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Antecedent of Private University Lecturers' Participation and E Learning Platforms

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Keywords:
private universities, lecturers' participation, e-learning, platforms.

Abstract

The COVID-19 pandemic has led to a decrease in face-to-face interactions due to the implementation of physical distancing policies, including within the education sector. The pandemic conditions make universities have to use a distance learning system. The aim of the study is to explore the relationship between e-learning platform preferences and lecturers' participation on e-learning. Data were collected using questionnaires distributed to 59 lecturers of a university. The questionnaire showed that there is a difference in the e-learning tools, techniques or platforms used by the lecturers. The results of chi square test shows that there was no significant relationship between e-learning platform preference and technical quality, learners and lecturers participation. In addition, low level of lecturers participation depends significantly only on learners participation, while technical quality, support system quality and educational support quality did not show any significant causal relationship. Further discussion and research are needed in order to gain more dimensions of lecturers' perspective.

INTRODUCTION

The implication of the COVID-19 pandemic is the reduction in face-to-face interactions or physical distancing policies, including those in the world of education (Silva et al., 2021). Up to May 2020, including South Africa with 9,400 cases, India with 62,000 cases, and Australia with 6,900 cases, they have shown significant changes in various aspects both institutionally, professionally, and for the community, especially related to education (Verma et al., 2020). The pandemic conditions forced universities to use a distance learning system.

Distance learning, one of which uses the ICT innovation approach, is usually better known as e-learning. E-learning provides educational service through an innovative approach of information in electronic forms that will strengthen the knowledge, skills, and other outcomes of learners (Fazlollahtabar and Muhammadzadeh, 2012). Several benefits of e-learning include cost savings associated with investing in learning infrastructure substantially; universities are becoming more digitalized and contributing to the digital form of the learning process, where learning can be done in a simple and fast way wherever and whenever with internet-enabled technologies

(Pham et al., 2019). In addition, the university will be more integrated with the global education environment, without state borders. Digital-based technology has penetrated all aspects of people's lives and allows learning to be done anywhere and anytime using the internet (Shamad and Wekke, 2019).

Currently, most Indonesian universities have adopted an online academic management information system (*AMIS*) to provide academic and administrative service activities ranging from student registration, payments, filling out the Study Plan Card, scheduling information, rooms, lecturers, grades, lecturer evaluations and learning, registration for Field Work Practices, and access to an online library. Although e-learning initiatives bring many advantages to the education system, these rewards have not been fully realized in developing countries.

However, the development of e-learning in Indonesia has also entered a strategic phase in the current COVID-19 pandemic. Various platforms, applications, or techniques are introduced or used by campus or school institutions, as well as instructors, ranging from simple to sophisticated versions, for example, WhatsApp groups, Google Hangouts Meet, Google Classroom, Zoom meetings, portals from universities, or even various combinations of these applications. Many studies have explored participation in e-learning, such as Davies and Graff (2005), Hrastinski (2008), Garavan et al. (2010), Tuparova and Tuparov (2010), Huang et al. (2012), Zhang et al. (2012), Giesbers et al. (2013), Weiser et al. (2018), and Shamad and Wekke (2019). Most of them discussed mainly students' participation. There was a lack of discussion on lecturers' perspectives on e-learning participation. Therefore, the aim of this study is to explore the relationship between e-learning platform preferences and lecturers' participation in e-learning.

Hypothesis Development

Tools may be related to the participation of lecturers engaged in e-learning. Giesbers et al. (2013) found that tool use and participation were correlated and were predictors of students' performance. Most previous studies agree that traditional service quality has a significant effect on students' satisfaction (Leonnard et al., 2015; Leonnard, 2018a; Leonnard, 2018b; Leonnard and Susanti, 2019).

Furthermore, the availability and ease of use of the tools/platforms/applications may respond to the challenges of e-learning, such as understanding internet operations (Shamad and Wekke, 2019). Therefore, platform/application preference is expected to be related to lecturers' participation in e-learning.

