Analysis of user satisfaction level on cashcloud.Id system with system usability scale method and Spearman's rank correlation

Andi Nugroho, Ilham, Jhohan Yudha Darmawan, Jefry Ferniandy

Abstract*— CashCloud.id system is one of the Software-as-a-Services (SaaS) platforms that can support users' business operations in conducting sales transactions. The problem faced by system service providers is the level of user satisfaction that has not been measured. In this study , a measurement of the level of user satisfaction in using the CashCloud.id system will be carried out and testing will also be carried out to determine the effect of age factors and educational background on the level of user satisfaction in using the CashCloud.id system. The data collection method used is an online Likert-scale questionnaire through Google Form with a total of 46 respondents. The selected respondent criteria are determined based on the history of using the system for transactions for 3 months (August - October 2022). The results of the questionnaire were processed using the System Usability Scale (SUS) method to measure the level of user satisfaction and Spearman's Rank to measure the relationship between the age factor and the user's educational background to the level of satisfaction with using the system . The measurement results of 46 users obtained an average score of 52.6 with Acceptability Ranges "Marginal-Low", Adjective Ratings "OK", and Net Promoter Score (NPS) "Detractor", which indicates that users are not quite satisfied with the use of the CashCloud.id system. Meanwhile, the results of the Spearman's Rank significance test show that there is no correlation between age and educational background factors on the level of user satisfaction .

Keywords—Information System , CashCloud.id, System Usability Scale (SUS), Spearman's Rank, Questionnaire, Likert Scale, Acceptability Ranges, Adjective Ratings, Net Promoter Score

I. INTRODUCTION

Information System is a system within an organization that meets the needs of daily transaction management, supports operations, is managerial, and strategic activities of an organization and provides certain external parties with the reports needed [1]. New technologies have allowed us to pursue even greater results, introducing the concept of surgical navigation [2].

The development of information systems today has reached an extraordinary level of acceleration. The development itself has penetrated almost all sectors, including the Fast Moving Consumer Goods (FMCG) field. Changes and developments in the FMCG world are more required to be better, along with the increasing operational needs of its business actors. Sales information systems can also be a benchmark for the quality of service from service providers. Sales system quality indicators are assessed based on the level of user satisfaction.

In designing an information system, the most important factor is the quality of the system that makes users interested in using the information system. Information system quality is the quality of a product or service that is often measured by the user's ability in the information system, where the information system can be implemented based on user needs. By increasing the quality of information systems, user satisfaction and improving information systems, this can support the success of the system for long-term use. To determine the quality of the information system, it is necessary to measure the satisfaction of information system users.

The level of satisfaction is the level of state that a person feels based on the results of comparing the outcome of the product used in relation to that person's expectations. Users of a product are not only involved in the process of receiving services, but also evaluate the services they receive. The results of the evaluation process produce feelings of satisfaction or dissatisfaction. User satisfaction is a measure to determine the quality of the services offered and as a basis for increasing the company's sales volume. Therefore, if user satisfaction can be achieved, it means that the service quality of a company's product can meet the expectations of these consumers, thus opening up the possibility that the number of new users will increase [3].

Digital-based companies are increasingly encouraged to grow and develop due to technological advances. Various software and operating systems and locally produced operating systems are increasingly numerous and have been proven to improve company performance and efficiency. Software as a Service (SaaS) is one of the products at the core of many companies [4].

SaaS vendors are responsible for maintaining user data without burdening the user. SaaS users subscribe via web services without having to care about implementation details, while the service provider takes care of software maintenance, management, and upgrades [5].

The Cashcloud.id system is a web-based Software-as-a-Service system developed by the AwanTunai company. The company is engaged in working capital financing for the Fast Moving Consumer Goods (FMCG) grocery/retail business sector. AwanTunai was established in 2017 with a business model of providing personal loans for the purchase of smartphone gadgets for customers at cellphone counters/kiosks that have collaborated with AwanTunai. In

2020, the AwanTunai company developed the Cashcloud.id system with the main features, namely Point of Sale (POS), Online-order Management System (OMS), Inventory Management System (IMS) [6].

Based on observations of Cashcloud.id system users, it was found that most of the users had difficulty understanding how the Cashcloud.id system worked, which was due to their lack of understanding of the development of the technology world [7]. Educational background can also be one of the factors that affect the user's absorption of the training material provided. On the other hand, there are some users who feel their needs have not been met on the Cashcloud.id system because the features needed by users are not yet available on the Cashcloud.id system. The most important thing in implementing an information system is the quality of the system that makes users feel interested in using the system.

