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THE RELATIONSHIP BETWEEN E-LEARNING AND STUDENT SATISFACTION AS MARKETING STRATEGY: A CASE STUDY AT A PRIVATE UNIVERSITY

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ABSTRACT

Universities have incorporated e-learning into their educational structures because of the unanticipated transition from conventional learning to digital and hybrid learning methods to the closure of educational facilities during the COVID-19 pandemic. This study aims to ascertain how e-learning influences students' satisfaction at private universities and to develop a marketing strategy to keep institutions of higher learning competitive throughout the COVID-19 or similarly disrupting events. In the study, we utilise a quantitative descriptive method. Collecting data was done by distributing e-questionnaires to students at a private university in Bandung. The sampling technique used random sampling with 245 respondents. The data was subjected to numerous linear regression analyses using SPSS. ICT, ESQ, and EIQ are the study's dependent variables, and e-learning is the study's independent variable. The findings indicate that all variables influence and significance of e-learning and students' satisfaction with 65.9%, which can enhance learning outcomes in private universities.

Keywords: Digital transition, education, electronic-learning, hybrid education, systemic disruption

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INTRODUCTION

The recent COVID-19 pandemic has had an unprecedented and profoundly disruptive effect on the world. The latest variant of COVID

has significantly disrupted social and community activities by imposing travel restrictions and curfews and required the use of Personal Protection Equipment (PPE) in the form of masks and sanitisers where essential goods needed to be purchased.

Among the most disrupted sectors is education, which was effectively shut down by governments locally and abroad in their immediate response to the pandemic. However, with every new variant, students could not continuously delay their schooling. In response, governments implemented limited online learning. Information and Communication Technology (ICT) soon became the leading solution to overcome the unpredictable limitations imposed by governments regarding face-to-face educational activities (Hermawan 2021).

In response, universities have had to rapidly improve their digital-based services in providing education and facilitating interaction with university administrative staff. ICT-based education is a means of interaction between educational management and administration that both educators and education personnel can utilise, and students can utilise to improve the quality, productivity, effectiveness, and access to education. Students have been forced to adapt to university digitisation as they transition to hybrid- and online learning as we approach industry 5.0. Given that many universities had to rely primarily on their digital platforms to communicate with and educate their students, a new basis for comparing the quality of ICT-based education was established between universities. Positive student perception of university digitisation efforts is essential as information in this digital era spreads quickly and can impact public perception.

Currently, institutions of higher education are embracing this transition as an opportunity by incorporating digital infrastructure into their operations. Amin *et al.* (2016) did a study to find out how well-liked online education is in Bangladesh. The results demonstrate that students are not pleased with the graphical user interface of online learning. Students' opinions of online education during the pandemic in India were examined by Khan *et al.*, (2020), and the findings reveal that students' perspectives on e-learning are positive and accept the new learning system. Co-participation is one of the key variables in students' willingness to utilise e-learning platforms, according to Ghavifekr and Mahmood's (2017) investigation of the factors influencing their use by Malaysian students. Samsudeen and Mohamed (2019) studied the intentions of Sri Lankan university students in using e-learning. They found that the acceptance of technology use significantly impacts behavioural intention and the use of e-learning. Tang and Lim (2013) discussed undergrad student readiness in e-learning in Malaysian private universities and found that the university has significantly profited from the implementation of e-learning (Tang, S. F., & Lim, C. L. 2013).

Although the previous research shows limited research on e-learning and student satisfaction, this study primarily concentrated on determining how student satisfaction with their education was affected through e-learning at private institutions.

LITERATURE REVIEW

Digitalisation is an unavoidable reality of living in the information age, altering our daily private and professional lives with constant innovation. Institutions of higher learning must likewise adapt to technology and e-learning to remain relevant in the digital age. This transition necessitates a simultaneous evolution of the teaching methodologies and the skills required to teach effectively in a digital environment.

What has been found is that e-learning I not necessarily worse than face-to-face learning. However, although Brink *et al.* (2020) found that e-learning enhances student learning experiences and creates new operational possibilities, every university has a different framework, and universities rely on students' ability to deal with the digital framework provided by the university. This adds complexity to classroom dynamics from the student and educator's perspectives. Consequently, adapting to e-learning regardless of previous experience can come with a learning curb that alienates users until mastered (Singh 2021). Furthermore, it is vital to ensure students' positive opinions about technology to ensure adoption (Brink *et al.*, 2020).

