligently wash hands with soap, hand sanitizer gel, and disinfectant fluids. This policy is based on the increasingly difficult spread of the virus controlled throughout Indonesia and the number of victims who were infected and died was increasing day by day.

Through the Republic of Indonesia Minister of Education and Culture Circular Letter No. 3 of 2020 concerning Prevention of COVID-19 in Education units, all higher education in Indonesia, including the Universities, are taking firm steps on the government's call to carry out learning activities from home. All academic activities that are usually carried out on campus, during this pandemic must be carried out from home. Not only students, lecturers and students (educational staff) are also forced to work from home in order to prevent and accelerate the reduction of the COVID-19 outbreak. The policies and phenomena of the pandemic, which have had an extraordinary impact and have occurred so quickly, have forced the world of higher education to change the pattern of service work from conventional to online-based services (online). The Covid-19 pandemic has forced students living in the red, orange and yellow zones to carry out distance learning in the new school year. Regarding the experiences of students studying from home during the Covid-19 pandemic, summarizing from the Friends of the Family Ministry of Education and Culture website, UNICEF conducted a survey on 18-29 May 2020 and 5-8 June 2020. During the survey, UNICEF received more than 4,000 responses from students in 34 Indonesian provinces, through the U-Report channel which consists of SMS, WhatsApp and Messenger. Results

The survey said that as many as 66 percent of the 60 million students from various levels of education in 34 provinces said they were uncomfortable studying at home during the Covid-19 pandemic. Of these, 87 percent of students want to return to school immediately. Then, 88 percent of students are also willing to wear masks at school and 90 percent say the importance of physical distancing if they continue learning in class. Even so, students have realized the impact of Covid-19 if they return to school, so according to them it would be better to wait until the number of COVID-19 cases has decreased. The reason students are uncomfortable learning from home is not without reason, if students feel uncomfortable when they have to learn from home rather than at school. The survey also found, during studying at home, 38 percent of students who were respondents said the lack of guidance from teachers was the main obstacle. While 35 percent said bad internet access. If distance learning continues, more than half or 62 percent of respondents admit that they need internet quota. Responding to the survey results, UNICEF representative in Indonesia Debora Comini said it was very important for the government to prioritize children's learning, either at school or remotely during the Covid-19 pandemic. "The most vulnerable children are the hardest hit by school closures, and we know from previous crisis that the longer they are out of school, the less likely they are to return, parents and students who are respondents said the biggest

obstacle students face when studying from home is the lack of internet access and supporting electronic devices.

Lecturers are also encouraged to be more creative in providing learning materials online by making learning videos in the form of tutorials which are uploaded on Youtube, maximize the use of Google Classroom, Whatsaap Group and video conferencing applications such as Zoom, Skype, Hangouts and Webex. The information above forms the basis for researching online student satisfaction in terms of hardware and software aspects software used when studying online and lecturer involvement in online learning services to students. From this study, researchers wanted to find out whether there was an effect of using hardware (laptops, smartphones, internet), software (google classroom, google meet) and lecturer involvement (interaction, presentation of material) on student satisfaction in online learning. Through statistical proof with Structural Equation Modeling is an analytical technique to test simultaneously a relationship formed from one or more independent variables with one or more unmeasured dependent variables. The use of covariance-based SEM with parametric assumptions, namely the research variables must meet the normal multivariate distribution assumption. However, the research variables do not meet the assumption of normality, so Partial Least Square (PLS) is used. In line with Ningsih (2012) SEM is one of the studies in the field of statistics that can be used to address research problems, where both the independent variable and the response variable are immeasurable variables. There are two structural equation models, namely SEM based on covariance (CBSEM) and SEM based on component (PLS).

LITERATURE REVIEW
hardware
The definition of Hardware or in Indonesian is also known as the name hardware is one of the components of a computer whose properties can be seen and touched directly or in a tangible form, which functions to support the computerization process. According to Rizky Dhanta (2009), hardware is a computer device consisting of an arrangement of electronic components in physical form (in the form of objects). Hardware or hardware is a tool or object that can be seen, touched, held and has a certain function. Equipment that is physically visible and can be touched or held. The hardware in this study is in the form of Personal Computers (laptops, desktops), Smartphones, Tablets andInternet Network

Software
Melwin (2007) defines software as follows, "Software functions as a regulator of computer work activities and all instructions that lead to the computer system. The software bridges the user interaction with the computer onlyunderstand machine language." Software is built based on the requests or needs of its users. This is especially evident in application software. Software which is the object of researchnamely Google Classroom and Google Meet.

