



Information and Service Challenges in the 5.0 Industrial Revolution on Student Satisfaction: Empirical Analysis in the Department of Electronics

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Abstrak

Revolusi industri 5.0 mempengaruhi seluruh pendidikan yang ada diperguruan tinggi diseluruh dunia. Penyebaran virus COVID-19 berdampak kepada sistem pendidikan. Perubahan situasi ini mempengaruhi kepuasan mahasiswa dalam menempuh pendidikan. Perguruan tinggi harus meningkatkan kualitas informasi dan kualitas pelayanan untuk mencapai kepuasan pada diri mahasiswa dan dapat bersaing menuju revolusi industri 5.0. Penelitian ini bertujuan untuk menganalisis pengaruh kualitas informasi dan kualitas pelayanan terhadap kepuasan mahasiswa. Penelitian ini termasuk penelitian korelasional. Subyek penelitian adalah mahasiswa Pendidikan Teknik Informatika yang berjumlah 100 orang. Teknik analisis data yang digunakan adalah uji regresi. Hasil penelitian menunjukkan bahwa (1) kualitas informasi berpengaruh positif dan signifikan terhadap kepuasan mahasiswa (2) kualitas pelayanan berpengaruh positif dan signifikan terhadap kepuasan mahasiswa (3) kualitas informasi dan kualitas pelayanan secara bersama-sama berpengaruh positif dan signifikan terhadap kepuasan mahasiswa. Temuan ini memberikan persepsi untuk meningkatkan persaingan menuju revolusi industri 5.0 dan kepuasan mahasiswa perguruan tinggi harus memperbaharui kualitas informasi dan kualitas pelayanannya.

Kata Kunci: Kualitas Informasi, Kualitas Pelayanan, Kepuasan Mahasiswa, Revolusi Industri 5.0

Abstract

The industrial revolution 5.0 has had an impact on all education in universities. The spread of the COVID-19 virus has an impact on the education system. These changes affect student satisfaction in taking education. Universities must improve the quality of information and service quality to achieve student satisfaction. This study aims to analyze the effect of information quality and service quality on student satisfaction. This research includes correlational research. The subjects of this study were 100 students of Informatics Engineering Education. The data analysis technique is regression test. The results showed that (1) the quality of information had a positive and significant effect on student satisfaction (2) the quality of service had a positive and significant effect on student satisfaction (3) the quality of information and the quality of service together had a positive and significant effect on student satisfaction. These findings provide a perception to increase competition towards the industrial revolution 5.0 and the satisfaction of college students must update the quality of information and service quality.

Keywords: Information Quality, Service Quality, Student Satisfaction, Industrial Revolution 5.0

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INTRODUCTION

The development of the industrial revolution 5.0 has affected the world of education (Hidayat et al., 2021; Anwar, 2021). The way of thinking about education has also changed due to the industrial revolution 5.0 (George & George, 2020; Ellitan, 2020; Husin et al., 2021). Character education, morals, and exemplary are the most important parts that must exist in the world of education in the era of the industrial revolution 5.0 (Rosa & Mujiarto, 2020; Malau, 2021). In industrial revolution 5.0, the knowledge possessed by students was replaced by technology (Shaddiq et al., 2021), and soft skills (Hidayat et al., 2021; Suan CHIN, 2021), as well as hard skills (Balrwein & Rahman, 2020) technology, cannot be replaced. In the industrial era, 4.0 (Farida et al., 2020; Rymarczyk, 2021) emphasis lies on the digital revolution (Rindfleisch, 2020) in the form of cyber-physical while the industrial revolution 5.0 made humans the center (Arıcı & Kitapci, 2021) by utilizing digital technology as a tool in managing all life in various fields. Human to machine or vice versa is an existing emphasis. Industry revolution 5.0 (Longo et al., 2020; Rachmadtullah et al., 2020) not only the relationship between machine to machine and robotics (Anshari, 2020).

