Application Evaluation Between Whatsapp and Telegram

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ABSTRACT

This paper presents an analysis of the usability of two popular messaging apps, WhatsApp and Telegram, as part of the Human-Computer Interaction (SECV2113) course at Universiti Teknologi Malaysia (UTM) [1]. A survey involving 10 participants, including friends and relatives of the author, was conducted to assess user experiences with the apps. Participants rated their experiences using a Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) across 10 statements related to aspects such as usage frequency, complexity, ease of use, support needs, functionality, learning curve, and confidence. The results provide valuable insights into user perceptions of these apps, contributing to a deeper understanding of their usability in the context of mobile communication tools.

General Terms

Social Media platform refers to a software application that allows user to communicate with other users. In the context of this report, social media apps refer to WhatsApp and Telegram.

Keywords

Telegram, WhatsApp, Social Media Platforms, Application Evaluation, Human-Computer Interaction.

1. INTRODUCTION

Software applications has significantly contributed to improving people's life, especially through the widespread use of mobile apps which have becom a norm in today's society. Social media platforms, in particular are constantly evolving as developer strive to create high-demand software that meets users' needs. Moreover, social media has become an essential part of today's social landscape [2]. Everyday, people from various age groups use apps such as WhatsApp or Telegram to communicate with others and share updates about their life [3].

Each app is built differently based on the priorities set by its developers, who are also responsible for enhancing usability for users. Individuals has different priorities when using social media apps. Some prefers using Whatsapp while others prefer Telegram. The preferences can be influences by various factor such as interface design, navigation flow, feature complexity, security, popularity and more.

This report aims to gather public's evaluation on well-known social media which are WhatsApp and Telegram. Both of these apps have similar functionality such as personal chatting, group chatting, calling functions, picture sharings and more. However, the public has mixed opinions on which they think perform better.

The questionnaires of this report adopts the System Usability Scale (SUS) format [4]. It consists of 10 statements, covering aspect such as frequency of use, complexity, ease of use, need for support, integration and funtionality, learning curve, and lastly, confidence in use.

2. METHODOLOGY

This section explains the methodology used to achieve the objectives of the case study. A total of ten (10) participants were involved in the study. The participants' ages ranged from 18 to 54 years old, ensuring that the sample covered a broad spectrum of social media users. Additionally, the gender distribution was balanced, with 5 men and 5 women, to explore whether gender influences the usability of the apps. The participants, including friends and relatives of the author, were asked to complete a survey administered via Google Forms. The data capture was done both at qualitative and quantitative levels.

For quantitative data, the questionnaire used for data collection was adapted from the System Usability Scale (SUS) questionnaire. The survey was structured using a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) to assess participants' experiences with two messaging apps, WhatsApp and Telegram. Meanwhile, the qualitative data were collected through open-ended question, asking users for suggestions on how the app could be improved. Afterward, the collected quantitative data were then imported into the System Usability Scale Analysis Toolkit online to process and generate meaningful graphs for analysis [5].

The 10 SUS questions addressed different usability aspects, including frequency of use, complexity, ease of use, need for support, integration and functionality, learning curve, and confidence in use. Each aspect was designed to gather insights into how users interact with and perceive these mobile applications.

The questions used in the study are: 1) I think that I would like to use this system frequently. 2) I found the system unnecessarily complex. 3) I thought the system was easy to use. 4) I think that I would need the support of a technical person to be able to use this system. 5) I found the various functions in this system were well integrated. 6) I thought there was too much inconsistency in this system. 7) I would imagine that most people would learn to use this system very quickly.8) I found the system very cumbersome to use. 9) I felt very confident using the system. 10) I needed to learn a lot of things before I could get going with this system.

3. FINDINGS

3.1 Qualitative Analysis

For qualitative data, users were given an open-ended question asking them what would they change to improve the app usability.

WhatsApp: 30% of participants agreed that privacy and security should be strengthened [6]. One participant suggested adding a scammer alert feature. Additionally, 10% of participants recommended improving picture quality when sharing images, while another 10% suggested changing the color theme of the user interface. 20% of participants proposed improvements for chat organization, both for individual and group chats. Another 10% suggested disabling the option to hide the blue tick. Finally, 20% of participants did not suggest any improvements.

Telegram: 60% of participants agreed that privacy and security should be enhanced. This aligns with concerns regarding users' accounts being hacked and being invited to scam groups [7]. 10% of participants raised the issue that they cannot call someone unless the other person is online, and also noted that the chat system feels laggy and uncomfortable to use. Finally, 30% of participants did not suggest any improvements.

