



## The Influence of system quality, information quality, service quality on user satisfaction

Henny Hamsinar<sup>1</sup>, Mohammad Bukhori<sup>2</sup>, Tin Agustina Karnawati<sup>3</sup>

<sup>1,2,3</sup>Prodi Magister Manajemen/Program Pascasarjana, Institut Teknologi dan Bisnis Asia, Indonesia

### ARTICLE INFO

#### Article history:

Received Oct 3, 2023  
Revised Oct 11, 2023  
Accepted Oct 24, 2023

#### Keywords:

Information quality;  
System quality;  
Service quality;  
User satisfaction.

### ABSTRACT

Hence, the transformation towards the use of a modern and technology-based education system is important to answer the challenges and opportunities in the world of education today. Automate administrative and management processes, such as student registration, timetable management, and tracking academic progress. Utilization of modern systems not only provides administrative efficiency, but also helps construct a learning environment that is more inclusive and responsive. The aims of this study to verify and analyze the partial and simultaneous effect of system quality, information quality and service quality on student satisfaction as system users. The research sample taken was 63. The conclusion of this study showed that system quality (X1) had no effect on user satisfaction (Y) because t-count was smaller than t-table, videlicet  $0.997 < 2.001$  and was not significant because it had a significance value that was greater than 0.05 which is 0.328. Information quality (X2) has no effect on user satisfaction (Y) because the t-count is smaller than the t-table, videlicet  $1.693 < 2.001$  and is not significant because it has a significance value greater than 0.05, namely 0.102. Service quality (X3) has a significant influence on user satisfaction (Y) because t-count is greater than t-table, videlicet  $5.731 > 2.001$  and has a significance value smaller than 0.05, namely 0.000. Simultaneously system quality, information quality and service quality affect user satisfaction.

*This is an open access article under the [CC BY-NC](https://creativecommons.org/licenses/by-nc/4.0/) license.*



### Corresponding Author:

Henny Hamsinar,  
Prodi Magister Manajemen/Program Pascasarjana,  
Institut Teknologi dan Bisnis Asia,  
Soekarno Hatta number 1A Road, Malang, East Java, 65113, Indonesia.  
Email: [hamsinar.khenny@gmail.com](mailto:hamsinar.khenny@gmail.com)

## 1. INTRODUCTION

The increasing quantity of higher education institutions forces each educational institution to observe the quality of education and institutions so that they are able and superior in competition. Universities are required to explore and improve all aspects of the optimal service so that this will have implications for improving the image of the college.

System user satisfaction is the response and feedback that users receive after using the information system. The user's attitude towards the information system is a subjective criterion regarding how much the user likes the system used. Satisfaction according to Day (Tjiptono, 2004) states that satisfaction or dissatisfaction is a customer's response to an

evaluation of the discrepancy disconfirmation that is felt between previous expectations and the actual performance of the product that is felt after using it. Starting from the basic concept of customer satisfaction, higher education is mainly a service industry that provides educational services or services whose aim is to provide satisfaction to its customers. According to (Tilaar, 2002), The level of satisfaction with educational services can be determined by comparing students' expectations with the reality they experience. Satisfaction will be achieved if there is a match between the services provided to students. As stated by (Wadwa & Radja, 2006) Satisfaction with the service they receive can be seen from the conformity between expectations and the performance of the service they receive.

Quality is the core of the continued existence of an institution. Improving integrated quality is a need and a demand that cannot be ignored if institutions want to continue to stand and promote. Increasingly tight competition between educational institutions increasingly demands that universities always provide the best service to students. The quality of a tertiary institution is mainly determined by the quality of the services provided, where quality service can be identified through student satisfaction, service satisfaction is more oriented towards students because students are the primary customers of tertiary institutions. College as a service industry must continue to consider as regards to provide service. because it is now increasingly recognized that student service and satisfaction because it is now increasingly recognized that student service and satisfaction is crucial side in order to survive in business and to win the competition (Tjiptono & Chandra, 2005).

System quality is how a system works well and optimally so that it can produce output that meets the expectations of system users.(Delone & Mclean, 2003), define system quality as relating to the expected quality of a system and the quality of appropriate information regarding the characteristics of a product. In an information system, system quality is a combination of software and hardware that work in the system. System quality can be used as a measure of characteristics when accessing applications such as easy use, reliable system, fast access, flexible system, and security.

