Implementation Of System Usability Scale (SUS) in Measuring AIS Website Usability at Mulawarman University

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Abstract. An information system is an organized way to collect, input, process, and store data, and to store, manage, control, and report information in such a way that an organization can achieve its stated goals. Mulawarman University has a website related to academic services, namely the Academic Integrated System (AIS). This study aims to analyze the level of usability of the Academic Information System (AIS) Website of Mulawarman University using the System Usability Scale (SUS) method. The SUS method was chosen because of its proven effectiveness in evaluating the usability of various types of systems, as well as providing clear insights into user experience. The analysis results show that the average SUS score obtained is 62.536, categorizing this system in Grade D. Based on the adjective rating, it is categorized as Ok, and the acceptability falls into the marginal category. These findings indicate that although the system has been routinely used by students, there is still significant room for improvement. Therefore, this research suggests the need for further evaluation and continuous development of the system to enhance usability, operational efficiency, and user satisfaction.

Keywords: Academic Integrated System (AIS), Mulawarman University, System Usability Scale (SUS), Website

1   Introduction

An information system is an organized way to collect, input, process, and store data, as well as store, manage, control, and report information in such a way that an organization can achieve its goals. The development of information systems has various methods [1]. The use of information systems in each university is one of the important factors in a university to improve the efficiency and effectiveness of all academic and non-academic activities so that it can improve the quality of the university. The Academic Information System is a system designed with the aim of meeting the needs of educational

institutions that want computerized educational services to improve performance, service quality, human resource quality, and the competitiveness they produce as well as reporting in the university environment involving students, lecturers, and academic administration officers [2].

Mulawarman University has several websites related to academic services, namely AIS, Star, etc. The Academic Integrated System (AIS) of Mulawarman University was created to replace the old academic information system. However, until now there has been no assessment of the usefulness of the website.

System Usability Scale (SUS) is one of the popular usability assessment methods used. SUS uses a Likert scale and is given ten simple statement items that provide a global picture of subjective assessments related to the level of usability [3]. The advantages of the SUS method are that it is very easy to do and easy for participants to understand and can be used in small sample sizes but produces reliable and valid results. The benefits that can be obtained by using SUS are that SUS is a scale that is easy to give to users, SUS results are reliable even though they use a small sample size and SUS results are valid, namely they can distinguish between systems that can be used and systems that cannot be used effectively [4].

2   Materials and Methods

Academic Integrated System is an integrated website from the Mulawarman University campus for academicians. AIS is used by students to do many things including Student Identification Number Activation, Student Biodata Filling, Registration and Study Plan Card (KRS) Filling. The AIS desktop display can be seen in Fig. 1 below.
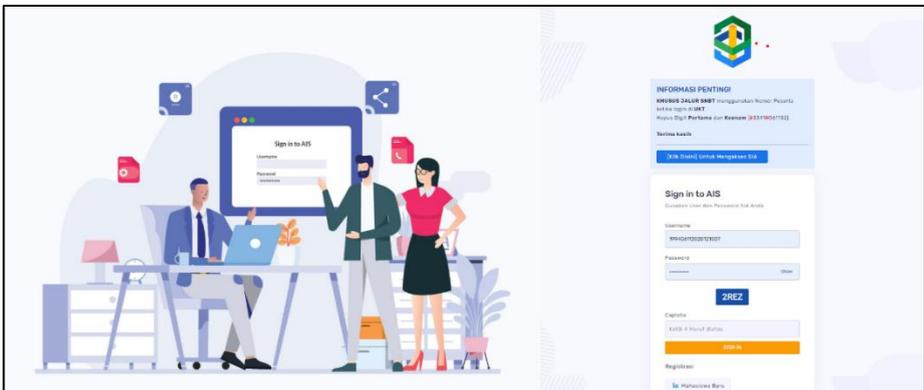

Fig. 1. Initial view of the Academic Integrated System website

2.1   System Usability Scale (SUS)

System Usability Scale (SUS) is a user testing method that provides a reliable and "fast and practical" measurement tool. 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. SUS is an inexpensive but effective instrument for testing the usability of a product, including websites, mobile phones, television applications, and others. SUS also provides an easy-to-understand scale from 0 to 100 [5]. This SUS method uses a simple questionnaire with 10 questions as arranged in table 2.1 to assess a website or application. In the SUS method questions, odd numbers have 5 positive sentences (1, 3, 5, 7, and 9) and even numbers have 5 negative sentences (2, 4, 6, 8, and 10) and each of these questions will measure user satisfaction in using the Academic Information System [6]. The questionnaire can be seen in Table 1.