Even though the initial adaptation required from a consumer and content-producing perspective can be challenging, the benefits of utilising e-learning technologies are robust. The first benefit to note is that technology innovation in education encourages lecturers to utilise different communication mediums, extend educational materials, and support the assessment of learning objectives (Vogelsang, 2019). Furthermore, e-learning accelerates the utilisation and improvement of the service system of the university. Moreover, e-learning is cost-effective and better for the environment as it reduces the need for transportation, accommodation near an institution of higher education, and physical stationery and textbooks. It also benefits attending classes from anywhere with a cellular signal or wifi. Moreover, classes are online; thus, they can be recorded and played back where needed, allowing for greater understanding and a means of revising content and catching up where classes cannot be attended (Wang 2021).

Approaching the benefit of digital technologies from the faculty perspective allows lecturers and administrators to cooperate, thus bolstering education and making student outcomes more transferrable and accessible. Furthermore, digitisation allows universities to improve education competency in learning and administration through evaluation of their content, analysis of their viewer and engagement metrics, and automation of specific tasks. Despite these benefits, using these technologies only allows the university in question to stay on par with other university study offerings; thus, efficient practices must be investigated in an intensely competitive world (Adler & Harzing, 2009).

METHODOLOGY

In order to engage with the underlying nuances of this research and the factors that pertain to it, a multistaged process, outlined in Figure 1, was followed, and several steps were taken to facilitate the testing process.

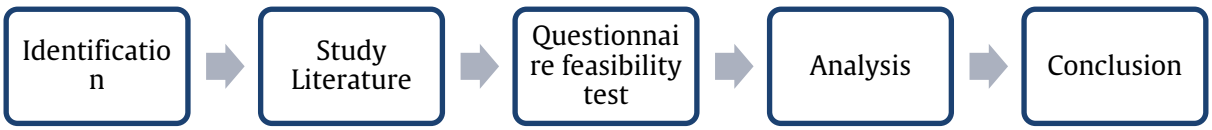

Figure 1: Research Stages
Author's compilation (2022)

Research paradigm

In order to determine how student education satisfaction is affected through e-learning at private institutions and, secondly, to model those factors into a model, this study employs a postpositivist paradigm to answer both. The rationale for the postpositivist paradigm is that, with the support of the literature, e-learning has been shown to have generalisable effects on students and educators and that these interactions are measurable and can be modelled through regression analysis. Furthermore, the researchers understand that this research does not necessarily constitute an absolute model of these interactions and thus utilises this paper to disambiguate this concept and advance the field toward a comprehensive model

Research design

Given the selected paradigm and the ample research already conducted in this field, this paper utilised a quantitative research design.

Sample

This research's target population is students at private universities who have applied ICT in their teaching and learning process. Thus the selection of universities was based on universities that have implemented ICT in their learning systems and services. Given that the entire population could not be engaged, the researchers limited the sample to Universitas Komputer Indonesia students across all study programs and several large private universities in Bandung.

A random non-probability sampling technique was utilised between January and

February 2022. The questionnaire was distributed online through web links like Facebook and WhatsApp groups to reach the maximum number of students. Respondents who take online classes and are engaged in e-learning serve as the analytical unit. A total of 245 completed questionnaires were gathered.

Research instrument

To develop the research instrument used in this study, the survey questionnaire, the current stance of literature on the ongoing conditions, determinants and existing problems regarding digitalisation and e-learning had to be identified. In the initial literature review process, a number of sources explicated the nature of e-learning and the effects of digitisation. What was of particular value were the sources utilised in Table 1 which presented already validated questionnaires that could be utilised in this study.

Once the relevant questions were identified, they were compiled into a survey questionnaire which used discrete whole numbers to record the respondent's responses and consisted of 25 questions. Table 1 lists the sources from which the questions were derived, and the indicators (questions) gathered from them in a statement form. Furthermore, Table 1 shows how they are grouped into overarching variables.

