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Student Satisfaction and Priority Quadrants towards E-Learning

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Abstrak

Metode pembelajaran e-learning sudah lama dikenal dalam pembelajaran jarak jauh dan semakin marak digunakan di masa pandemi, apalagi di masa endemik seperti saat ini. Siswa yang terbiasa melakukan pembelajaran tatap muka sebagai penyebab rendahnya hasil belajar. Beberapa penelitian dengan menggunakan analisis regresi linier berganda menyimpulkan bahwa tingkat kepuasan siswa terhadap model pembelajaran e-learning berpengaruh terhadap hasil belajar. Metode analisis tambahan diperlukan untuk mengukur kualitas layanan e-learning sekaligus dapat membuat skala prioritas penanganannya. Tujuan dari penelitian ini adalah menganalisis pengaruh kesetaraan layanan secara parsial dan simultan terhadap kepuasan mahasiswa dalam metode e-learning, mengukur tingkat kepuasan mahasiswa dan membuat skala prioritas penanganannya. Subyek penelitian adalah 100 orang mahasiswa yang mengambil mata kuliah MSDM. Metode penelitian menggunakan observasi, studi literatur terkait kualitas layanan terkait kualitas e-learning. Analisis data dilakukan dengan menghitung selisih antara nilai rata-rata kenyataan dan harapan untuk setiap atribut kualitas layanan. Hasilnya ditemukan bahwa (1) secara parsial variabel reliabilitas merupakan variabel yang paling besar pengaruhnya, sedangkan variabel assurance merupakan variabel yang paling kecil pengaruhnya terhadap kepuasan mahasiswa, (2) variabel tangible tidak berpengaruh terhadap kepuasan, dan (3) atribut yang menjadi prioritas perbaikan adalah atribut ketepatan waktu mengajar dan guru memberikan penjelasan (pedoman) pada materi pembelajaran dan penggunaan platform e-learning.

***Kata kunci*:** *Kepuasan, Kualitas Pelayanan, Kuadran Prioritas*

Abstract

The e-learning learning method has long been known in distance learning and is increasingly being used during a pandemic, especially during an endemic period like today. Students who are accustomed conducted face-to-face learning as a cause of low learning outcomes. Several studies using multiple linear regression analysis have concluded that the level of student satisfaction with the e-learning learning model has an effect on learning outcomes. Additional analytical methods are needed to measure the quality of e-learning services and at the same time be able to make priority scales for handling them. The purpose of this study was to analyze the partial and simultaneous effect of service equal on student satisfaction in the e-learning method, measure the level of student satisfaction and make a priority scale for handling it. The subjects were 100 students who took MSDM courses. The research method used observation, literature studies related to service quality regarding e-learning quality. Data analysis was done by calculating the difference between the average values of reality and expectations for each service quality attribute. The result found that (1) partially the reliability variable is the variable that has the most influence, while the assurance variable is the variable that has the least effect on student satisfaction, (2) the tangible variable has no effect on satisfaction, and (3) the attributes that are the priority improvement is the attribute of the timeliness of teaching and the teacher providing explanations (guidelines) on the learning materials and the use of the e-learning platform.

Keywords: Satisfaction, Service Quality, Priority Quadrant

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1. INTRODUCTION

The e-learning learning model was known before the Covid pandemic occurred, and became a staple in the teaching and learning process when the pandemic hit the world. In its implementation, this learning model experiences various obstacles that can affect learning outcomes (Hakim et al., 2023; Novianti et al., 2021; Satyawan & Swadesi, 2021). Some of the problems that are often found, internet connection and power interruptions are the most problematic aspects of e-learning. Previous study suggested that there are three factors that become obstacles in e-learning, namely internal (for example embarrassment to ask which

causes ongoing misunderstanding), external (poor internet access, lack of training on how to use e-learning, lack of instructional design using e-learning), and cross-internal-external barriers (duration of study time and more assignments) (Bringula et al., 2021; Noviani, 2021). Barriers that occur in the implementation of e-learning besides affecting learning outcomes, also affect student satisfaction (She et al., 2021; Suhandiah et al., 2022; Suryani & Sugianingrat, 2021).

