

The Effect Of The Information System Quality, Service Quality, And User Satisfaction On Academic Information System User Loyalty

Irham Kurniawan, YusaqTomoArdianto, SyarifHidayatullah

Abstract: The purpose of the study is to analyze the effect of the information system quality, service quality and user satisfaction on user loyalty. Primary data obtained by questionnaires are the main data in this analysis. The respondents are students of the informatics engineering study program at Widyagama University of Malang. The population of this sample was 104 students who are registered as active in the academic information system. The analysis technique used path analysis. The results have shown: a) the quality of information system directly affects user satisfaction. b) service quality directly affects user satisfaction. c) the quality information systems directly affects user loyalty. d) service quality directly affects user loyalty. e) user satisfaction directly affects on user loyalty. f) the quality of information system does not have an indirect effect on user loyalty through user satisfaction. g) indirectly, service quality has no effect on user satisfaction.

Index Terms: Quality Of Information System, Quality Of Service, User Satisfaction, User Loyalty.

1. INTRODUCTION

As an educational service, an institution must be able to create trust from its users. In addition, institutional managers must be able to improve the quality of their services in winning the hearts of the public as users, so they can come back. In addition, institutional managers must be able to improve the quality of their services in winning the hearts of the public as users so that they can use these services again. Widyagama University of Malang is one of the private universities in Malang City. Consists of D3, S1, and S2 study programs. There are many choices of the existing study programs, there are also very many active registered students. The efforts to maintain the number of incoming students each year, the institution must be able to improve the quality of existing systems and services, so that existing students become satisfied and can recommend to relatives and others to choose to study at Widyagama University Malang. Purwati (2018) stated that improving the quality of academic information systems can increase student satisfaction, but indirectly through satisfaction, the quality of the system can increase user or student loyalty. Furthermore (Purwati, 2018), suggests that service quality can also directly influence user loyalty and indirectly affect user loyalty through satisfaction.

The similar research has been conducted with the result that the quality of information systems and service quality have a simultaneous effect on user satisfaction of SIAKAD Universitas Merdeka of Malang, Listanto, (2017). This is also in line with Riza, (2015) that there is a significant influence of the quality of academic information system variables, service quality on student satisfaction Faculty of Administrative Sciences University of Brawijaya. The information system that has been applied at Widyagama University of Malang is an assessment of the user satisfaction of the existing academic information system. However, there are also many users who are satisfied but have not obtained user loyalty and recommended it to friends or relatives. Based on the description, the quality of information systems, service quality and user satisfaction with academic information system user loyalty are very interesting topics.

2. LITERATURE REVIEW & HYPOTHESES

2.1. A literature review

2.1.1. Quality of Information System

Davis defined the quality of information systems in Ni Made (2016) as perceived ease of use which is the level of how much computer technology is felt to be relatively easy to understand and use. The quality of the information system is a characteristic of the inherent information about the system itself (DeLone dan McLean, 2016). The quality of information will more increasing produced by an information system itself and the desired quality of information the product / system characteristics information will further increase user satisfaction. The previous research (Listanto, 2017; Dety, 2019; Riza, 2015; Utami, 2013; and Adeyemi, 2020), they claimed there is a significant influence on the quality of information systems on user satisfaction. According McGill dan Klobas (2003), information systems must also be able to make users feel satisfied. In measuring the quality of information systems, there are several indicators, including: Ease of use, response time, reliability, security, and flexibility. According to Wong, (2010) information system quality indicators include:

- Irham Kurniawan is currently pursuing masterdegree program in management in University of Merdeka Malang, Indonesia. Email: sedajohan@gmail.com
- YusaqTomoArdianto is a Lecture in University of Merdeka Malang, Indonesia; corresponding author. Email: yusaqtomo71@gmail.com
- SyarifHidayatullah is a Lecture in University of Merdeka Malang, Indonesia. Email: syarif_ok@gmail.com.

functionality, reliability, usability, accessibility, accuracy, timeliness, and relevance.

