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EASE OF USE ANALYSIS OF GOPAY AND OVO INTERFACES USING SYSTEM USABILITY SCALE (SUS) TECHNIQUE

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Abstract

The development of information and computer technology has occurred at an extraordinary speed, increasing human interaction with computers and allowing people to utilize the internet and technological devices for their daily needs. Information technology provides conveniences such as access to information, communication, and transactions without having to leave home. One form of application of this technology is through multifunctional cellular phones. In this digital era, digital wallets have become an integral part of everyday life in Indonesia, facilitating financial transactions and opening up access to various levels of society. With additional features such as loyalty and cashback programs, as well as strong regulatory support, digital wallets are expected to continue to grow, providing greater benefits to the economy and people's welfare. Two online financial service applications that are currently very popular among the public are OVO and GoPay. This research is first carried out data collection, then data processing, analysis and conclusions. Based on the results of the analysis for the System Usability Scale value of the GoPay application of 62.3 and for the OVO application of 29.28.

Keywords: System Usability Scale, GoPay, OVO

INTRODUCTION

The development of information and computer technology today is happening at an incredible pace. Over time, these technological advancements have significantly increased human interaction with computers. Through technology, people now often utilize the internet and various technological devices to fulfill their daily needs and desires. Information technology has enabled people to enjoy various conveniences that were previously unthinkable. For example, with the internet, people can easily access information, communicate, and conduct various transactions without leaving home. Additionally, the application of information technology in everyday life has also sped up various processes, one of which is the use of cellular phones or handheld mobile phones. Cell phones not only serve as communication tools but also as multifunctional devices that can be used to access the internet, take photos, send messages, and more. Thus, information technology has become an inseparable part of modern life, significantly impacting various aspects of human life, ranging from education and work to entertainment [1].

In the rapidly evolving digital era, digital wallets have become an integral part of Indonesians' daily lives. The increasing adoption of technology across all demographics, from the young to the elderly, has driven a significant shift in how people transact and manage their finances. Now, with just a few taps on a mobile screen, users can perform various types of transactions, such as paying bills, sending money, buying goods and services, and investing. This convenience not only makes everyday life more efficient and convenient but also opens up wider access for those previously limited by traditional banking infrastructure. Additionally, various features such as loyalty programs, cashback, and discounts offered by digital wallet service

providers further increase their appeal and usage. This digital transformation has changed the paradigm of financial transactions to be more inclusive and dynamic, marking a new era where technology and daily life are harmoniously integrated. With the support of stronger regulations and awareness of digital security's importance, digital wallets are expected to continue growing and providing even greater benefits to the Indonesian economy and welfare [2].

Two online financial service applications that are currently very popular among the public are OVO and GoPay. Both applications offer convenience in making electronic or digital payment transactions. OVO Cash itself is a sum of money or funds in the form of electronic money (e-money) that can be accessed through the OVO application for various financial transactions, such as payments at partner merchants, top-ups, and balance checks. Users can top up their OVO Cash balance and use it to pay for various needs, such as purchasing goods, paying bills, and other services. This application can be operated entirely through mobile phones, providing flexibility and convenience for its users [3].

The advantage of the OVO application lies not only in its ability to facilitate transactions but also in the various additional features offered. For example, OVO users often benefit from attractive promotions and cashback on every transaction. Additionally, OVO is integrated with various merchants and services, ranging from restaurants and retail stores to online transportation services, making it easier for users in various aspects of their lives.

Meanwhile, GoPay, part of the Gojek ecosystem, offers similar functions to OVO. GoPay users can store money digitally and use it for various purposes, from paying for transportation services and food delivery to online shopping. Like OVO, GoPay can also be accessed and operated entirely through mobile phones, making financial activities more practical and efficient [4].

The use of these two apps provides many benefits to users in their daily lives. For example, they do not need to carry cash, which can reduce the risk of loss or theft. Additionally, with various promotions and special offers, users can save money on transactions. The balance top-up process is also very easy, which can be done through bank transfers, credit cards, or various outlets that partner with OVO and GoPay. With all the convenience and benefits offered, it is not surprising that OVO and GoPay are the applications of choice for many people in their daily financial activities. Both platforms have become essential parts of the modern digital lifestyle, helping people transact more quickly, safely, and efficiently.