Lecturer involvement
Lecturers are professional educators with the main task of educating, teaching, guiding, directing, training, assessing and evaluating students in early childhood education through formal education, basic education, and secondary education andcontinuing education. The role of the lecturer in the learning process includes many things as stated by Adam and Dece, including that the role of the lecturer is as a teacher, class leader, mentor, environmental regulator, participant, expeditor, planner supervisor,

motivator, and counselor. The focus being examined is the lecturer's assignment in this case the involvement of online teaching with students.

Online Learning Satisfaction

According to Chang and Fisher in Ana Uka (2014) the level of student satisfaction in the lesson is a very important component for them to acquire knowledge or skills. A student can be considered satisfied if he feels thatlessons meet needs and expectations. This can motivate students to put more effort into learning, increase a positive attitude toward learning, and to attend other courses in the future. Student satisfaction in online learning is the variable studied. Readiness for online learning is defined as the mental or physical readiness of an organization or individual for a learning experience . Readiness for online learning is very important because in the implementation of e-learning various obstacles (obstacles) are often encountered such as resistance, computer literacy, limited human resources, infrastructure to organizational culture. In addition, the elearning model itself is designed to simplify the acquiring process basic information needed in developing e-learning. Therefore, online learning readiness should also be the main concern of the organization before deciding to implement e-learning.

METHOD

This research will use exploratory descriptive method. This means that the research will begin by providing an overview about each variable studied descriptively, then study the relationship pattern and its influence exploratively. Based on the formulation of the problem and objectives to be achieved, this study uses a survey method. According to Nasir (2011) the survey method is an investigation conducted to obtain facts from existing symptoms andseeking factual information, both about the social, economic, or political institutions of a group or region. Furthermore, the relationship between these variables will be examined in research and calculated using statistics. In taking the sample, the researcher used a sample of level 1 and 2 students filled out the Google Form questionnaire as many as 168 people. Because learning is online, the distribution of questionnaires is also carried out using existing technological facilities using Google Drive with the Google Form application. In this case, SEM with SmartPLS is an alternative technique in SEM analysis. The data used does not have to be multivariate normal distribution. In SEM with SmartPLS the value of the latent variable can be estimated according to the linear combination of the manifest variables associated with a latent variable and is treated to replace the manifest variable. According to Monecke & Leisch (2012) in Sarwono and Narimawati (2015), SEM with SmartPLS consists of 2 components, namely: (1) Inner Model and (2) Outer Model.

The hypothesis in this study is to examine the influence of hardware, software and involvement lecturers on student satisfaction learning online.
H1: The use of computer hardware in online learning has a positive effect on online student satisfaction.
H2: The use of computer software in online learning has a positive effect on online student satisfaction.
H3: Lecturer involvement in online learning has a positive effect on student satisfaction learning online.
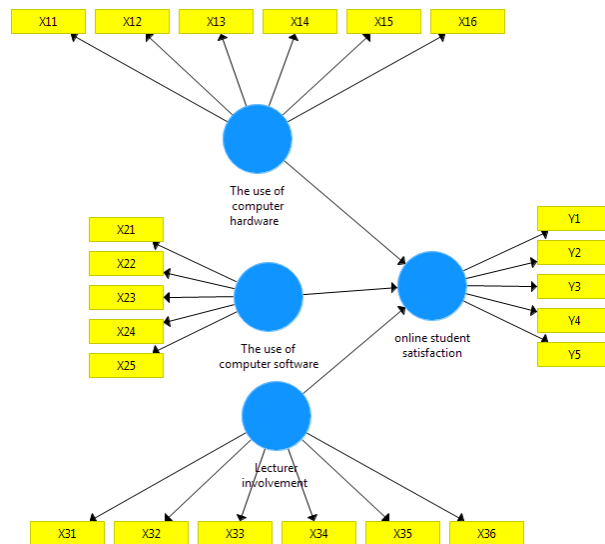
Fig 1. Research Model