Students' activities when e-learning takes place are influenced by various factors, such as internet connection, learning format delivered, lecturer mastery in teaching with e-learning, usefulness, convenience, prior knowledge, and so on. Directly or indirectly this will have an impact on student satisfaction with e-learning (Basith & Triani, 2020; Warjiyono et al., 2021; Winoto & Tanuraharjo, 2020). Several studies on e-learning satisfaction have been carried out using various methods, such as the End User Computing Satisfaction (EUCS) method and the Service Quality (Servqual) method. Judging by the EUCS method, several researchers found that accuracy, content, preciseness, ease of use, usefulness, and format were at the level of quite satisfied/not good/negative effect on satisfaction (Lattu et al., 2022; Purwandani, 2018; Triandika et al., 2021). Judging by the servqual method, some researchers stated that student satisfaction with e-learning is still at a higher level of expectation than reality, meaning that e-learning has not met the element of satisfaction for its users. (Darmawan, 2015; Pham Hong et al., 2020; Wijaya et al., 2021).

Research using the servqual method by researchers was carried out with various kinds of analysis, including structural equation modelling (SEM) analysis, path analysis, factor analysis, exploratory and confirmatory factor analysis, and importance-performance analysis, all of which have the aim of looking at the factors of user satisfaction with e-learning separately in terms of tangible, empathy, responsiveness, reliability, and assurance factors (Ameylda & Djamaludin, 2022; Pham et al., 2019; Simbolon et al., 2022). It is interesting to observe when all of these factors are analyzed not only partially, but also simultaneously and also grouped through quadrant priority to find out which factors must be addressed immediately (priority) so that user satisfaction can increase (Dayanti & Ilham, 2022; Firliana et al., 2016). This research has new interesting things to study, namely analyzing the effect partially and simultaneously through the multiple regression method and also grouping priorities through quadrant priority so that student satisfaction increases.

There are researched Service Quality theory, previous study revealed that service quality is the result of a comparison between the expected service and the existing reality (Gronroos, 1984), while other study define service quality as the level of difference between client perceptions and expectations (Parasuraman et al., 1985). The basic similarity between the two concepts is that service quality is the result of a comparison of expectations and reality felt by consumers, in this case, by university students. Some research results show different results, including there was a positive effect of service quality on university student satisfaction, service quality in higher education perceived by students was still below expectations, physical evidence, reliability, responsiveness, empathy, assurance and compliance were important variables in predicting student satisfaction (Marliana, 2020; Perera et al., 2017; Sumi & Kabir, 2021). The reliability, responsiveness, assurance, empathy and tangible variables simultaneously had a significant effect on student satisfaction. The highest level of university student expectations was tangibility, while the lowest was empathy. There was a significant difference between student expectation and perception which indicates that students were not very satisfied with the quality of e-learning services provided by a university (Li et al., 2018; Magasi et al., 2022; Suprianto et al., 2020). Overall, users were satisfied with the performance of ServQual attributes in the implementation of e-learning. (Chandra et al., 2018; Herman, 2022; Kobero & Swallehe, 2022).

Existing research as in the references above is carried out separately between the influence of the e-learning model and satisfaction in e-learning. In reality, just looking at the effect of e-learning on learning outcomes is certainly not enough, further research is still needed to analyze satisfaction in using e-learning. Through this satisfaction it can be seen what is the top priority to be handled so that satisfaction and learning outcomes increase. It is interesting to observe if all of these factors are analyzed not only partially, but also simultaneously and grouped through priority quadrants to find out which factors must be addressed immediately (priority) so that user satisfaction can increase. This research has interesting new things to study, namely analyzing the effect partially and simultaneously through the multiple regression method and also grouping priorities through the priority quadrant so that student satisfaction increases. The purpose of this study was to analyze the partial and simultaneous effect of service equal on student satisfaction in the e-learning method, measure the level of student satisfaction and make a priority scale for handling it.

