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Effect of Accounting Lecturer Behavior on the Level of Online Learning Outcomes Achievement

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Abstract. Changes in learning models in reaction to the COVID-19 pandemic have a significant impact on how accounting is taught. The objective of this study was to compare the differences in learning outcomes before and during the pandemic. A total of 367 research participants were collecting and the data were analyzed using the Partial Least Square – Structural Equation Modelling approach. Additional testing to control the demographic variable shows that the demographic variable is not a determinant of learning outcome achievement. The results showed that anxiety reduces the ease of use, and external control perception positively affects it. The theoretical implication is that the online learning outcome increases depending on user behavior variables. Technology acceptance variables are a mediation between personality variables and online learning. Other constructions of the TAM model have been empirically proven. The level of achievement before the pandemic is higher than during the pandemic. These results indicate that the implementation of online learning is more effective if it has been prepared from the beginning. The practical implication is to achieve a good outcome. A university must reduce anxiety and increase the positive control of the external perception of each lecturer.

Keywords: online learning playfulness; ease of use; self-efficacy; usefulness; behavioral intention to use; achievement of learning outcome

1. Introduction

The spread of COVID-19 at the end of 2019 has led to changes in all areas. Some countries have implemented lockdowns, migration restrictions, and physical distance policies. The pandemic is also impacting educational institutions. The

teaching and learning process in Indonesia must change the techniques, methods, and related learning tools. The teaching and learning process is done from and at home—the learning method goes from face-to-face in the classroom to distance learning. The learning model that was once a complementary method before the pandemic is now the core mode of instruction. Almost all universities in Indonesia are applying this method. Changing the learning model from the classroom to online was an emergency learning strategy. The learning design was modified, but the same learning outcomes are expected from the online model.

Online learning uses online technology to convey material and knowledge (Nortvig et al., 2018). This method minimizes face-to-face interaction and relies on technology to form virtual classrooms. Lecturers must operate advanced technology to ensure that the learning process is running well. The preferences and skills required differ from classroom learning. Lecturers are required to handle devices that support online learning, both technology and learning design.

There are two beliefs for determining the behavior of information technology acceptance. The first belief is ease of use and usefulness drive successful implementation. A framework based on reasoned action theory is built on understanding the factors that cause a new technology to be accepted and applied (Davis et al., 1989). This acceptance model is known as the technology acceptance model (TAM). This model explains that its actual use and success are influenced by the ease of use and mediated by usefulness. The second model adds adjustment and anchors as additional variables. Acceptance of online learning uses antecedent variables: self-efficacy, perception of external control, online learning, playfulness, and anxiety (Al Kurdi et al., 2020; Clair, 2015; Igbaria & Iivari, 1995). This model is expected to make the best contribution in predicting and explaining the success of online learning. This framework is known as the computer usage model (CUM). Learning outcomes have not been achieved optimally due to the emergency learning model, minimal preparation, and initial learning design due to the COVID-19 pandemic situation. TAM provides direction on how an information system can be received and delivers optimal results. CUM provides advice regarding variables that are predictors of ease of use and usefulness variables. In the context of online learning, CUM predict that online learning anxiety (anxiety), self-efficacy (SE), perception of external control (PEC), and system playfulness (PF) are variable which determines the perceived ease of use (EU) and usefulness (PUS). University management should reduce anxiety to increasing acceptance. Improving self-efficacy, external control perception, and online learning playfulness will also encourage success (Achim & Kassim, 2015; Adetimirin, 2015; Kustono, 2020). Self-efficacy is a belief in organizing and carrying out a series of activities necessary to obtain planned performance.

The contributions of this research in the field of accounting education are as follows: (1) it examines the antecedents of online learning acceptance during the Covid-19 pandemic, (2) provides evidence of learning achievements before and during the pandemic, and (3) offers accounting lecturers insights into the importance of learning design. This article is organized as follows. We first review

the literature and develop the hypotheses. Section 3 describes the design of the research. The results were then discussed, and finally, the conclusions and suggestions are presented.

2. Literature review

2.1 Achievement of learning outcomes

In colleges, learning needs to be formulated through learning outcomes (Chahine & Khan, 2015). Learning outcomes (LO) are goals that are to be achieved in the learning process. One form is a change in knowledge expected to occur in students after going through a series of learning processes. The LO should show the characteristics of the disciplines studied. The achievement of learning outcomes (ALO) is designed using the curriculum (Nambi, 2019). The curriculum is a map of how students can achieve specific competencies. The learning model is an integral part of learning design. Performance competencies are designed to be accommodated gradually in the lecture process. Assignments, evaluations, discussion processes, and other student portfolios improve their competence (Ayeni & Akinfolarin, 2014; Chahine & Khan, 2015). The level achieved is then evaluated on the level of competence that each student has in a particular subject. Each subject has a suitable learning strategy. The selection of methods takes into account the material that students must master (Nambi, 2019). If it refers to Bloom's taxonomy, the LO level also consists of several levels (Hanum, 2013). The lowest level is low-level thinking skills, and the highest level is high-level thinking skills.