(Delone & Mclean, 2003), argue that information quality is when the product has clear detailed information so that it has value. The quality of information is assessed based on the content, accuracy, relevance and usefulness resulting from the information. Meanwhile, according to (Seddon, 1997), the quality of information influences the decision-making process. Information quality is when information can be easily digested by system users so that it has benefits. The indicators for measuring information quality according to (Jogiyanto, 2009), are: (1) accurate; (2) relevant; (3) completeness; (4) easy to understand.

(Setiawan, 2022) concluded that system quality, information quality and service quality have a positive effect on user satisfaction. The same results were also obtained by research conducted by (Priansyah et al., 2022). Furthermore, research conducted by (Muharsyah & Ekawati, 2022) concluded the positive influence of information quality, system quality and service quality on user satisfaction. Research by (Amarin & Wijaksana, 2021) from 150 samples obtained results of a significant influence on user satisfaction. The same conclusion was also obtained from research conducted by (Achmadi & Siregar, 2021). Research by (Fachri et al., 2021) concluded that information quality has a positive effect on user satisfaction, while system quality does not have a positive effect on user satisfaction. Research (Asyifa & Imam Subekti, 2021) with 402 respondents concluded that it had a positive influence on user satisfaction. (L. T. Utomo et al., 2017) concluded that information quality has a more dominant influence on user satisfaction compared to system quality and service quality. Research conducted by (Safitri et al., 2020) concluded that system quality, information quality and service quality have effect on user satisfaction. Research conducted by (Muhammad Ramdani & Adhitia Erfina, 2023) concluded that system quality, information quality and service quality have a positive effect on user satisfaction However, research conducted by (Widodo & Putranti, 2016) concluded that information quality had no significant effect on user satisfaction. While the quality of the information does not affect user satisfaction (G. S. Utomo et al., 2020). The Delone &

McLean method places user satisfaction as an important dimension in evaluating the success of an information system. User satisfaction is a significant measure because satisfied users tend to be more likely to accept, utilize and promote effective use of the system. Based on the results of these findings, the hypothesis formulated is as follows: (H1) System quality partially influences user satisfaction.

(A. P. Parasuraman et al., 1988) regarding service quality in the context of information systems found that good information system quality contributes positively to user satisfaction. They found that high information system quality, such as the availability of accurate information, reliable performance, and easy-to-use interface, is closely related to user satisfaction. Several other studies also confirm that system quality, information quality and service quality have a positive effect on user satisfaction (Setiawan, 2022). The same thing was obtained by research conducted by (Priansyah et al., 2022) and (Mulyono et al., 2022). (H2) Information quality partially influences user satisfaction.

(Putro & Santika, 2020) in the context of mobile applications found that the quality of application information has a significant influence on user satisfaction. (Fitriasmu, 2010) and (Prajoko et al., 2022) in the context of knowledge management systems, they found that good information quality contributes positively to user satisfaction. (Muharsyah & Ekawati, 2022) research confirms that there is a positive influence of information quality on user satisfaction. (H3) Service quality partially influences user satisfaction.

(A. Parasuraman et al., 1985) regarding service quality in the context of service companies, found that high service quality positively influences user satisfaction. Research conducted by (Brata et al., 2018) confirms that there is a positive influence of service quality on user satisfaction. Research conducted by (Setiawan, 2022), (Priansyah et al., 2022) and (Irawan & Wijaksana, 2020) confirmed that the quality of systems, information and services simultaneously influences user satisfaction. (H4) System quality, information quality and service quality simultaneously influence user satisfaction.

Several previous studies found inconsistent results or different ones that discuss system user satisfaction. The variables used in this research are references from several related sources on variables that influence user satisfaction, inclusive system quality, information quality and service quality. Based on this explanation, this research aims to determine the partial influence of system quality on user satisfaction, the partial influence of information quality on user satisfaction and the partial influence of service quality on user satisfaction as well as the simultaneous influence of system quality, information quality and service quality on user satisfaction

## 2. RESEARCH METHOD



Figure 1. Theoretical Thinking Framework

The construct of this research is to view the influence of information quality, system quality and service quality on user satisfaction. This research will explain the partial

influence of information quality on user satisfaction, the partial influence of system quality on user satisfaction, the partial influence of service quality on user satisfaction, as well as the simultaneous influence of information quality, system quality and service quality on user satisfaction.