In addition, it has also been identified that the support system, such as poor infrastructure, inadequate IT support, lack of e-learning policy, and lack of university management support, presents challenges for lecturers to participate in e-learning (Moakofhi et al., 2017). Thus, besides students' participation, it is expected that the technical quality, support system quality,

and educational support quality also impact lecturers' participation in e-learning.

Based on the arguments above, the working hypotheses to be tested in this study are:

Hypothesis 1: There is a significant relationship between e-learning platform preference and technical quality.

Hypothesis 2: There is a significant relationship between e-learning platform preference and learners' participation.

Hypothesis 3: There is a significant relationship between e-learning platform preference and lecturers' participation.

Hypothesis 4: Technical quality has a significant impact on lecturers' participation.

Hypothesis 5: Support system quality has a significant impact on lecturers' participation.

Hypothesis 6: Educational support quality has a significant impact on lecturers' participation.

Hypothesis 7: Learners' participation has a significant impact on lecturers' participation.

METHOD

To examine the hypotheses, the research carried out a survey involving 59 lecturers from a university using a simple random sampling method. The measurements were obtained by using a 5-point Likert scale. The aim of the research was to analyze the relationship between e-learning platform preferences and the participation of lecturers. Data analysis was performed by employing SPSS software packages. Because the data types of the independent and dependent factors are all categorical (nominal for the platform data and ordinal for the participation), a chi-square test was used to show the relationship between e-learning platform preferences and learning participation. In addition, to analyze the causal relationship between independent variables of technical quality, support system quality, educational support quality, and learners' participation, and the dependent variable of lecturers' participation, ordinal logistic regression was used.

Perceptions of lecturer participation in e-learning were assessed through an evaluation of 35 questions, ranging from involvement, enthusiasm, communication, to evaluation and reporting. Based on the review of some of the studies mentioned above, several attributes were developed that may be predictors of lecturer participation in e-learning. The predictors were then incorporated into the questionnaire questions, as follows:

1. Active participations of students
2. Active communication of students
3. Enthusiasm of students
4. Active contact
5. More Resource

6. Students participation
7. Lecturers interaction
8. Flexibility
9. Less Resource
10. Higher workload
11. Less face to face interaction
12. More control
13. Online expectation
14. Comfort class
15. Flexible schedule
16. Creative resource
17. More time to prepare
18. Satisfaction
19. Feedback
20. More satisfaction
21. Flexible place
22. Know better
23. Less evaluation
24. More coverage
25. Motivation
26. Reliable technology
27. Suitable technology
28. Technical issue
29. Persistent
30. Compensation
31. IT Helper
32. Faculty support
33. Free and unlimited access
34. Periodic facilitation
35. Remuneration

Based on the validity test (column corrected item-total correlation), a few of r value of attribute/ question were under the r-table (0.2564) and it mean invalid. From the table below, questions 1, 2, 4, 6, 8, 10, 11, 15, 16, 17, and 29 were excluded from the next stage. Thus, the next validity test only used 24 questions.

Table 1. Initial Validity Test Result

Variable	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Var1	117.39	111.38	0.23	663
Var2	117.75	112.503	186	666
Var3	118.59	107.28	443	649
Var4	117.93	122.34	-275	698
Var5	117.97	108.723	357	654
Var6	117.73	120.408	-185	696
Var7	118.24	104.563	429	645
Var8	116.88	113.589	177	667
Var9	118.12	105.865	308	654
Var10	117.73	117.408	-75	687
Var11	117.15	120.338	-201	691
Var12	117.93	109.237	261	0.66
Var13	118.31	105.526	416	647
Var14	117.54	108.459	358	654
Var15	117.42	115.317	27	676
Var16	116.8	114.199	145	668
Var17	117.71	114.967	24	678
Var18	117.47	106.288	0.53	644
Var19	117.92	105.251	454	645
Var20	118.36	104.164	579	638
Var21	116.98	112.603	284	662
Var22	117.71	122.691	-262	703
Var23	118.2	126.268	-417	709
Var24	117.81	104.051	524	0.64
Var25	117.64	121.854	-257	696
Var26	117.31	105.147	604	0.64
Var27	117.31	107.629	462	649
Var28	117.98	126.465	-413	0.71
Var29	117.31	115.078	42	675
Var30	117.8	107.027	315	655
Var31	117.64	107.716	314	655
Var32	117.54	102.563	563	635
Var33	118.14	103.74	449	643
Var34	117.53	103.426	508	639
Var35	117.36	105.095	482	643