2. METHODS

The research method uses descriptive verification, descriptive is used to explain the priority scale of handling obstacles in e-learning while verification is to see the simultaneous and partial effects of e-learning on learning outcomes. The analysis to see learning outcomes in this study uses multiple linear regression analysis and service equal analysis, the use of the two analyzes aims not only to see the effect but also to know the priority scale of handling obstacles, which in the end will all have an impact on learning outcomes, based on the explanation the research design can be made as show in Figure 1.

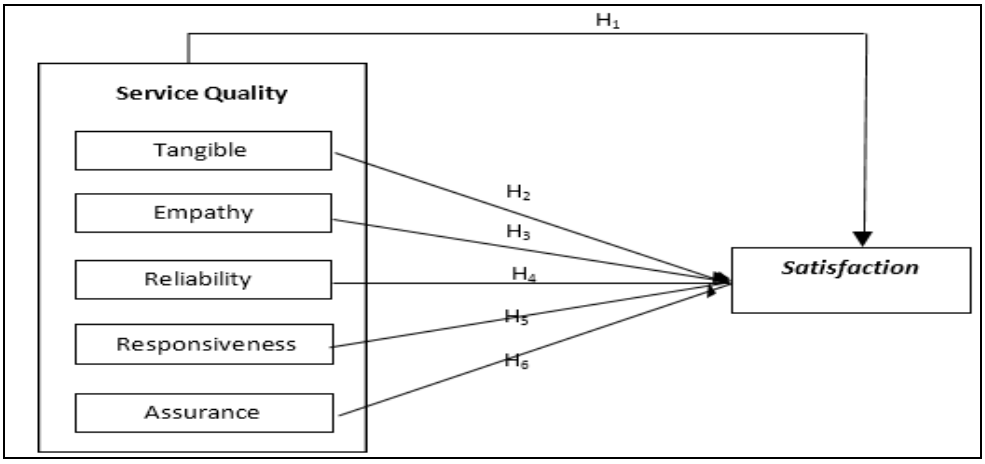

Figure 1. Research Design

The subjects of this research were 100 students in 3 (three) study programs in Economics major and currently implementing e-learning courses in Human Resource Management (MSDM), while the object of the research was the level of student satisfaction with teachers in carrying out e-learning lessons. Teachers who acted as observed variables must of course meet 5 (five) elements of service quality, namely tangible, empathy, reliability, responsiveness, and assurance. For this reason, this study also analyzes the effect and relation of the 5 (five) elements of service quality using the multiple regression method.

The data collection methods used to see the level of student satisfaction are (1) observation through indirect observation of the application of e-learning, (2) literature studies related to service quality regarding e-learning quality (ELQ) and satisfaction variables through previous studies, and (3) questionnaire by giving a questionnaire containing an

assessment of each service attribute based on indicators and dimensions of servqual and ELQ. There are 2 (two) assessments carried out by each respondent, namely an assessment for the level of expectation (expected service) and the level of reality (perceived service), which shows how much the level of expectation and reality of university students toward the e-learning process. The assessment of each attribute uses a Likert scale, where a value of 1 indicates the lowest value (very bad/very unexpected) and a value of 5 indicates the highest value (very good/highly expected). The results of an open questionnaire of students as service users regarding complaints and obstacles that occur when using e-learning as well as the results of a study of the literature related to the quality of e-learning process services obtained 17 service attributes as show in Table 1.

Table 1. Dimensions and Attributes of E-Learning Service Quality

Dimensions	Num.	Service Quality Attributes
Reliability	A1	Teacher consistency in providing teaching materials
	A2	The teacher can be relied on by students
	A3	Punctuality of teaching
Responsiveness	A4	Quick response from the teacher when students have difficulty understanding the matter
	A5	The teacher responds well to questions and comments from students
	A6	The teacher provides explanations (guidelines/instructions) on the learning matter also the use of the e-learning platform
	A7	Efficient use of time by teachers during the e-learning process
Assurance	A8	The teacher understands and masters e-learning teaching techniques and masters the knowledge being taught
	A9	The teacher is fair in giving grades
	A10	The teacher is able to answer each question clearly
Empathy	A11	Students always get the best motivation from the teacher
	A12	The learning process is interesting because the teacher is creative in bringing the learning atmosphere to life
	A13	Teachers provide learning materials that are up to date, clear, organized, and relevant
Learning Quality	A14	Delivery of matter and examples of questions using a method that is easy for students to understand
	A15	Ease of using e-learning applications by students
	A16	Students get learning materials, such as videos, modules, e-books, ppt, etc.
	A17	The teacher is creative in delivering matter with other supporting applications