RESULT AND DISCUSSION

Partial Least Square (PLS) Analysis
Outer Model Test The outer model is a model that specifies the relationship between latent variables and their indicators or it can be said that the outer model defines how each indicator relates to its latent variables. The outer model is interpreted by looking at several things, including: convergent validity values, discriminant validity values, composite reliability, Average Variance Extracted (AVE) and Cronbach's alpha. a) Convergent validity The convergent value is measuring the magnitude of the loading factor for each construct. a loading factor above 0.70 is highly recommended, however a loading factor between 0.5 - 0.60 can still be tolerated as long as the model is still in the development stage. The PLS Algorithm model and the complete indicator loading value. After the Outer loading test is carried out, the outer loading value is obtained in the table above. The table above shows that all indicator values have met the requirements, namely > 0.70
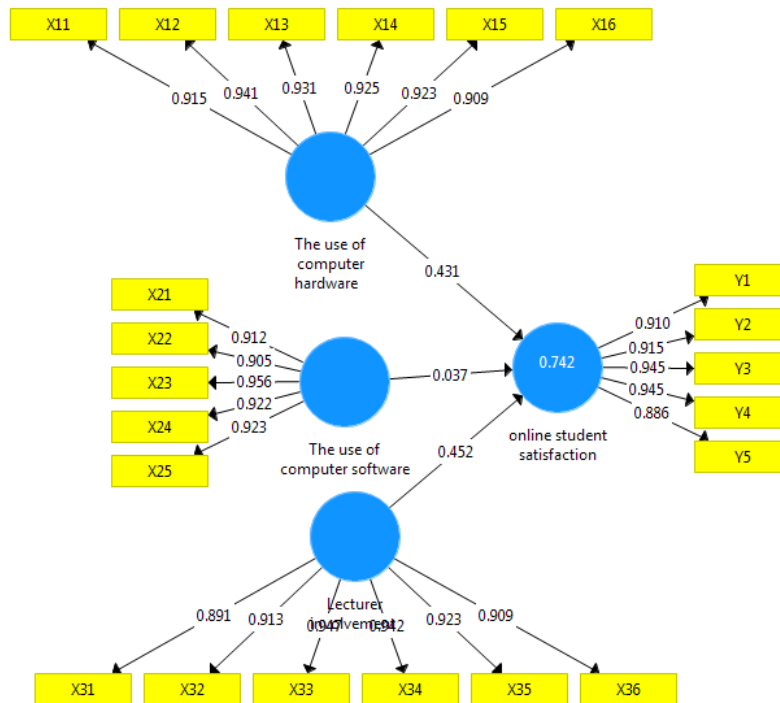
Fig 2. Validity Testing

Reliability and Validity

As shown in Table 1, all values of Cronbach's alpha, composite reliability, and rho-A are well above the threshold of 0.70 (Hair et al., 2019). These results signify that the constructs are reliable and performed well. AVE for each construct are above 0.50, indicates the convergent validity (Hair et al., 2019). Finally, all the VIF values are less than 3, establishing the lack of multi-collerinallity issues among the study constructs.

Table 1. Reliability Analysis

Variables	Cronbach'sAlpha	Composite Reliability	Average Variance Extracted
The use of computer hardware	0.843	0.824	0.715
The use of computer software	0.887	0.856	0.745
Lecturer involvement	0.854	0.843	0.627
student satisfaction learning online.	0.815	0.887	0.609