Source: Calculated Data

Then, they were tested again for the validity of the 24 attributes, all r values were above the r-table (above 0.2564). To test the reliability, the score seen was Cronbach's alpha of 0.891. All attributes are reliable because the Cronbach's alpha value is above the r-table.

Table 2. Final Validity Test Results

Variable	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Var3	75.58	187.973	457	887
Var5	74.95	189.29	395	889
Var7	75.22	184.037	455	888
Var9	75.1	182.852	413	889
Var12	74.92	186.458	0.41	889
Var13	75.29	182.967	0.52	886
Var14	74.53	184.288	571	885
Var18	74.46	184.873	619	884
Var19	74.9	180.369	638	883
Var20	75.34	181.952	665	883
Var21	73.97	193.757	368	889
Var22	75.58	187.214	342	891
Var23	75.08	185.286	0.46	887
Var24	74.8	181.441	618	883
Var25	75.64	187.061	429	888
Var26	74.29	185.002	623	884
Var27	74.29	187.76	504	887
Var28	75.31	180.802	589	884
Var30	74.78	188.382	0.31	892
Var31	74.63	189.514	0.3	892
Var32	74.53	182.426	552	885
Var33	75.12	185.141	408	889
Var34	74.51	182.806	524	886
Var35	74.34	185.469	482	887

Source: Calculated Data

Table 3. Reliability Test Results

Cronbach's Alpha	Number of Items
891	24

Source: Calculated Data

RESULTS AND DISCUSSION

Based on the questionnaire to 59 lecturers, the sample size was almost the same between females and males. The samples were 52,5% females, while 47,5% were males.

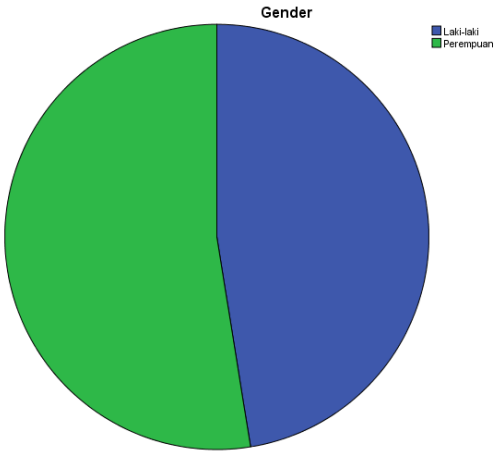

Figure 1. Respondents by Gender
Source: Calculated Data

The respondents included lectures who teach for undergraduate degree only, master degree, until doctoral degree. Most of them have only undergraduate students or 57.6% , while 20.3% attend for undergraduate and master degree. The rest proportion includes 8.5% for lecturers only in master degree, 6.8% in undergraduate, master, and doctoral degree, 5.1% only in doctoral degree, and 1.7% in master and doctoral degree.

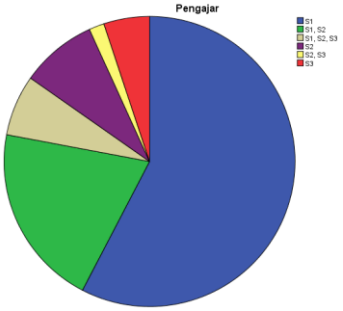

Figure 2. Respondents by Study Program Level
Source: Calculated Data

Eventually, the population of lectures was dominated by female gender and undergraduate program (entire university lectures of a private university in Jakarta). However, the gender or program intentions were not the purpose; thus, the results of gender and program level differences are not intentional arising from random sampling results which are not expected to cause bias in the study.