II. RESEARCH METHODOLOGY

2.1 Questionnaire

Questionnaire is one of the data collection techniques to analyze knowledge, attitudes, beliefs and characteristics [8]. The questionnaire is a structured list of questions or statements submitted to people called respondents. Each statement item must be valid in order to measure what it is intended to measure. In addition, the questionnaire must also be reliable, which means that it will produce consistent results over time so that the questionnaire can be trusted or relied upon [9].

The focus has traditionally been on achieving good values on standardized coefficients used to determine the psychometric quality of a tool such as validity, reliability, and in certain cases, sensitivity. There are several other criteria that are also important but have not received the same level of attention, although they may equally contribute to improving the psychometric properties of a questionnaire. These criteria refer to the respondent's experience during questionnaire completion which may not always be positive (e. g., the questionnaire is too long, some items are difficult to understand) [10].

2.2 Likert Scale

The Likert scale is a psychometric scale commonly used in questionnaires and is the most widely used scale in survey research. The scale is named after Rensis Likert, who published a report explaining its use. Likert Scale is a research scale used to measure attitudes and opinions. In the Likert scale respondents are asked to complete a questionnaire that requires them to indicate their level of agreement with a series of questions [11]. The questions or statements used in this study are usually referred to as research variables. The Likert scale is a form of scale that is used to collect data to determine or measure data that is qualitative or quantitative in nature. In testing using a Likert scale, respondents determine their level of agreement with a question by choosing one of the alternative answers available [12]. The data is obtained to determine a person's opinion, perception, or attitude towards a phenomenon that occurs [13].

The most widely used psychometric measure for collecting user/customer feedback at the level of agreement is the Likert scale, developed by Likert. Several studies have used it, including organizational behavior in educational institutions, music education, routine priority dental care, and sports for athlete attributes and outcomes. As a result of its ordinal structure and limited style, Likert scales have several problems, including problems with information distortion and information loss[14].

2.3 System Usability Scale (SUS)

The System Usability Scale (SUS) is one of the most used standardized questionnaires for evaluating the perceived usability of different technologies[15].

The System Usability Scale (SUS) provides a "quick and dirty", highly reliable tool for measuring usability. It consists of 10 questionnaire items with five answer options for respondents; from Strongly agree to Strongly disagree. Originally created by John Brooke in 1986, it allows for the evaluation of a wide variety of products and services, including hardware, software, mobile devices, websites and applications.

SUS has become an industry standard, with references in over 1300 articles and publications. Benefits noted using SUS include:

1. Is a very easy scale to administer to participants
2. Can be used on small sample sizes with reliable results
3. Valid - can effectively distinguish between usable and unusable systems 4.

The method of calculating SUS scores is done by following some rules, such as: Each statement item has a contribution score. Each item contribution score will range from a value of 0 to 4. For each statement with an odd number, namely 1, 3, 5, 7, and 9, the respondent's answer scale is reduced by 1. For each statement with an even number, namely 2, 4, 6, 8, and 10, the respondent's answer scale will be used as a value deduction of 5. To get the overall SUS score, the number of contribution scores is multiplied by a value of 2.5 [16].

The following is the SUS score calculation formula:

$$\underline{x} = \sum_{i=0}^{n} xi/N$$

Ket:

x = average score value

xi = respondent score value

N = number of respondents

SUS score = ((R1 − 1) + (5 − R2) + (R3 − 1) +(5 − R4) + (R5 − 1) + (5 − R6) +(R7 − 1) + (5 − R8) + (R9 − 1) +(5 − R10)) x 2.5)

The results of the SUS score assessment, expressed as in the following figure:

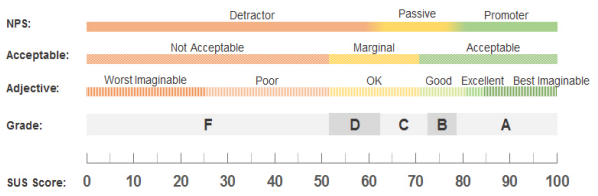

Figure 1 System Usability Scale

Based on the SUS score assessment, there are 3 assessments, namely:

1. Acceptability Range which is an assessment with a range, such as:
   - Not Acceptable 0-50
   - Marginal 50-70
   - Acceptable 70-100
2. Grade Scale
   - A = 80.3-100

- B = 68-80.3
- C = 68
- D = 51-68
- F= 0-51

3. Adjective Ratings
   - Best Imaginable = 85-100
   - Excellent = 74-85
   - Good = 53-74
   - Ok = 39-53
   - Poor = 25-39
   - Worst Imaginable = 0-25