This research uses quantitative research methods. Quantitative research according to (Sugiyono, 2019) is a research method used to research a certain population or sample and analyze the data using statistics quantitative with the aim of a predetermined hypothesis. The population in this research is all active students in the Informatics Engineering study program at Dayanu Ikhsanuddin University (Unidayan) who are taking final assignment courses in 2023, the number of which is known to be 173 people. The minimum number of samples using the Slovin formula is as follows.

$$n = \frac{173}{1+173 \cdot (0,1)^2} = 63 \quad (1)$$

An online questionnaire via Google Form was distributed to collect data with indicators totaling 18 statements that refer to previous studies. Each statement is measured on a 5-point Likert scale, where a value of 1 means Strongly Disagree (STS), a value of 2 means Disagree (TS), a value of 3 means Neutral (N), a value of 4 means Agree (S), and a value of 5 means Strongly Agree (SS). The collected data was analyzed using the SPSS Statistics 26 application. Respondent characteristics and research variables are included in Table 1 below.

**Table 1. The performance of respondent characteristic**

Age	Quantity	Percentage
21	11	17,46%
22	16	25,40%
23	21	33,33%
24	7	11,11%
25	5	7,94%
26	2	3,17%
27	1	1,59%
Total	63	100%

*Source: Processed Research Data 2023*

Multiple linear regression analysis in this study was used to measure whether there is an influence on system quality, information quality and quality service to user satisfaction. Multiple linear regression model obtained from the results of data processing using the SPSS 26 program.

### 3. RESULTS AND DISCUSSIONS

Based on Table 2 below, it is known that the validity test results for all statement items that measure the quality system variable, information system, service system and user satisfaction obtained  $r_{count} > r_{table}$  0.349, so that all statement items on the quality system variable, information system, service system and user satisfaction are declared valid and can be used in research

**Table 2. Validity Test Results**

Variable (1)	Item (2)	r-count	r-table	Description
Quality System	X1.1	0,913	0,349	Valid
	X1.2	0,624	0,349	Valid
	X1.3	0,846	0,349	Valid
	X1.4	0,883	0,349	Valid
	X1.5	0,762	0,349	Valid
Information System	X2.1	0,832	0,349	Valid
	X2.2	0,912	0,349	Valid
	X2.3	0,851	0,349	Valid

	X2.4	0,938	0,349	Valid
Service System	X3.1	0,900	0,349	Valid
	X3.2	0,910	0,349	Valid
	Y.1	0,901	0,349	Valid
User Satisfaction	Y.2	0,947	0,349	Valid
	Y.3	0,888	0,349	Valid
	Y.4	0,905	0,349	Valid
	Y.5	0,886	0,349	Valid
	Y.6	0,915	0,349	Valid
	Y.7	0,780	0,349	Valid

Source: Processed Research Data 2023

In Table 2 the results of the reliability test on the variables used show all Cronbach Alpha values  $> 0.60$ . So, it can be concluded that the answers to the statements of all the variables used in this study are reliable and feasible to use.

Table 3. Reliability Test Results

No	Variable	item	Cronbach's Alpha	Description
1	Quality System	X1	0,867	Reliabel
2	Information System	X2	0,903	Reliabel
3	Service System	X3	0,778	Reliabel
4	User Satisfaction	Y	0,950	Reliabel

Source: Processed Research Data 2023

Normality test results are said to be normal if the significance value is  $> 0.05$  and vice versa if the sig level  $< 0.05$  can be interpreted as abnormal. Based on table 4 the results of the Kolmogorov-Smirnov normality test, a sig (2-tailed) value of  $0.148 > 0.05$  was obtained, so it was concluded that the data was normally distributed.

Table 4. Normality Test Results

One-Sample Kolmogorov-Smirnov Test		
	Unstandardized Residual	
N		30
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std.Deviation	1.62764093
Most Extreme Differences	Absolute	.208
	Positive	.208
	Negative	-.140
Kolmogorov-Smirnov Z		1.140
Asymp. Sig. (2-tailed)		.148

Source: Processed Research Data 2023

Table 5. Multicollinearity Test Results

Model	Coefficients	
	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
Quality System	.289	3.457
Information System	.122	8.225
Service System	.211	4.742

Source: Processed Research Data 2023

In table 5. it is known that the independent variable system quality (X1) has a tolerance value of  $0.289 > 0.1$  and a VIF value of  $3.457 < 10$ , information quality (X2) has a tolerance value of  $0.122 > 0.1$  and a VIF value of  $8.225 < 10$ , and service quality (X3) has a tolerance value of  $0.211 > 0.1$  and VIF  $4.742 < 10$ , so it can be concluded that multicollinearity does not occur.