The Indonesian government must continue to improve the development of digital infrastructure (Purbasari et al., 2020) by making various policies and regulations (Adawiyah et al., 2021) to grow and develop the telecommunications industry to compete with other countries in welcoming the 5.0 industrial revolution. The turning of the education system to digital devices is also the impact of the spread of the COVID-19 virus that has hit the whole world (Chen et al., 2020; B, 2020; Joseph Paschal & Mkulu, 2020). The learning system is all converted into a digital form to prevent the spread of the COVID-19 virus (Crawford et al., 2020; Mhlanga & Moloi, 2020; Maity et al., 2021). Colleges/universities rearrange their learning systems which are usually done conventionally and must be done online (Shukla et al., 2020; Silalahi & Hutauruk, 2020; Bestiantono et al., 2020). With the development of the industrial revolution 5.0 (Aprilisa, 2020) and the impact of the COVID-19 virus (Toquero, 2020) Bostan et al., 2020) every college/university must continue to provide learning to students so that they can compete later. Higher education is a sector that produces human resources (Saravanakumar, 2020; Hasbullah et al., 2020) quality, and to achieve this, universities must improve the ability of students to meet the demands of people's lives (Kandiko Howson & Lall, 2020).

Information Technology (Samimi, 2020; Alam, 2020) is one of the means to improve the quality of human resources (Jaya, 2020; Dewi & Hoesada, 2020) in the face of industrial revolution 5.0 (Ellitan, 2020) and limited space for movement due to the spread of the COVID-19 virus (Freeman & Eykelbosh, 2020; Bhagat et al., 2020). Information technology is currently developing very rapidly (Suresh et al., 2004; Asuquo et al., 2020). Improving services from the various features provided can increase the activity of an organization (Kuzieva, 2019) Shukshina et al., 2020) is a part of information technology (Sofyani et al., 2020). Universities are currently trying to improve the quality of their information to students to meet the demands of the 5.0 industrial revolution (Yosintha, 2020). The focus of this information technology is to provide information systems in various aspects of activities in the industrial world, in which developments continue to rise rapidly (Oztemel & Gursev, 2020; Dwivedi et al., 2020). Accuracy, relevance, and timeliness are the main keys that must be provided in information technology (Al-Okaily et al., 2020) to improve the information system for students. Satisfaction (Kurdi et al., 2020) obtained by students in obtaining information is a form of the success of universities in implementing information systems (Abdurrahaman et al., 2020) in the form of service quality. Providing accurate service quality to students in gathering information that is currently developing can increase student satisfaction (Cahyono et al., 2020; Li et al., 2021). Student perception is a comprehensive assessment of the superiority of a service (Minh, 2020). The intense competition in welcoming the 5.0 industrial revolution must be anticipated by universities. Universities must improve and explore all aspects of education (Alshehri & Cumming, 2020). Service quality (Demir et al.,

2020; Tešić, 2020) given is one method to provide satisfaction to (Mulyono et al., 2020) students and is one of the important factors in determining the success of higher education. Students must be able to feel satisfied. To achieve this, every university must be involved in a series of breakthrough activities to improve the quality of higher education services (Liu et al., 2020). Universities can succeed by identifying the factors that will affect services using information technology. The development of information has a great influence on a company in the business world (Akbar et al., 2020). All transactions can be done in real-time and recorded online so that they can be seen directly (Ekaso et al., 2020).

Service improvement (Locock et al., 2020) has been developed by a company and the quality of its service can be measured (Restuputri et al., 2020). With this information system, service performance can be measured and increase employee motivation. The information system in question will disseminate information that is likely to provide benefits to users by utilizing information technology in the classroom. Finally, it will improve the quality of service that will be received by students. The profile of a university will also increase because it provides satisfaction to students with quality information that is accurate, efficient, and timely as well as the best service. Identifying factors in information systems and service quality are the aim of this study. The results of the study can be used as a benchmark for universities to maximize service quality and be able to compete in the era of the industrial revolution 5.0.

METHOD

This research is included in correlational research based on problems because it aims to see the effect of information quality and service quality on student satisfaction (Y. Wang, 2021).