Table 1 SUS Score

Grade	SUS	Precentile Range	Adjective	Acceptable	NPS
A+	84.1 – 100	96 – 100	Best Imaginable	Acceptable	Promoter
A	80.8 – 84.0	90 – 95	Excellent	Acceptable	Promoter
A-	78.9 – 80.7	85 – 89	Good	Acceptable	Promoter
B+	77.2 – 78.8	80 – 84		Acceptable	Passive
B	74.1 – 77.1	70 – 79		Acceptable	Passive
B-	72.6 – 74.0	65 – 69		Acceptable	Passive
C+	71.1 – 72.5	60 – 64		Acceptable	Passive
C	65.0 – 71.0	41 – 59	Ok	Marginal	Passive
C-	62.7 – 64.9	35 – 40		Marginal	Passive
D	51.7 – 62.6	15 – 34		Marginal	Detractor

2.4 Spearman Ranks

The Spearman Ranks correlation coefficient is a method of testing the strength and direction (positive or negative) of the correlation (relationship or connection) between two variables. The Spearman Ranks correlation coefficient can be used to summarize the strength and direction (negative or positive) of the relationship between two variables. The result will always be between 1 and minus 1. The Spearman correlation works by calculating the Pearson correlation on the ranked values of this data. The rank (from low to high) is obtained by assigning rank 1 to the lowest value, 2 to the next lowest value, and so on. If we look at a plot of the rank data, then we see that they are perfectly linearly related.

Personality can be represented numerically by the Big Five Factors (BFF) model. The theoretical basis of personality categories can be found in the Five Factor Model (FFM)); a set of questionnaires called the Big Five Inventory (BFI) can be used to obtain a person's personality. In this study, 30 volunteers provided their BFI results to find their BFF. The BFF consists of five different personality factors: openness (O), conscientiousness (C), extraversion (E), sociability (A), and neuroticism (N). These can be represented in numerical values from 0 to 5 and act as independent variables for regression analysis. Each person is represented anonymously[17]. The persona contains a summary of user information that has been researched through previously conducted surveys and interview methods. The survey results that have defined the problem are then summarized into a persona that contains an imaginative user's imaginative user description, information description, user difficulties and user's expected needs or desires[18].

After obtaining the SUS score, the influence of the age factor and the user's educational background on the level of satisfaction will then be measured using the Spearman's Rank method. Spearman's Rank correlation is used to determine the relationship between socio-economic factors of users such as age and education level with the level of satisfaction of users. The value of user satisfaction level is obtained from the accumulated value of all attributes in the previous problem formulation. To find out the factors that influence the level of user satisfaction, the Spearman's Rank Correlation Formula is used which is described as follows:

$$r_s = 1 - \frac{6\sum_{i=1}^{n} d_i^2}{N^3 - N}$$

If there are many equal rank values in the calculation, the calculation uses the formula:

$$r_s = \frac{\sum x^2 + \sum y^2 + \sum d^2}{2\sqrt{x^2 \sum y^2}}$$

With description:

$$\sum X^2 = \frac{N^3 - N}{12} - \sum T_x$$

$$\sum Y^2 = \frac{N^3 - N}{12} - \sum T_y$$

Furthermore, to find out T_x and T_y formula used:

$$T_x = \frac{t^3 - t}{12}$$

$$T_y = \frac{t^3 - t}{12}$$

To interpret the numbers / calculation results need to be compared with the value of r_s table with an error rate 5%.

Description:

r_s = Spearman Rank Correlation
N = Number of respondents
t = Number of twin values
X^2 = Variation in the value of variable X
Y^2 = Variation in the value of variable Y
d_i = Integral differentiation (difference in degree between variables)
T_x = correlation factor of variable X
T_y = correlation factor of variable Y

Because the N used in this study is more than 30, where the t table does not exist, the significance test uses the following formula:

$$t = r_s \sqrt{\frac{N - 2}{1 - r_s^2}}$$

The decision-making criteria for Correlation Analysis using Spearman's Rank are determined, as follows:

- H_0: There is no relationship between user satisfaction and age variables (X_1) and (X_2) education level.

H_1: There is a relationship between user satisfaction and age variables (X_1) and(X_2) education level.

2.5 Cashcloud.id

From this development, information technology is increasingly sophisticated, one of which is a computer. With the sophistication of computers, the community is increasingly guiding the availability of fast and accurate information so that it can help the community because of effective, efficient processes and faster service [19]. Based on the development of the world of cloud applications as described above, that currently cloud technology is experiencing very rapid development [20]. Cashcloud.id system is a web-based Software-as-a-Service system developed by AwanTunai company. The company is engaged in working capital financing for the Fast Moving Consumer Goods (FMCG) grocery/retail business sector. AwanTunai was established in 2017 with a business model of providing personal loans for the purchase of smartphone gadgets for customers at cellphone counters/kiosks that have collaborated with AwanTunai. In 2020, AwanTunai developed the Cashcloud.id system with the main features, namely Point of Sale (POS), Online-order Management System (OMS), Inventory Management System (IMS).