Table 6. Test Results for the Coefficient of Determination (R<sup>2</sup>)

Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.973 <sup>a</sup>	.947	.941	1.40817

a. Predictors: (Constant), Quality system, Information Quality, Service Quality  
b. Dependent Variable: user satisfaction

Source: Processed Research Data 2023

Based on table 6, it is known that the coefficient of multiple determination (R Square) is 0.947 (94.7%) meaning that the variables system quality (X1), information quality (X2), and service quality (X3) have a contribution of 94.7% to user satisfaction (Y) while the remaining 5.3% is due to other variables outside the research.

Table 7. Partial Test Results (t test)

Model	t	Sig.
(Constant)	.528	.602
Quality system	.997	.328
Information Quality	1.693	.102
Service Quality	5.731	.000

Source: Processed Research Data 2023

The results of the t-count calculation in table 7. show that the system quality (X1) partially does not have a significant effect on user satisfaction (Y) because the t-count is smaller than the t-table, namely  $0.997 < 2.001$ . Information quality (X2) partially has no significant effect on user satisfaction (Y) because the t-count is smaller than the t-table, namely  $1.693 < 2.001$ . Service quality (X3) partially has a significant effect on user satisfaction (Y) because the t-count is greater than the t-table, namely  $5.731 > 2.001$ .

Table 8. Simultaneous Test Results (f test)

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	923.243	3	307.748	155.197	.000 <sup>b</sup>
	Residual	51.557	26	1.983		
	Total	974.800	29			

a. Dependent Variable: user satisfaction

b. Predictors: (Constant), Quality system, Information Quality, Service Quality

Source: Processed Research Data 2023

Based on the results of the f-count calculation in Table 8. a comparison can be made with the f-table that simultaneously system quality (X1), information quality (X2), and service quality (X3) have an effect on user satisfaction (Y) f-count is greater than f-table is  $155.19 > 2.76$ , so it can be concluded that H4 is accepted, which means there is an influence of the variables system quality (X1), information quality (X2) and service quality (X3) simultaneously on user satisfaction (Y).

Partial system quality does not have a significant effect on user satisfaction, because the results of the t-test show a significance value that is smaller than the t-table, namely  $0.997 < 2.001$ , meaning that there is no significant influence between system quality and user satisfaction. This can also be seen from the respondents' answers, many of whom agreed regarding the quality of the system. The results of this research mean resist the proposed hypothesis, namely "It is suspected that system quality partially influences user satisfaction". The results of this research are supported by empirical research entitled "Influence of information quality and system quality and quality of digital payments on consumer satisfaction and repurchasing intention on Gojek users in the city of Samarinda" conducted by (Fachri et al., 2021) with the object is different, stating that system quality (X1) has no effect to user satisfaction (Y) because some Gojek users admit

that the appearance of the application sometimes changes and not all users can accept application changes.

The quality of the system has no effect because students mostly seek information directly from the admin. The quality of information partially has no impact on user satisfaction, because the results of the t-test show a significance value that is smaller than the t-table, namely  $1.639 < 2.001$ , meaning there is no influence significant relationship between information quality and user satisfaction. The results of this research mean resist the proposed hypothesis, namely it is suspected that information quality partially influences system user satisfaction. The results of this research are consent with empirical research conducted by (Widodo & Putranti, 2016) with the research title "*The influence of application system quality and information quality on user satisfaction of RTS*" application systems with trust as a mediating variable which states that information quality (X2) has no significant effect on user satisfaction (Y). research results show that system users in purchasing online tickets do not depend entirely on the system, the quality of information at Unidayan for students is more complete and quickly obtained by asking the admin directly, compared to accessing information through the system.

Service quality influences user satisfaction because the t-test results show a significant value that is greater than the t table, namely  $5.731 > 2.001$ . The regression coefficient is positive, meaning that there is a significant influence between service quality and user satisfaction. The results of this research support the proposed hypothesis, namely it is suspected that service quality partially influences student satisfaction with system users. The results of this research are according to research conducted by (Amarin & Wijaksana, 2021) on users of the Berrybenka application in the city of Bandung, service quality is good, which will lead to high levels of consumer satisfaction. The quality of existing services is in line with expectations and reality, students can get updated information that is accurate and appropriate, either by accessing it through the system or by asking the admin directly.