Table 1. System Usability Scale Questionnaire

Code	Question
P1	I think I will use this AIS often
P2	I find AIS complicated to use
P3	I find AIS easy to use
P4	I need help from someone else or a technician in using this AIS
P5	I feel like these AIS features are working as they should
P6	I feel there are many things that are inconsistent with AIS
P7	I feel like others will Fig. out how to use this AIS quickly
P8	I find AIS confusing
P9	I feel there is no barrier in using this AIS
P10	I need to get used to it first before using AIS

The statement above can be seen in the form of the SUS calculation formula as follows:

$$\text{SUS score} = \{(P1-1) + (5-P2) + (P3-1) + (5-P4) + (P5-1) + (5-P6) + (P7-1) + (5-P8) + (P9-1) + (5-P10)\} \times 2.5 \tag{1}$$

The average SUS questionnaire score is obtained from the sum of the scores of all respondents which are then divided by the number of respondents who provided responses. (SUS) has three perspectives in determining the results of the assessment calculation, namely acceptability, value scale, and adjective rating.

The Likert scale is a scale used to measure a person's attitudes, opinions, and perceptions by giving a score to each question. The measurement procedure is that respondents are asked to state their agreement based on each respondent's perception [7]. The Likert scale options consist of 5 categories and scores, as shown in Table 2.

Table 2. Likert Scale

Statement	Rating
Strongly Disagree	1
Disagree	2
Netral	3
Agree	4
Strongly Agree	5

3   Results and Discussions

Respondent characteristics are used to determine the character of each respondent. Respondents in this study were active students of Mulawarman University from the class of 2021 to 2024 as users of the academic integrated system website. The research sampling process was carried out by distributing questionnaires in the form of Google forms to 69 respondents.
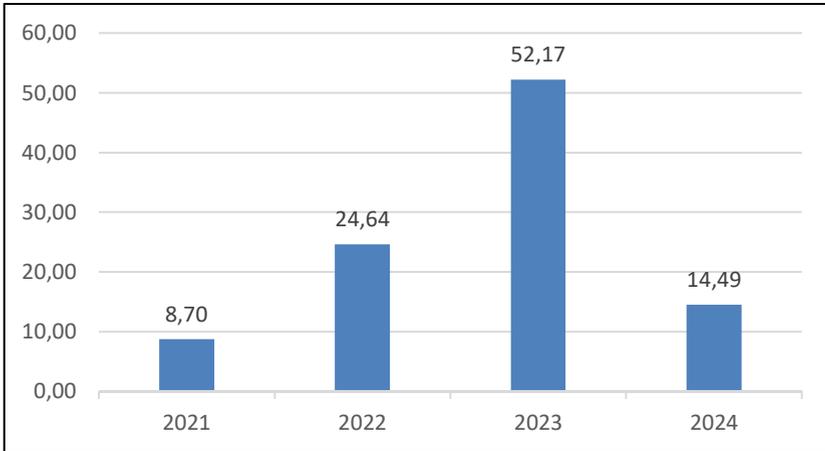

Fig. 2. Respondent Characteristics Percentage

The results of data analysis from 69 respondents who obtained a final SUS score of 62.536, and based on Fig. 3 the SUS interpretation scale obtained a score of 62.536 where the AIS 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 category which means that the AIS website is quite difficult or not easy and less satisfying to use by users. F or the results of the percentile ranking level in Fig. 3 for a website that has a score of 62.536 which is at the 34th percentile which is included in the Marginal category.
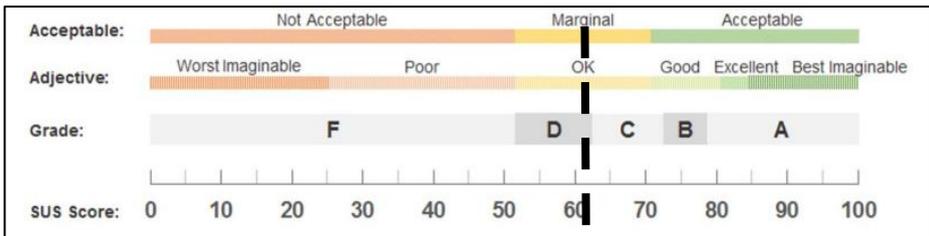