2.1.2. Service Quality

An organization, the quality of services provided must have certain criteria in order to improve its quality for all its users. Quality of service, namely providing service excellence performed by service providers in meeting the needs and desires of users as well as the accuracy of delivery to match user expectations. Service quality is an important thing that must be considered and maximized in order to survive and remain the choice of users. (Parasuraman, 2017). Other studies on service quality variables on user satisfaction were conducted by (Listanto, Yusaq&Nanik, 2017; Adhie, 2017; Riza, 2015; Purwati, 2018; Bakrie, 2019; and Adeyemi, 2020). This study states that there is a significant effect of service quality variables on user satisfaction. Further research on the effect of service quality on user loyalty has been carried out (Bakrie, 2019), suggests that there is a significant influence on user loyalty. Meanwhile, Anamdevula, 2019 stated that there was no significant effect of service quality on user loyalty. According Tjiptono, (2017), and Parasuraman, (2017), explains that the indicators used to measure service quality variables include five types, among others: tangibles, reliability, responsiveness, assurance, and empathy. Indicators - The indicators of service quality variables can be described as follows: a) tangible, is the ability of an organization to show its existence to external parties. b) reliability, is the organization's ability to provide services as promised accurately and reliably. c) responsiveness, is a policy to assist and responsive and appropriate services to users by delivering clear information. d) assurance, is knowledge, politeness, and the ability of company employees to foster users' trust in the company. e) empathy, is giving genuine and individual or personal attention to users by trying to understand what users want.

2.1.3. User Satisfaction

User satisfaction is always the main goal of all companies. The more satisfied users are, the more user loyalty increases. According Hermawan (2017), consumer or user satisfaction is a response to the user's fulfillment of a consumption experience, or a small part of that experience. The effect of user satisfaction on user loyalty has a significant and insignificant effect, this is in line with research conducted by (Purwati, 2018; Irfan, 2019; and Bakrie, 2019). According Kotler (2018), measurement of customer satisfaction consists of : 1. Performance, 2. Expectations, 3. Overall Satisfaction. According Jogiyanto, (2017), The indicators used to measure user satisfaction are system satisfaction, information satisfaction and service satisfaction. User satisfaction indicators are intended so that system providers can measure how much success the system has implemented in the institution.

2.1.4. User Loyalty

Loyalty in the higher education environment consists of dimensions of attitude and behavior. Behavioral loyalty is associated with the willingness of students to complete their studies at the college where they study and the intention of students to make the best use of the facilities provided by the college. Meanwhile, attitude loyalty is in the form of students' willingness to provide positive recommendations

to family, friends, and relations wherever they are. User loyalty is the feeling of the user towards a service or the tendency to always be loyal to use a certain service which is indicated by the intention to always use these products in every choice, Gilaninia (2018). In the educational process, student loyalty is more aimed at the positive commitment behavior of students to higher education, shown by loyalty and participation. According (Tjiptono, 2017), There are three indicators used to measure user loyalty, including: reuse, habit of using and always liked. According Griffin, 2018, User loyalty indicators include: making regular purchases, buying outside the service line, willingness to recommend, showing immunity from the attractiveness of similar products from competitors.

2.2. Conceptual Framework and research hypotheses

The conceptual framework model in this analysis is a causal relationship between quality of information system, service quality, user satisfaction and user loyalty, as depicted in the figure below:

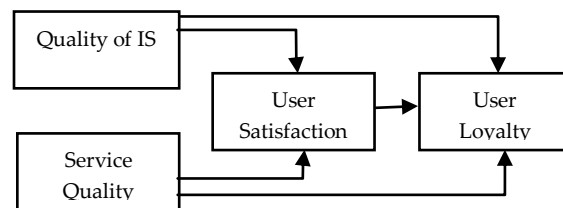


Figure 1. Conceptual Framework Model

Relying on theoretical basis and conceptual framework that has been identified, the following research hypotheses are proposed:

- H1: Quality of information systems impacts user satisfaction
- H2: Service Quality impacts user satisfaction
- H3: Quality of Information System impacts User Satisfaction
- H4: Service Quality has an impact on User Loyalty
- H5: User Satisfaction has an impact User Loyalty
- H6: Quality of Information System influences User Loyalty through mediating User Satisfaction
- H7: Service Quality influences User Loyalty through mediating User Satisfaction

3. RESEARCH METHODS

Population is the total number of research subjects who have similar characteristics. The population in this study were 104 active students of the Informatics Engineering study program at Widyagama University of Malang. The sampling technique used was non probability sampling, with a census. The research instrument used a questionnaire with a Likert scale (5-point scale) used as an assessment item. Types of data obtained from the distribution of questionnaires are interval data. This study uses path analysis. This study's data was gathered from respondents through a Google Form, which has been used for online distribution of the questionnaire.