2.2 Computer self-efficacy

Computer self-efficacy (SE) is an individual's evaluation of the ability to use computers. A person's self-efficacy plays an essential role in influencing motivation and behavior. Some people believe that their ability to use computers is not related to their experience in carrying out specific tasks (Chahine & Khan, 2015). It shows that belief is an essential factor for completing a task. A person who has self-efficacy sees complex tasks requiring computer programs as an opportunity to master various programs. SE is defined as considering any appropriate person who can take the necessary action in such circumstances. SE construction refers to beliefs about a person's ability to perform a behavior. SE has a positive direct effect on ease of use. SE is a concept that can be used to measure the knowledge of each individual, especially in terms of using accounting information systems. Students with high SE have an advantage in digital processing information (Abdullah & Ward, 2016). The research showed that there are SE factors that determine the success of online learning. SE is a variable that affects academic performance (Al Kurdi et al., 2020). Their research found that students with high SE had better academic achievements. They tested SE on the ease of use and usefulness of online learning systems and their influence on behavioral intentions on online learning acceptance. Thus, the result showed that self-efficacy serves as an antecedent to receiving online learning. Similar results were also delivered by previous research in online learning and technology acceptance (Achim & Kassim, 2015; Al-Azawei & Lundqvist, 2015; Chahine & Khan, 2015). Our first hypothesis there is:

H1: Self-efficacy will have a positive effect on perceived ease of use.

2.3 Perception of external control

Perception of external control (PEC) is defined as the extent to which one believes that organizational resources and technical experts support the system's use. A person feels safe using particular applications if they think infrastructure support is guaranteed (Pham et al., 2020).

During the pandemic, lecturers were not allowed to teach in the classroom. The online learning method is one of the instruments that can be used to ensure the continuation of learning. Lecturers use a wide variety of software to facilitate this learning model. Often new lecturers use it for the first time. In situations where there are irregularities, such as during the pandemic, the perception of external support becomes essential. The choice of using a specific application is also based on the university's readiness to assist student's needs. PEC refers to an individual's perception of the extent to which an organization contributes to the application used. If the lecturer assesses positive support, the lecturer develops a more positive perception of the application. External control factors include time, opportunity, and cooperation with others. Support from the organization is important when assistance is needed to ensure employees' tasks run efficiently and when they face stressful situations (Rhoades & Eisenberger, 2002).

Previous research discovered the influence between PEC and ease of use (Adetimirin, 2015; Oturakci & Oturakci, 2018). System users feel that the system is easy to use to make adjustments according to their needs. The user of the system wants to have control over the applications used. The system platform provides users with the opportunity to make adjustments to achieve usage goals. We hypothesize that:

H2: Perception of external control will have a positive effect on perceived ease of use.

2.4 Online learning anxiety

Another internal factor thought to affect the use of online learning is online learning anxiety (anxiety). Anxiety is a predictor of usefulness and indicates an intervening variable between anxiety and reception (Gbongli et al., 2019). Individuals prefer technology that can produce the expected results. Anxiety negatively impacts user confidence and performance. Higher anxiety drives lower performance. Several studies have shown the influence of computer analysis variables on usefulness perception (PUS) and acceptance (Igbaria & Livari, 1995; Yuwana & Kustono, 2017).

Researchers concluded that the higher the anxiety, the lower the ease of use (EU). If a person feels anxious and feels unsuccessful in using the system, it will fail in implementing the information system. Computer knowledge and skills have a significant negative relationship with computer anxiety. Anxiety also negatively impacts the acceptance of the technology (Abdullah & Ward, 2016; Ajmal & Ahmad, 2019; Clair, 2015). Here we hypothesize that:

H3: Online learning anxiety will have a negative effect on perceived ease of use.

2.5 Online Learning Playfulness (PF)

Online learning Playfulness (PF) is defined as how much one believes that using an online learning system gives them comfort and satisfaction. PF is the level of

satisfaction that the user feels. The more users enjoy the website's online processes, the higher the chance of re-using it (Chen, 2018). PF explains that the extent to which activities using a particular system are considered enjoyable, regardless of the performance consequences resulting from using the system. TAM discusses the perception of convenience, that one's attitude in using a technology depends on the individual's playfulness in using the technology. The more user-friendly the system is, the higher the level of playfulness (Adetimirin, 2015; Chen, 2018; Dumpit & Fernandez, 2017; Mohammadi & Isanejad, 2018). Our hypothesis is:
H4: Online learning playfulness will have a positive effect on perceived ease of use.

2.6 Ease of use
Ease of use (EU) is the belief that an application is easy to learn, understand, and operate (Yuwana & Kustono, 2017). If the person has a perception of ease of use, he will accept it when using a particular application. Individuals do not reject but rather react positively to the application. Conversely, if an individual believes that an information system is challenging to understand and operate, he responds negatively by rejecting the application. Individuals feel the ease of use when meeting the indicators of easy operation; (1) the application is understandable, (2) its use is uncomplicated, (3) it can be operated as the user wishes, and (4) it is flexible. The application means it does not cause problems when implemented. The context of online learning leads to the use of online learning applications. Lecturers choose applications that are easy to use and learn. Previous research has shown that the EU drives perceived usefulness (Abdullah & Ward, 2016; Ho et al., 2019; Nagy, 2018). We, therefore, hypothesize that:
H5: Perceived ease of use will have a positive effect on perceived usefulness.

