

User Satisfaction Evaluation of Meta AI Integration in WhatsApp: A Quantitative EUCS Approach

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Abstract. This study aims to evaluate user satisfaction with the integration of Meta AI technology in the WhatsApp application using the End User Computing Satisfaction (EUCS) model. The model encompasses five key dimensions: Content, Accuracy, Format, Ease of Use, and Timeliness. Data was collected through questionnaires distributed to 44 respondents consisting of students, with the sample determined using the Slovin formula. The analysis revealed that overall user satisfaction falls into the "Satisfied" category, with the highest average score in the Content dimension (3.83) and the lowest in the Ease of Use dimension (3.45). The Ease of Use dimension requires special attention, as some users find Meta AI's navigation challenging. This study contributes to the development of Meta AI features in WhatsApp and serves as a reference for future studies focusing on user satisfaction evaluation.

Keywords: EUCS; Meta AI; Quantitative Evaluation; User Satisfaction; WhatsApp

1. Introduction

WhatsApp (WA) is a type of social media categorized as a messenger platform. It is referred to as such because its primary purpose is to connect users through messages, information, photos, and videos via the internet (Yahya and Dirgantara, 2022). This social media platform has a high number of users, especially among students. Students, particularly university students, tend to use WA to support their academic needs and to interact with friends, relatives, and others (Hatta and Zia Ulhaq, 2022). By utilizing this application, various forms of communication can be conducted easily and efficiently (Isnaini *et al.*, 2023).

WhatsApp regularly introduces innovations to meet user needs. One of the latest innovations is the integration of Meta AI technology. Meta AI, launched in September 2024, is an artificial intelligence (AI) development designed to provide a more personalized and responsive communication experience (Solihin, 2024). The advantages of Meta AI include free accessibility, features that support learning, and the ability to complete tasks according to user needs. However, these advantages come with some drawbacks, such as less accurate search results compared to web search engines and limited suitability for complex mathematical calculations (Anjelina and Zulfaroh, 2024).

Previous studies analyzing user satisfaction with WhatsApp based on user experience include the following : A study by Harianto, Jaya and Darmansyah (2022) examined user

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satisfaction with WhatsApp as an information-sharing medium that influences the public's need for instant messaging applications. The study employed the PIECES Framework, which involves six indicators: Performance, Information and Data, Economics, Control and Security, Efficiency, and Service. This research involved 115 respondents through questionnaires. The findings showed that WhatsApp achieved an average score of 4.31, indicating a high level of user satisfaction with the application.

Fitriyani and Nuryanti (2023) analyzed user satisfaction with WhatsApp, an essential application for obtaining general and personal information, using a Likert scale with 40 respondents. Satisfaction with the user interface was assessed as an indicator of the application's success. Results showed that user satisfaction reached 92.5% in the "agree" and "satisfied" categories. Additionally, independent variables in the EUCS model, including Content, Format, Accuracy, Timeliness, and Ease of Use, were significantly related to user satisfaction with WhatsApp.

A study by (Fernandes Andry and Jessica Angelina, 2023) focused on user satisfaction with WhatsApp Web as a communication tool that allows usage across multiple devices. Using the WebQual 4.0 and Importance Performance Analysis (IPA) methods, data was collected through a questionnaire consisting of 23 questions covering expectations and performance indicators. The results showed that Usability Quality and Service Interaction Quality had a positive impact on user satisfaction, while Information Quality had no significant effect. A recommendation for users is to ensure that VPN applications are disabled for optimal access to WhatsApp Web via PC or laptop browsers.

A study by Kiasati and Zulaikha (2023) explored student satisfaction with the iPusnas application through the End User Computing Satisfaction (EUCS) model, which evaluates user satisfaction based on experiences with information systems. The research involved 42 postgraduate students from the Interdisciplinary Islamic Studies program at UIN Sunan Kalijaga Yogyakarta, drawn from a total population of 167 individuals. By employing a quantitative method and percentage analysis, the findings indicated that 72.6% of users expressed satisfaction with the iPusnas application, classifying it as "satisfied." The application was deemed efficient and effective due to its convenience and accessibility at any time and place without requiring excessive effort.