4. RESEARCH FINDINGS

4.1. Description of Respondents

The results of the descriptions of the respondents used in this study are active students of the Widyagama University Informatics Engineering study program which amounted to

104 students. The results showed that the respondents knew the contents of the questionnaire and had shown a high level of consistency.

Table 1 the respondents' description:

Category	Total	%
Gender-Based Respondents		
Male	82	78,9%
Female	22	21,1%
Entry Year-Based Respondents		
Year 2013	1	0,9%
Year 2014	7	6,7%
Year 2015	9	8,6%
Year 2016	14	13,4%
Year 2017	22	21,1%
Year 2018	20	19,2%
Year 2019	31	29,8%

Based on table 4 it can be explained that the majority of respondents were male as much as 78.9% more than the

4.3. The Classical Assumption Test

The classical assumption test is used for statistical requirements in linear regression analysis. If the basic assumptions are not met, it will result in a biased coefficient assessment that can lead to interpretations and conclusions.

4.3.1. Validity Test

The purpose of conducting a validity test is to assess whether a set of measuring instruments is appropriate for measuring what should be measured. The instrument is said to be valid, meaning that the measuring instrument used to obtain the data is valid.

Table 2 : Results Validity Test

Variable	Item	Correlation's Coefficient	Results
Quality of IS	X111	0,659	Valid
	X112	0,705	Valid
	X121	0,726	Valid
	X122	0,683	Valid
	X131	0,808	Valid
	X132	0,750	Valid
	X141	0,783	Valid
	X142	0,719	Valid
Service Quality	X211	0,651	Valid
	X212	0,680	Valid
	X221	0,744	Valid
	X222	0,671	Valid
	X231	0,741	Valid
	X232	0,653	Valid
	X241	0,534	Valid
	X242	0,620	Valid
User Satisfaction	X251	0,786	Valid
	X252	0,727	Valid
	Y111	0,702	Valid
	Y112	0,717	Valid
	Y121	0,749	Valid
	Y122	0,840	Valid
	Y131	0,757	Valid

female gender as much as 21.1%. In addition, based on SIAKAD which uses year-in-year respondents, the majority of respondents who are still active in 2019 are 29.8%, 2018 19.2%, 2017 as much as 21.1%, 2016 8.6%, 2015 6, 7%, and in 2013 amounted to 0.9%.

4.2. Path Analysis

Furthermore, the path model in path analysis is shown in Figure 2 below:

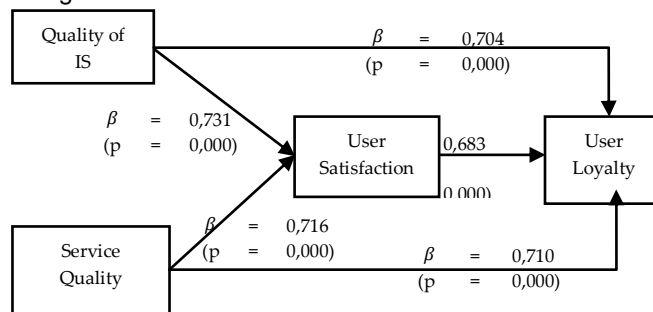


Figure 2 : Path Diagram Results

Variable	Item	Correlation's Coefficient	Results
User Loyalty	Y132	0,748	Valid
	Y211	0,680	Valid
	Y212	0,584	Valid
	Y221	0,805	Valid
	Y222	0,826	Valid
	Y231	0,774	Valid
	Y232	0,763	Valid

Based on data processing, it can be seen from the 30 statement items tested, The r value of the product moment table at $\alpha = 0.05$ and $n = 104$ is 0.194. All statement items have a positive correlation coefficient value and are greater than r table, and the probability is smaller than $\alpha = 5\%$, so there is a significant relationship between the scores of each statement item with the score. total.