Table 1: Research Informants

Variable	Code	Indicator	Source
Information & Communication Technology (ICT)	ICT1	An environment that is favorable for teaching and learning is promoted through ICT-based technique.	Bhat & Bashir (2018)
	ICT2	ICT-based methodology is positively correlated with students' academic performance.	
	ICT3	The ICT-based methodology is very supportive in developing learners' styles.	
	ICT4	ICT resources are readily available, which improves my productivity and learning efficiency.	
	ICT5	ICT-enabled instruction is superior to conventional instruction.	
	ICT6	Ease of use This ICT-enabled teaching approach instills self-assurance in lecture preparation and delivery.	
	ICT7	ICT technologies like online quizzes, instructional blogs, and regular email make communication easier.	
	ICT8	The use of ICT requires physical and social effort.	
	ICT9	ICT usage necessitates both physical and interpersonal work. ICT-based methods for teaching and learning help educators unwind and calm down.	
e-Service Quality (e-SQ)	ESQ1	I can easily find any service I need thanks to ICT facilities.	Parasuraman *et al.,* (2005).
	ESQ2	ICT facilities make it easy to get learning materials anywhere and anytime.	
	ESQ3	This ICT facility and website are always available for learning.	
	ESQ4	ICT facilities and websites do not crash after I upload assignments.	
	ESQ5	ICT facilities and websites provide teaching materials and services in an appropriate time frame.	
	ESQ6	ICT facilities and websites quickly send me what I ordered.	
	ESQ7	ICT facilities and websites protect information about my confidential information (values, financial records, etc.).	

Table 1: Continued

	ESQ8	My personal information is not shared with other websites by ICT resources or websites.	
e-Information Quality (e-IQ)	EIQ1	The information provided on the web, as well as the university's ICT facilities, is accurate.	Zhou *et al.,* (2014).
	EIQ2	Information is always easy to find on the web and in university ICT facilities.	
	EIQ3	Up-to-date information on the web, as well as university ICT facilities	
	EIQ4	Information is provided on the web, as well as complete university ICT facilities.	
E-learning (EL)	EL1	Your perception of the overall quality of instruction from online learning is very good to bad.	Headar *et al.,* (2013).
	EL2	The instructional website seems up to date.	
	EL3	The instructional website works great.	
	EL4	The instructional website has clear instructions.	

Research Hypothesis

This study analysed the relationship between one variable and another. The empirical analysis was conducted on variables that affected student satisfaction: ICT, e-SQ, and e-IQ. Based on the End-User Computing Satisfaction (EUCS) model formulated by Doll and Torkzadeh (1988) and used in their research. Figure 2 is a research hypothesis based on the EUCS model.