Base on Table 1, related to the e-learning process which have been categorized according to servqual and learning quality dimensions, with a significance level (α) = 5% or 0.05 and df (degree of freedom) = n-2 = 100-2 = 98, obtained r count ≥ r table so that all statements submitted were valid. *Cronbach's alpha* method is used to calculate reliability, where data will be said to be accurate if it has the lowest *Cronbach's alpha* coefficient value of 0.60 (Cronbach, 1951). The results of *Cronbach's alpha* coefficient for each respondent showed that each statement item was reliable because it has a *Cronbach's alpha* value > 0.60. Gap Scoring with the Servqual Method was done by calculating the difference between the average values of reality and expectations for each service quality attribute. Referring to the theory and previous research, the research model can be described as show in Figure 2.

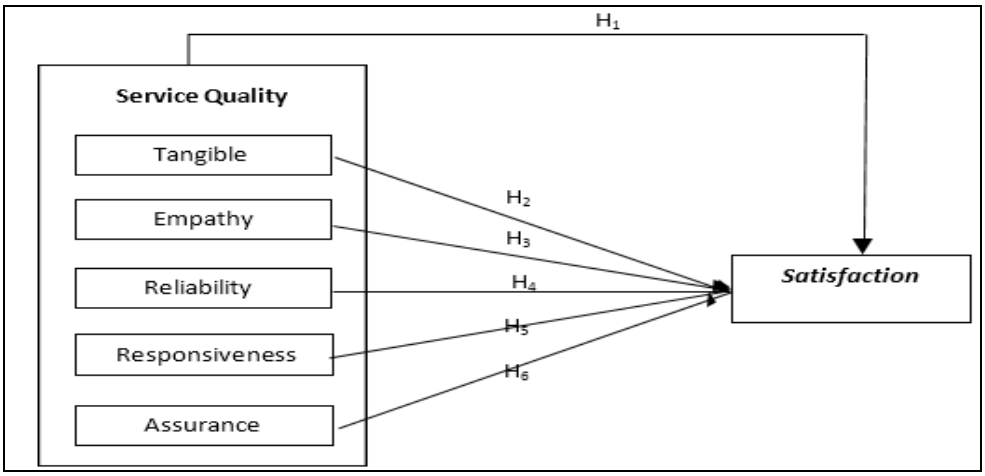

Figure 2. Research Model

3. RESULTS AND DISCUSSION

Results

The classical assumption test used consists of testing normality, multi collinearity, and heteroscedasticity with the following results. The result of classical assumption test is show in Table 2. After the classical assumption test result obtain. The next process is to find out percentage of effect as show in Table 3.

Table 2. Classical Assumption Test

Test Types	Variables	Test Results		Criteria		Information
Normality	Service Quality	0.656		Asym Sig > 0.05		
Multi Collinearity	Tangible	0.675	1.739	≥ 0.100	≤ 10	No Multi Collinearity
	Reliability	0.595	1.681	≥ 0.100	≤ 10	
	Responsiveness	0.352	3.214	≥ 0.100	≤ 10	
	Assurance	0.389	2.568	≥ 0.100	≤ 10	
	Empathy	0.572	1.748	≥ 0.100	≤ 10	
Heteroscedasticity	Tangible	0.721		Asym Sig > 0.05		No Heteroscedasticity
	Reliability	0.413		Asym Sig > 0.05		
	Responsiveness	0.246		Asym Sig > 0.05		
	Assurance	0.570		Asym Sig > 0.05		
	Empathy	0.341		Asym Sig > 0.05		
	Service Quality	0.292		Asym Sig > 0.05		