III. DISCUSSION AND RESULTS

3.1 Discussion

The data used in the study comes from questionnaire data which has a total of 46 respondents. Respondent criteria are active users of the Cashcloud.id system who have recorded transactions for the last 3 months (August to October 2022). Respondents come from several regional location points such as Jakarta, Bandung, Bogor, Malang, Surabaya, Lombok, Mataram, Tangerang, etc. The questionnaire was filled out by questioning the respondents through telephone communication media.

Data was collected using a questionnaire method expressed on a Likert scale. The questionnaire in this study from the point of view of how to answer is included in the closed questionnaire, and from the form it is included in the rating-scale questionnaire. The Likert scale has five answers, namely: strongly agree (SS), agree (S), doubt/neutral (N), disagree (TS), and strongly disagree (STS). Alternative answers for undecided/neutral can be eliminated so that the answers are more optimal. So that there are 4 (four) alternative answers provided.

The implementation was carried out by giving questionnaires to several users of the Cashcloud.id system spread across several locations. The questionnaire is given in the form of Google Form. With Google Form, users can create forms that can be used by everyone. This feature can collect information from many respondents for various needs [21].

The method used for data analysis in this study is the System Usability Scale (SUS). The SUS method is a way to test the usability of an application system. SUS was developed as a "quick and dirty" usability measurement[22]. The SUS method instrument is a questionnaire consisting of 10 question items. The testing scale starts from a value range of 1 (one) to represent the answer "strongly disagree" to 5 (five) to represent the answer "strongly agree". In the case of usability assessment studies, the SUS questionnaire can be used to effectively compare two or more UIs, two versions of the same system, or even different tasks within one system [23].

The question instrument was created based on the provisions set forth in the SUS method, as follows:

Table 2 Method of SUS

Modified SUS Statements		Strongly Disagree		-	Strongly Agree	
No	Statements	1	2	3	4	5
1.	I think that I would like to use Cashcloud.id system more frequent.	o	o	o	o	o
2.	I found the Cashcloud.id system unnecessarily complex.	o	o	o	o	o
3.	I thought the Cashcloud.id system was easy to use.	o	o	o	o	o
4.	I think that I would need the support of a technical person to be able to use Cashcloud.id system.	o	o	o	o	o
5.	I found the various functions in Cashcloud.id system were well integrated.	o	o	o	o	o
6.	I thought there was too much inconsistency in Cashcloud.id system.	o	o	o	o	o
7.	I would imagine that most people would learn to use Cashcloud.id system very quickly.	o	o	o	o	o
8.	I found the Cashcloud.id system very cumbersome to use.	o	o	o	o	o
9.	I felt very confident using the Cashcloud.id system.	o	o	o	o	O
10.	I needed to learn a lot of things before I could get going with Cashcloud.id system.	o	o	o	o	O

3.2 Research Results

- Data Review

a. Data Type

The type of data used in this research is quantitative. Quantitative data is data in the form of numbers or numbers. This type of data can be measured in size or quantity and tends to be more objective, which means that it can be interpreted the same by everyone. Processing of this type of data is also carried out using mathematical or statistical calculation techniques.

Data in quantitative types is absolute because it is directly indicated by numbers. Quantitative data is highly dependent on accuracy because it can affect the quality of the research. Therefore, it is important in using quantitative data to be able to pay attention to other rules such as sampling and population to ensure the accuracy of the data obtained. In this case, the quantitative data in question consists of: user age, user education level, and user questionnaire responses.

b. Data Source

In this study using primary data sources, namely internally sourced data obtained directly through the implementation of observations, namely in the form of direct observation, and others [40]. The primary data source in this study is the Cashcloud.id system user.

c. Questionnaire Sheet

Questionnaire data was collected using the Google Forms platform

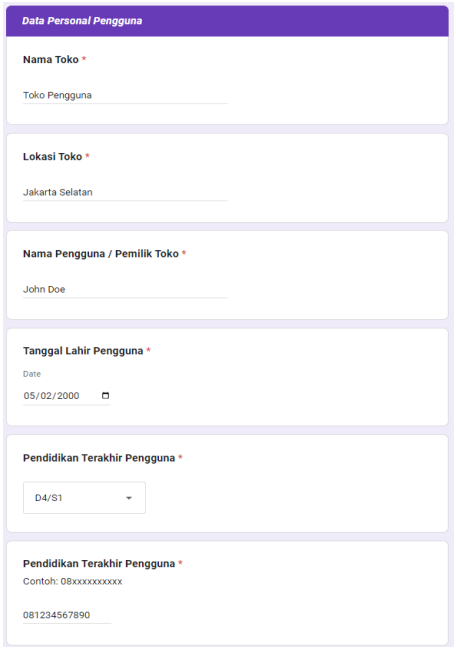

Figure 2 Google Forms Questionnaire 1

Figure 3 Google Forms Questionnaire 2

Figure 4 Google Forms Questionnaire 3

- Data Processing
  - - System Usability Scale Test (SUS)