4.3.2. Composite Reliability and Cronbach Alpha

The measures composite reliability & Cronbach alpha are used to assess variables' reliability in a research model. General agreement was that the reliability was considered satisfactory if ≥ 0.700 . The results of the reliability test for each variable are shown in Table 3 below :

Table 3. Cronbach's Alpha and Composite Reliability

Variable	Cronbach's Alpha	Reliability's Coefficient	Results
Quality of IS	0,700	0,778	Reliable
Service Quality	0,700	0,764	Reliable
User Satisfaction	0,700	0,788	Reliable
User Loyalty	0,700	0,780	Reliable

Based on the table above, it is assumed that all variables' coefficient reliability values are more significant than 0.70, indicating that all variables have met the reliability criteria.

4.4. Structural Model Test

The test of structural model involves the measurement of the R-Square. The R-Square (R²) indicates whether the

dependent variable has a strong or weak effect on the independent variable. Testing the validity of the model in path analysis is necessary so that it can be known whether or not an analysis has been carried out. Testing the validity of the model in path analysis, there are two indicators that need to be seen, namely the total coefficient of determination (R^2). In this case, the interpretation of the coefficient of determination (R^2) is the same as the interpretation of the coefficient of determination (R^2) in the

4.5. Hypothesis testing

Table 5. Path Coefficient

Path Construct	Direct Influence	P Value	Indirect Influence	Result
Quality of IS→User Satisfaction	0,731	0,000		Sig
Service Quality→ User Satisfaction	0,716	0,000		Sig
Quality of IS→User Loyalty	0,704	0,000		Sig
Service Quality→User Loyalty	0,710	0,000		Sig
User Satisfaction→ User Loyalty	0,683	0,000		Sig
Quality of IS→User Satisfaction→User Loyalty	-	0,000	$0,731 \times 0,683 = 0,449$	No Sig
Service Quality → User Satisfaction →User Loyalty	-	0,000	$0,716 \times 0,683 = 0,489$	No Sig

5. DISCUSSION

5.1. The effect of information system quality on user satisfaction

The quality of information systems affects the satisfaction of users of academic information systems at Widayagama University. This means that the more quality the information system used, and the quality of services provided by the system provider, the more user satisfaction increases, in this case students. The quality of information systems affects user satisfaction, the value of the beta coefficient of the quality of information systems with a value of 0.442 and a p value of 0.000 is smaller than $p = 0.05$. According with previous studies conducted by Listanto,dkk (2017), DetyAryani (2019), Riza (2015) Andhini (2013), and Adeyemi (2020), suggests that the quality of information is a variable that has a dominant effect on user satisfaction. The better the quality of information, the student satisfaction will increase, conversely, if the quality of information is bad then student satisfaction will decrease

5.2. The effect of service quality on user satisfaction

Service quality also has a significant effect on user loyalty. Service quality has a significant effect on user satisfaction; the value of the beta coefficient of service quality with a value of 0.370. This is in line with previous research Adhie (2017), Ardhini (2017), Bakrie (2019), Karim (2019), and Adeyemi (2020), which suggests that there is a significant influence between service quality on user satisfaction. If the quality of academic services increases, student satisfaction will increase. Quality services are absolutely necessary to be able to meet student expectations, the better the quality of SIAKAD provided by universities to students will also provide various benefits to the university.

5.3. The Influence of quality information system on user loyalty

Based on the study results in table 5, The quality of information systems affects user loyalty; the value of the beta coefficient of the quality of information systems with a value of 0.383 and a p-value of 0.000, which is smaller than

regression analysis. Based on the results of the calculation of the R model, the total coefficient of determination with a value of 0.826 shows the variation in the data that can be explained in the research model, which is 82.6%. Meanwhile 17.4% can be explained by other variables (which are not yet in the model).