Based on Neurosensum research, which involved 1,000 respondents who were active e-commerce users of productive age (19-45 years) in eight major cities in Indonesia during November 2020 to January 2021, ShopeePay had the highest market penetration (68 percent), followed by OVO (62 percent), DANA (54 percent), and GoPay (53 percent) [5]. Based on this, the Gopay application has the smallest value based on market penetration, while the OVO application ranks second. However, OVO received the lowest rating on the Google Play Store, with a rating of 4.0, compared to ShopeePay (4.8), GoPay (4.6), and DANA (4.6).

Data from the Google Play Store shows that the OVO application has experienced a significant decrease in rating. This decline is caused by various problems often experienced by users, which are then expressed in the form of complaints in reviews on the Google Play Store. One of the main problems faced by users is frequent errors or interruptions in the OVO application. These errors have resulted in many users feeling frustrated as they are unable to use the app smoothly. Another significant issue is the transaction limit imposed by OVO. This transaction limit is considered to hinder users' flexibility in conducting various financial transactions. Users felt that the limit was too low and did not meet their needs, especially for those who often make large transactions. Users also highlighted the limitation of features in

the OVO application. Some of the features expected by users were not available or did not function properly, thus limiting the experience and usability of the app. Complaints regarding these feature limitations cover a wide range of aspects, from limited payment options to difficulties in accessing certain services. Additionally, the slow performance of the OVO app is one of the most common complaints. Users often experience long loading times when opening the app or trying to make transactions. This slow performance makes the process of using the app inefficient and disrupts user convenience. Overall, these complaints reflect user dissatisfaction with the OVO app. Users expect OVO to make improvements and enhance the quality of service to make their experience in using the app better. By addressing these issues, OVO can increase its rating on the Google Play Store and regain the trust of its users [6].
GoPay also has a few shortcomings due to limitations. The limitation in question is that GoPay can only be accessed in the Gojek application. Unlike Ovo or Dana e-wallets whose applications are separate from connected or cooperating applications. However, despite these shortcomings, GoPay still has advantages that are good enough to complement the needs of GoPay users [7].

The problems mentioned for the OVO and GoPay applications are usability problems. Usability is an indicator or level of satisfaction felt when interacting with an application, technology, or device, used in an effective and efficient way according to the context of use [8]. The role of usability in the development of an application is vital to ensure that the application can survive and continue to be used by its users. Usability refers to the extent to which the application is easy to use and provides a satisfying experience for the user. If an application has poor usability, users will feel uncomfortable and have difficulty using it. This can result in users feeling reluctant to use the application again in the future [9].

Therefore, this research analyzes the ease of GoPay and OVO users using usability testing techniques, specifically the System Usability Scale (SUS) method. Based on the background that has been described, this research implements the SUS method in a study entitled "Ease of Use Analysis of GoPay and OVO Interfaces using System Usability Testing (SUS) Techniques." By using the SUS method, the researcher hopes this study can provide in-depth insights into the level of ease of use of the two platforms. This research aims to identify aspects that affect the overall user experience and provide recommendations that can be used to improve the user interface.

METHODS

RESEARCH DESIGN

Research design in this study there are several stages can be seen in Figure 1.

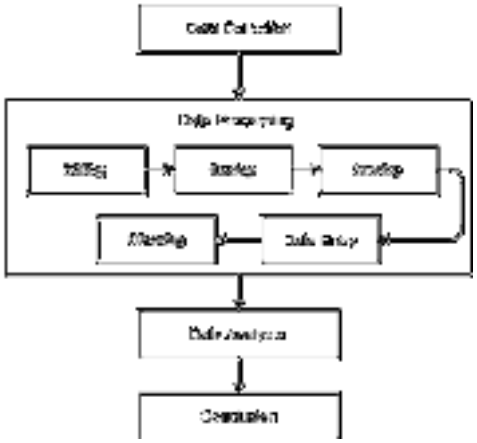

Figure 1. Research Design

DATA PROCESSING

In this study, the data processing process is carried out through several important stages to ensure the accuracy and quality of the data used in the analysis, as follows:

1. Editing: This begins with the collection of responses from respondents, who are evaluated using a scale from "Strongly Agree (SA)" to "Strongly Disagree (SD)." This stage ensures that each response is accurately documented from the outset to minimize possible errors.
2. Coding: Responses are categorized into numerical value categories according to the SUS scale: "Strongly Agree (5)" to "Strongly Disagree (1)." This process helps convert qualitative data into quantifiable data, facilitating further analysis.
3. Cleaning: This important stage checks and cleans the dataset of entry errors, missing values, or inappropriate outliers. Data cleaning ensures the dataset's integrity and validity before further analysis.
4. Data Entry: This initial process involves collecting primary data from respondents using the SUS questionnaire. The raw data from the questionnaire is then entered into a database system or electronic worksheet in preparation for the analysis phase.

Overall, these processes are essential to ensure that the data used in this research is reliable and provides an accurate and meaningful analysis of the ease of use of the GoPay and OVO interfaces. Each of these data processing stages ensures that the research methodology is well executed and complies with the necessary standards to gain valuable insights into the field of usability testing of digital wallet applications.

DATA ANALYSIS

At this stage, we will obtain the results of the system quality assessment calculated using the SUS method. The SUS score is interpreted into an adjective rating to clarify the system's usability level further. This rating is then translated into the level of user acceptance (acceptability range) to determine whether the system is acceptable to users or not [10].

Figure 2. Adjective ratings dan acceptability range

Figure 2 explains the parameters of the SUS score calculation, presenting a score range from 0 to 100 with various categories of acceptability ranges, which are classified into two options: Not Acceptable and Acceptable. For the Grade Scale, the assessment is categorized by five letters: F, D, C, B, A. Additionally, the adjective ratings range from Worst Imaginable, Poor, OK, Good, Excellent, to Best Imaginable.

The SUS scores are then interpreted with percentile ranks and letter grades from A to F, where A is the best grade and F is the worst. The criteria for percentile ranks and letter grades are shown in Table 1.

Table 1. SUS Score Grade Percentile rank

SUS *Score*	Grade	Value	Percentile
> 80.3	A	>= 80.3	>= 90 %
68 – 80.3	B	74	< 70% - 90 %
68	C	68	40 % - 70 %
51-68	D	51	20 % - 40 %
<51	F	>= 80.3	< 20 %

Based on Table 1, the calculated SUS scores will be grouped into 5 grades based on several criteria. Grade F is given for scores that are below 51 with a percentile of less than 20%. Grade D is given for scores between 51 and 68, with percentiles between 20% and 40%. Grade C, which is the standard, is awarded for a score of 68 with a percentile between 40% to 70%. Grade B is awarded for scores between 68 to 80.3, with percentiles between 70% to 90%. Grade A, which is the highest, is awarded for SUS scores above 80.3 with percentiles above 90%.

CONCLUSION

Retrieval At this stage, providing interpretation means giving a broader meaning to the research findings includes two aspects, namely connecting research results with other research findings and producing a concept that is explanatory [11]. Then draw conclusions with a statement about the results of hypothesis testing to find out the final results obtained from the research being conducted [12]. Research Hypothesis At the hypothesis stage which can be used as a reference in this study as follows:

H0: The average application usability value is more than equal to 68
H1: Average application usability value less than 68

RESULTS AND DISCUSSION

CHARACTERISTICS OF RESPONDENTS

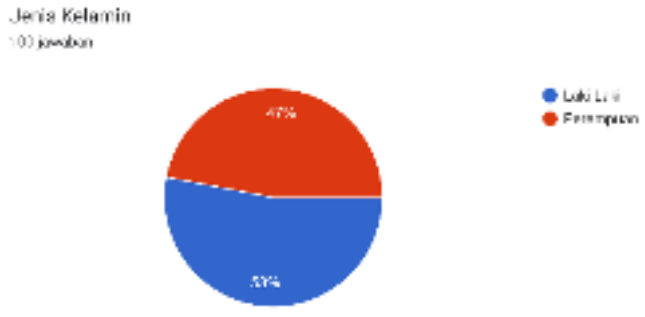

Figure 3. Characteristics of Respondents Based on Gender

Based on the questionnaire distribution results, the characteristics of the respondents are shown in Figure 3. Figure 3 shows that the majority of respondents are male, with 53 respondents, while the number of female respondents is 47. This

suggests that in this research sample, male participation is slightly more dominant than female, although the difference is not significant. In the context of data analysis involving comparisons between male and female responses to the usability of GoPay and OVO interfaces, this distribution may affect the evaluation results if user characteristics differ significantly by gender.