H6: Perceived ease of use will have a positive effect on behavioral intention.

2.7 Perceived usefulness
Perceived usefulness (PUS) is the user's belief that the system can get their work done. The use of the applications helps improve their performance (Kustono & Nanggala, 2020). The results of using these applications are more satisfying than not using them. In terms of time, the work is done faster. PUS is related to decision-making choices. Under normal conditions, if an application has benefits, then individuals use it. Conversely, if the user finds it less valuable, they don't use it. PUS construction is related to productivity, work performance, effectiveness, and task completion (Lai, 2017). Usefulness is an essential control for behavioral intention and actual usage. In the context of online learning, lecturers choose to use applications that can help the teaching and learning process (Al Kurdi et al., 2020). PUS increases an individual's behavioral intention to use technology (Nanggala, 2020).

Other studies have also found supportive results (Amer et al., 2013; Feriady et al., 2020; Siegel et al., 2017). They found a positive connection between PUS and behavioral intention. The usefulness of the information systems is the benefit obtained or expected by the user in carrying out their duties and work. The level of use affects the user's system's intent. The proposed hypotheses are as follows:
H7: Perceived usefulness will have a positive effect on behavioral intention.

2.8 Behavioral intention to use

Behavioral intention (intention) is an antecedent of individual behavior. Intention directs a person to behave (Nanggala, 2020). It indicates acceptance or rejection of someone using a particular application. Intention affects how often individuals use it. Acceptance means the use of an application to complete work more frequently than others. More often, this indicates that the individual accepts the new system and it reveals a high intention. Intention means the individual's probability of doing or not doing. Action is a consequence of intention. In the theory of planned behavior, the construct is the prediction of activity. A person engages in conduct if they have the desire or interest to do so. Behavioral intentions predict participation in online learning initiatives (Hanif et al., 2018).

Previous research has shown that intention positively affects technology (Al Kurdi et al., 2020; Amer et al., 2013; Hanif et al., 2018; Nanggala, 2020). They found a positive relationship between individual interests and the online learning application. Lecturers' intention strive to maximize the facilities provided in online learning software. We therefore hypothesize that:
H8: Behavioral intention will have a positive effect on the degrees of online learning usage.

2.9 Degrees of online learning usage

Learning is focused on achieving the outcome. Learning outcome (LO) can be fulfilled from knowledge, skills, and attitudes by social, economic, and academic cultural conditions. Students' abilities and LO are accommodated through several strategic steps and academic completeness, including courses, final assignments, presentations, tests, and student portfolios. The achievement of output becomes the focus of the learning process and improves learning quality (Chahine & Khan, 2015). In ideal conditions with adequate infrastructure preparation, the online learning system improves students' academic performance (Muchlas, 2013). The learning model is one of the factors that influence the success of learning activities. Online learning improves the interaction that occurs between lecturers and students.

According to the previous findings that different methods will produce different outcomes (Pablico, 2017). These differences can be in the form of differences in technique or differences in degrees of use. Effective learning is learning that utilizes information and communication technology optimally. The online technology application can improve the achievement of learning outcomes (ALO). Digital learning has better positive effects on learning motivation than traditional teaching, and digital learning shows better positive results on learning outcomes than conventional education (Lin et al., 2017; Nortvig et al., 2018). Our last hypothesis is:
H9: Degrees of use of online learning will have a positive direct effect on the achievement of learning outcomes.

3. Methodology

3.1 Sample and data collection

The target population in this study is accounting lecturers in Indonesia. An online questionnaire was used to measure nine constructs: PEC, SE, anxiety, PF, EU, PUS, intention, OLU, and ALO. Online questionnaires were shared using Google

Forms. All items are measured on a five-point Likert scale, with endpoints 1 (totally disagree) and 5 (totally agree). The SmartPLS path analysis was used to test the research hypotheses. Partial Least Square (PLS) is chosen over the covariance-based structural equation modeling approach (CB-SEM) because PLS is prediction-oriented (Chin, 1998) and, as such, can fulfill our goals well.

Based on these empirical theories and findings, the conceptual framework of this study is shown in figure 1.