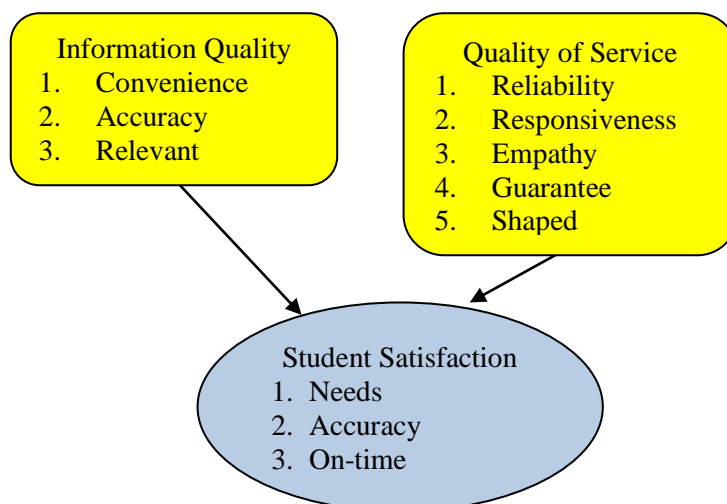


Figure1. Research Thinking Framework

The way researchers describe the variables to be studied with their parameters is a function of the operational definition (Table 1).

Table 1
Variable Operational Definition

Variables	Definition	Dimension	Indicators	Scoring scale
Information Quality (X1)	Information can meet the requirements and expectations of those who need information	1. Convenience	a. Easy to use b. Clear instructions c. How to work is easy to understand	Likert
		2. Accuracy	a. Accurate information b. Provide a proper report c. Trust me	

Variables	Definition	Dimension	Indicators	Scoring scale
Quality of Service (X2)	Forms of service in meeting the needs and expectations of users	3. Relevant	a. According to the needs b. New information	Likert
		1. Reliability	a. Suitability b. On-time c. Well delivered	
		2. Responsiveness	a. Quick response b. Clear c. Be careful	
		3. Guarantee	d. Respond to complaints a. Solution b. Polite c. Provide security	
		4. Empathy	a. Polite b. Patience in serving c. Concern	
		5. Shaped	a. Convenience b. Completeness	
		1. Needs	a. Information according to need	
		2. Accuracy	a. Accuracy in conveying information b. Suitability	
		3. On-time	a. Delivery on-time b. Latest	
Student Satisfaction (Y)	Feeling disappointed or satisfied with something			Likert

The population is the whole of the object or subject of the study. The population in this study was students majoring in electronics engineering at the Informatics Engineering Education study program totaling 100 people.

$$n = \frac{N}{1 + Ne^2}$$

The sample is part of the population. The sampling technique in this study was carried out by a simple random method using the Slovincs formula with a significance level of 10% obtained from a sample of 50 people.

The data were processed using the SPSS version 20 application. The instrument was tested to see its validity and reliability before being used. Then proceed with the analysis requirements test in the form of normality, reliability, and multicollinearity tests. Furthermore, hypothesis testing is carried out which consists of:

H1. There is a significant influence between the quality of information on student satisfaction

H2. There is a significant influence between quality service to student satisfaction

H3. There is a significant influence between the quality of information and service quality together on student satisfaction

RESULTS AND DISCUSSIONS

Before testing the hypothesis, the analysis requirements were first carried out consisting of tests for normality, linearity, and multicollinearity. The results of the Kolmogorov-Smirnov normality test obtained a sig value of $0.953 > 0.05$, which means that the data is normally distributed. The linearity test based on deviation from linearity obtained a sig value for information quality of $0.111 > 0.05$ and a sig value for service quality of $0.973 > 0.05$, which means that there is a linear relationship between the information quality variable and student satisfaction and the service quality variable and student satisfaction. Furthermore, the

multicollinearity test obtained a VIF value of $2.360 < 10$. This means that there is no multicollinearity between the variables of information quality and service quality.

Table 2
R Correlation Value

Relationship between variables	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig
Information Quality → Student Satisfaction	0.750	0.563	0.554	3.81145	0.000
Service Quality → Student Satisfaction	0.650	0.422	0.410	4.38123	0.000
Quality of information and quality of service together → Student satisfaction	0.760	0.578	0.560	3.78410	0.000

Table 3
Regression

Variables	Constant	B	Sig
Information Quality	31.672	0.603	0.000
Service quality	31.625	0.606	0.000
Quality of information and quality of service together	26.945	0.488	0.010
		0.177	

Hypothesis 1: Information quality affects student satisfaction. As seen from Table 2, the sig value of $0.000 < 0.05$ means that there is a significant correlation between the quality of information and student satisfaction. The value of the coefficient of determination (R Square) is 0.563 or 56.3%, this number means that the quality of information contributes 56.3% influence on student satisfaction while the rest ($100\% - 56.3\% = 43.7\%$) is influenced by other variables.