3.2 Quantitative

Several visualization methods were employed to better understand the data. First, a boxplot was used to display the distribution of responses, highlighting the median, quartiles, and potential outliers for each app. This provided a clear overview of the central tendency and variability of participants' ratings. Second, a percentile curve was used to show the cumulative distribution of the Likert scale ratings across all participants. This helped in identifying how responses are distributed, including where the majority of users fell on the scale. Third, a per-item chart was used to assess individual questions, illustrating the percentage of participants who agreed, disagreed, or were neutral on specific aspects of each app. This offered insights into particular usability features or concerns based on the responses.

These charts below were generated using the System Usability Scale Analysis Toolkit, which helped in providing a visual representation of the quantitative data and assist in easier interpretation of the results.

Table 1: Boxplot Data Table

Variable	SUS Score (mean)	SD	Min	Max	1. Quartile	Median	3. Quartile	Adjective Scale	Grade Scale	Quartile Scale	Acceptability Scale	NPS Scale	Industry Benchmark
Telegram	68	17.59	40	95	53.125	70	83.75	OK	C	2nd	Marginal	Passive	Above Average
WhatsApp	80.75	12.25	55	100	73.75	82.5	88.125	Excellent	A	4th	Acceptable	Promoter	Above Industry Standard

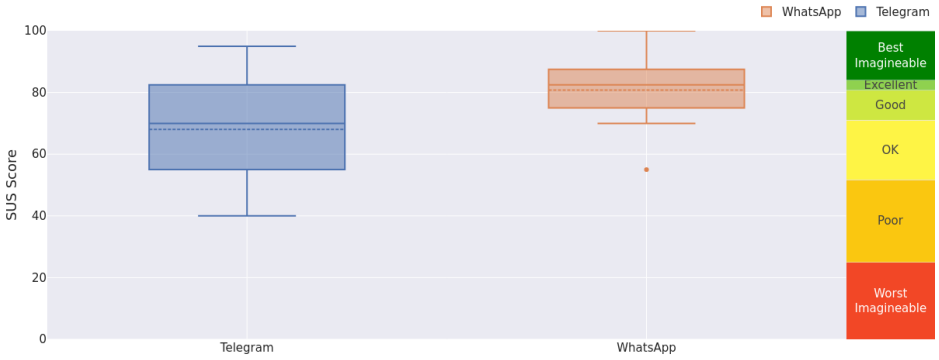

Figure 1: Boxplot Diagram

Table 2: Percentile-Curve Data Table

Variable	SUS Score	Percentile
Telegram	68	49.12
WhatsApp	80.75	88.65

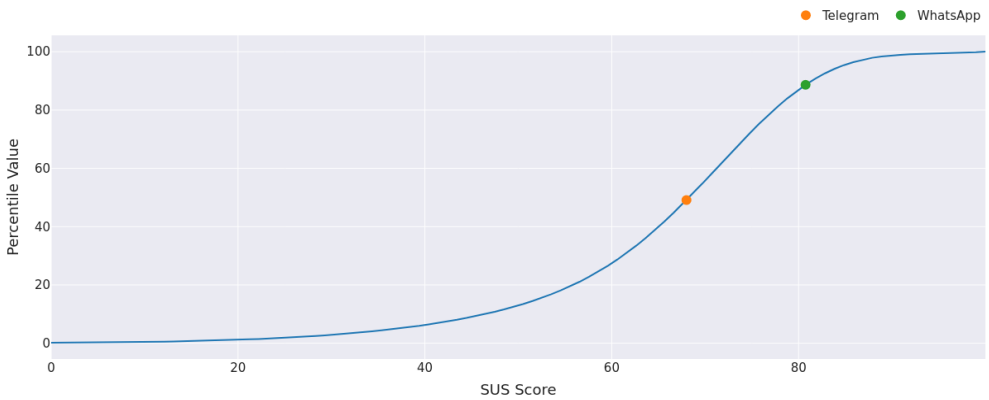

Figure 2: Percentile-Curve Diagram

Table 3: Per Item Data Table

Variable	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7	Question 8	Question 9	Question 10
Telegram Contribution (SD)	4.5 (3.12)	6.0 (3.39)	7.75 (2.36)	8.25 (2.51)	6.75 (2.97)	7.25 (2.36)	6.5 (2.55)	8.0 (1.87)	6.5 (2.29)	6.5 (2.78)
WhatsApp Contribution (SD)	9.0 (1.66)	6.0 (3.39)	9.0 (1.66)	9.5 (1.0)	7.25 (2.36)	7.5 (2.24)	8.75 (1.25)	8.75 (1.25)	8.25 (1.6)	6.75 (2.51)

