TEPIAN Vol. 6 No. 1 (March 2025) 45-49 p-ISSN 2721-5350 e-ISSN 2721-5369
https://doi.org/10.51967/tepian.v6i1.3201 © 2025 Tepian Politeknik Pertanian Negeri Samarinda

Measuring the Quality of STAR Websites Using the System Usability Scale (SUS) Method

Muhammad Labib Jundillah *
Information System, Mulawarman University, Samarinda, 75119, Indonesia
labibjundillah@gmail.com
*Corresponding author

Ramadiani
Informatics, Mulawarman University, Samarinda, 75119, Indonesia
ramadiani@unmul.ac.id

Azainil
Education Management, Mulawarman University, Samarinda, 75119, Indonesia
azainil@fkip.unmul.ac.id

Submitted: 2024-11-25; Accepted: 2025-03-04; Published: 2025-03-15

***Abstract*—** This study aims to analyze the level of usability in the Learning Application System (STAR) at Mulawarman University using the System Usability Scale (SUS) method. Mulawarman University (Unmul) is a university in Indonesia located in Samarinda City and is currently trying to innovate in the educational aspect. Learning Application System (STAR) is a website designed to support the academic teaching and learning process at Mulawarman University. STAR Unmul can be accessed by lecturers and students. The existence of STAR Unmul which can be accessed via gadgets is very helpful for students in the lecture process. However, to ensure that the teaching and learning process runs optimally, STAR Unmul needs to be evaluated to determine how high the level of usability is in supporting the teaching and learning process at Mulawarman University. The System Usability Scale (SUS) is a usability evaluation method that provides adequate results based on considerations of small sample size, time, and cost. This study involved 100 respondents consisting of students. The results of the analysis show that the average SUS score obtained is $\bar{x}$ 59.725 which categorizes this system in Class D. Based on the assessment of adjectives, this system is categorized as Good, and acceptability is in the Marginal category. These findings indicate that although this system has been used routinely by students, there is still significant room for improvement.

***Keywords*—** Higher Education STAR, System Usability Scale (SUS), Usability Evaluation

I. INTRODUCTION

In this increasingly rapid digital era, information and communication technology has spurred human innovation to create various devices to carry out activities in various fields, including education. Mulawarman University (Unmul) is one of the universities in Indonesia located in Samarinda City and strives to innovate in the educational aspect(Ramadiani et al., 2017). Mulawarman University is one of the universities that always follows the development of information technology, including providing various service facilities to the entire academic community (Setyaningtyas et al., 2023). Mulawarman University provides web-based academic information services, which can be accessed at any time. In addition to academic information services (AIS Unmul), Mulawarman University also develops innovations in web-based learning activities. One of these innovations is E-Learning (Jundillah et al., 2019). E-Learning is a learning model that utilizes the internet network as information and communication technology (Ramadiani et al., 2016; Ramadiani, Azainil, et al., 2020; Rizal, 2023). In the world of education, e-learning is used as a teaching and learning medium (Maulana et al., 2024). In implementing e-learning, Mulawarman University uses the Learning Application System (STAR).

System Usability Scale (SUS) is one of the usability evaluation methods that provides adequate results based on considerations of small sample size, time, and cost. The results of calculations using the SUS method will be converted into a value, which can be used as a consideration to determine whether an application is feasible or not feasible to implement. The advantages of the SUS System Usability Scale are that it is easy to use and accepted by respondents, can be used on small research samples with accurate results, and has been proven valid in determining whether the system can be used properly. Research on STAR needs to be conducted to determine user satisfaction with its services. So, the university has not been able to describe or describe whether STAR has been successfully implemented at Mulawarman University and whether (STAR) has met the needs of its users.