Kiasati and Zulaikha (2023) also evaluated student satisfaction at Universitas Esa Unggul with e-learning implementation using the EUCS model, which includes five dimensions: Content, Format, Timeliness, Ease of Use, and Accuracy. The study involved 100 active students as respondents, with analysis conducted using Partial Least Square Structural Equation Modeling (PLS-SEM) through the SmartPLS 4.0 application. Results indicated that among five hypotheses, two (Content and Accuracy) were rejected due to t-test values below the threshold (1.96), while three others (Format, Ease of Use, and Timeliness) significantly influenced user satisfaction. The conclusion emphasized that Format, Ease of Use, and Timeliness play a crucial role in enhancing user satisfaction with Universitas Esa Unggul's e-learning platform.

The novelty of this research compared to previous studies lies in its specific focus on user satisfaction with WhatsApp, which has integrated Meta AI technology—an innovation launched in September 2024. This study adopts the End User Computing Satisfaction (EUCS) model, which includes five dimensions: Content, Format, Accuracy, Timeliness, and Ease of Use, to evaluate user experience with Meta AI technology (*Angga Buana, Wicaksana and Adinugroho, 2024*). The research question is how satisfied users are with the integration of Meta AI technology in WhatsApp and to what extent AI-based features affect the overall user experience. The study also examines the dimensions of the EUCS model to identify the factors most influencing user satisfaction. Additionally, it aims to identify the advantages and

disadvantages of Meta AI technology and its impact on WhatsApp as a communication medium, particularly among university students.

This research uses purposive sampling, a non-random sampling technique where researchers select samples based on specific characteristics or criteria aligned with the research objectives (Lenaini and Artikel, 2021). Sample selection is based on considerations or criteria formulated by the researchers (Ani, Lumanauw and Tampenawas, 2021). The respondent criteria in this study are Android smartphone users who frequently use WhatsApp and have a student background.

2. Methods

The research methodology refers to the series of stages carried out throughout the research process, starting from the preparation phase to the final report writing. This study employs a quantitative approach, which is divided into four main stages: (1) preparation stage, (2) planning stage, (3) data collection stage, and (4) data processing and analysis stage. Figure 1 below visually illustrates the research methodology flow.

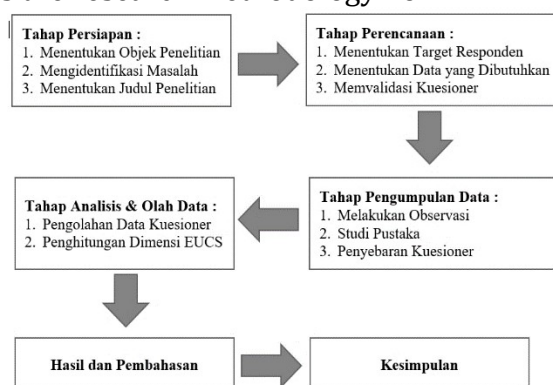


Figure 1. Research Methodology

2.1. Preparation Stage

The preparation stage begins with determining the research object. The research object being studied is the WhatsApp (WA) application with Meta AI, which is currently popular. This object was chosen because it has not been widely discussed, yet it is increasingly used to support users' tasks and activities. The researcher is interested in identifying problems related to the use of Meta AI in WA based on user perceptions. These stages led to the formulation of the research title.

2.2. Planning Stage

The planning stage includes determining the target respondents. The target respondents in this study are AI application users, particularly teenagers and university students. From this target group, the required data can be identified, and statements from each dimension of EUCS can be determined and validated. Respondents were selected randomly using the Slovin formula with a margin of error of 10%. Based on the Slovin formula calculation, the sample size was determined to be 44 data points from a population of 78 respondents.

2.3. Data Collection Stage

Data collection is carried out through direct observation of teenagers or university students using the AI application. This is followed by a literature review and the distribution of questionnaires to the predetermined target respondents. The questionnaire consists of 15 statements on the dimensions of EUCS. The aspects measured include content, accuracy, format,

ease of use, and timeliness. Table 1 below shows the list of questionnaire statements for each dimension.