Besides gender and program, the samples age was mostly on 46-55 years old (44.1%) and following by 26-35 years old and 56-65 years old with the same percentage (20.3%). Following the proportions, 10.2% on 36-45 years old, 3.4% and 1.7% on 17-25 years old and more than 65 years old, respectively.

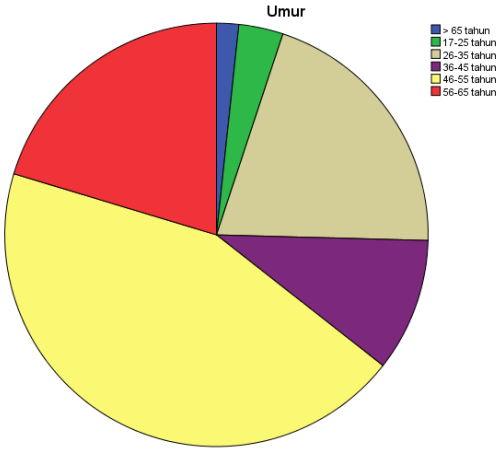

Figure 3. Respondents by Age
Source: Calculated Data

The questionnaire also showed that there are different e-learning tools, techniques or platforms used by the lectures. 42.4% of lectures used zoom meeting application, while 22% and 16.9% used google classroom and google hangouts meet application, respectively. Less were WhatsApp group (11.9%), university portal (3.4%), Microsoft teams and cisco Webex, each 1.7%.

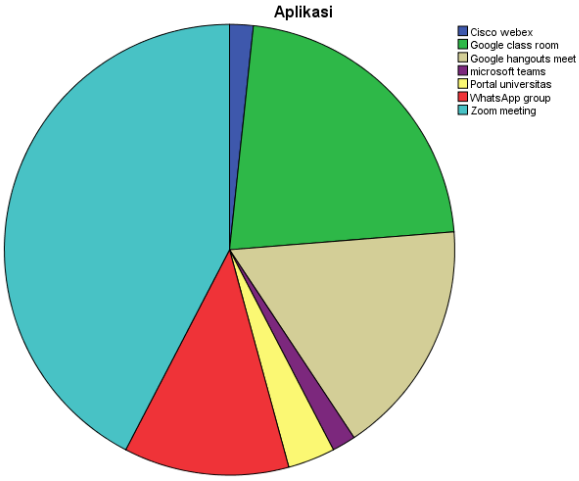

Figure 4. Platforms/Applications
Source: Calculated Data

Those platforms preference, then, was analyzed using cross tabulation table to evaluate the relationship between platform preference, technical quality, learners and lecturers participation. In the first iteration, the evaluation is carried out on each application according to what was submitted by the respondent. However, based on the chi-square results, it was found that the expected value (E value) of less than 5 was more than 20% of the number of

cells, which was 85,7%. Therefore, it was done merging categories that were close together, especially with low frequency, into the "Other" category. This "Other" includes Cisco Webex, Microsoft teams, university portal, WhatsApp group, and google hangout meet. Next, there were a few iterations employed, including grouping perceptions of participation into only 2 levels "High" and "Low". The results of this further iterations resulted in the E value decreasing to 16,7%, so that the results of chi square data processing can be concluded.

From Table 4, it can be seen that most respondents were perceived high technical quality for zoom meeting (76%), while for google classroom was low (58,3%). Other platforms were perceived "high" in technical quality. Compared to google classroom, zoom meeting offers video conferencing platform that is able to provide real time messaging and content sharing (Zoom, 2020). However, based on chi-square test the p-value is 0.092 (higher than 0.05); thus, there is no significant technical quality difference between the applications. The significance will only perform if the significance level is 90% ($\alpha = 0.10$). The results were in line to Leonnard (2021) from students' perspective that the e-learning platform/application had no significant effect on technical quality and satisfaction.