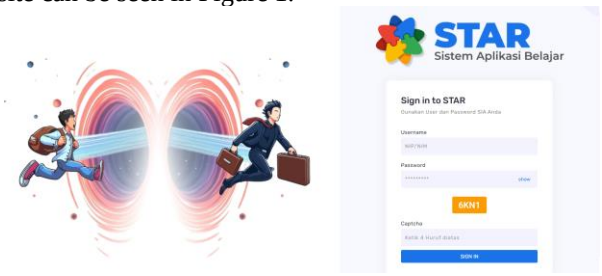
II RESEARCH METHODS

A. STAR

Learning Application System (STAR) is a website designed to support the academic teaching and learning process at Mulawarman University. STAR Unmul can be accessed by lecturers and students. STAR Unmul provides various features such as attendance with selfie photos, access to lecture materials and assignment collection media. The existence of STAR Unmul which can be accessed via gadgets is very helpful for students in the lecture process. However, to ensure that the teaching and learning process runs optimally, STAR Unmul needs to be evaluated to determine how high the level of usability is in supporting the teaching and learning

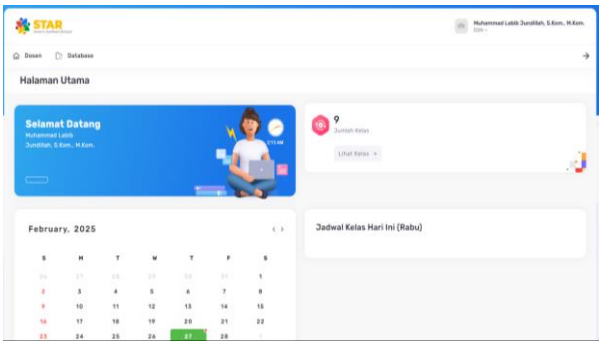
Jundillah, M. L., Ramadiani, & Azainil. (2025). Measuring the quality of STAR websites using the System Usability Scale (SUS) method. TEPIAN, 6(1). 45-49. https://doi.org/10.51967/tepian.v6i1.3201

process at Mulawarman University (Ramadiani, Kurniawan, et al., 2020). The appearance of the STAR website can be seen in Figure 1.



. Figure. 1. STAR Website

The main dashboard page of the star website after logging in displays the username and the total number of classes taken in the current semester in Figure 2. Class attendance can only be done when the class is open, or the lesson begins. Attendance is done by mandatory showing a selfie of the student's face from the front.



. Figure. 2. Dashboard STAR Website

Specifically, the lecturer dashboard will display student profile photos from each course taught. Lecturers can determine the time to take attendance at each lecture meeting. Can be seen in Figure 3.

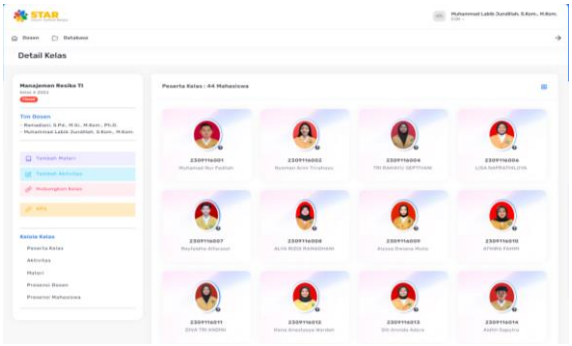


Figure. 3. Dashboard Lecturer STAR Website

B. System Usability Scale (SUS)

In conducting this research, the method used is the System Usability Scale (SUS) method. The System Usability Scale (SUS) is a usability evaluation that involves end users in the implementation process. This user testing method was introduced by John Brooke in 1986. The results of calculations using the SUS method will be converted into a value that can be used as a consideration to determine whether an application is feasible or not(Maryati et al., 2022).

The system usability scale (SUS) has different rules in calculating the results of respondents' answers. The difference lies in the odd and even number of test instruments [8], here is how to calculate the results of the system usability scale (SUS) test:

a) An odd number instrument statement, the instrument answer scale is reduced by 1
b) Even the number instrument statement, then the instrument answer scale is reduced by 5.
c) Assessment results scale 1 - 5 (5 is the best answer).
d) Add up all answers then multiply by 2.5.
e) Determine the average value of the test instrument answers for all respondents(Manurung et al., 2024).