Table 1. Questionnaire Statement List for EUCS Dimensions

Metode	Dimensi / Aspek	Kode	Pernyataan Kuesioner
EUCS	Content	C1	The information provided by Meta AI meets my needs
		C2	The answers provided by Meta AI are relevant to the topic I asked about.
		C3	Meta AI provides useful information to complete my tasks.
	Accuracy	A1	The answers from Meta AI are what I was looking for
		A2	I trust the answers provided by Meta AI.
		A3	Meta AI is highly accurate in answering questions
	Format	F1	The layout of the answers from Meta AI is neat and easy to understand
		F2	The display of Meta AI helps me understand its answers
		F3	The format of Meta AI's answers is very helpful in understanding the information.
	Ease of Use	E1	I did not experience any difficulties while using Meta AI.
		E2	The navigation in Meta AI is very easy to understand.
		E3	Meta AI helps me complete many tasks.
	Timelines	T1	Meta AI provides answers very quickly.
		T2	The response from Meta AI is as expected.
		T3	Meta AI does not delay in providing the information I need.

2.4. Data Processing and Analysis Stage

Data processing and analysis are performed after the questionnaires are returned and processed by calculating the averages for each dimension of the EUCS method. This allows for the results to be explained, discussed, and conclusions to be drawn. The user satisfaction variable, measured using the EUCS method, is a dependent variable. The questionnaire responses are measured using a Likert scale to assess user satisfaction with the AI application. The researcher converts the respondents' answers as shown in Table 2 below (Natalea and Christiani, 2019) :

Table 2. Conversion of Respondent Satisfaction Level Values

Level	Skor (1-5)	Tingkat Kepuasan
1	1,00-1,80	Sangat Tidak Puas
2	1,81-2,60	Tidak Puas
3	2,61-3,40	Cukup Puas
4	3,41-4,20	Puas
5	4,21-5,00	Sangat Puas

The data collected from the respondents are analyzed by conducting validity tests using the Pearson Product-Moment correlation method, reliability testing using the Cronbach's Alpha method, as well as correlation analysis and calculation of the average score for each EUCS aspect using Microsoft Excel.

2.5. Results and Discussion

The results and discussion section presents the implementation of the research methodology, as discussed in the previous stages. The collected data will be processed to calculate its validity and reliability. Subsequently, the data will be analyzed by calculating the averages to determine the satisfaction level for each EUCS dimension. The results of this data processing will then be discussed, highlighting the dimensions with low and high averages, in order to address the research problem and objectives.

2.6. Conclusion

The conclusion summarizes the results and discussion that have been elaborated in detail and clearly. It aims to help the reader better understand the findings of the study, particularly in terms of user satisfaction with the Meta AI application on WhatsApp. Additionally, it provides insights into which features could be improved, offering recommendations for both the developers and other users.

3. Results and Discussion

Based on the planning stage, it has been explained that the total population consists of 78 respondents. These respondents are users of the WhatsApp application with a background as students or university students. By using the Slovin formula and a margin of error of 10%, a sample size of 44 respondents was obtained. The following is an explanation of the characteristics of the Meta AI users in the WhatsApp application, validity testing, reliability testing, and user satisfaction levels along with their discussion.

3.1. Respondent Characteristics

Based on the data collected from the questionnaires, the results show that the respondent group is predominantly female, with 25 female respondents and the remaining 19 being male. The chart below shows the percentage distribution of respondents based on gender.

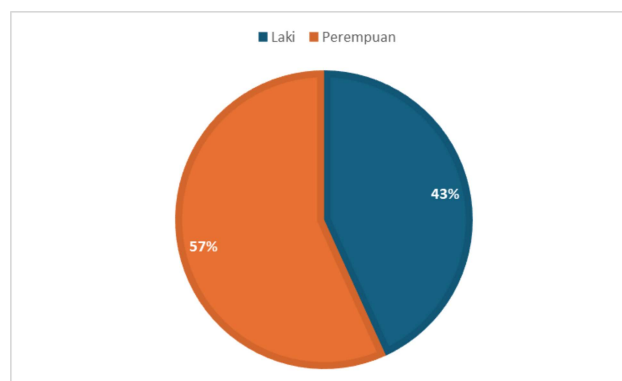


Figure 2. Gender-Based Respondent Characteristics Chart

Figure 3 shows the percentage distribution of respondents by age. The respondents are mostly students with an age of 20 years, followed by 18 years, above 20 years, and below 19 years.