Table 4. Crosstabulation of Application and Technical Quality

Application	Technical_Quality 1.00	Technical_Quality 2.00	Total
Google classroom	7	5	12
Other	6	16	22
Zoom meeting	6	19	25
Total	19	40	59

Source: Calculated Data

Table 5. Chi-Square Test of Application and Technical Quality

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.768	2.0	92
Likelihood Ratio	4.514	2.0	105
N of Valid Cases	59.0		

Source: Calculated Data

Meanwhile, Table 6 and 7 shows that most respondents were perceived low for all applications. However, based on chi-square test the p-value in table 9 and table 11 are higher than 0.05; thus, there is no significant difference on learners and lecturers participation between the applications. The results were in contrast to Giesbers et al (2013) that the actual use of tools and contributions to interactions in the learning situation may relate to motivation towards e-learning participation because web-videoconference systems offer several tools (like chat, audio, and webcam) that vary in the amount and type of information learners can share with each other and the teacher. The interaction

may create more availability of opportunities to learn, and this situational factors may influence participation (Hurtz and Williams, 2009).

Table 6. Crosstabulation of Application and Learners Participation

Application	Learner_Participation 1.00	Learner_Participation 2.00	Total
Google classroom	8	4	12
Other	14	8	22
Zoom meeting	20	5	25
Total	42	17	59

Source: Calculated Data

Table 7. Chi-Square Test of Application and Learners Participation

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.678	2.0	432
Likelihood Ratio	1.718	2.0	424
N of Valid Cases	59.0		

Source: Calculated Data

Table 8. Crosstabulation of Application and Lecturers Participation

Application	Lecturer_Participation 1.00	Lecturer_Participation 2.00	Total
Google classroom	9	3	12
Other	14	8	22
Zoom meeting	13	12	25
Total	36	23	59

Source: Calculated Data

Table 9. Chi-Square Test of Application and Lecturers Participation

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.904	2.0	386
Likelihood Ratio	1.949	2.0	377
N of Valid Cases	59.0		

Source: Calculated Data

Finally, ordinal logistic regression was employed to analyze the causal relationship between independent variable of technical quality, support system quality, educational support quality, and learners participation, and dependent variable of lecturers participation. The Fitting Information Model -2log Likelihood explains that without including the independent variable (intercept only) the value is 40.947. However, by inserting the independent variables into the (final) model, the value decreased to 23.698. This change in value is the chi-square value of 17.249 and is significant at the 5% real level (sig. 0.002).

Table 10. Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	40.947			
Final	23.698	17.249	4.0	2

Source: Calculated Data

The Goodness of Fit table shows the suitability test of the model with the data. Pearson value was 8.123 with a significance of 0.422 (> 0.05) and a Deviance of 10.662 with a significance of 0.222 (> 0.05). Based on the results of the goodness-of-fit, the decision taken is failure to reject H0, meaning that there is not enough evidence to say that the resulting model does not match the data. This means that the model according to empirical data or the model is suitable for use.

Table 11. Goodness of Fit

Test	Chi-Square	df	Sig.
Pearson	8.123	8	422
Deviance	10.662	8	222

Source: Calculated Data

Furthermore, a partial parameter estimator test is carried out, where the null hypothesis in this test is that certain independent variables do not have a significant effect on lecturers participation. If the null hypothesis is successfully rejected, it can be said that the independent variable affects lecturers participation. Based on the table below, it is suspected that there are 4 variables that are thought to affect lecturers participation. However, only 1 independent variable completely forms a significant regression model, namely learners' participation. In addition, only 1 regression equation can be formed significantly at the 95% confidence level, namely at the low participation level, while the high participation regression equation cannot be formed.