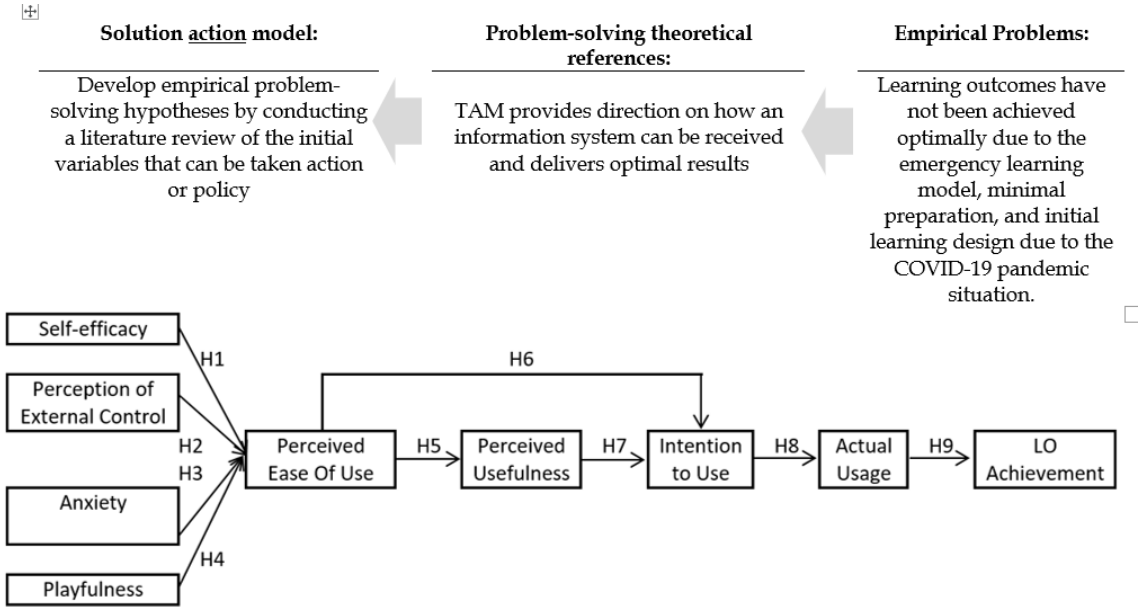

Figure 1. Conceptual framework

Figure 1 illustrates the relationship between endogenous variables (achievement of learning outcomes) and antecedent variables. Nine hypotheses were tested. The research framework develops on the alleged influence of playfulness on ease of use, self-efficacy, ease of use on usefulness, ease of use and usefulness on behavioral intention, the level of e-learning intentions used, and the level used achievement.

3.2 Measurements

The instrument used in this study was an online questionnaire containing a closing statement (see Appendix 1). To measure TAM variables, it using Venkatesh and Bala's (2008) instruments with certain modifications (Kustono et al., 2020). Questionnaire to measure ALO with the self-reported percentage of achievement. The questionnaire for OLU uses seven indicators (Hanum, 2013). Degrees of use of online learning (OLU) in this study are not proxied by the frequency of use but the quality of online learning. The quality of online learning follows. Other comments are statements related to the quality of online learning being carried out. The higher the value, the more optimal the online learning will be.

4. Results and discussion

Questionnaires were distributed using Google form using channels of professional organizations and a network of colleagues for dissemination. The total number of questionnaires returned was 373. Six questionnaires were incomplete and were therefore ignored. Sampling using stratified method with geographical considerations in order to obtain a sufficient and representative composition. Lecturers who are in one area are considered to be homogeneous characteristics following the research objectives. According to geography, data of Indonesian accounting lecturers have not been found. The representation of the population is adjusted to the number of Indonesians. It means that the composition of the population in Indonesia becomes a reference for the geographical composition of the lecturers' origin. Indonesia's territories are grouped into six area, namely (1) Sumatra, (2) Java, (3) Kalimantan, (4) Bali and Nusa Tenggara, (5) Sulawesi and Maluku, and (6) Papua.

Table 1. Sampling procedures

Area	Total Populations (1000)	% Population	Samples Obtained	% Sample	% Pop - % Sample
1	59,196 .8	22%	73	20%	2%
2	151,650 .2	56%	226	62%	(5%)
3	15,153 .7	6%	16	4%	1%
4	16,432 .9	6%	20	5%	1%
5	22,790 .7	8%	28	8%	1%
6	43,79 .1	2%	4	1%	1%
Indonesia	269,603 .4	100%	367	100%	

As a whole, the participants met geographic characteristics. Table 1 indicates the number is over the target (Java), and some others are less than the target, reflecting the number of colleges with accounting lecturers. The amount of difference from the target sample is not too large, so it is considered that the sample is reasonably representative of the population.

Table 2. Validity testing- outer loadings

	PUS		EU		SE		PEC	
	Org. sample	T-statistic	Org. sample	T-statistic	Org. sample	T-statistic	Org sample	T-statistic
Item 1	0.56	3.35	0.87	27.63	0.56	18.21	0.59	6.23
Item 2	0.79	7.28	0.91	40.41	0.49	5.40	0.80	15.19
Item 3	0.64	5.40	0.92	35.60	0.79	4.55	0.77	12.09
Item 4	0.82	15.9	0.80	35.67	0.79	13.06	0.85	18.74
Item 5					0.81	18.55	0.81	17.01

	ANXIETY		PF		INTENTION		OLU	
Item 1	0.93	45.19	0.54	4.81	0.79	21.40	0.82	28.92
Item 2	0.95	73.84	0.78	3.37	0.84	24.78	0.71	17.36
Item 3	0.87	22.58	0.79	15.97	0.80	22.69	0.92	35.02
Item 4	0.63	5.14	0.84	20.88			0.79	18.73
Item 5							0.56	5.51
Item 6							0.50	4.60
Item 7							0.44	4.35

Overall the questionnaire items have an outer loading with a t-statistic of more than 1.96. Each item meets the validity requirements. This study used Cronbach's alpha technique to ensure the reliability of the questionnaire. The reliability of the instrument is fulfilled if it shows a score of 0.70.