From Table 3, the sig value of $0.000 < 0.05$ means that the hypothesis is accepted and there is a significant influence between the quality of information on student satisfaction. The regression equation from Table 2 is obtained $Y = 31.672 + 0.603 X_1$, meaning that the constant 31.672 states that if there is no increase in the value of information quality (X_1) then the value of student satisfaction (Y) is a constant 31.672. And the regression coefficient of 0.603 states that for every 1% increase in the information quality variable (X_1), the value of student satisfaction will increase by 0.603.

The existence of good and good quality information will have a good impact on student satisfaction. Accurate quality of information (P. Wang & Li, 2020) following the development of the industrial revolution 5.0, the impact will be very large on student satisfaction (Utomo & Darma, 2020). In conclusion, the quality of information has a positive and significant effect on student satisfaction.

Hypothesis 2: Service quality affects student satisfaction. As seen from Table 2, the sig value of $0.000 < 0.05$ means that there is a significant correlation between service quality and student satisfaction. The value of the coefficient of determination (R Square) is 0.422 or 42.2%, this figure means that service quality contributes 42.2% to student satisfaction while the rest ($100\% - 42.2\% = 57.8\%$) is influenced by other variables.

From Table 3, the sig value of $0.000 < 0.05$ means that the hypothesis is accepted and there is a significant influence between service quality and student satisfaction. The regression equation from Table 2 is obtained $Y = 31.625 + 0.606 X_2$, meaning that the constant 31.625 states that if there is no increase in the value of service quality (X_2) then the value of student satisfaction (Y) is a constant 31.625. And the regression coefficient of 0.606 states that for every 1% increase in the service quality variable (X_2), the value of student satisfaction will increase by 0.606.

Service quality is the most important part of the business world (Ali et al., 2021). In addition, in education, service quality also affects student satisfaction (Khalifa et al., 2021). Fast and precise service quality (Jomnonkwao et al., 2020) can provide a sense of satisfaction and high trust in educational institutions. In conclusion, service quality has a positive and significant effect on student satisfaction.

Hypothesis 3: Quality of information and quality of service together affect student satisfaction. As seen from Table 2, the sig value of $0.000 < 0.05$ means that there is a significant correlation between information quality and service quality together with student satisfaction. The value of the coefficient of determination (R Square) is 0.578 or 57.8%, this figure means that the quality of information and the quality of service together contribute 57.8% of the influence on student satisfaction while the rest ($100\% - 57.8\% = 42.2\%$) is influenced by other variables.

From Table 3, the sig value of $0.01 < 0.05$ means that the hypothesis is accepted and there is a significant influence between the quality of information and the quality of service together on student satisfaction. The regression equation from Table 2 is obtained $Y = 26.945 + 0.488 X_1 + 0.177 X_2$, meaning that the constant 26.945 states that if there is no increase in the value of information quality (X_1) and service quality (X_2), the value of student satisfaction (Y) is constant 26.945. The regression coefficient X_1 is 0.488 which states that for every 1% increase in the information quality variable (X_1), the student satisfaction value will increase by 0.488 with the assumption that the service quality variable is constant or not increasing. The regression coefficient X_2 is 0.177 states that for every 1% increase in the service quality variable (X_2), the value of student satisfaction will increase by 0.177 assuming the information quality variable is constant or not increasing.

Quality information that is right on target (Ilyas, 2021) and according to the needs of the development of the industrial revolution 5.0 will be of great benefit to students. The rapid development of information technology and accompanied by the provision of a very adequate quality of service will provide comfort (Bayanova et al., 2020) and satisfaction for students (Pratiwi et al., 2021; Vrtič et al., 2021). In conclusion, the quality of information and the quality of service together have a positive and significant effect on student satisfaction.

CONCLUSIONS

Based on the results of the study, several conclusions were obtained: 1) the quality of information has a positive effect on student satisfaction. 2) Service quality has a positive effect on student satisfaction. 3) Information quality and service quality together have a positive effect on student satisfaction.

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