System quality, information quality and service quality simultaneously have a significant effect on user satisfaction, this is shown by the f test results with the calculated f value being greater than the f table, namely  $155.19 > 2.66$ . Based on the provisions, if the significance value of the f test is  $< 0.05$ , then system quality (X1), information quality (X2), and service quality (X3) simultaneously influence user satisfaction (Y).

The coefficient of multiple determination (R-Square) is 0.947, meaning that system quality, information quality and service quality contribute to user satisfaction with system users of 94.7%, while the remaining 5.3% is due to other variables outside the research. The results of this research espouse the proposed hypothesis, namely it is suspected that system quality, information quality and service quality simultaneously influence user satisfaction.

This research is in admit with empirical research conducted by (Amarin & Wijaksana, 2021) on users of the Berrybenka application in the city of Bandung, which stated that simultaneously system quality, information quality and service quality are related to consumer satisfaction. Based on the percentage contribution to user satisfaction reaching 94.7%, it can be concluded that the variables of system quality, information quality and service quality have a significant impact or influence on user satisfaction.

#### 4. CONCLUSION

The main result concerning this research shows that system quality and information quality have no partial effect on student satisfaction. Seeing that students are looking for more information directly from the study program, for students it is more complete and faster to obtain it by asking directly into the admin of the Unidayan informatics engineering study program, rather than accessing information through the system. Service quality partially influences user satisfaction. This shows that the quality of existing services is in line with expectations. Based on the percentage contribution to student satisfaction with

system users reaching 94.7%, it can be concluded that the variables of system quality, information quality and service quality simultaneously have a significant impact or influence on student satisfaction. system. This research is limited to system quality, information quality, and quality service, while judging from the R-Square value, there are still many other factors that influence user satisfaction, so other variables need to be studied further.

#### REFERENCES

- Achmadi, A., & Siregar, A. O. (2021). The Effect of System Quality, Information Quality and Service Quality on User Satisfaction of E-Learning System. *The International Journal of Business Review (The Jobs Review)*, 4(2), 103–120. <https://doi.org/10.17509/tjr.v4i2.40483>
- Amarin, S., & Wijaksana, T. I. (2021). Pengaruh Kualitas Sistem, Kualitas Informasi, dan Kualitas Layanan Terhadap Kepuasan Konsumen (Studi Pada Pengguna Aplikasi Berrybenka di Kota Bandung). *Business Management Analysis Journal (BMAJ)*, 4(1), 37–52. <https://doi.org/10.24176/bmaj.v4i1.6001>
- Asyifa, N. N., & Imam Subekti. (2021). Pengaruh kualitas sistem, kualitas informasi, kualitas layanan dan kemudahan penggunaan terhadap kepuasan pengguna sistem informasi akademik mahasiswa (SIAM) Universitas Brawijaya. *Jurnal Ilmiah Mahasiswa FEB*, 9(2).
- Brata, M. evan widyawan, Hapsari, D. W., & Yudowati. (2018). *The Effect of quality system, quality of information, and quality of seervice to user satisfaction of financial information system*. 5, 1.
- Delone, W. H. & Mclean. (2003). The DeLone and McLean Model of Information Systems Success: A Ten-Year Update. *Journal of Management Information Systems*, 19(4), 9–30. <https://doi.org/10.1080/07421222.2003.11045748>
- Fachri, A., Hudayah, S., & Indriastuti, H. (2021). Influence Of Information Quality and System Quality and Quality of Digital Payments on Consumer Satisfaction and Repurchasing Intention on Gojek Users in The City of Samarinda. *International Journal*, 5(4).
- Fitriasmu, S. M. (2010). *Evaluasi Kesuksesan Aplikasi Knowledge Management Dalam Organisasi*. 1(1).
- Irawan, A., & Wijaksana, T. I. (2020). *Pengaruh Kualitas Informasi, Kualitas Sistem Dan Kualitas Layanan Terhadap Kepuasan Pengguna Aplikasi Elevenia*. 7(2), 3848.
- Jogiyanto. (2009). *Sistem Teknologi Informasi*. Andi Offset.
- Muhammad Ramdani & Adhithia Erfina. (2023). Pengaruh kualitas siak terhadap kepuasan mahasiswa di stikes sukabumi menggunakan regresi linier. *Jurnal CoSciTech (Computer Science and Information Technology)*, 4(1), 50–55. <https://doi.org/10.37859/coscitech.v4i1.4477>
- Muharsyah, A., & Ekawati, R. K. (2022). Analisis Pengaruh Kualitas Informasi, Kualitas Sistem dan Kualitas Layanan Terhadap Kepuasan Pengguna Pada Aplikasi Tokopedia Dengan Model Delone and Mclean Di Kota Palembang. *JuSiTiK: Jurnal Sistem dan Teknologi Informasi Komunikasi*, 4(2), 20–27. <https://doi.org/10.32524/jusitik.v4i2.505>
- Mulyono, K. K., Wardani, A. S., & Sucipto, S. (2022). Pengukuran Kesuksesan Website Universitas Menggunakan Metode Delone and Mclean. *JSITIK: Jurnal Sistem Informasi dan Teknologi Informasi Komputer*, 1(1), 64–76. <https://doi.org/10.53624/jsitik.v1i1.178>
- Parasuraman, A. P., Berry, L. L., & Zeithaml, V. A. (1988). SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing*, 64(1).
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing*, 49(4), 41–50. <https://doi.org/10.1177/002224298504900403>
- Prajoko, M. A., Effendi, I., & Sugandini, D. (2022). *Pengaruh Persepsi Kegunaan, Kualitas Informasi, Terhadap E- Kepuasan Dengan Kepercayaan Sebagai Variabel Mediasi Pada Pengguna Marketplace Tokopedia di Daerah Istimewa Yogyakarta*. 9(1).
- Priansyah, D., Nova Arviantino, F., Arif Setiawan, Y., & Riana, D. (2022). Pengaruh Kualitas Sistem, Layanan, dan Informasi Terhadap Pengguna Google Classroom Model DeLone and McLean. *METIK JURNAL*, 6(1), 52–58. <https://doi.org/10.47002/metik.v6i1.306>
- Putro, B. E., & Santika, S. (2020). Analisis Pengaruh Penggunaan Aplikasi Seluler Fso Terhadap Kinerja Karyawan di Pt Sugih Famili Putra. *Jurnal Teknologi*, 12(1).
- Safitri, E. M., Pratama, A., Furqon, M. A., Mukhlis, I. R., Agussalim, & Faroqi, A. (2020). Interaction Effect of System, Information and Service Quality on Intention to Use and User Satisfaction.