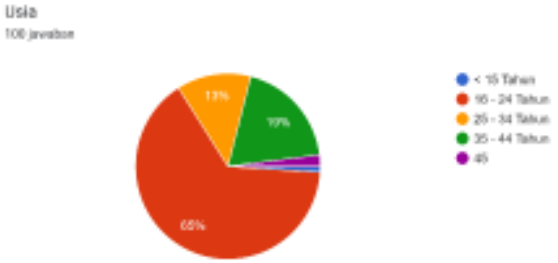

Figure 4. Characteristics of Respondents Based on Age

Figure 4 shows the age distribution of respondents in this study. The majority of respondents, 65% or 65 people, are in the age range of 16-24 years. This indicates that most of the GoPay and OVO app users who participated in this study are young people who actively use digital technology and applications in their daily lives. Additionally, 13% or 13 respondents are aged 25-34 years, showing significant participation from this group as well. Meanwhile, respondents aged 35-45 years account for 5% or 5 people, indicating less participation from this age group compared to the younger ones. The presence of respondents aged 15 years and those over 45 years, each at 2% or 2 respondents, indicates limited age variation in the sample, though they still participated in the study. Overall, the age distribution of respondents in this study indicates that the participating GoPay and OVO app users are predominantly young, which aligns with the main target demographic of these digital wallet apps in a dynamic and rapidly growing market.

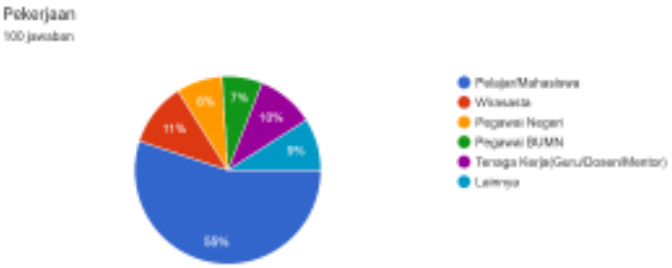

Figure 5. Characteristics of Respondents Based on Occupation

Figure 5 shows the distribution of respondents' professions in this study. The majority, 76% or 76 respondents, are students. This indicates that most of the GoPay and OVO app users participating in this study are active in the field of education or are pursuing higher education. Furthermore, 9% or 9 respondents are civil servants, and the same percentage are BUMN (State-Owned Enterprise) employees, reflecting significant participation from government professionals in the research. The remaining 3% or 3 respondents are workers (teachers/lecturers/mentors) and housewives, respectively. Although these groups are smaller in number, their presence demonstrates some professional diversity within the sample. Thus, the professional distribution of respondents in this study shows that the GoPay and OVO apps are not only used by students but also by professionals from both the public and private

sectors. This adds to the understanding of the use of these digital wallet applications across different segments of society.

VALIDITY TEST

The value of r table in this study is calculated as a result of dividing the number of respondents by N. The validity test was carried out with a significance level of 5%. In this study, there were 100 samples, so the r table value for the validity test was 0.195.

Table 2. Validity Test Results for GoPay Related Questions

Question	r-count	r-table	Description
1	0,5434132645	0,195	Valid
2	-0,07803938894	0,195	Not valid
3	0,4517920142	0,195	Valid
4	0,009174020306	0,195	Not valid
5	0,429479166	0,195	Valid
6	-0,07282805945	0,195	Not valid
7	0,4009603872	0,195	Valid
8	-0,01226474906	0,195	Not valid
9	0,2684029328	0,195	Valid
10	0,2706887057	0,195	Valid

Table 2 displays the validity test results for ten questions related to the use of GoPay. Based on the analysis, questions 1, 3, 5, 7, 9, and 10 are considered valid because the calculated r-values (0.543 for question 1, 0.452 for question 3, 0.429 for question 5, 0.401 for question 7, 0.268 for question 9, and 0.271 for question 10) exceed the critical r-table value of 0.195. This indicates that the relationship between these questions and the variable being tested (i.e., GoPay user satisfaction) is statistically significant.