There are three points of view in the assessment, namely acceptability, value scale, and adjective assessment. There are three levels of acceptability consisting of unacceptability, marginal (low and high), and acceptability. Meanwhile, the value scale consists of A, B, C, D, and F. For adjective rating, there are more levels, namely worst imagine, poor, ok, good, excellent and best imagine. Of the three-system usability scale (SUS) assessments as in Figure 4 and Figure 5, namely acceptance is used to see the level of user acceptance of the software, grade scale to see the level of the website, and attribute rating to see the results of the website ranking. In addition to these three methods, the system usability scale (SUS) has another way to determine the assessment results, namely by using the SUS score percentile ranking. Determination of assessment results based on the SUS score percentile ranking is generally carried out based on the results of user assessment calculations. The SUS score percentile ranking is different from acceptance, grade scale, and attribute rating which are grouped into three categories. The following are the provisions for determining the assessment on the SUS score percentile ranking (Oktaviani, 2020).

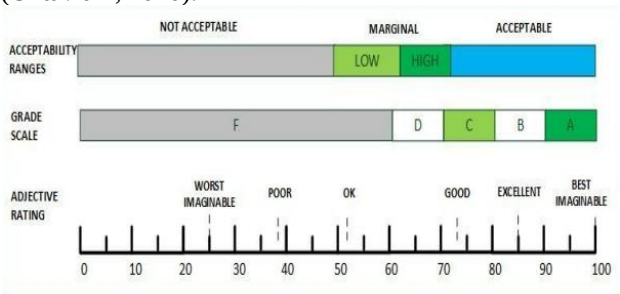


Figure. 4. System Usability Scale

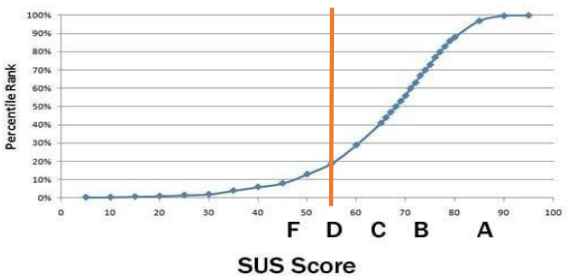


Figure. 5. Percentile Rank

Jundillah, M. L., Ramadiani, & Azainil. (2025). Measuring the quality of STAR websites using the System Usability Scale (SUS) method. TEPIAN, 6(1). 45-49. https://doi.org/10.51967/tepian.v6i1.3201

In conducting the evaluation process of the instrument owned by the system usability scale (SUS), there are ten statements that are the benchmarks for testing. The system usability scale (SUS) testing instrument can be used to evaluate various types of testing ranging from websites, information systems, and mobile-based software (Sunarto et al., 2023). The system usability scale (SUS) testing instrument can be seen in Table 1.

Table 1. SUS Evaluation Instrument

Code	Question
Q1	I think I will use this AIS often
Q2	I find AIS complicated to use
Q3	I find AIS easy to use
Q4	I need help from someone else or a technician in using this AIS
Q5	I feel like these AIS features are working as they should
Q6	I feel there are many things that are inconsistent with AIS
Q7	I feel like others will figure out how to use this AIS quickly
Q8	I find AIS confusing
Q9	I feel there is no barrier in using this AIS
Q10	I need to get used to it first before using AIS

III. Results and Discussion

A. *Respondent Characteristics*

Respondent characteristics are used to determine the character of each respondent. Respondents in this study were lecturers and active students of Mulawarman University from the class of 2020 to 2024 as users of the STAR website. The research sampling process was carried out by distributing questionnaires in the form of Google forms to 100 respondents. Where the most students' respondents came from the class of 2023 at 34%, followed by the class of 2021 at 29%, and the class of 2022 at 27%. The class of 2020 included the smallest respondents at 2%, followed by the class of 2024 at 8%. Respondent Characteristics Percentage can be seen in Figure 6.