- 2020 6th Information Technology International Seminar (ITIS), 92–97.  
<https://doi.org/10.1109/ITIS50118.2020.9321002>
- Seddon, P. B. (1997). A respecification and extension of the delone and mclean's model of IS success. *Information System Research*, 8(September), 240–250.
- Setiawan, Y. (2022). Pengaruh Kualitas Sistem, Kualitas Informasi Dan Kualitas Layanan Terhadap Kepuasan Penggunaan Learning Management System (LMS) Pada Karyawan Pt Wahana Inti Selaras. *Jurnal Ekonomi Manajemen dan Bisnis*, 3(1), 14–23.  
<https://doi.org/10.32815/jubis.v3i1.1084>
- Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Alfabeta.
- Tilaar, H. A. R. (2002). *Membenahi Pendidikan Nasional*. Rineka Cipta.
- Tjiptono, F. (2004). *Manajemen Jasa* (2nd ed.). Andi.
- Tjiptono, F., & Chandra. (2005). *Service, Quality, and Satisfaction*. Andi Offset.
- Utomo, G. S., Titisari, K. H., & Wijayanti, A. (2020). Pengaruh Kualitas E-Government Terhadap Kepuasan Pengguna E-Filing: Studi Kasus Wajib Pajak di Surakarta. *JURNAL AKUNTANSI DAN BISNIS: Jurnal Program Studi Akuntansi*, 6(1), 13–21.  
<https://doi.org/10.31289/jab.v6i1.2752>
- Utomo, L. T., Ardianto, Y. T., & Sisharini, N. (2017). Pengaruh Kualitas Sistem, Kualitas Informasi, Kualitas Layanan, Terhadap Kepuasan Pengguna Sistem Informasi Akademik Universitas Merdeka Malang. *Jurnal Teknologi dan Manajemen Informatika*, 3(2).  
<https://doi.org/10.26905/jtmi.v3i2.1425>
- Wadwa, & Radja. (2006). School Organization. *Journal of Education*, 72, 112–120.
- Widodo, A., & Putranti, H. R. D. (2016). Pengaruh Kualitas Sistem Aplikasi Dan Kualitas Informasi Terhadap Kepuasan Pengguna Sistem Aplikasi Rts (Rail Ticketing System) Dengan Kepercayaan Sebagai Variabel Mediasi. *Media Ekonomi Dan Manajemen*, 31(2).