Table 3. Reliability testing – Cronbach Alpha

Construct	Cronbach Alpha
Anxiety	0.82
Self-efficacy	0.82
Playfulness	0.71
Perception of external control	0.72
Ease of use	0.77
Usefulness	0.78
Behavioral intention to use	0.71
Online learning usage	0.85

All measurement variables meet the requirements of reliability. Each score is above 0.70 so that they can be used in the analysis.

4.1 Research participant description

Table 4 presents descriptive statistics for each variable used in this study and data on the characteristics of the research participants. The data used in this study include the following data: age, gender, education, and teaching experience.

Table 4. Descriptive statistics

Variables	Mini-mum	Maxi-mum	Mean	Std. Dev.	Skew-ness
Perception of external control	16.00	25.00	20.77	1.76	0.84
Self-efficacy	16.00	20.00	17.28	1.64	0.67
Anxiety	5.00	13.00	7.88	1.96	0.58
Ease of use	11.00	20.00	15.59	2.03	-0.03
Usefulness	8.00	20.00	15.60	2.42	-0.22
Playfulness	7.00	15.00	11.55	1.97	-0.44
Behavioral intention to use	3.00	13.00	6.26	3.06	-0.14
Online learning usage	19.00	35.00	28.44	2.93	-0.10
Achievement of LO - During	0.65	0.75	0.70	0.02	0.38
Achievement of LO - Before	0.85	0.95	0.89	0.03	0.76

Based on the analysis results in Table 4, there are no variables that indicate extreme distribution. It suggests that the distribution blend with the mean value of the variable scale range for each variable. Skewness indicates good numbers as well, except for perception of external control (PEC). The skewness for this variable is 0.84, close to 1 but not yet. The best data distribution is on the EU variable; that is, the median mean coincides at 15.59 and 16.00, the skewness value is at a score of -0.03.

4.2 Demographics additional test

Additional testing was conducted to find indications that caused ALO differences based on the research participants' demographics. The test was conducted to increase the research model's credibility in detecting the antecedent variables for achieving LO. Research participant demographics include gender, college status, education level, age, and teaching experience. The demographic data of research participants shows the following information. The mean of male LO achievement participants (70.20) is lower than that of female participants (70.35). Privat universities have better achievement than private universities. The participants' attainment of the target LO from state universities was (70.50) higher than participants from private universities (70.02). Participants with a doctoral degree have a higher ALO (70.36) than LO achievement participants with a master's degree (70.20). Lecturers who have doctor degrees have better achievement than master's degrees. These differences need to be tested statistically to ensure that the differences are significant. Testing was through Levene's test for variables categorized as a dummy (0, 1) and one-way ANOVA test with a scale of more than two (0, 1, 2).

Table 5. Levene's test for equality of variances - during a pandemic

Item	Item	Mean	F	Sig.	T	Sig. (2-tailed)
Gender	Male	70.35	0.31	0.58	0.49	0.62
	Female	70.20			0.54	0.59
College Status	State	70.50	20.15	0.00	1.77	0.08
	Privat	70.02			1.69	0.10
Level of Education	Doctor	70.36	0.21	0.65	0.52	0.60
	Master	70.20			0.57	0.57

The test results in Table 5 show that ALO of male participants was higher. This difference is not significant because the p-value is 0.62. In other words, gender differences were not related to ALO. Male and female accounting lecturers did not have differences in the achievement of the learning outcome. The test results show that the level of participants' education is different in ALO. This difference is not significant (p-value is 0.60). There are no different learning outcomes between accounting lecturers with a doctoral degree and master degree lecturers.

Table 5 shows that the participant college group mean does not show any difference (0.08). This situation may be due to online learning, both private and public, facing relatively the same infrastructure readiness problems. Indonesian accounting lecturers who come from state universities have additional resource support compared to private universities. In pandemic and emergency conditions, it is not enough to provide significance for achieving LO. The situation is an unpredictable force majeure. The best strategy that must be taken is to prepare the competence of lecturers to use online learning media as soon as possible. College groups are not a determinant of online learning outcomes in a pandemic situation. Hypotheses test does not need to consider college status as a confounding factor. Further testing was conducted using age and experience demographics with the Analysis of Variance (ANOVA) to find the influence. The test results are shown in Table 6.