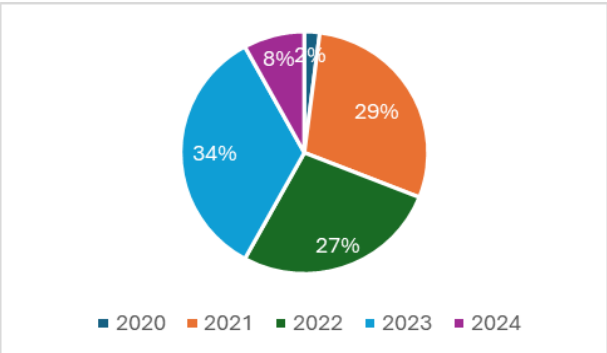


Figure. 6. Students Respondent Characteristics Percentage

The validity test was conducted on 100 respondents to assess the validity of the questionnaire. An item is considered valid if the calculated r exceeds the tabled r. The significance level is 0.05 or 5% for 100 respondents, resulting in a tabled r of 0.1946. Table 2 are the validity test results for each variable item.

Table 2. The Validity test results

Criteria	SUS	*r table 5%*	Validity
Q1	0,245	0,1946	Valid
Q2	0,709		Valid
Q3	0,686		Valid
Q4	0,284		Valid
Q5	0,484		Valid
Q6	0,474		Valid
Q7	0,525		Valid
Q8	0,757		Valid
Q9	0,533		Valid
Q10	0,274		Valid

Table 2 shows that all items in the system usability scale are considered valid as the calculated r values are more significant than the tabled r value. Reliability Test results can be seen in Table 3.

Table 3. The Reliability test results

Reliability Statistics	
Cronbach's Alpha	N of Items
.804	10

Table 3 shows that all indicator items in the SUS are deemed reliable because Cronbach's alpha values are greater than 0.60.

B. *Assessment Results*

The results of data analysis from 100 respondents who obtained a final SUS score of 59.725, and based on Figure 7 the SUS interpretation scale obtained a score of 59.725 where the STAR website received a Grade D assessment, and for interpretation based on nature (Adjective) it was included in the Good category and based on the level of acceptance it was included in the Marginal low category which means that the STAR website is quite difficult or not easy and less satisfying to use by users.

Jundillah, M. L., Ramadiani, & Azainil. (2025). Measuring the quality of STAR websites using the System Usability Scale (SUS) method. TEPIAN, 6(1). 45-49. https://doi.org/10.51967/tepian.v6i1.3201

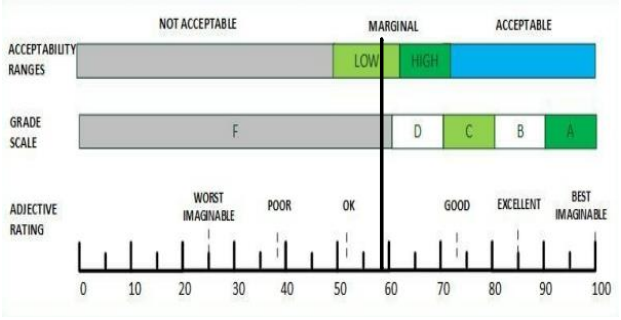


Figure. 7. System Usability Scale Assessment

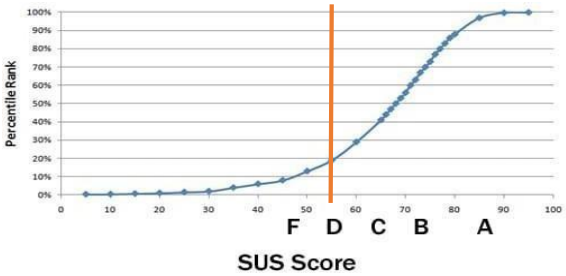


Figure. 8. Percentile Rank Assessment

The results of data analysis from 100 respondents who obtained a final SUS score of 59.725, and based on Figure 8 the SUS interpretation scale obtained a score of 59.725 where the STAR website received a Grade D assessment, and for interpretation based on nature (Adjective) it was included in the Good category and based on the level of acceptance it was included in the Marginal low category which means that the STAR website is still generally acceptable to users. Meanwhile, the results of the Percentile Rank level from the STAR website which has a $\bar{x}$ of 59.725 are at the 20% Percentile, meaning that the STAR Percentile Rank value is still quite acceptable, namely it is said to be acceptable if the percentile is exactly at 20%.