On the other hand, questions 2, 4, 6, and 8 were deemed invalid because the calculated r-values (approximately -0.078 for question 2, 0.009 for question 4, -0.073 for question 6, and -0.012 for question 8) are smaller than the critical r-table value of 0.195. This indicates that there is no significant relationship between these questions and the variables tested in the context of GoPay usage. Thus, the results of this validity test clearly identify which questions are statistically relevant for research on GoPay usage.

Table 3 shows the validity test results for the ten questions related to OVO usage. In this analysis, questions 1, 3, 4, 5, 7, 9, and 10 are considered valid because the calculated r-values (0.401 for question 1, 0.364 for question 3, 0.202 for question 4, 0.406 for question 5, 0.362 for question 7, 0.318 for question 9, and 0.223 for question 10) exceed the critical r-table value of 0.195. This indicates that the relationship

between these questions and the variable being tested (i.e., OVO user satisfaction) is statistically significant.

Table 3. Validity Test Results of OVO Related Questions

Question	r-count	r-table	Description
1	0,4008669924	0,195	Valid
2	-0,02948538985	0,195	Not valid
3	0,3643258083	0,195	Valid
4	0,2020656111	0,195	Valid
5	0,4056229435	0,195	Valid
6	-0,04199393571	0,195	Not valid
7	0,3623033449	0,195	Valid
8	0,09096075803	0,195	Not valid
9	0,3178071397	0,195	Valid
10	0,2230817879	0,195	Valid

On the other hand, questions 2, 6, and 8 were deemed invalid because the calculated r-values (approximately -0.029 for question 2, -0.042 for question 6, and 0.091 for question 8) are smaller than the critical r-table value of 0.195. This indicates that there is no significant relationship between these questions and the variables tested in the context of OVO usage. Consequently, the results of this validity test offer a clear understanding of the statistical relevance of the research questions in relation to OVO usage.

REALIBILITY TEST

An instrument is deemed reliable if it attains a Cronbach's alpha value greater than 0.60. The reliability test assesses the Cronbach's alpha value for each variable in the instrument. The results of the reliability test in this study, presented in Figure 6, show that the total Cronbach's alpha value for the questionnaire is 0.654, indicating that the instrument is reliable and falls within the acceptable reliability category.

Reliability Statistics

Cronbach's Alpha	N of Items
.665	20

Figure 6. Cronbach's alpha

The results of the reliability analysis show that the instrument used in this study has a Cronbach's Alpha value of 0.665 from the 20 items tested. This Cronbach's Alpha value indicates the level of internal consistency of the instrument. In general, a

Cronbach's Alpha value above 0.60 indicates that the instrument has a good level of reliability, because it shows that the items in the instrument tend to be related to each other and measure the same concept. Thus, these results support the reliability of the instruments used in collecting research data.

HYPOTHESIS TEST

A hypothesis is an initial opinion or provisional answer to the problem being studied—in this case, the usability level of the GoPay and OVO applications. This study employs the One-Sample t-Test analysis method to test the hypothesis. The One-Sample t-Test is used to evaluate the research hypothesis and obtain the results of this study.

One-Sample Test

	Test Value = 68					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
NilaiPG	-2.056	99	.042	-5.7000	-11.201	-.199
NilaiPO	-18.227	99	.000	-32.5100	-36.049	-28.971

Figure 7. Result of t-Test

Figure 7 shows the results of the hypothesis test. The significance values obtained are 0.042 for GoPay and 0.0001 for OVO, using a critical value of 68. Since these significance values are both smaller than 0.05, the null hypothesis (H0) is rejected, and the alternative hypothesis (H1) is accepted. This indicates that the average usability value for both GoPay and OVO applications is less than 68. Overall, the results of this test demonstrate that the average usability of both applications falls below the threshold of 68, which supports the proposed alternative hypothesis (H1).