Table 6. Anova- during a pandemic

Item		Sum of Squares	Mean Square	F	Sig.
Age	Between Groups	7.54	3.77	1.23	.29
	Within Groups	500.88	3.05		
	Total	508.42			
Experience	Between Groups	4.72	2.36	.77	.47
	Within Groups	503.70	3.07		
	Total	508.42			

Table 6 demonstrates participants grouped into 3 (three), namely, age up to 30 years, 31- 45 years, and 45-70 years. The ANOVA test results showed that the differences between groups had an F-value of 1.23 with p=0.29. The age did not show any difference in ALO. Different ages of accounting lecturers in Indonesia are not related to the level of achievement. Participants with long experience demographic data are grouped into three categories: age up to 10 years, 10 - 25 years, and more than 25 years. The ANOVA test results showed that the differences between groups had an F-value of 0.77 with p = 0.47. The length of experience as lecturers did not show any difference in ALO. Accounting lecturer experience in teaching is not related to the achievement of learning outcomes.

5. Result and discussion

Additional testing to control for the demographic variable shows that the demographic variable is not a determinant of LO achievement. The model can work regardless of participant demographic factors. Hypothesis testing was conducted by observing the calculation t-value using smartPLS application version 3.2.2 with 500 subsamples and 300 iterations. The results are shown in Table 7.

Table 7. Path coefficients

Relationship Between Variables	Entire Sample Estimate	Mean of Sub-samples	Standard Error	T-statistic	P-Values
ANXIETY → EU	-0.931	-0.928	0.042	22.393	0.000
PEC→ EU	0.256	0.286	0.065	-3.911	0.000
PF → EU	-0.050	-0.069	0.133	0.443	0.658
SE → EU	-0.136	-0.128	0.097	1.401	0.162
EU → PUS	0.415	0.420	0.140	2.967	0.003
EU → INTENTION	0.348	0.347	0.077	4.530	0.000
PUS → INTENTION	0.537	0.538	0.061	8.733	0.000
INTENTION → OLU	0.657	0.060	0.088	7.423	0.000
OLU → ALO	0.870	0.869	0.051	17.086	0.000

The test results in Table 7 show that hypotheses 3 and 4 were rejected. The test results of PF effect on the EU have a negative path coefficient of -0.050 and a p-value of 0.658. PF does not affect the EU. Hypothesis 3, which states that variable playfulness positively affects the ease of use, is rejected. The test results of SE's effect on the EU have a negative path coefficient of -0.136 and a p-value of 0.162.

SE does not affect the EU. Hypothesis 4, which states that the self-efficacy variable positively affects the ease of use, is rejected.

Table 7 shows that except for the third and fourth hypotheses, other hypotheses failed to be rejected. Hypothesis 1 states that anxiety negatively affects the ease of use. Anxiety is proven to reduce the EU. The test result shows that anxiety negatively affects the EU with a coefficient value of -0.931 and a p-value is less than 0.001. Perceived anxiety reduces the confidence of lecturers in using the online learning system. Lecturers avoid using applications that feel complicated and unusable—the desire to use the application decreases with rising anxiety levels. These results confirm the findings of Majid (2012). Lecturers who are restless in using online learning find it difficult and feel compelled to use it to not optimal their performance.

Hypothesis 2 states that the perception of external control positively affects the ease of use. PCE increases the EU. The test result showed that PCE had a statistically significant positive effect on the EU with a coefficient of 0.256 and a p-value is less than 0.001. Thus it fails to reject the second hypothesis.

Lecturers who believe that an institution or environment provides the infrastructure that supports online learning systems find it easy to use online learning. If there is a problem with online learning, the lecturer has the confidence that the institution will help solve it. Lecturers expect to have adequate control over the e-learning application used. Application customization can be adjusted according to their needs. That is consistent with Oturakci & Oturakci (2018), who found a significant influence between PEC and the EU. If lecturers have access to adequate technology and usage skills, external control will also increase.

The test results of hypothesis 5 testing show that the EU has a statistically significant positive effect on PUS with a coefficient value of 0.415 and a p-value of 0.003. It fails to reject the fifth hypothesis. The impact shown by the regression coefficient is positive, meaning that the higher the EU, the higher the PUS. The EU explains the extent to which one trusts an information technology system that is free from physical and mental efforts. An easy-to-operate system will provide convenience and provide benefits to the users. If the lecturer feels that the EU is high, then the PUS is also high. Lecturers who believe that online learning is easy to understand and use will react positively to this learning model.

Online learning is useful if there is an ease of use factor. If the individual feels that the technology is easy to use and learn, it will encourage them to use the new technology. Lecturers who find it easy to use can take advantage of online learning. This result is in line with research conducted by research that proves EU influence on PUS (Abdullah & Ward, 2016; Ho et al., 2019; Lin et al., 2017). The test results demonstrate a direct positive relationship between EU and intention to use online learning. The test result showed that statistically, the EU had a positive effect on the intention with a coefficient value of 0.348 with a p-value is less than 0.001. Hypothesis 6 (six) fails to be rejected. Lecturers are interested in using online learning technology if the technology is easy to do. If the

individual thinks the technology has sound capabilities, the user will be interested in using it.