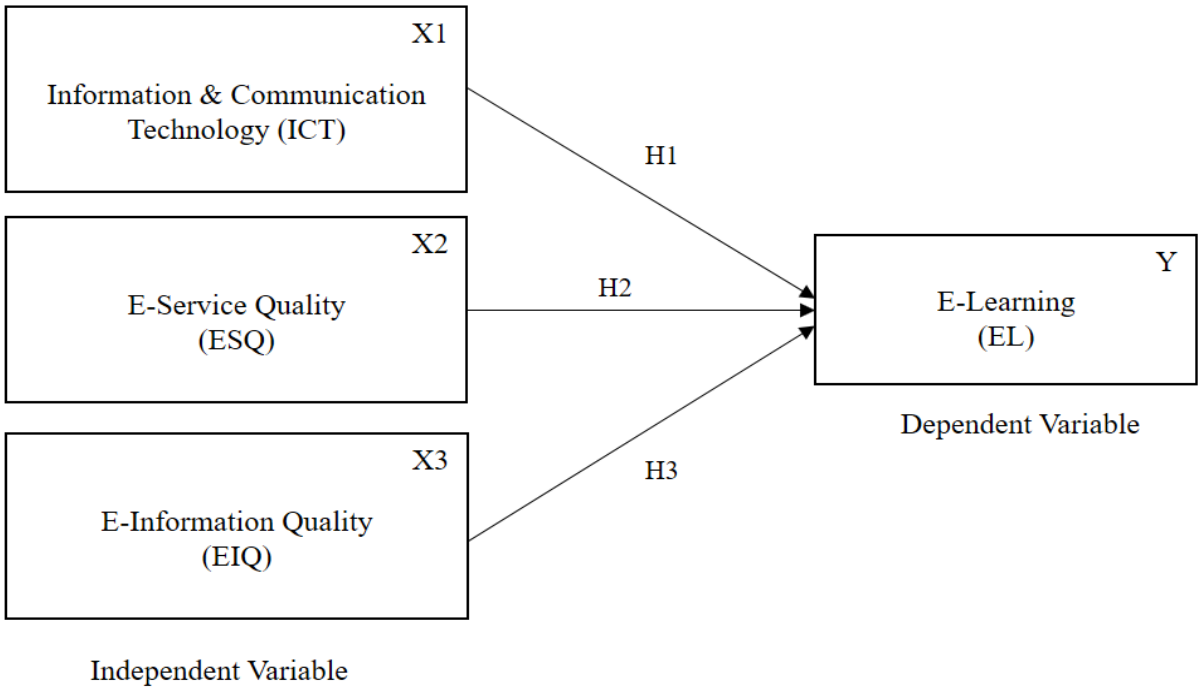

Figure2: Research Hypothesis
Source: Author's compilation (2022)

Three factors were theorised to impact students' satisfaction with information and communication technologies used during teaching and learning. ICT, e-SQ, and e-IQ.

As a result, three hypotheses can be formulated in this study, namely:

- H1 = ICT variable (X1) has an impact on user satisfaction (Y).

- H2 = Variable e-SQ (X2) has an impact on user satisfaction (Y).
- H3 = Variable e-IQ (X3) has an impact on user satisfaction (Y).
- H4 = the three variables simultaneously affect E-Learning (Y).

Statistical analysis

Once the questionnaires were retrieved, data analysis was carried out by conducting descriptive analysis, validity testing, and reliability testing. Statistical analysis utilised excel to record the data in line with Indonesian data protection requirements. The multiple linear regression model was created using Statistical Package for Social Sciences (SPSS) version 28.0.1 and Microsoft Excel. Hypotheses were tested through T-tests and F-tests.

RESULTS AND DISCUSSION

Validity and Reliability Test

Validity is measured to determine how appropriate the indicators used in this study are and test the relationship between question points and the total score (Napitupulu, 2018). An indicator will have a high validity if the score significantly influences the total score (Sahin, 2018). The validity tests' results on the tools employed, including ICT, E-Information Quality, and E-Service Quality Variables, are shown in Table 2, Table 3 and Table 4, respectively, and show that they are all significant, valid and reliable.

Furthermore, the factors are shown to be correlated, and thus related, to each other internally within their constructs, showing that there is structural cohesion in each variable.

Table 2: ICT Variable Validity Test

Correlations		ICT1	ICT2	ICT3	ICT4	ICT5	ICT6	ICT7	ICT8	ICT9	ICT
ICT 1	Pearson Correlation	1	.718**	.560**	.577**	.460**	.501**	.490**	.263**	.403**	.754**
	Sig. (2-tailed)	n/a	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	249	249	249	249	249	249	249	249	249	249
ICT 2	Pearson Correlation	.718**	1	.540**	.570**	.450**	.436**	.480**	.303**	.392**	.741**
	Sig. (2-tailed)	.000	n/a	.000	.000	.000	.000	.000	.000	.000	.000
	N	249	249	249	249	249	249	249	249	249	249
ICT 3	Pearson Correlation	.560**	.540**	1	.662**	.483**	.520**	.462**	.351**	.384**	.755**
	Sig. (2-tailed)	.000	.000	n/a	.000	.000	.000	.000	.000	.000	.000
	N	249	249	249	249	249	249	249	249	249	249
ICT 4	Pearson Correlation	.577**	.570**	.662**	1	.461**	.587**	.524**	.328**	.397**	.776**
	Sig. (2-tailed)	.000	.000	.000	n/a	.000	.000	.000	.000	.000	.000
	N	249	249	249	249	249	249	249	249	249	249
ICT 5	Pearson Correlation	.460**	.450**	.483**	.461**	1	.482**	.482**	.329**	.325**	.697**
	Sig. (2-tailed)	.000	.000	.000	.000	n/a	.000	.000	.000	.000	.000
	N	249	249	249	249	249	249	249	249	249	249
ICT 6	Pearson Correlation	.501**	.436**	.520**	.587**	.482**	1	.577**	.360**	.439**	.750**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	n/a	.000	.000	.000	.000
	N	249	249	249	249	249	249	249	249	249	249
ICT 7	Pearson Correlation	.490**	.480**	.462**	.524**	.482**	.577**	1	.374**	.496**	.757**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	n/a	.000	.000	.000
	N	249	249	249	249	249	249	249	249	249	249
ICT	Pearson	.263**	.303**	.351**	.328**	.329**	.360**	.374**	1	.427**	.591**