$p = 0.05$. The results showed that the quality of information systems and service quality have a significant effect on user loyalty. This means that a quality information system, supported by quality academic services will be able to increase user loyalty, namely students of Widayagama University of Malang. The quality of the information system examined in this study is reflected in the quality of information measured in order to analyze the effect on user loyalty. The results of this study are in line with previous research conducted by Purwati (2018), which states that the quality of information has a significant effect on user loyalty.

5.4. The Influence of service quality on user loyalty

According to the study results shown in table 5, Service quality affects the loyalty of users of academic information systems. The quality of information systems affects user loyalty; the value of the beta coefficient of the quality of information systems with a value of 0.383. This is in line with research conducted by Purwati (2018) and Annamdevula (2019), which states that service quality has a significant effect on user loyalty. This study suggests that the consequence of loyalty has a strong relationship with the single antecedent of service quality. In contrast to research conducted by Bakrie (2019), which states that service quality does not directly affect loyalty.

5.5. The impact of system quality on user loyalty

The results of this study indicate that user satisfaction has a significant effect on user loyalty. User satisfaction in this study is formed from conformity of expectations, information satisfaction and service satisfaction. The main thing that encourages student satisfaction is information satisfaction which is reflected in the users being satisfied with the information provided by the system. The results of previous research which are in line with this research, namely Irfan (2019), state that user satisfaction has a significant effect on loyalty. Based on this research, students of the Faculty of Administrative Sciences, Department of Business Administration have been able to feel satisfaction with expectations and overall satisfaction in accordance with user wants and needs. Differences were found in research

conducted by Bakrie (2019), Karim (2019) and Annamdevula (2019), which stated that student satisfaction did not have a significant effect on student loyalty. Bakrie (2019) and Karim (2019), states that the level of satisfaction felt by students is still low so that it cannot create loyal students, while Annamdevula (2019) argues that student satisfaction does not have a significant effect on student loyalty.

5.6. The influence of service quality on user loyalty through user satisfaction.

The results showed that the quality of the information system had no significant effect on user loyalty through user satisfaction. In line with research conducted by Annamdevula (2019), a satisfied information system user does not necessarily make users loyal. This can occur because the quality of information systems such as ease of operating the system, speed of system access, system security and relevance of system information are not the ones that make users feel satisfied, but students as users of information systems always need up-to-date information and in accordance with user expectations, in this case millennial era students, so as to create user loyalty, that is, they can happily recommend the system to others.

5.7. The influence of service quality on user loyalty through user satisfaction

The results showed that service quality has no significant effect on user loyalty through user satisfaction. This can happen because the quality of services such as responses and handling of complaints in institutions has not been effective in increasing user satisfaction. This is evidenced by the opinion of respondents about the responses and responses of service providers who obtained a smaller average score. The quality of service expected by users is that it can help in ignorance of system users. Bakrie's research (2019), which states that service quality does not directly affect loyalty is not tested in this study.

6. CONCLUSION

Based on the results of the hypothesis, the conclusions in this study are: 1) The results of descriptive analysis show that the quality of information systems is formed from ease of use, speed of access, system security, and relevance. The main thing that drives the quality of information systems is the ease of use of the system, which is reflected in the system being used which is very easy to operate and has a help feature for system users to make it easier to understand the system. Service quality is formed from tangible, reliability, responsiveness, assurance, and empathy. The main thing that affects service quality is system reliability. User satisfaction is formed through the conformity of expectations, information satisfaction and service satisfaction. The main thing that affects user satisfaction is information satisfaction. User loyalty is formed from reuse, willingness to recommend and always trusting. The main thing that affects user loyalty is willingness to recommend. The more quality the academic information system (SIKAD), supported by the quality of services provided, will further increase student satisfaction, which in turn will create user loyalty to the academic system at Widyagama University of Malang. 2) The quality of