A person's intention to adopt a particular part of a technology is determined by one's attitude towards using such technology. EU has been shown to impact intention. If the online learning system is easy for users to use, it will affect users' interest in using online learning to carry out their activities. Individuals commit particular actions because that they have the interest or desire to do so. These results follow previous studies (Cigdem & Ozturk, 2016; Hanum, 2013). The lecturer intends to use the e-learning methods to facilitate the teaching and learning process and achieve the learning objectives. With the e-learning applications, lecturers' interest will increase if they find it easy to use. Therefore, it can be concluded that the EU affects the intention in the online learning system.

The result showed that usefulness has a positive effect on behavioral intention. PUS has an impact with a coefficient value of 0.537 and a p-value is less than 0.001. Hypothesis 7 (seven) fails to be rejected. Usefulness is considered a measure of the user's belief that using information technology can improve work performance. Instead of using information technology, the work will be more efficient and effective using information technology. The results of the work will also be better. The lecturers' attitude in online learning is driven by how much confidence that online learning can improve their performance.

According to the lecturers, using online learning is easy and does not require much effort. Lecturers will take full advantage of online learning. Lecturers accept the use of the online system to complete teaching if the system is easy to use and completes learning tasks better and effectively. These results are in line with previous research. Lecturers choose to use online learning applications to help the teaching and learning process (Al Kurdi et al., 2020). Usefulness increases individual behavioral intention to use technology (Nanggala, 2020). Other studies have also found similar results (Amer et al., 2013; Yuwana & Kustono, 2017).

The results showed that intention had a positive effect on the OLU. The test result indicates that intention has a significant positive impact on OLU, with a coefficient value of 0.657 and a p-value is less than 0.001. Hypothesis 8 (eight) fails to be rejected. Their behavioral intentions influence the behavior of lecturers in teaching. The level of use is affected by level of interest. Expertise in operating online learning programs includes the ability to implement learning, complete tasks, and the competencies for using online learning software packages to influence the degree of interaction between lecturers and students.

This study's results align with previous studies (Cigdem & Ozturk, 2016; Kustono et al., 2020). They found a positive relationship between an individual's behavioral intention to use technology. It shows that lecturers who use the online learning system tend to use online learning software optimally. The learning model will be interactive by involving students and lecturers in a discussion. This hypothesis test results are similar to previous research conducted, which found a positive relationship between intention and OLU variables (Al Kurdi et al., 2020).

Hypothesis 9 states that the degrees of use of online learning affect the achievement of learning outcomes. The test results showed that OLU positively influences ALO with a coefficient value and a p-value is less than 0.001. Hypothesis 9 (nine) fails to be rejected. OLU is an actual level of action of lecturers who use online learning technology. Its quality is showed an interactive level between students and lecturers. The more interactive the learning pattern is, it is assumed that the online learning system that is applied is more optimal.

From the results, it can be concluded that OLU affects ALO. It is related to the fact that the model used was only an online learning model, which influenced the results. However, lecturers who have transitioned to a fully online model can improve the quality of learning. On the other hand, online learning is no longer voluntary but has become mandatory. The use of online learning systems at various levels determines its effectiveness. Lecturers should use the learning model at the highest level of online learning for optimal results. These results align with previous research (Al Kurdi et al., 2020; Hanum, 2013; Lin et al., 2017).

We use a one-sample t-test for Hypothesis 10. Table 8 shows the average learning designed from the beginning. It shows an LOA rate of 85.77%, but it dropped to 69.76% during the pandemic.

Table 8. One-sample test

Time Dimension	Mean Difference	T Statistic	Sig. (2-tailed)
During pandemic	69.76	645.05	.00
Before pandemic	85.77	287.57	.00

The design from the beginning has taken into account all aspects that can support the maximum achievement of LO. The methods implemented during pandemics were intended as a substitute. Thus, the teaching and learning process was achieved, even though it is not optimal in its implementation.

Before the pandemic (85.77%), the level of achievement is higher than during the pandemic (69.76%). These results indicate that online learning is more effective when the learning design has been prepared from the beginning. The low level of achievement during pandemic suggests that online learning at the beginning of the pandemic is an emergency measure. Lecturers and students were not prepared for the learning model that was applied. Learning outcomes that were initially designed for face-to-face should be transformed into a complete online learning system.

The university is expected to prepare an adequate online learning infrastructure. The use of information technology for online learning continues to evolve as technology advances. The maximum online application provides better student LO. Online learning can make it easier for students to improve their knowledge and skills, and even attitudes towards the learning environment. Students can learn both individually and collaboratively in a group to complete their learning tasks.

The online learning system's planned use has a positive impact; that is, it can increase the ALO. Online learning methods developed can affect improving student's academic achievement. Similar results were found by (Lin et al., 2017; Nortvig et al., 2018). They concluded that digital learning presents better positive effects on learning outcomes than traditional teaching does. Computer-based learning showed promising results (Cigdem & Ozturk, 2016). If planned, online learning becomes a constructive tool, and it takes facilities the development of critical thinking.