Table 2: Continued

8	Correlation										
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	n/a	.000	.000
	N	249	249	249	249	249	249	249	249	249	249
ICT 9	Pearson Correlation	.403**	.392**	.384**	.397**	.325**	.439**	.496**	.427**	1	.670**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	n/a	.000
	N	249	249	249	249	249	249	249	249	249	249
ICT	Pearson Correlation	.754**	.741**	.755**	.776**	.697**	.750**	.757**	.591**	.670**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	n/a
	N	249	249	249	249	249	249	249	249	249	249

Table 3: E-Service Quality Variable Validity Test and Correlations

		ESQ1	ESQ2	ESQ3	ESQ4	ESQ5	ESQ6	ESQ7	ESQ8	ESQ
SQ1	Pearson Correlation	1	.645**	.636**	.455**	.491**	.612**	.534**	.430**	.778**
	Sig. (2-tailed)	n/a	.000	.000	.000	.000	.000	.000	.000	.000
	N	249	249	249	249	249	249	249	249	249
SQ2	Pearson Correlation	.645**	1	.638**	.439**	.432**	.519**	.404**	.448**	.726**
	Sig. (2-tailed)	.000	n/a	.000	.000	.000	.000	.000	.000	.000
	N	249	249	249	249	249	249	249	249	249
SQ3	Pearson Correlation	.636**	.638**	1	.479**	.564**	.636**	.555**	.452**	.802**
	Sig. (2-tailed)	.000	.000	n/a	.000	.000	.000	.000	.000	.000
	N	249	249	249	249	249	249	249	249	249
SQ4	Pearson Correlation	.455**	.439**	.479**	1	.528**	.566**	.485**	.421**	.730**
	Sig. (2-tailed)	.000	.000	.000	n/a	.000	.000	.000	.000	.000
	N	249	249	249	249	249	249	249	249	249
SQ5	Pearson Correlation	.491**	.432**	.564**	.528**	1	.605**	.516**	.458**	.749**
	Sig. (2-tailed)	.000	.000	.000	.000	n/a	.000	.000	.000	.000
	N	249	249	249	249	249	249	249	249	249
SQ6	Pearson Correlation	.612**	.519**	.636**	.566**	.605**	1	.529**	.488**	.810**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	n/a	.000	.000	.000
	N	249	249	249	249	249	249	249	249	249
SQ7	Pearson Correlation	.534**	.404**	.555**	.485**	.516**	.529**	1	.684**	.776**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	n/a	.000	.000
	N	249	249	249	249	249	249	249	249	249
SQ8	Pearson Correlation	.430**	.448**	.452**	.421**	.458**	.488**	.684**	1	.732**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	n/a	.000
	N	249	249	249	249	249	249	249	249	249
SQ	Pearson Correlation	.778**	.726**	.802**	.730**	.749**	.810**	.776**	.732**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	n/a
	N	249	249	249	249	249	249	249	249	249

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4: E-Information Quality Validity Test

Correlations

		EIQ1	EIQ2	EIQ3	EIQ4	EIQ
EIQ1	Pearson Correlation	1	.704**	.720**	.684**	.881**
	Sig. (2-tailed)	n/a	.000	.000	.000	.000
	N	249	249	249	249	249
EIQ2	Pearson Correlation	.704**	1	.714**	.657**	.871**
	Sig. (2-tailed)	.000	n/a	.000	.000	.000
	N	249	249	249	249	249
EIQ3	Pearson Correlation	.720**	.714**	1	.738**	.898**
	Sig. (2-tailed)	.000	.000	n/a	.000	.000
	N	249	249	249	249	249
EIQ4	Pearson Correlation	.684**	.657**	.738**	1	.876**
	Sig. (2-tailed)	.000	.000	.000	n/a	.000
	N	249	249	249	249	249
EIQ	Pearson Correlation	.881**	.871**	.898**	.876**	1
	Sig. (2-tailed)	.000	.000	.000	.000	n/a
	N	249	249	249	249	249