Fig. 3. Interpretation results of the SUS Method

4   Conclusions

The analysis results show that the average SUS score obtained is 62.536, categorizing this system in Grade D. Based on the adjective rating, it is categorized as Ok, and the acceptability falls into the marginal category. These findings indicate that although the system has been routinely used by students, there is still significant room for improvement. Therefore, this research suggests the need for further evaluation and continuous development of the system to enhance usability, operational efficiency, and user satisfaction.

References

1. Triandini, E., Jayanatha, S., Indrawan, A., Putra, G.W., Iswara, B.: Metode Systematic Literature Review untuk Identifikasi Platform dan Metode Pengembangan Sistem Informasi di Indonesia. Indonesian Journal of Information Systems **1**(2), 63 (2019).
2. Siagian, S. H. T., Effiyaldi, E.: Analisis Dan Perancangan Sistem Informasi Akademik pada Stikes Prima Jambi. Jurnal Manajemen Sistem Informasi **3**(4), 1282–1291 (2018).
3. Maryati, I., Nugroho, E.I., Indrasanti, Z.O.: Analisis Usability pada Situs Perpustakaan UC dengan Menggunakan System Usability Scale. Jurnal Media Informatika Budidarma **6**(1), 362–369 (2022).
4. Nuriman, M.L., Mayesti, N.: Evaluasi Ketergunaan Website Perpustakaan Universitas Indonesia Menggunakan System Usability Scale. Baca: Jurnal Dokumentasi Dan Informasi **41**(2), 253 (2020).
5. Ramadhan, D.W.: Pengujian Usability Website Time Excelindo Menggunakan System Usability Scale (Sus) (Studi Kasus: Website Time Excelindo). JIPI (Jurnal Ilmiah Penelitian Dan Pembelajaran Informatika) **4**(2), 139 (2019).
6. Fauzi, A.M.N., Triayudi, A., Sholihati, I.D.: Mengukur Tingkat Kepuasan Pengguna Aplikasi Kearsipan Menggunakan System Usability Scale Dan Pieces Framework. JIPI (Jurnal Ilmiah Penelitian Dan Pembelajaran Informatika) **7**(1), 231–239 (2022).
7. Destiarini.: Analisa Tingkat Kepuasan Pengguna Laman Siakad Universitas Baturaja Dengan Metode Usability. Informanika 6(1) (2020).
8. Iryanti, E., Zulfiqar, L.O.M., Kusumawardani, S.S., Hidayah, I.: Pengukuran Kepuasan Pengguna E-Learning Menggunakan Metode Evaluasi Heuristik dan System Usability Scale. Jurnal Teknologi Informasi Dan Ilmu Komputer **9**(3), 469 (2022).
9. Janna, N.M., Herianto.: Konsep Uji Validitas Dan Reliabilitas Dengan Menggunakan Spss. Jurnal Darul Dakwah Wal-Irsyad (DDI) (2021).
10. Kesuma, D.P.: Penggunaan Metode System Usability Scale Untuk Mengukur Aspek Usability Pada Media Pembelajaran Daring di Universitas XYZ. JATISI (Jurnal Teknik Informatika Dan Sistem Informasi) **8**(3), 1615–1626 (2021).
11. Kurniawan, C.N., Zaman, B., Bhahri, S.: Analisis Usability Pada Website Ayomulai Menggunakan Metode System Usability Scale. Journal of Technology Research in Information System and Engineering (JTRISTE) **9**(2), 90–102 (2022).
12. Sugiyono.: Metode Penelitian Kuantitatif, Kualitatig, dan R&D. Alfabeta, Bandung (2018).
13. Sujarweni, W.: Analisis Laporan Keuangan : Teori, Aplikasi, & Hasil Penelitian. Pustaka Baru Press (2017).