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A Study on Comparing User Experience Design for Messenger Services Focused on WhatsApp and Telegram

Takisheva Sagadat[1], Seung In Kim[2]*

Abstract

This paper presents a comparative analysis of mobile user experience in WhatsApp and Telegram, two of the most popular messengers today. The study utilizes the Creating Pleasurable Interfaces model and follows a two-stage approach. Initially, an online survey targets users experienced with Telegram and WhatsApp. Subsequently, in-depth interviews are conducted based on survey results and prior research analysis. The findings reveal that Telegram users tend to give higher evaluations for functionality and user satisfaction compared to WhatsApp. Moreover, the paper explores the potential reasons behind the disparities in functionality and user satisfaction, considering factors such as interface design, feature sets, and overall usability. The most significant disparities are observed in functionality and user satisfaction. These findings are expected to contribute to identifying crucial user experience factors in a competitive environment, providing a comparative assessment between the two messaging platforms.

Keyword : User Experience, WhatsApp, Telegram, Creating Pleasurable Interface Model, In-depth Interview

1. Introduction

The most popular messenger is WhatsApp, which is owned by Facebook, the leader of social networks [1]. WhatsApp and Telegram are popular instant messaging platforms that have become integral parts of many people's lives, including political groups and educational settings. They serve as platforms for group discussions, content dissemination, and sharing various types of information, such as YouTube videos, images, and text messages.

WhatsApp is a simple and reliable way to confidentially exchange messages and make free calls anywhere in the world [2]. WhatsApp is a widely used instant messaging application that allows users to send text messages, make voice and video calls, share multimedia files such as images and videos, and engage in group chats [3]. Developed by WhatsApp Inc., the application was initially released in 2009 and quickly gained popularity for its user-friendly interface and the convenience it offers in

1 Department of Digital Media Design, IDAS, Hongik University, Seoul, Korea [Graduate Student]
e-mail: takishevasagadat18@gmail.com
2 Department of Digital Media Design, IDAS, Hongik University, Seoul, Korea [Professor]
e-mail: r2d2kim@naver.com (Corresponding author)

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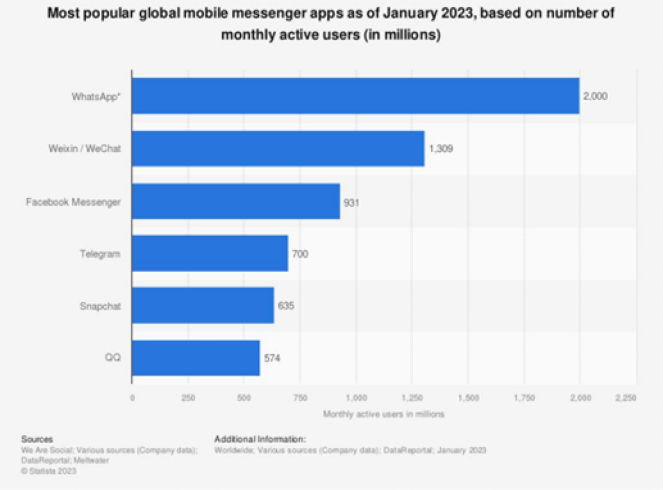
communication. WhatsApp operates on various platforms, including iOS, Android, and Windows Phone, and it uses the internet to transmit messages, making it a cost-effective alternative to traditional SMS. In 2014, Facebook acquired WhatsApp, further solidifying its position as one of the leading messaging platforms globally.

Telegram serves as a messaging platform facilitating user interaction through the transmission of messages, encompassing diverse media formats including images, videos, and files. Furthermore, it affords the establishment of groups or channels to facilitate communication with a wider audience. In addition, Telegram incorporates functionalities that enable voice and video calls, along with voice-based discussions within group configurations [4].

In this study, the selection of primary messaging applications for the analysis of user experience was guided by high monthly active user metrics and a substantial user percentage as shown in [Fig 1]. Consequently, Telegram and WhatsApp were chosen for the comparative investigation [5].



[Fig. 1] Monthly Active Users by Messenger Apps

WhatsApp and Telegram compete as they fulfill similar requirements. While there are several articles comparing these applications, they predominantly serve as foundational pieces outlining fundamental distinctions rather than conducting comprehensive comparisons [6]. A study analyzing YouTube videos shared in politically oriented public groups on WhatsApp and Telegram during the COVID-19 pandemic in Brazil found a significant political bias in the content shared on these platforms, with predominantly right-oriented content [7]. Research has shown that the educational use of Telegram promotes higher levels of engagement in virtual postgraduate courses, as compared to WhatsApp. Students appreciated the

diverse functionalities of Telegram, such as chat groups, peer assessments, and support for various types of online interaction [8]. A security analysis comparison between Signal, WhatsApp, and Telegram found that each app has different encryption protocols and security features [9]. Overall, while both WhatsApp and Telegram are popular instant messaging platforms, they have some differences in terms of their functionalities, security features, and potential vulnerabilities.

The objective of this study is to assess the user experience of prominent messaging applications and identify elements of user experience that these messaging platforms should enhance. Additionally, the study aims to conduct a comparative analysis of significant differences in the user experience between the WhatsApp and Telegram messaging applications. Furthermore, the investigation delves into the analysis of moral, ethical, and political dimensions of responsibility associated with the use of these messaging platforms. For this end, this study conducted an analysis of disparities in user experience when utilizing the messengers Telegram and WhatsApp among individuals aged 20 to 60, who exhibit heightened activity within the contemporary messenger community.