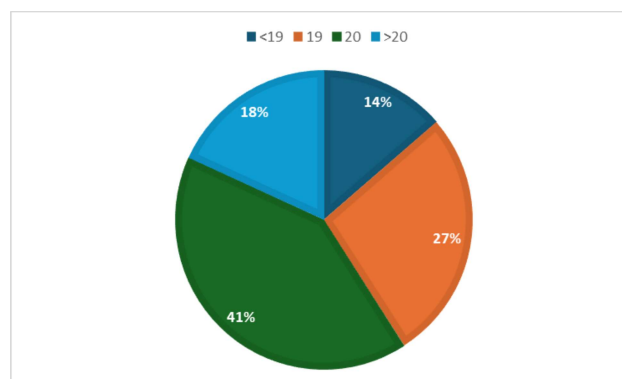


Figure 3. Age-Based Respondent Characteristics Chart

3.2. Uji Validitas

The validity test aims to assess the extent to which the research instrument can measure the intended variables through the distribution of questionnaires. The validity of the

instrument in this study was tested to ensure that each question is relevant and accurate in measuring the variables being studied.

Table 3. Uji Validitas EUCS Meta AI

Aspek	ID	R-Hitung	R-Tabel	Status
Content	C1	0,795	0,251	Valid
	C2	0,794		
	C3	0,775		
Accuracy	A1	0,812		
	A2	0,789		
	A3	0,841		
Format	F1	0,820		
	F2	0,704		
	F3	0,722		
Ease Of Use	EU1	0,672		
	EU2	0,498		
	EU3	0,684		
Timeliness	T1	0,804		
	T2	0,791		
	T3	0,756		

Table 3 shows that all variables have a calculated r value greater than the r table value, thus concluding that these variables are valid.

3.3. Reliability Test

The reliability test is conducted to determine whether the research instrument is consistent and stable when used under the same or similar conditions. If an instrument is reliable, the measurement results or data obtained can be trusted and will yield the same outcomes if the test is repeated. This test uses the Cronbach's Alpha method to measure the internal consistency of a questionnaire instrument with multiple questions. The Cronbach's Alpha value ranges from 0 to 1, and the higher the value greater than 0.6 the better and more reliable the instrument (Sanaky, Saleh and Titaley, 2021). As shown in Table 4, all variables are considered reliable as they have Cronbach's Alpha values greater than 0.6.

Table 4. Reliability Test Results for EUCS in Meta AI

Aspek	R Hitung	R Tabel	Status
Content	0,821	0,6	Reliabel
Accuracy	0,859		
Format	0,841		
Ease of Use	0,803		
Timeliness	0,813		

3.4. User Satisfaction Level

The scores obtained from the respondents' answers were calculated and averaged, then placed on a positive measurement scale to compare them with the category levels and satisfaction levels, as shown in Table 5 below

Table 5. Meta AI User Satisfaction Level Based on EUCS Dimensions

Metode	Variabel	Mean	Level	Tingkat Kepuasan
EUCS	Content	3,83	4	Puas
	Accuracy	3,81	4	Puas
	Format	3,70	4	Puas
	Ease of Use	3,45	4	Puas
	Timeliness	3,79	4	Puas

The variables within EUCS yielded an average lowest score of 3.45 for the Ease of Use dimension. It was found that users still face difficulties using Meta AI, including challenges with navigation, which is still somewhat hard to understand and moderately helpful in completing tasks. The highest average score was for the Content variable at 3.83, followed by Accuracy at 3.81, Timeliness at 3.79, and Format at 3.70. Although the lowest score was below 3.70, it still falls within the level 4 interval. Therefore, it can be concluded that the user satisfaction level is categorized as "Satisfied."

4. Conclusions

Based on the discussion, this study reveals that user satisfaction with Meta AI on the WhatsApp application falls into the "Satisfied" category, with the highest average score in the Content dimension (3.83) and the lowest in the Ease of Use dimension (3.45). The Ease of Use dimension requires particular attention, as users still encounter difficulties navigating Meta AI, despite its ability to assist in completing tasks. To address this, the study recommends that Meta AI developers improve navigation and the user interface to enhance the Ease of Use dimension. Additionally, optimizing usage guidelines and feature documentation for Meta AI is crucial to make them more comprehensible, particularly for students and college students who are the primary target audience of this research. Overall, this study contributes to the development of AI-based applications on WhatsApp while providing a valuable reference for future research focusing on evaluating user satisfaction using a similar approach.

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