Table 3 calculated score

No	Skor Hasil Hitung										Jml	Jml x 2,5
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
1	2	0	4	0	4	2	4	2	4	2	24	60
2	2	0	3	2	2	3	2	4	3	3	24	60
3	1	3	1	2	2	2	1	2	2	2	18	45
4	4	0	4	0	4	0	3	0	4	0	19	47,5
5	2	2	2	2	2	2	2	2	1	2	19	47,5
6	3	1	4	1	4	1	4	3	4	1	26	65
7	4	0	4	2	3	4	4	3	4	2	30	75
8	3	4	4	3	4	3	0	4	3	4	32	80
9	3	3	3	1	3	2	2	2	2	1	22	55
10	4	4	3	4	4	3	4	3	4	0	33	82,5
11	4	4	4	3	4	2	3	2	3	3	32	80
12	3	1	2	1	2	1	1	1	1	0	13	32,5
13	3	2	2	1	3	1	1	3	3	1	20	50
14	3	1	3	3	3	0	1	1	3	0	18	45
15	3	4	3	2	4	3	3	3	4	1	30	75
16	1	3	2	1	1	1	1	0	0	0	10	25
17	3	3	4	3	4	3	3	3	4	3	33	82,5
18	2	3	2	1	1	3	1	3	1	4	21	52,5
19	1	1	1	0	0	0	0	0	0	0	3	7,5
20	1	1	3	2	1	0	1	1	0	1	11	27,5
21	1	1	2	1	2	3	2	1	1	0	14	35
22	2	2	1	1	1	2	3	3	3	1	19	47,5
23	1	3	1	3	1	0	2	2	1	1	15	37,5
24	3	3	3	2	3	2	4	4	4	4	32	80
25	1	1	1	1	1	1	1	0	0	0	7	17,5

26	4	4	4	4	4	3	4	4	4	3	38	95
27	4	4	4	4	4	3	3	4	4	1	35	87,5
28	3	2	3	3	3	3	3	3	3	3	29	72,5
29	4	3	4	3	4	3	3	4	4	3	35	87,5
30	1	1	1	1	2	2	1	1	1	0	11	27,5
31	0	0	2	1	1	1	1	3	1	0	10	25
32	3	1	2	2	1	3	3	1	2	0	18	45
33	1	0	1	1	1	1	4	1	0	4	14	35
34	1	1	1	1	1	1	2	1	1	1	11	27,5
35	1	3	3	2	4	2	1	4	2	4	26	65
36	0	1	1	2	1	1	1	0	1	4	12	30
37	3	1	3	1	2	1	3	1	2	2	19	47,5
38	4	4	4	4	4	3	4	4	4	4	39	97,5
39	2	1	2	3	0	3	3	1	3	3	21	52,5
40	1	3	2	1	1	1	1	1	1	3	15	37,5
41	3	1	3	0	1	1	2	1	2	3	17	42,5
42	3	3	3	3	3	2	4	3	4	3	31	77,5
43	1	1	1	1	1	2	1	2	4	2	16	40
44	1	1	1	0	1	3	2	3	3	3	18	45
45	2	0	1	1	1	1	1	1	4	2	14	35
46	1	1	1	0	1	1	3	2	2	3	15	37,5
										Subtotal	969	2422,5

To get the results of the usability test above, it is carried out step by step according to the System Usability Scale (SUS) calculation guidelines. The result of the summation of the converted data is 969. These results were multiplied by 2.5, resulting in a result of 2422.5. The next step is to divide 2422.5 by the number of respondents, namely 46, so that the result is 52.6 which if rounded to 53.

The following are the steps for calculating the SUS score:

$$\underline{x} = \sum_{i=0}^{n} xi/N$$

$\underline{x} = 2422{,}5/46 = 52{,}6$

Description:

$\underline{x}$ = Average score value

$\Sigma\, xi$ = Total score value of respondents

N = Number of respondents

Based on the SUS test results, the final score is 53, according to the SUS interpretation guidelines in Table 4.1 which shows that the score of 53 for the Acceptability Range version gets a Marginal predicate, then the Grade Scale results in terms of user acceptance level are included in class D, then the Adjectives Rating version is included in the OK category which is almost close to Good.