C. Respondent Response Analysis

The SUS questionnaire has 10 questions given to respondents. By looking at the average respondent's answer to each question in the SUS questionnaire, it can be seen which respondents most agree or disagree. The SUS questionnaire has positive and negative questions. The STAR Website Usability can be said to be good if the positive questions (1, 3, 5, 7, and 9) have an average answer of "strongly agree" or "agree". And negative questions (2, 4, 6, 8, and 10) have most of the respondents' answers "strongly disagree" or "disagree". Most of the answers to each question in the SUS questionnaire are in Table 4.

Table 4. Respondent Response Analysis

Likert Scale	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Very Disagree	1	6	0	13	2	2	1	4	2	0
Disagree	1	**44**	5	**54**	20	22	19	**52**	25	18
Neutral	24	39	23	28	28	**42**	21	32	30	36
Agree	**56**	10	**61**	4	**43**	28	**49**	10	**34**	**42**
Very Agree	18	1	11	1	7	6	10	2	9	4

Based on Table 4, the average response for each item of the SUS questionnaire statement is as follows:

a) The average response of respondents to statement Q1 as many as 56 respondents stated that they agreed. This means that respondents agree that STAR is useful for users.
b) Question Q2 as many as 44 respondents stated that they disagreed. This shows that respondents consider STAR is designed as creatively and efficiently as possible so that respondents stated that STAR is easy to use.
c) Meanwhile, the respondents' responses to question Q3 were 61 respondents who agreed, meaning that STAR is easy to use.
d) The average respondents' responses to question Q4 were 54 respondents who disagreed. Respondents considered STAR easy to use and stated that they did not need technical assistance when accessing STAR.
e) Meanwhile, the respondents' responses to question Q5 were 43 respondents who agreed, meaning that STAR has been well designed.
f) Respondents' answers to question Q6 as many as 42 respondents stated neutral. This is because some respondents considered STAR consistent or appropriate when accessing STAR.
g) The average answer to question Q7 as many as 49 respondents stated agree, this means that respondents considered STAR easy to understand by users and did not cause confusion when accessing STAR.
h) Question Q8, the average number of respondents who stated Disagree was 52 respondents, which means that respondents consider STAR easy to understand by users.
i) As for question Q9, the average number of respondents who stated Agree was 34 respondents. This means that users do not feel awkward when accessing STAR so that respondents are quite confident that they will not make mistakes when accessing STAR.
j) Most respondents stated in Q10, the average number of respondents who stated Agree was 42 respondents, which means that respondents need to learn STAR and adapt to how to access STAR first before using STAR.

Based on the questions above, it can be concluded that STAR features work well, users feel that STAR is easy to use, users also feel that they will understand how to use STAR quickly, and users feel comfortable when using STAR which makes users use STAR often. However, some users stated that to access STAR, users must get used to it first.

Based on the questionnaire results, respondents gave an average neutral answer to question Q6, meaning that some respondents agreed that access to the STAR website was still inconsistent or irregular. This of course affects the effectiveness of the STAR website. A system can be said to be good if the system can meet user needs. Obstacles related to this range from the user's location not being detected, to experiencing errors when taking selfies for attendance and needing to be taken several times in order to complete it.

Then for other statements, respondents answered agree to question Q10. This means that most respondents considered it true that there are still usability deficiencies on the STAR website. The problem that caused respondents to state that users need to get used to it first before using the STAR website is that users do not understand how to log in, do not understand how to take attendance photos, and do not understand the features on the STAR website. So, before users access or use the STAR website, there needs to be socialization about how to access the STAR website first so that users can learn and adapt to how to access or use the STAR website.