CALCULATION OF SUS QUESTIONNAIRE

The next step is to conduct an SUS evaluation to analyze user responses to the GoPay and OVO applications. The assessment was carried out through an online questionnaire using Google Forms, which was disseminated via social media. The results showed that the average SUS score for GoPay was 62.3, while for OVO it was 29.28. These results indicate that the GoPay application achieved a Grade D in usability, whereas the OVO application received a Grade F. The calculation of these average values was performed in two ways, as follows:

1. Comparing the average scores obtained from respondents by determining acceptability, grade scale, and adjective rating.
2. Comparing the average scores obtained from respondents with the SUS Score Percentile Rank.

The results of the comparison indicate that the average score for GoPay falls into the acceptable category, with a grade scale level of D and an adjective rating of "OK," as shown below. Additionally, the SUS Score Percentile Rank for GoPay corresponds to Grade D, with a percentile rank between 20% and 40%, as illustrated in Table 4 and Figure 5. For OVO, the average score is in the "F" grade category, reflecting poor usability.

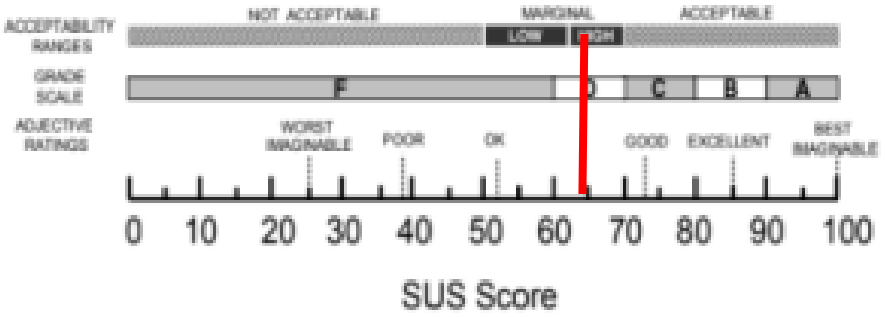

Figure 8. GoPay Average Value Acquisition Results

The results of GoPay's average score shown in Figure 8 indicate that user acceptance falls into the acceptable category. On the rating scale, this level of acceptance corresponds to Grade D, which signifies that GoPay's performance is still below the ideal standard. In the adjective rating assessment, GoPay is categorized as OK, meaning that its performance is considered fairly good but still requires improvement. When compared to the SUS Score Percentile Rank, GoPay's average score of 51 places it in Grade D, which is within the 20% - 40% percentile range. This indicates that, compared to other products, GoPay is below average and only performs better than 20% - 40% of existing products. Overall, while user acceptance is in the acceptable category, there is significant room for improvement in GoPay's performance and user experience.

Table 4. Results of GoPay percentage ranking scores and letter grades

SUS *Score*	Grade	Value	Percentile
51-68	D	51	20 % - 40 %

Table 4 shows the percentile rank scores and letter grades for GoPay. Based on this data, GoPay's SUS Score ranges from 51 to 68, which is categorized under Grade D. The average SUS Score value of GoPay is 51, which places it in the percentile rank between 20% to 40%. This means that GoPay performs better than 20% to 40% of other products, but still below the expected average. This score indicates that while GoPay is acceptable to users, there is still a need for significant improvements to enhance the user experience and achieve a higher score.

OVO Results

The results of the OVO average score obtained in comparing the average score with user acceptance fall into the acceptable category, the grade scale level falls into category F, as shown in the figure below. While the results obtained in comparing the average score with SUS Score Percentile Rank are at Grade F with a value <51 and Percentile <20% as in table 5 and figure 6.