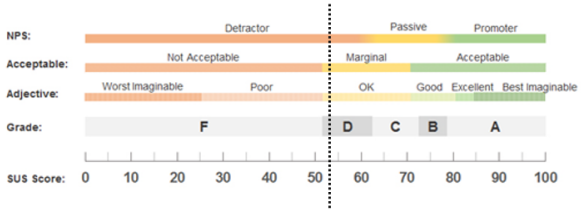

Figure 5 SUS Score Result

From the calculation data above shows that the calculation of usability using SUS on the Cashcloud.id Application produces a score of 53 Figure. From Figure 0 it can be seen that the Cashcloud.id Application still occupies a Marginal-Low level on the Acceptability Ranges side. Judging from the Grade Scales side, the system occupies Grade D. While in terms of Adjective Rating, the system evaluation results are in the "OK" position. This shows that the Cashcloud.id Application is still not acceptable to users as a system product that can help users in completing their tasks, namely helping consumers in accordance with what users expect. Furthermore, if the SUS score is correlated with the NPS score, the results show that the evaluated system still occupies a position between Detractor as shown in Figure 0. This means that system users have not received satisfaction so that the possibility of users to recommend the use of the system to others is still small.

Based on the interpretation results above, it states that users are quite satisfied with the use of the Cashcloud.id system, but improvements still need to be made to be better able to meet the needs and be well received by users.

The following is the percentage of responses to each question item of all respondents to the questionnaire which is divided into the following:

Table 4 Likert Scale Score

Skala Likert	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Sangat tidak setuju [1]	4	15	0	9	4	2	4	17	11	15
Tidak setuju [2]	33	24	28	20	37	33	33	26	22	26
Netral [3]	15	9	22	22	15	24	17	17	15	15
Setuju [4]	30	37	26	37	15	30	26	28	20	20
Sangat setuju [5]	17	15	24	13	28	11	20	11	33	24

From Table 4 above, it can be seen that the results of the test state that users of the Cashcloud.id system are quite satisfied but still need to be improved so that they are better able to be accepted by users. This is because the responses given by respondents tend to be positive (47%), but not a few respondents also gave negative responses (36%) and the rest gave neutral responses (17%).

- **Spearman's Rank Correlation Test**

After obtaining the SUS score results, a correlation test using Spearman's Rank was conducted to determine the relationship between age and education level factors to the level of user satisfaction.

The following is the data used for testing.

Table 5 Spearman's Rank Correlation Test

No	Usia	Pendidikan	Score SUS x 2,5
1	34	2	60
2	46	3	60
3	42	3	45
4	34	4	47,5
5	43	3	47,5
6	33	1	65
7	38	5	75
8	42	3	80
9	44	3	55
10	49	5	82,5
11	31	3	80
12	52	3	32,5
13	43	3	50
14	38	5	45
15	56	3	75
16	31	3	25
17	34	3	82,5
18	48	2	52,5
19	54	3	7,5
20	35	2	27,5
21	35	5	35
22	31	5	47,5
23	32	3	37,5
24	40	3	80
25	42	3	17,5

a. Correlation Test of User Age Factor on Satisfaction Level

1. Determining the Hypothesis Test

Ho: p = 0 (There is no significant relationship/correlation between age and user satisfaction level)

Ha: p ≠ 0 (There is a significant relationship/correlation between age and user satisfaction level)

2. Significant Level

$\alpha = 0{,}05$ or 5%

3. Correlation testing with SPSS

To get the results of the correlation test, calculations were carried out using SPSS 26. Then, the test results were obtained as follows:

Correlations

			Usia	Score_SUS
Spearman's rho	Usia	Correlation Coefficient	1.000	-.060
		Sig. (2-tailed)	.	.691
		N	46	46
	Score_SUS	Correlation Coefficient	-.060	1.000
		Sig. (2-tailed)	.691	.
		N	46	46

Figure 6 Correlation Test of User Age Factor on Satisfaction Level

The rho value of -0.06 means that the age factor with the level of user satisfaction is in the category of a very weak negative correlation.

4. Significance test

The significance value> 0.05 can be concluded by accepting H_0, meaning that there is no correlation between the age factor and the level of satisfaction.

b. Correlation Test of User Educational Background Factor on Satisfaction Level

1. Determining the Hypothesis Test

Ho: p = 0 (There is no significant relationship/correlation between age and user satisfaction level)

Ha: p ≠ 0 (There is a significant relationship/correlation between age and user satisfaction level)

2. Significant Level

$\alpha = 0{,}05$ atau 5%

3. Correlation testing with SPSS

To get the results of the correlation test, calculations were carried out using SPSS 26. Then, the test results were obtained as follows:

Correlations

			Pendidikan	Score_SUS
Spearman's rho	Pendidikan	Correlation Coefficient	1.000	.097
		Sig. (2-tailed)	.	.520
		N	46	46
	Score_SUS	Correlation Coefficient	.097	1.000
		Sig. (2-tailed)	.520	.
		N	46	46

Figure 7 Correlation Test of User Age Factor on Satisfaction Level

The rho value of 0.097 means that the educational background factor with the level of user satisfaction is in the category of a very weak positive correlation.