Hypothesis Testing a) Direct Influence Analysis Whether or not a proposed hypothesis is accepted, it is necessary to test the hypothesis using the Bootstrapping function on SmartPLS. The hypothesis is accepted when the significance level is less than 0.05 or the t-value exceeds the critical value. Or the t statistics value for a significance level of 5% if the t-statistic value is > 1.96 then the null hypothesis (H0) is rejected. The results of the PLS Bootstrapping Model are presented in the figure 3.
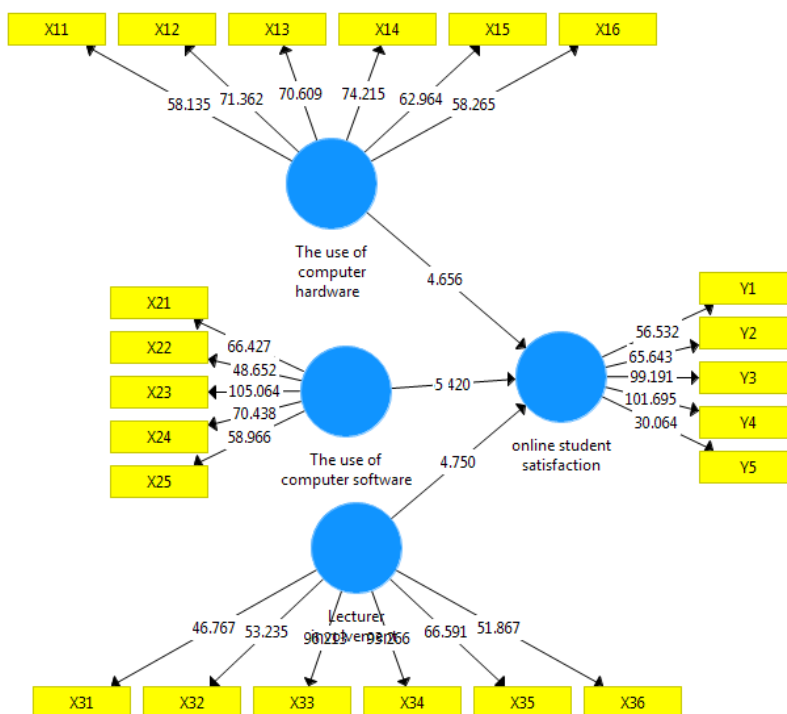

Fig 3. Hypothesis Testing

Table 2. Hypothesis Testing

Hypothesis	Coefficient	t-values	Sig	Decision
The use of computer hardware on online student satisfaction.	0.431	4.656	0.000	Supported
The use of computer software on online student satisfaction.	0.370	5.420	0.000	Supported
Lecturer involvement on student satisfaction learning online.	0.452	4.750	0.000	Supported

Based on the picture and table above, the interpretation of the research hypothesis is as follows:

The use of computer hardware on online student satisfaction
Based on the results of the analysis, it was found that the p value of 0.000 was smaller than 0.050, so it was concluded that the relationship was significant.The use of computer hardware in online learning has a positive effect on online student satisfaction. Testing the first hypothesis shows that there is a positive and significant influence of technology mastery on student satisfaction in online learning. Technology masterywill increase the ability and support creative behavior that will lead to the satisfaction that individuals do. Technology mastery is assessed by students as follows: There are many benefits that can be obtained from mastering technology, being able to use electronic media well in online learning. I can easily operate applications such as zoom, googlemet in lectures. I have the intention to learn to use electronic media seriously by mastering technology. can make my activities easier. If technological capabilities move in a positive direction because of the benefits obtained in mastering technology, it will increase effectiveness and efficiency in carrying out activities, so that a sense of satisfaction will arise in the individual. This research is in line with research (Sambul, 2018) which shows that mastery of technology has a positive value, so that the higher the mastery of technology will further improve students' abilities.

The use of computer software on online student satisfaction
Based on the results of the analysis, it was found that the p value of 0.000 was smaller than 0.050, so it was concluded that the relationship was significant. The use of computer software in online learning has a positive effect on online student satisfaction. The use of information and communication technology through information systems will not only improve the quality and speed of information produced for management, but with the appropriate information technology will create a management information system that is able to improve inter-functional integration within the organization. The general definition of an information system is: "A system consisting of a series of information subsystems for processing data to produce information that is useful in decision making. The introduction of related educational reforms closely with the information system needed in the development of the world of education. This concept has the nuances of how the world of education tries to use computer devices, which can
applied as a means of communication to improve the performance of education significantly. Information is the only source needed by an institution leader education. The choice of platform in online learning must pay attention to at least two aspects, namely the platform that is understood and can be used; and platforms that can help achieve learning objectives. Platform type online learning can combine 3 options, namely (1) system learning management, (2) social media applications; and (3) web conferencing software. Significant influence of choice online learning platform modes on the variability of the level of student satisfaction in participating in the online learning process is indicated by the effect of changes in the unique variance of the level of satisfaction