Table 5: Validity of Research Instrument items

Item	R_{count}	r_{table}	Information
ICT1	0.754	0,181	Valid
ICT2	0.741	0,181	Valid
ICT3	0.755	0,181	Valid
ICT4	0.778	0,181	Valid
ICT5	0.697	0,181	Valid
ICT6	0.750	0,181	Valid
ICT7	0.757	0,181	Valid
ICT8	0.591	0,181	Valid
ICT9	0.670	0,181	Valid
ESQ1	0.778	0,181	Valid
ESQ2	0.726	0,181	Valid
ESQ3	0.802	0,181	Valid
ESQ4	0.730	0,181	Valid
ESQ5	0.749	0,181	Valid
ESQ6	0.810	0,181	Valid
ESQ7	0.776	0,181	Valid
ESQ8	0.732	0,181	Valid
EIQ1	0.881	0,181	Valid
EIQ2	0.871	0,181	Valid
EIQ3	0.898	0,181	Valid
EIQ4	0.876	0,181	Valid

The results in Table 5 show that all the instruments used in this study are valid for testing because the entire r-count value of the instrument exceeds the r-table value. After testing the instrument's validity and getting valid results, a reliability test is carried out to measure the instrument's reliability as a data collection material (Munir, 2018). Table 6 shows the reliability testing result of all instruments represented in the distributed

questionnaires and obtained data.

Table 6: Reliability Test Results of Research Instruments

Reliability Statistics

Cronbach's Alpha	N of Items
.957	25

The decision-making of Cronbach's Alpha test is:

If r-count >= r-tabel, then reliable

If r-count < r-tabel, then not reliable

Table 5 shows that the alpha value is 0.957 as the r-count. These results will be compared with the r-table value obtained from N = 249 (number of test respondents) and α = 0,01.

From the two data, the value of r-table = 0.181 is obtained. The conclusion is that the value of the r-count (0.957) is greater than the r-table (0.181), so the research instrument tested can be trusted and thus considered statistically reliable.

Multiple Linear Regression Analysis

Multiple Linear Regression (MLR) is a statistical technique to predict the effect of several independent variables using the dependent variable (Maulud, 2020). Multiple regression analysis was done using SPSS version 28.0.1 software; the results are shown in Table 7.

Table 7: Multiple linear regression analysis findings

Model		Unstandardised Coefficients		Standardised Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.093	.191		.489	.625
	ICT	.295	.070	.250	4.230	.000
	ESQ	.152	.083	.133	1.843	.067
	EIQ	.482	.064	.497	7.530	.000

a. Dependent Variable: EL

The results of regression analysis using SPSS can be explained through the obtained regression model, namely:

Y = 0,093 + 0,295 X1 + 0,152 X2 + 0,482 X3

The above equation can be explained as follows:

1. Variable X1 (ICT) has a positive value of 0,295, so it can be said that the higher X1, the higher the quality of E-Learning.
2. Given that variable X2 (ESQ) has a positive value of 0,152, it can be said that as X2 rises, so does the quality of e-learning.
3. Given that variable X3 (EIQ) has a positive value of 0,482, it can be claimed that the quality of e-learning will increase as X3 increases.

Hypothesis Test

T-Test

The T-test tests the significance level between the independent and dependent variables individually. The standard level of significance used is 5% (0.005). The analysis results using Excel and SPSS are shown in Table 7. Dependent Variable: EL

Table 7 provides an inference for the t-test results, which are as follows:

1. The t-count value is 4,230, and the significance value of the ICT variable is 0,000 > 0.05. It is concluded that the ICT variable has no effect and is not significant for E-Learning.
2. T-count is 1,843, whereas the significance value for the E-Service variable is 0,067, 0.05. Conclusion: The E-service variable has an impact and is essential for E-Learning.
3. The t-count value is 7,530, and the significance value of the EIQ variable is 0.000 <0.05. It can be concluded that the EIQ variable has an effect and is significant for E-Learning.