4. Significance test

The significance value> 0.05 can be concluded by accepting H0, meaning that there is no correlation between the educational background factor and the level of satisfaction.

IV. CONCLUSIONS

From the research that has been done, it is found that the level of user satisfaction with the CashCloud.id system as measured using the System Usability Scale (SUS) method, it can be concluded that the assessment results given by 46 respondents obtained a score of 52.6. With Acceptability Ranges including the "Marginal-Low" category, with Grade Scale included in the "C" class, and in the Adjective Ratings mode getting an OK rating. These results indicate that users of the CashCloud.id system are not satisfied enough based on the standard Usability average value that has been set.

After conducting the Spearman's Rank test using SPSS 26, the significance test results show that there is no correlation between the age factor and educational background to the level of user satisfaction. The correlation between the age factor and educational background to the level of user satisfaction shows a very weak negative correlation for the age factor and a very weak positive correlation for the educational background factor.

REFERENCES

[1] J. Hutahaean, *Konsep sistem informasi*. 2018.

[2] D. Amparore *et al.*, "3D Imaging Technologies in Minimally Invasive Kidney and Prostate Cancer Surgery: Which Is the Urologists' Perception?," *Minerva Urol. Nephrol.*, vol. 74, no. 22, pp. 178–185, 2022, doi: 10.23736/S2724-6051.21.04131-X.

[3] L. Cucu Sumartini and D. Fajriany Ardining Tias, "Analisis Kepuasan Konsumen Untuk Meningkatkan Volume Penjualan Kedai Kopi Kala Senja," *J. E-Bis*, vol. 3, no. 2, pp. 111–118, 2019, doi: 10.37339/e-bis.v3i2.124.

[4] G. Dewarani and Y. Alversia, "The influence of customer involvement and engagement on co-creation of services, satisfaction, and loyalty: The case of Software as a Service," *Innov. Mark.*, vol. 19, no. 2, pp. 27–37, 2023, doi: 10.21511/im.19(2).2023.03.

[5] M. A. Ikram, R. Alturki, and F. K. Hussain, "Towards Linguistic-based Evaluation System of Cloud Software as a Service (SaaS) Provider," *Int. J. Adv. Comput. Sci. Appl.*, vol. 13, no. 2, pp. 716–722, 2022, doi: 10.14569/IJACSA.2022.0130284.

[6] H. Gil-Gomez, V. Guerola-Navarro, R. Oltra-Badenes, and J. A. Lozano-Quilis, "Customer relationship management: digital transformation and sustainable business model innovation," *Econ. Res. Istraz.* , vol. 33, no. 1, pp. 2733–2750, 2020, doi: 10.1080/1331677X.2019.1676283.

[7] M. Logachev, V. Bugrimov, and A. Kondrat'Ev, "Simulation model of the car service inventory management system: Input parameters," *Transp. Res. Procedia*, vol. 63, pp. 2335–2340, 2022, doi: 10.1016/j.trpro.2022.06.267.

[8] T. C. Peck and M. Gonzalez-Franco, "Avatar Embodiment. A Standardized Questionnaire," *Front. Virtual Real.*, vol. 1, no. February, pp. 1–12, 2021, doi: 10.3389/frvir.2020.575943.

[9] E. S. Ningsih, F. S. Fatimah, R. J. Sarwadhamana, and E. Sulistyaningsih, "Uji Validitas dan Reliabilitas Instrumen Kuesioner Manajemen Talenta," *Indones. J. Hosp. Adm.*, vol. 4, no. 2, pp. 52–55, 2021, [Online]. Available: https://ejournal.almaata.ac.id/index.php/IJHAA/article/view/2138

[10] J. Baumgartner, N. Ruettgers, A. Hasler, A. Sonderegger, and J. Sauer, "Questionnaire experience and the hybrid System Usability Scale: Using a novel concept to evaluate a new instrument," *Int. J. Hum. Comput. Stud.*, vol. 147, p. 102575, 2021, doi: 10.1016/j.ijhcs.2020.102575.