Table 3. Percentage of Effect

Variables	B	Sig	Criteria	Information	Percentage of Effect
Constant	4,456	-	-	-	-
Tangible (X_1)	0,43	0.280	sig < 0.05	No Effect	-
Reliability (X_2)	0,42	0.011	sig < 0.05	Had an Effect	26.41%
Responsiveness (X_3)	0,28	0.021	sig < 0.05	Had an Effect	14,56%
Assurance (X_4)	0,39	0.001	sig < 0.05	Had an Effect	5,68%
Empathy (X_5)	0,22	0.000	sig < 0.05	Had an Effect	15,67%
Simultaneously		0.000	sig < 0.05	Had an Effect	35.80%

Base on Table 3 shows that the most influential variable on student satisfaction is reliability while the smallest is assurance. It can be assumed that reliability in the form of the ability to deliver matter in e-learning greatly had an effect on student satisfaction with e-learning. Meanwhile, assurance is the variable that had the weakest influence on student satisfaction because the e-learning teaching and learning process did not require students and lecturers to meet face-to-face so security guarantees felt by students are not a variable that is too influential. Simultaneously all variables had an effect of 35,8% on student satisfaction with e-learning Table 4 shows the results of the recapitulation of the gap score calculation for each respondent.

Table 4. Gap Score Calculation

Atr Num.	Service Attributes	Perceived (P)	Expected (E)	Gap Score (P-E)
A1	Teacher consistency in providing teaching materials	4.02	4.30	-0.28
A2	The teacher can be relied on by students	3.78	4.25	-0.47
A3	Punctuality of teaching	3.96	4.37	-0.41
A4	Quick response from the teacher when students have difficulty understanding the matter	3.88	4.33	-0.45
A5	The teacher responds well to questions and comments from students	3.67	4.28	-0.61
A6	The teacher provides explanations (guidelines/instructions) on the learning matter also the use of the e-learning platform	3.79	4.42	-0.63
A7	Efficient use of time by teachers during the e-learning process	4.10	4.26	-0.16
A8	The teacher understands and masters e-learning teaching techniques and masters the knowledge being taught	4.02	4.33	-0.31
A9	The teacher is fair in giving grades	4.03	4.34	-0.31
A10	The teacher can answer each question clearly	4.11	4.32	-0.21
A11	Students always get the best motivation from the teacher	4.01	4.33	-0.32
A12	The learning process is interesting because the teacher is creative in bringing the learning atmosphere to life	4.12	4.33	-0.21
A13	Teachers provide learning materials that are up to date, clear, organized, and relevant	4.06	4.43	-0.37
A14	Delivery of matter and examples of questions using a method that is easy for students to understand	3.85	4.32	-0.47
A15	Ease of using e-learning applications by students	4.10	4.49	-0.39
A16	Students get learning materials, such as videos, modules, e-books, ppt, etc.	4.18	4.40	-0.22
A17	The teacher is creative in delivering matter with other supporting applications	4.02	4.26	-0.24

Base on Table 4, the results of the gap score on the respondents showed negative results on all service attributes, this indicates that respondents had greater expectations than the services obtained (satisfaction is less than expected). Gap Scoring with the Servqual

Method was done by calculating the difference between the average values of reality and expectations on each service quality attribute and the following results were obtained,

In this study, 17 service attributes were used as an assessment to determine how well the application of online learning, especially in Mathematics courses. There were servqual dimensions used, namely reliability (3 attributes), responsiveness (5 attributes), assurance (2 attributes), and empathy (4 attributes). Meanwhile, in the learning quality dimension, there were 3 service attributes which include ease of use, presentation of learning materials, and delivery of material. In this study, it is known that there was a negative gap for all service attributes, with the results of this study, of course, improvements are needed for all service attributes. Of course, it will be difficult to improve all of the service attributes, the Cartesian diagram is used to determine which attributes will be the priority for improvement based on the gap score value and the following results are obtained. The Cartesian diagram is show in Figure 3.

Figure 3. Cartesian Diagram

Based on the results of the Cartesian diagram in Figure 3, the distribution of attributes in each quadrant, in Quadrant I (concentrate here), contains attributes such as punctuality of teaching (A3) and the teacher provides explanations (guidelines/instructions) on the learning matter also the use of the e-learning platform (A6). Then in Quadrant II (keep up the good work), contains attributes such as teachers providing learning materials that are up to date, clear, organized, and relevant (A13), ease of using e-learning applications by students (A15), and students get learning materials, such as videos, modules, e-books, ppt, etc. (A16).