F-Test

The F test will produce a result if every independent variable in the model immediately impacts the dependent variable. The run tests were predicated on a 0.05 significance threshold, or five per cent. Table 8 contains the outcomes.

Table 8: F Test Results Using SPSS

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	74.006	3	24.669	160.551	.000[b]
	Residual	37.644	245	.154		
	Total	111.650	248			

a) Dependent Variable: EL

b) Predictors: (Constant), EIQ, ICT, ESQ

F-value computations for Table 8 yield a significance level of 0.000 and an F-value of 160,551. These findings show that the computed F significance level is lower than the 0.05 significance threshold. It indicated that the variables ICT, e-IQ, and e-SQ together have an influence and significance on student satisfaction in the application of e-learning.

Coefficient of Determination

How well the independent variable X can account for changes in the dependent variable Y, or how much X contributes to Y, is shown by the coefficient of determination (R2) number (Padilah, 2019). Table 9 displays the value of the coefficient of determination (R2).

Table 9: Results of the Regression Coefficient of Determination

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.814[a]	.663	.659	.39198

Based on Table 9, the adjusted R2 value is 0,659. These results can be interpreted that 65,9s% of the diversity from E-learning can be explained by ICT (X1), E-Service (X2), and E-Information Quality (X3), while the rest (34,1%) are other variables that were not studied.

Based on the results obtained from the t-count value and the significance level for each variable, namely ICT, e-IQ, and e-SQ, the results show that the X2 and X3 variables influence the variable. Y, but the X1 variable does not influence the Y variable. This result occurs because, based on the results obtained from the calculated F value and the significant level, the new X1 variable will be affected if it co-occurs with X2 and X3. The correlation analysis test findings demonstrate that every independent variable impacts the dependent variable, as shown by the estimated r, which ranges from 0.800 to 1,000 and has a very strong association level. Then, based on the regression test results, the coefficient of multiple determination R2 of 0,659 shows that the ICT, e-IQ can explain the student satisfaction variable, and e-SQ variables by 65,9%, while other factors explain the remaining 34,1%

DISCUSSION

The Covid-19 pandemic triggered the digitalisation of education. However, since then, it has become a standard competitive requirement of university administrators (Hasanah, 2020). To add emphasis to this point, Indonesia's ministry of education and culture aims to hybridise learning permanently through simultaneous digital- and face-to-face learning (Amin, 2020). Thus, although the pandemic might have triggered its adoption, it is here to stay. The importance of the e-learning capacities at a university level is their ability to

mitigate the risk universities face in similar emergency conditions.

Professors, administrative staff, and students must rapidly adopt and adjust to digitisation so that the learning process can continue despite distance and time constraints and develop additional e-learning methodologies. To enable students to retain teachings and adequately support the caliber of graduates from each university, e-learning must be of the highest possible quality. To this end, efforts should be made to include rigorous quality control measures and incorporate technology into every learning opportunity. This study shows that if a university applies itself to ICT, e-IQ, and e-SQ development, it can improve e-learning experiences significantly. Online learning will always require rapid innovation by faculty and universities so that students remain interested in the knowledge conveyed by the lecturer every time they take a class, whether in person or through a device.

CONCLUSION

The analysis results show that the three variables simultaneously strongly affect the (bound) variable. Therefore, the results of this analytical test can be used as a reference for every education provider, significantly higher education institutions, in improving ICT facilities and their operational support. This is an added benefit for universities that already have established ICT facilities. Marketing improvements in the supporting infrastructure have been a widely used marketing strategy. Consequently, this paper has addressed its objective and shown that ICT, e-SQ, and e-IQ all significantly affect E-Learning (Y). Moreover, the student satisfaction variable can be explained by the ICT, e-IQ, and e-SQ variables by 65,9%, while other factors explain the remaining 34,1%. The study did not suffer any significant limitations. A suggested future research direction is modelling the research in this paper towards a formal framework and the expansion of the research to include factors derived from educational theory.

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