Lecturer involvement on student satisfaction learning online
Based on the results of the analysis, it was found that the p value of 0.000 was smaller than 0.050, so it was concluded that the relationship was significant. Lecturer involvement in online learning has a positive effect on student satisfaction learning online. This finding can be interpreted that the learning satisfaction that students have in online learning, it will has an impact on higher readiness for online learning. The results of the assessment of the level of achievement of the respondents' answers (TCR), show that the

existing level of learning satisfaction is correct seen to be able to better improve online learning readiness. Connectivity and interaction between students (peer-to-peer interaction) is conducive to supporting analytical critical thinking processes in the online learning process, and this condition is explained by Kranzow (2013) will affect student satisfaction andimpact on learning readiness. The results of this hypothesis support the research conducted by Yilmaz. (2017), that learning satisfaction has a significant relationship to online learning readiness. consistency of lecturers in giving lectures properly, lecturers are reliable in using learning platforms, lecturers respond quickly and efficiently regarding student needs in online learning, lecturers encourage and motivate students to study well, and lecturers understand students' difficulties during the online learning process. In improving online learning, continuous and comprehensive improvement is needed from all lecturers. Online learning is the main method the teaching and learning process can continue if the COVID-19 pandemic has not passed. Therefore student satisfaction can be increased by improving the quality of service through improving the online learning process. More increasing service quality results in increased student satisfaction with service quality In addition to increasing satisfaction through good service quality will have an impact on student loyalty Indirectly student loyalty will affect the number college enrolled students.

Significant test results show that students feel satisfaction in online learning is influenced by the involvement of lecturers in interactions, the material presented by lecturers and the presentation is quite satisfactory for students. In contrast to the use of hardware in the form of laptops, smartphones and internet networks which are not enoughmake students like online learning. Likewise, the use of Google Classroom and Meet software has not made students satisfied in online learning. Use hardware and software in online learning for students majoring in computers have indeed been fulfilled and it is normal for them to easily master online learning applications. This makes the two variables not affect student satisfaction in learning online. It is possible that the results will be different if the respondents are taken from non-computer majors. Satisfaction is a person's feeling of pleasure or disappointment that arises after comparing the performance (results) that one thinks to the expected performance (or outcome). Satisfaction itself is the result of differences between expectations and perceived performance. When participating in online learning, students will personally assess whether they feel satisfied or not dissatisfied with the learning process . Learning satisfaction is an affective element that occurs when students feel there is consistency between expectations and experiences. In other words, students who have a high level of satisfaction in their learning activities, it is certain that they will also have high readiness to study online. If the expectations are met or the reality experienced exceeds expectations, then students feel learning satisfaction.

Student satisfaction is also very concerned in online learning, however students are the main characters who play a role in obtaining learning. Where at this time students are more demanded to deeper understand a lesson, while the conditions are very difficult to deepen learning. Many students complain about online learning due to poor conditions, there are also some students who are quite satisfied with this online learning, as we know online learning does not cost too much because learning done at home is sufficient to cover costs but not with understanding knowledge. Some e-learning as open or web-based or online learning have the same capabilities and functions to connect computers to internet networks. That way, it is possible to learn through e-learning from anywhere, anytime in any way and rhythm. E-learning is defined as a learning experience in a synchronous and asynchronous environment using devices with internet access. E-learning or online learning has been developed and implemented by several universities

in Indonesia: Binus University, Bandung Institute of Technology, Open University, and other universities. E-learning does not only use the internet network, e-learning is also distance learning using other devices such as computers or PCs, notebooks and mobile phones. One of the e-learning used in online learning is the Learning Management System. Content and learning management system (LMS) teaching materials that have been stored can be reopened, if this is required by students to become a medium that is used as access to teaching and learning services, both for students and teaching staff.

CONCLUSION

The results of data processing with SmartPLS show that The use of computer hardware in online learning has a positive effect on online student satisfaction, The use of computer software in online learning has a positive effect on online student satisfaction, Lecturer involvement in online learning has a positive effect on student satisfaction learning online.from 3 exogenous variables the use of hardware, the use of software does not affect student satisfaction when studying online while the variable of lecturer involvement has a significant and significant effecton student satisfaction in online learning. The value of the coefficient of determination is 74% indicating that there are still 26% of other variables that affect student satisfactionin online learning. it really needs to be considered, because there are so many advantages or disadvantages for students, whether they satisfy learning goals or not depends on their focus point. From some students towards online learning where they do not get effective learning experiences. However, student focus also includes part of a small study group that illuminates student satisfaction. Student satisfaction in online learning is also referred to as shared needs, which is where it appears that students' expectations are more in need of effective online learning needs

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