IV. Conclusion

The results of the analysis show that the average SUS value obtained is 59.725 so that this system falls into category D. Based on the assessment of adjectives, this system falls into the good category, and the level of acceptance falls into the Marginal category. These findings indicate that although this system has been used in the campus environment, there is still room for improvement. First, the system needs to be improved in providing easy access to device location and taking selfies. Second, students and lecturers need to be given modules and video tutorials on how to access the features on the STAR website. This aims to ensure that the STAR website can be used optimally.

References

Jundillah, M. L., Suseno, J. E., & Surarso, B. (2019). Evaluation of E-learning Websites Using the Webqual Method and Importance Performance Analysis. *E3S Web of Conferences*, *125*(201 9), 1–5. https://doi.org/10.1051/e3sconf/201912524001

Manurung, R. Y., Krisbiantoro, D., & Utami, D. A. B. (2024). Usability Evaluation of Tokopedia Application Version 3.242 Using System Usability Scale (SUS) Method. *Sinkron*, *9*(1), 366–374. https://doi.org/10.33395/sinkron.v9i1.13191

Maryati, I., Nugroho, E. I., & Indrasanti, Z. O. (2022). Analisis Usability pada Situs Perpustakaan UC dengan Menggunakan System Usability Scale. *Jurnal Media Informatika Budidarma*, *6*(1), 362. https://doi.org/10.30865/mib.v6i1.3472

Maulana, I. T., Rizal, F., & Suhaedin, E. (2024). *E-Learning is Effectively Used for Management for IT Service Courses*. *3*(August), 172–179.

Oktaviani, N. (2020). Measuring User Perspectives on Website Conference Using System Usability Scale Pengukuran Perspektif Pengguna Terhadap Website Conference Menggunakan System Usability Scale. *Journal of Information Systems and Informatics*, *2*(2), 279–290. http://journal-isi.org/index.php/isi

Ramadiani, Atan, R., Selamat, M. H., Abdullah, R., Pa, N. C., & Azainil. (2017). User difficulties in e-learning system. *Proceeding - 2016 2nd International Conference on Science in Information Technology, ICSITech 2016: Information Science for Green Society and Environment*. https://doi.org/10.1109/ICSITech.2016.7852626

Ramadiani, Azainil, Hidayanto, A. N., Khairina, D. M., & Jundillah, M. L. (2020). Teacher and student readiness using e-learning and m-learning. *Bulletin of Electrical Engineering and Informatics*. https://doi.org/10.11591/eei.v9i3.2006

Ramadiani, R., Kurniawan, A., Arifin, Z., Jundillah, M. L., Alex, R., Azainil, A., & Hidayanto, A. N. (2020). Evaluation of student academic performance using e-learning with the association rules method and the importance of performance analysis. *Journal of Physics: Conference Series*, *1524*(1). https://doi.org/10.1088/1742-6596/1524/1/012107

Ramadiani, Rodziah, A., Hasan, S. M., Rusli, A., & Noraini, C. (2016). Integrated Model for E-Learning Acceptance. *IOP Conference Series: Materials Science and Engineering*. https://doi.org/10.1088/1757-899X/105/1/012016

Rizal, M. (2023). Learning Writing Skill During Covid-19 Pandemic through E-Learning in Indonesian English Classroom. *EDUCASIA: Jurnal Pendidikan, Pengajaran, Dan Pembelajaran*, *8*(1), 73–84. https://doi.org/10.21462/educasia.v8i1.151

Setyaningtyas, A. A., Jundillah, M. L., & Kamila, V. Z. (2023). Penggunaan Metode Delone dan Mclean Untuk Menganalisis Kesuksesan Mulawarman Online Learning System (MOLS). *Adopsi Teknologi Dan Sistem Informasi (ATASI)*, *2*(2), 110–118. https://doi.org/10.30872/atasi.v2i2.1057

Sunarto, S., Kamila, V. Z., & Jundilah, M. L. (2023). Pengukuran Tingkat Kepuasan Pengguna Website Perpustakaan Fakultas Teknik Universitas Mulawarman Menggunakan System Usability Scale (Sus). *Kreatif Teknologi Dan Sistem Informasi (KRITISI)*, *1*(1), 6–12.