information systems (SI) can increase student satisfaction. The more reliable the system is by users, which is reflected in the accuracy in answering the ignorance of system users and systems that are easy to operate, it will increase system user satisfaction. In addition, the information system must also contain relevant information, so that users will feel satisfied when using the system. Quality of service can increase user loyalty. The quality of system services by providing a good response and handling of complaints, will further increase user satisfaction of the academic information system at Widyagama University of Malang. 3) The quality of information systems can increase user loyalty. The quality of information that can meet user needs can increase user loyalty. The quality of information is increasing, so students as users will feel loyal. Improvement and improvement of academic information through this research can directly and indirectly have an impact on student loyalty. 4) Service quality can increase the loyalty of users of academic information systems. The quality of service that can be felt by the reliability of the system, and can be accessed quickly and responsively, will further increase the loyalty of users of information systems at Widyagama University of Malang. 5) User satisfaction can increase user loyalty. User satisfaction is formed through the conformity of expectations, information satisfaction and service satisfaction. The main thing that encourages increasing user satisfaction is information satisfaction. The more satisfied the user is with the information provided by the system, the more satisfied the user is with the system used. 6) The quality of the information system cannot increase user loyalty through user satisfaction. This can occur because the quality of information systems such as ease of operation of the system, speed of system access, system security and relevance of system information are not the things that make users feel satisfied. Satisfied users of information systems do not necessarily make users loyal. 7) The results showed that service quality cannot increase user loyalty through user satisfaction. This can happen because the quality of services such as responses and handling of complaints in institutions has not been effective in increasing user satisfaction

7. RESEARCH LIMITATIONS

This research is limited to Widyagama University Malang, with students as respondents. Further researchers can develop by taking wider case studies, and expanding with lecturers or staff as research respondents. This research is limited to the variables of information system quality, service quality, user satisfaction and user loyalty. This research can be developed using other variables that have not been studied, such as: university image, university promotion, and others.

8. SUGGESTION

Based on the research results, the suggestions given include: 1) For higher education institutions that are the object of research, the results of this study can be used as a reference in improving the quality of academic information systems and services provided to students. Technological development demands that all aspects be carried out effectively and efficiently. For this reason, through improving the information system, a higher education

organization will be able to compete with other universities.
2) For further researchers, it is necessary to develop other mediating variables such as university image, university promotion, and others.