In Quadrant III (low priority), contains attributes such as teacher can be relied on by students (A2), quick response from the teacher when students have difficulty understanding the matter (A4), the teacher responds well to questions and comments from students (A5), and delivery of matter and examples of questions using a method that is easy for students to understand (A14). In Quadrant IV (possibly overkill), contains attributes such as teacher consistency in providing teaching materials (A1), efficient use of time by teachers during the e-learning process (A7), teacher understanding and masters e-learning teaching techniques and master the knowledge being taught (A8), the teacher is fair in giving grades (A9), the teacher can answer each question clearly (A10), students always get the best motivation from the teacher (A11), the learning process is interesting because the teacher is creative in bringing the learning atmosphere to life (A12), and teacher is creative in delivering matter with other supporting applications (A17).

Discussion

This research proves that the e-learning model has a positive effect on learning satisfaction, the results of this analysis support the findings which was conducted at the Faculty of Economics and Business, Krida Wacana Christian University by taking the Human Resource Management and Organizational Behavior course (Ameylda & Djamaludin, 2022; Pham Hong et al., 2020; Winoto & Tanuraharjo, 2020). The hypothesis of this study is that service quality consisting of tangible, empathy, reliability, responsiveness, and assurance affects student satisfaction with e-learning either partially or simultaneously. Hypothesis testing is carried out to know the effect of sub-variables either partially or simultaneously. Where according to previous study regression analysis is a study of the dependence of the dependent variable with one or more independent variables with the aim of forecasting (Ghozali, 2018). Based on the results of data analysis, information obtained that tangible variables did not affect satisfaction, but the variables of reliability, responsiveness, assurance, and empathy affected student satisfaction with e-learning.

The lowest gap from the results of this study was obtained from interesting learning process items because the coach is creative in enlivening the learning atmosphere, from these results it can be It is known that the seller's ability to utilize e-learning greatly influences learning satisfaction. This statement supports the results of research conducted which examined the availability of ICT devices, the ability of lecturers to utilize e-learning, and the ease of access to e-learning with the Computer Security course in the Study Program Informatics Engineering, Faculty of Computer Science, Lancang Kuning University (Taslim et al., 2017). The results of this study are in line with e-learning research such as that conducted by previous study (Basith & Triani, 2020; She et al., 2021; Soegoto et al., 2022). It is very important to note from the research results that a very large gap occurs in teaching items providing explanations about learning materials and the use of e-learning platform plates. Given the different abilities of students, explanations from teachers are very important at every meeting of the e-learning model, these activities can have a positive impact on students' skills in learning with this model so that satisfaction will increase (Li et al., 2018; Meranga, 2021; Wijaya et al., 2021).

In general, this research is useful for improving the e-learning model at STIE Ekuitas, based on servqual analysis it is known that the obstacle that must be overcome immediately is the teacher's obligation to provide an explanation at the opening of learning so that students can understand and be familiar with learning using the e-learning model. However this study also have some limitation, This research only looks at satisfaction without involving other indicators or factors around it. So from future research it should be able to deepen and expand research by taking into account other factors related to e-learning models of influences learning satisfaction.

4. CONCLUSION

Simultaneously the e-learning model influences learning satisfaction, while partially the tangible variable has no influence, the reliability variable is the variable that has the most influence, while assurance is the variable that has the least influence in the teaching and learning process using the e-learning model. Of all service attributes those who have negative gaps, the priority attributes for improvement are the timeliness of teaching (A3) and the teacher providing explanations (guidelines/instructions) on learning materials and the use of e-learning platforms (A6). While the service attributes in terms of time utilization, mastery of the material by the teacher, and the teacher's creativity in teaching are in the obstacle quadrant that does not need to be addressed immediately. This study also concluded that content and materials have a great influence on satisfaction, the reliability of the teacher in

conveying the material, responding to students who experience difficulties, answering student questions and comments well, and teaching creativity can also increase student learning satisfaction.

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