Table 12. Parameter Estimates

Parameter	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval (Lower Bound)	95% Confidence Interval (Upper Bound)
Threshold [Lecture_Participation=1.00]	-1.386	641	4.672	1	31	-2.642	-129
Location [Technical_Quality=1.00]	-913	756	1.459	1	227	-2.394	568
Location [Technical_Quality=2.00]	0.0			0			
Location [SupportSystem_Quality=1.00]	0.41	672	371	1	542	-908	1.727
Location [SupportSystem_Quality=2.00]	0.0			0			
Location [EducationalSupport_Quality=1.00]	-657	778	713	1	398	-2.183	868
Location [EducationalSupport_Quality=2.00]	0.0			0			
Location [Learner_Participation=1.00]	-2.273	706	10.356	1	1	-3.657	-889
Location [Learner_Participation=2.00]	0.0			0			

After all tests have been carried out, the ordinal logistic regression model with the proportional odds formed can be determined. The data processing program with SPSS presents the reverse direction of the ordinal logistic regression output (Norusis, 2011). Therefore, for writing the model, the direction of the parameter coefficients must be reversed. The ordinal logistic regression equation that is formed is:

$$
\begin{aligned}
&logit[P(Y \leq 1|x)] \\
&\quad = 1.386^{*} + 0.913\ technical\ quality \\
&\quad - 0.410\ support\ system\ quality \\
&\quad - 0.657\ educational\ support\ quality \\
&\quad + 2.273\ learners\ participation^{*}
\end{aligned}
$$

*significance at 95%.

Based on the equation, it can be concluded that low level of lecturers participation depends significantly only on learners participation, while technical quality, support system quality and educational support quality did not show any significant causal relationship.

To summarize, based on the analyzes above, the hypotheses are confirmed:

1. H1 rejects; thus there is no significant relationship between e-learning platform preference and technical quality
2. H2 rejects; thus there is no significant relationship between e-learning platform preference and learners participation
3. H3 rejects; thus there is no significant relationship between e-learning platform preference and lecturers participation
4. H4 rejects; thus technical quality has no significant impact on lecturers participation
5. H5 rejects; thus support system quality has no significant impact on lecturers participation
6. H6 rejects; thus educational support quality has no significant impact on lecturers participation
7. H7 fails to reject; thus learners participation has significant impact on lecturers participation

In general, the main factor that significantly impact lecturers participation is the student itself. Both student-lecturer need motivation to learn, self-efficacy, and perceived barriers and enablers to participate in e-learning (Garavan et al, 2010). The support systems included on the research have no significant impact on lecturers participation, although lecturers feel the poor infrastructure, inadequate IT support, lack of e-learning policy, and lack of university management support as challenges on e-learning environment (Moakofhi et al, 2017). Additionally, e-learning technical quality

still needs to be improved because it was related to students' satisfaction (Leonnard, 2021).

CONCLUSION

The analysis revealed that most respondents demonstrated high participation in *Zoom* meetings (76%), whereas participation in *Google Classroom* was lower (66.7%). A significant relationship was found between the e-learning platform and lecturers' participation, indicating that the use of tools and interactive contributions in learning environments may relate to motivation and engagement. Interaction opportunities and ease of platform use influence participation and address common e-learning challenges such as technical understanding.

However, the chi-square test indicated no significant relationship between platform preference and technical quality, or between learners' and lecturers' participation. The logistic regression model showed that low lecturer participation was significantly influenced only by learners' participation, while technical quality, support system quality, and educational support quality were not significant factors. Although lecturers identified challenges such as poor infrastructure, inadequate IT support, lack of policies, and limited institutional backing, these factors did not directly impact their participation.

Findings also revealed that platform preference alone was not a determining factor for lecturer engagement in e-learning. Instead, the primary factor influencing lecturer participation is the level of student engagement. This highlights the need for further research into lecturer participation factors, as many previous studies have focused primarily on student participation. E-learning challenges extend beyond higher education institutions to governmental responsibility in providing adequate policy and infrastructure support.

The findings suggest that increasing lecturer participation requires not only effective tools and interactive environments but also attention to human factors such as motivation and mutual engagement between students and lecturers, in order to enhance the overall e-learning experience.

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