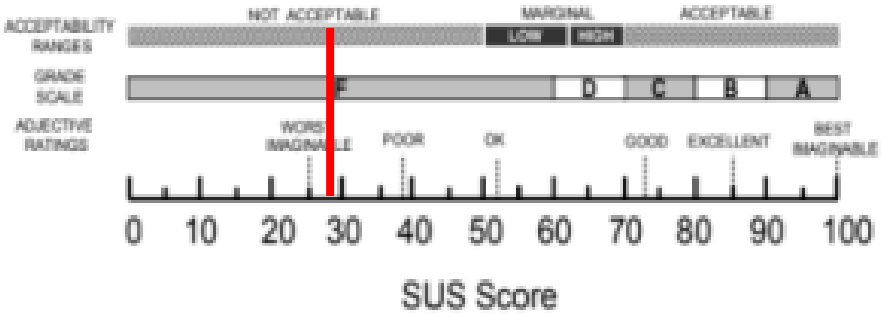

Figure 9. OVO Average Score Result

The results of the average OVO score shown in Figure 9 indicate that user acceptance falls into the acceptable category. However, on the rating scale, this level of acceptance corresponds to Grade F, which signifies that OVO's performance is still far from the expected standard, as illustrated in the figure below. Additionally, when compared to the SUS Score Percentile Rank, OVO's average score falls into Grade F with a value of less than 51 and is in the percentile range of less than 20%, as shown in Table 5 and Figure 6. This indicates that OVO's performance is inferior compared to most other products, performing better than only less than 20% of existing products. Overall, while the user acceptance rating falls into the acceptable category, significant improvements are required for OVO to enhance its user experience and overall performance.

Table 5. OVO precentile rank and letter grades results

SUS *Score*	Grade	Value	Percentile
<51	F	>= 80.3	< 20 %

Table 5 shows the percentile rank score and letter grades for OVO. Based on the data, OVO's SUS Score is less than 51, which is categorized in Grade F. OVO's average SUS Score is greater than or equal to 80.3, which places it in the less than 20% percentile rank. This means that OVO's performance is below average and only better than less than 20% of other products. This score indicates that while there is user acceptance that falls into the acceptable category, OVO still requires significant improvements to enhance the user experience and achieve a higher score.

CONCLUSION

The SUS evaluation conducted to analyze user responses to the GoPay and OVO applications revealed significant differences in usability. The assessment was carried out through an online questionnaire disseminated via social media. The results showed that the average SUS score for GoPay was 62.3, while for OVO it was 29.28. These results indicate that the GoPay application achieved a Grade D in usability, while the OVO application received a Grade F.

The average value calculation was performed in two ways. First, by comparing the average score obtained from respondents to determine acceptability, grade scale, and adjective rating. Second, by comparing the average score obtained from respondents with the SUS Score Percentile Rank.

The results for GoPay show that user acceptance is in the acceptable category. On the grade scale, this level of acceptance falls into Grade D, which signifies that GoPay's performance is below the ideal standard. In the adjective rating assessment, GoPay falls into the OK category, indicating that its performance is considered fairly good but still requires improvement. When compared to the SUS Score Percentile Rank, GoPay's average score is at Grade D with a value of 51, placing it in the 20% - 40% percentile range. This indicates that GoPay performs better than 20% - 40% of other products, but still remains below average. Overall, although GoPay's user acceptance is in the acceptable range, there is considerable room for improvement in its performance and user experience.

Table 4 shows the percentile rank scores and letter grades for GoPay. Based on this data, GoPay's SUS Score ranges from 51 to 68, which is categorized under Grade D. The average SUS Score value of 51 places GoPay in the 20% - 40% percentile range, meaning that it performs better than 20% - 40% of other products but is still below the expected average. This score indicates that while GoPay is acceptable to

users, there is a significant need for improvement to enhance user experience and achieve a higher score.

In contrast, the average score for OVO indicates that user acceptance falls into the acceptable category. However, on the grade scale, this level of acceptance falls into Grade F, indicating that OVO's performance is far below the expected standard. Furthermore, when compared to the SUS Score Percentile Rank, OVO's average score is at Grade F with a value below 51, placing it in the less than 20% percentile range. This indicates that OVO underperforms compared to most other products, performing better than less than 20% of existing products. Overall, while OVO's user acceptance shows an acceptable category, there is an urgent need for significant improvements to enhance its user experience and overall performance.

Table 5 displays the percentile rank scores and letter grades for OVO. Based on the data, OVO's SUS Score is below 51, which corresponds to Grade F. The average SUS Score value is less than 51, placing OVO in the less than 20% percentile range. This score indicates that OVO's performance is below average and only surpasses less than 20% of other products. This finding highlights that, despite some level of user acceptance, OVO requires substantial improvements to enhance user experience and achieve a higher score.

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