REFERENCES

- [1] Adeyemi, O.lismail, 2020. Integration of Information System Success. Model (ISSM) and Technology Acceptance Model (TAM): Proposing Students' Satisfaction with University Web Portal Model. Record and Library Journal. Volume 6, No. 1, 2020. Can be accessed at: <https://e-journal.unair.ac.id>.
- [2] Adie, Kurban, 2017. Effect of Academic Service Quality and Educational Facilities on Student Satisfaction at Pgris Palembang University. Jurnal Media WahanaEkonomika, Vol. 13, No. 4, Januari2017 : 22-35. Can be accessed at: <https://jurnal.univpgripalembang.ac.id/>.
- [3] Agustina, Nadia, dkk (2018). Effect of Customer Satisfaction, Switching Costs, and Brand Trust on Customer Loyalty. JurnalAdministrasiBisnis (JAB). Vol. 64 No. 1 November 2018. Hal 92 - 101. Can be accessed at: <http://www.administrasibisnis.studentjournal.ub.ac.id>.
- [4] Akbar, Ilham. 2017. The Influence of Relationship Marketing and Relationship Quality on User Loyalty with User Satisfaction as Intervening Variables in Mulegh Perfume Products in Purwokerto. Indonesian Journal Of Strategic Management, Vol 1, Issue 1, Februari 2018.
- [5] Annamdevula, Subrahmanyam, 2014. Effect of student perceived service quality on student satisfaction, loyalty and motivation in Indian universities Development of HiEduQual. Journal of Modelling in Management. Vol. 11 No. 2, 2016. pp. 488-517. Can be accessed at: <https://www.emerald.com/insight/>.
- [6] Anifaturohmah, Siti dan Nani Hanifah. 2015. The Effect of Sales Service Quality on Customer Satisfaction in Isam Economic Perspective (Case Study at UD. Cita Rasa Sempidi Denpasar). STAI DarulUlum. Banyuwangi.
- [7] Ardianto, Yusaq, Tomo, 2010. Analysis of Supply Prices, Quality of Service and Ease of Loyalty of Gondanglegi Sugarcane Farmers, Malang Regency. Journal of Islamic Economics and Business. IQTISHODUNA (Vol 6, No 1; 2010). Can be accessed at: <http://ejournal.uin-malang.ac.id/>.
- [8] Bakrie, Muhammad, 2019. The Influence of Service Quality, Institutional Reputation, Students' Satisfaction on Students' Loyalty in Higher Education Institution. International Journal for Educational and Vocational Studies, Vol. 1, No. 5, September 2019, pp. 379-391. Can be accessed at: <http://ojs.unimal.ac.id/index.php/ijevs>
- [9] Dety, Aryani, 2019. The Influence of the Quality of Academic Information Systems (Siakad) on Student Satisfaction at IAIN Ambon. Tahkim. Vol. XV, No. 2, Desember 2019. Can be accessed at: <https://core.ac.uk/>.
- [10] Griffin, jill, 2005. customerloyalty , revised edition, jakarta: Erlangga, Kotler (2017).
- [11]
- [12] Irfan, Muhammad, 2019. Measurement of SIMAK User Satisfaction and Its Impact on Loyalty Using the End User Computing Satisfaction (EUCS) Model (Case Study: Faculty of Teacher Training and Education, Majalengka University).5 September 2019.
- [13] Karim, Al Rashed, 2019. Influence of Service Quality on Customer Satisfaction and Customer Loyalty in the Private Banking Sector of Bangladesh: A PLS Approach. Journal of Marketing and Information System(JMIS). www.readersinsight.net/jei.
- [14] Kotler dan Keller. 2017. Marketing Management. Volume 1. Edition 3. Andi. Jogjakarta.
- [15] Listanto, Yusaq, dkk, 2017. The Influence of System Quality, Information Quality, Service Quality, on User Satisfaction of Academic Information System Universitas Merdeka Malang. Journal of Information Technology & Management. Volume 3, Number 2, July - December 2017. Pg 149-160. Can be accessed at: <http://jurnal.unmer.ac.id/>
- [16] Miftah, R., Syarif, H., Harianto, R., 2017. Analysis of System Quality and Information Quality on Academic Information System User Satisfaction of Lecturers. National Seminar on Information Systems 2017, 14 September 2017 Faculty of Information Technology - UNMER Malang. Can be accessed at: <https://seminar.unmer.ac.id/index.php/senasif/2017>.
- [17] Ni Made, 2016. The Influence of Information System Quality, Information Quality and Perceived Usefulness on End-User Satisfaction of Accounting Software (Empirical Study of Star Hotels in Bali Province). E-Journal of Economics and Business, Udayana University 5.1. Pp: 115-142. Can be accessed at: <https://media.neliti.com/>
- [18] Parasuraman. 2017. Rassessment of Expectations as a comparison standard in measuring service Quality: Implications for future reseach. Journal of Marketing.
- [19] Purwati, Astri Ayu dkk, 2018. The Influence of the Quality of Academic Information Systems on Student Satisfaction and Loyalty in Higher Education. Journal of Economic, Business and Accounting (COSTING). Volume 2 Number 1, July-December 2018. Can be accessed at: <https://journal.ipm2kpe.or.id/>
- [20] Riza, Wahyudi, et all, 2016. The Influence of the Quality of Siakad Systems, Information and Services on Student Satisfaction. Journal of Business Administration (JAB). Vol. 23 No. 2 June 2015. Can be accessed at: <http://www.administrasibisnis.studentjournal.ub.ac.id>
- [21] Sugiyono. 2010. Quantitative Research Methods, Quantitative and R & D. Bandung: Alfabeta.
- [22] Supardi, 2017. Economic and Business Research Methods. Yogyakarta: UII Press, 2005.
- [23] Tjiptono, Fandy, 2017, Marketing strategy. Volume 1. Edition 3. Jakarta: Erlangga.
- [24] Wahyudi, Riza. 2016. The Influence of the Quality of Siakad Systems, Information and Services on Student Satisfaction. Journal of Business Administration (JAB). Volume 23 No. June 2. <http://administrasibisnis.studentjournal.ub.ac.id>.
- [25] Pratama, Hendry, Prasetya and Ardianto, Yusaq., T, 2019. Information Quality as a Link Between System Quality and User Satisfaction: Study of Core Banking System at BPR. Journal of Information Technology & Management - Vol.5 No.2 2019.