The practical implication of the results is that the variables that affect online learning are anxiety and external perceptions. Universities can take corrective action based on these two variables. University administrators can reduce anxiety by increasing skills as well as adequate preparation. Increasing external perceptions can be done through discussion groups, outreach and ad-hoc teams to support lecturers using online technology.

6. Conclusions

This research aims to identify the determinants of accounting lecturers' online learning achievements in Indonesia during the COVID-19 pandemic. There are several antecedent constructions for online learning acceptance that have been identified. The results showed that, first, the perception of anxiety reduces the confidence of lecturers in using the online learning system, and the perception of external control positively affects the ease of use. Second, online learning playfulness and computer self-efficacy do not affect the ease of use. Lastly, the degrees of use of online learning affect the achievement of targeted learning outcomes. These results indicate that online learning is more effective if the learning design has been prepared from the beginning. Lecturers should use online learning models to their maximum to ensure optimal results. The results of the study provide clues to how online learning can be optimized. University administrators can use two variables: anxiety and perception of external control by modifying the two antecedent variables' level. The results showed that more careful preparation from the start resulted in achieving the learning outcome target. From a theoretical perspective, the results explain that user behavior influences online learning outcomes. The variables built from the reasoned action view become a mediation between the lecturer’s behavior and the online learning outcomes.

Declaration of conflicting interests

The authors declare no potential conflict of interest in this research, authorship, or publication of this article.

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Appendix 1

Construct	Operational Definition	Item	Measurement Items
Perceived Usefulness (Davis, 1989; Venkatesh & Bala, 2008)	The degree to which a person believes that using a particular online learning system would enhance his or her job performance.	PUS1	Using the on line learning system improves my performance in my task.
		PUS2	Using the on line learning system in my task increases my productivity.
		PUS3	Using the online learning system enhances my effectiveness in my task.
		PUS4	I find the online learninf system to be useful in my task
Perceived Ease of Use (Davis, 1989; Venkatesh & Bala, 2008)	the extent to the which a person believes that using a online learning will be free of effort.	EU1	My interaction with the system is clear and understandable.
		EU2	Interacting with the online learning system does not require a lot of my mental effort.
		EU3	I find the online learning system to be easy to use.
		EU4	I find it easy to get the online learning system to do what I want it to do
Computer Self-efficacy (Venkatesh & Bala, 2008)	The degree to which an individual believes that he or she has the ability to perform a specific task/job using the online learning	SE1	I could complete the job using a online learning
		SE2	... if there was no one around to tell me what to do as I go.
		SE3	... if I had just the built-in help facility for assistance.
		SE4	... if someone showed me how to do it first.
			... if I had used similar packages before this one to do the same job.
Perception of External Control (Venkatesh & Bala, 2008)	The degree to which an individual believes that organizational and technical resources exist to support the use of the online learning system	PEC1	I have control over using the online learning system.
		PEC2	I have the resources necessary to use the online learningsystem
		PEC3	Given the resources, opportunities and knowledge it takes to use the system, it would be easy for me to use the online learning system
		PEC4	The system is not compatible with other systems I use
		PCE5	I feel compelled to use th online learning system
Online Learning Anxiety (Venkatesh & Bala, 2008)	The degree of "an individual's apprehension, or even fear, when she/he is faced with the possibility of using online learning with computers	AX1	Online learning didn't scare me at all.
		AX2	Teaching with online learning makes me nervous.
		AX3	Online learning made me feel uncomfortable.
		AX4	The computer makes me feel uncomfortable.
Online Learning Playfulness (Venkatesh & Bala, 2008)	"...the degree of cognitive spontaneity in microcomputer interactions"		The following questions ask you how you would characterize yourself when you use a computer for online learning:
		PF1	. . . spontaneous
		PF2	. . . creative
		PF3	. . . playfulness
		PF4	. . . unoriginal
Behavioral Intention (Davis, 1989; Venkatesh & Bala, 2008)	Intention a person to perform a specific behavior.	BI1	Assuming I had access to the online learning system, I intend to use it.
		BI2	Given that I had access to the online learning system, I predict that I would use it.
		BI3	I plan to use the online learning system in the next <n> semester
Degree of use online learning (Hanum, 2013)	Measuring the quality of online learning undertaken. Statements 1 and 2 are statements about whether online learning was designed from the start of learning or something sudden. Another statement is a statement about the quality of online learning that is practiced.	OLU1	Design and concept of materials designed for online learning
		OLU2	The material must be following the curriculum and available electronic media
		OLU3	The material must be available and accessible regardless of place and time
		OLU4	Minimum material is available in electronic presentations (e.g. PowerPoint)
		OLU5	Delivery of learning material must be following the program that has been planned
		OLU6	Maximum student interaction with students, Interaction must be carried out either synchronously or asynchronously
		OLU7	Independent students in finding reference sources to strengthen the material
Achievement of learning outcome	The self-reported percentage of achievement.	ALO 1	What percentage of your learning achievement is completed compared to what was expected at the start of the semester?