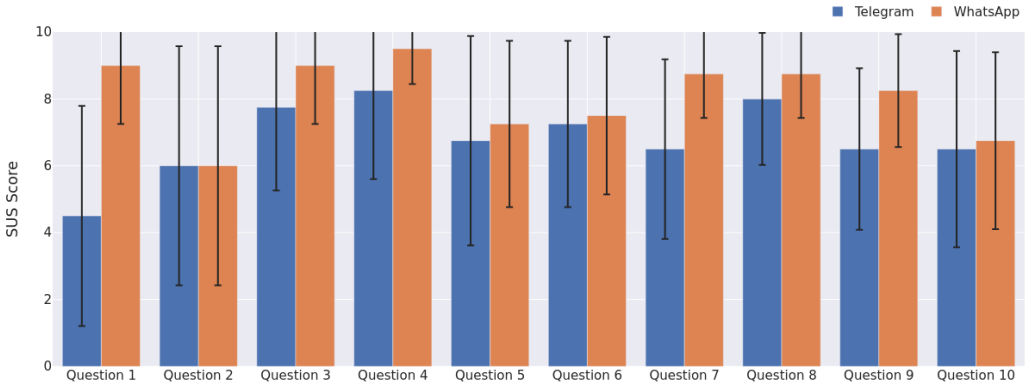

Figure 3: Per Item Chart

4. DISCUSSION

Boxplot Diagram: The comparison between Telegram and WhatsApp based on their System Usability Scale (SUS) scores reveals an obvious difference in usability. Telegram has a mean SUS score of 68, which is considered acceptable, but with higher variability (SD = 17.59), indicating inconsistent user experiences. Its quartile ranking places it in the 2nd quartile, and it is rated "OK" in terms of usability. For that, it receives a grade of C and a "Marginal" acceptability rating. In contrast, WhatsApp scores much higher with a mean of 80.75, classified as "Excellent," and demonstrates greater consistency (SD = 12.25). Its quartile ranking is in the 4th quartile. It holds a grade of A, with an "Acceptable" rating for acceptability and a "Promoter" status on the Net Promoter Score (NPS) scale. WhatsApp is also rated "Above Industry Standard" on the industry benchmark, whereas Telegram is only rated "Above Average." Overall, WhatsApp is regarded as evidently more usable and user-friendly than Telegram, with users more likely to recommend it and have a consistently positive experience.

Percentile-Curve: The percentile curve for the SUS scores of Telegram and WhatsApp highlights their relative usability performance. Telegram, with a SUS score of 68, falls at the 49.12th percentile, meaning its usability is better than approximately 49% of other systems, placing it around the average mark in terms of user experience. In contrast, WhatsApp achieves a higher SUS score of 80.75, which places it at the 88.65th percentile, indicating that it performs better than nearly 89% of other systems, reflecting its superior usability. This comparison shows that while Telegram is somewhat average in terms of usability, WhatsApp stands out as one of the top performers, offering a significantly better user experience.

Per Item Chart: The per-item chart compares the contributions (scores) and standard deviations (SD) of individual questions in the System Usability Scale (SUS) assessment which reveals outstanding differences between Telegram and WhatsApp. For Telegram, the scores range from 4.5 for Question 1 to 8.25 for Question 4, with Questions 3 and 4 receiving the highest scores of 7.75 and 8.25, respectively, suggesting relatively strong user satisfaction in these areas. However, these scores are accompanied by moderate standard deviations (2.36 to 3.12), indicating varied user experiences. In contrast, WhatsApp scores higher overall, with Questions 1, 3, and 4 receiving the highest contributions (9.0 and 9.5), signaling superior user satisfaction. WhatsApp's lower standard deviations (ranging from 1.0 to 1.66) reflect more consistent feedback, indicating that users generally agree on the app's usability. The lowest score for WhatsApp is seen in Question 10 (6.75), which still outperforms Telegram's lowest scores, but with a higher standard deviation of 2.51, showing more variability in user responses. Overall, WhatsApp demonstrates stronger, more consistent usability ratings across the board, while Telegram shows more mixed results, with certain aspects receiving lower ratings and greater variability in user opinions.

5. RECOMMENDATION AND CONCLUSION

For WhatsApp, improvements should focus on enhancing privacy and security by adding features like a scammer alert system to protect users from fraudulent activities [8]. Additionally, refining the picture quality when sharing images and offering more customization options for the user interface, such as additional color themes, would increase user satisfaction. Improving chat organization by introducing better sorting or categorization features would help users navigate individual and group chats more efficiently.

For Telegram, it is essential to prioritize strengthening privacy and security measures to protect user accounts and prevent scams [9]. Enhancing the calling feature to allow asynchronous calls or providing more flexibility in how calls are made would improve the overall user experience. Additionally, optimizing the app's performance to address issues like lag and discomfort in the chat system would enhance usability and responsiveness.

Both WhatsApp and Telegram offer strong user experiences but could benefit from focused improvements. WhatsApp could enhance its privacy and security, provide better image sharing, and offer more customization and chat organization features. Meanwhile, Telegram needs to prioritize security, improve its calling features, and optimize performance to

ensure a smoother, more responsive experience. By addressing these areas, both platforms can meet user expectations more effectively and continue to evolve in a competitive market [10].

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