[11] L. Dauzón-Ledesma and J. Izquierdo, "Language Learning Investment in Higher Education: Validation and Implementation of a Likert-Scale Questionnaire in the Context of Compulsory EFL Learning," *Educ. Sci.*, vol. 13, no. 4, 2023, doi: 10.3390/educsci13040370.

[12] M. Awaludin, H. Mantik, and F. Fadillah, "Penerapan Metode Servqual Pada Skala Likert Untuk Mendapatkan Kualitas Pelayanan Kepuasan Pelanggan," *J. Sist. Inf. Univ. Suryadarma*, vol. 10, no. 1, 2014, doi: 10.35968/jsi.v10i1.990.

[13] G. Zou, L. Zou, and S. fang Qiu, "Parametric and nonparametric methods for confidence intervals and sample size planning for

win probability in parallel-group randomized trials with Likert item and Likert scale data," *Pharm. Stat.*, no. July 2022, pp. 418–439, 2022, doi: 10.1002/pst.2280.

[14] M. M. Rosa Leonor, G. S. Manaces Easud, and P. P. Luis Fernando, "Indeterminate Likert Scale in Social Sciences Research," *Int. J. Neutrosophic Sci.*, vol. 19, no. 1, pp. 290–297, 2022, doi: 10.54216/IJNS.190125.

[15] J. R. Lewis, "The System Usability Scale: Past, Present, and Future," *Int. J. Hum. Comput. Interact.*, vol. 34, no. 7, pp. 577–590, 2018, doi: 10.1080/10447318.2018.1455307.

[16] B. Tujni and F. Syakti, "Implementasi Sistem Usability Scale Dalam Evaluasi Perspektif Pengguna Terhadap Sistem Informasi Akademik Berbasis Mobile," *Ilk. J. Ilm.*, vol. 11, no. 3, pp. 241–251, 2019, doi: 10.33096/ilkom.v11i3.479.241-251.

[17] H. Y. Song and S. Park, "An Analysis of Correlation between Personality and Visiting Place using Spearman's Rank Correlation Coefficient," *KSII Trans. Internet Inf. Syst.*, vol. 14, no. 5, pp. 1951–1966, 2020, doi: 10.3837/tiis.2020.05.005.

[18] G. Karnawan, S. Andryana, and R. T. Komalasari, "Implementation of User Experience Using the Design Thinking Method in Prototype Cleanstic Applications," *J. Teknol. dan Manaj. Inform.*, vol. 6, no. 1, pp. 10–17, 2020.

[19] S. Agustami and R. Mutu Manikam, "Perancangan Aplikasi Sistem Informasi Penyewaan Gedung Serbaguna Wilayah Jakarta Barat," *J. Ilm. FIFO*, vol. 12, no. 2, p. 149, 2021, doi: 10.22441//fifo.2020.v12i2.004.

[20] A. Nugroho *et al.*, "PENGORGANISASIAN FILE MENGGUNAKAN GOOGLE," vol. 2, no. 2, pp. 111–120, 2022.

[21] Iswanti, S. Astuti, Suryono, I. Sayekti, and B. Krishna, "Google form in engineering mathematics: Innovation in assignment method," *J. Phys. Conf. Ser.*, vol. 1613, no. 1, 2020, doi: 10.1088/1742-6596/1613/1/012059.

[22] F. S. Handayani and A. Adelin, "Interpretasi Pengujian Usabilitas Wibatara Menggunakan System Usability Scale," *Techno.Com*, vol. 18, no. 4, pp. 340–347, 2019, doi: 10.33633/tc.v18i4.2882.

[23] I. B. Lima, Y. Jeong, C. Lee, G. Suh, and W. Hwang, "Severity of usability problems and system usability scale (Sus) scores on augmented reality (ar) user interfaces," *ICIC Express Lett. Part B Appl.*, vol. 12, no. 2, pp. 175–183, 2021, doi: 10.24507/icicelb.12.02.175.

Andi Nugroho,
Phd Student in Computer Science - Computer Science
Department, Mercu Buana Uuniversity, Jakarta, Indonesia
Email : andi.nugroho@mercubuana.ac.id
Scopus Author ID : 57208427717
ORCID : orcidID = https://orcid.org/0000-0002-1713-035X.

Ilham, student at "Mercu Buana University" (Meruya Selatan, Kembangan, Jakarta). Faculty of Computer Science, Information Systems Study Program, Jakarta, Indonesia.

Jhohan Yudha Darmawan, student at "Mercu Buana University" (Meruya Selatan, Kembangan, Jakarta). Faculty of Computer Science, Information Systems Study Program, Jakarta, Indonesia.

Jefry Ferniandy, student at "Mercu Buana University" (Meruya Selatan, Kembangan, Jakarta). Faculty of Computer Science, Information Systems Study Program, Jakarta, Indonesia.