2. Methods

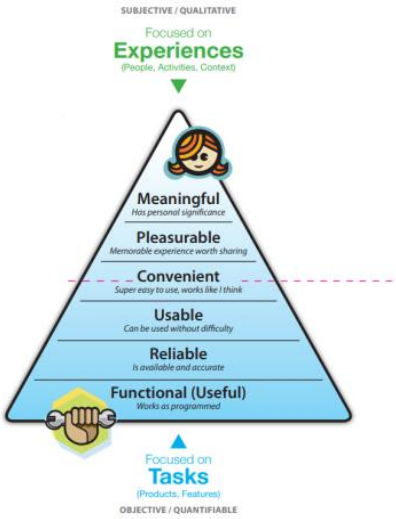
2.1 User Experience

The user experience is the impact on the user left by the product. It is an emotional interaction that begins as a feeling during usage. Essentially, it is about what we feel and what we remember after using the product [10]. User experience (UX) is an extensive concept that takes into account the emotions, beliefs, preferences, perception, as well as the physical and mental responses or actions of the user, happening prior to, during, and after the product usage. Essentially, UX refers to the thoughts and emotions a user encounters throughout the events occurring in the delivery of a service or product. Additionally, within this process, users might request services that go beyond their initial expectations [11].

UX delves into technology that surpasses the fulfillment of mere practical requirements, recognizing its influence on a subjective, contextual, intricate, and ever-evolving encounter. UX is molded by the internal factors of the user including inclinations, expectations, needs, motivation, mood, the attributes of the designed system such as complexity, purpose, usability, and functionality and the context or environment in which the interaction unfolds including organizational/social context, significance of the activity, and voluntary usage [12].

2.2 Creating Pleasurable Interfaces Model

Creating Pleasurable Interfaces Model by Stephen P. Anderson maintains the emotional elements of the hierarchical perspective model by Patrick Jordan, known as the 'Pleasurability Test' [13][14]. As illustrated in [Fig. 2], it depicts a hierarchical structure of UX elements within the model of developing pleasant interfaces. Components associated with usability are situated at the bottom of the pyramid, while elements linked to emotional perception are positioned at its top. The higher a component is in this hierarchy, the more significant it may be considered for overall user perception [15].



[Fig. 2] Creating Pleasurable Interfaces Model

Therefore, for this study, specific evaluation criteria were adapted and expanded using elements of emotional experience according to the creating pleasurable interface model. This was done to align with the measurement of UX in the use of mobile messengers.

2.3 Questionnaire and Data Collection

The selected scientific approach for this study involves survey evaluation. Utilizing a survey proves to be an effective method for gathering information from a group of individuals to address various questions [15].

Within the framework of the conducted research, respondents from various countries were surveyed, including South Korea, Kazakhstan, Russia, Pakistan, El Salvador, Palestine, France, Bulgaria, Philippines

and others. As a result, 61 individuals participated in the WhatsApp survey, while 56 individuals took part in the Telegram survey. The questions in the two surveys were identical.

The questionnaire's question structure was organized based on Stephen P. Anderson's Creating Pleasurable Interfaces Model, consisting of a total of six elements: Functionality, Reliability, Usability, Convenience, Pleasurability, and Meaningful [16]. Additionally, two additional items, namely moral and ethical responsibility, and political conflict, have been incorporated.

More specifically, the Functionality (functional) element comprises three questions: the program operated as expected or better; the program is good in error prevention; the program has good features, for example, word search, pin the chat, edit and cancel a message.

Reliability (reliable) includes three questions: always accessible; always performs accurately; overall, the functional elements are reliable.

Usability (usable) encompasses three questions: can be used without difficulty; useful for sharing personal information, messages, photos, or videos; the program is easier to navigate. For example: searching for a chat, starting a conversation.

Convenience (convenient) comprises three questions: conveys simple, organized, and clear information; the content of the information is easy to understand; the program is easy to adapt to even the first time.

The Pleasurable (pleasurable) elements consist of three questions: a service tailored to individual preferences; the program has a pleasurable interface; creates the attractive experience I desire.

The Meaning (meaningful) includes three questions: creates value together with users; has an overall brand, system, and consistency; appeals to emotional, mental, and social values.

Moral and ethical responsibility (moral and ethical responsibility) include three questions: I believe that the Telegram messenger provides a high level of user privacy; I believe that Telegram effectively prevents the spread of fake news and unreliable information at a high level; I believe that Telegram is effective in filtering content containing violence, hatred, or other undesirable materials.

Political conflict (political conflict) encompasses three questions: how do you assess the current role of messengers in the context of political conflicts and social movements; I believe that the messenger is politically neutral and does not take sides in political matters; I believe that the messenger applies content censorship in connection with political conflicts.

The data were gathered using a self-administered questionnaire method. The elements of the Creating Pleasurable Interfaces model were assessed on a 5-point scale, and open-ended questions were employed to elicit feedback regarding potential dissatisfaction in the overall experience of using social networks.

2.4 Research Methods

The object of the research is users with experience using Telegram and WhatsApp, engaging in basic messenger functions such as calls and messaging. For the purposes of this study, in-depth interviews were conducted with 8 participants, aged between 20 and 30, who had experience using both applications. In-depth interviews are mostly long-duration, face-to-face, interviews conducted to achieve desired goals. In-depth interview also known as one-on-one is a method of extracting more detailed information or deep understanding of a subject or concept [17].

3. Results

3.1 Quantitative Survey Results

Quantitative measurement of UX is important for the development and continuous improvement of interactive system [18]. In [Table 1], the average values and standard deviations for user experience elements are presented. Overall, user satisfaction with the experience on Telegram is higher than on WhatsApp. Examining the messengers separately, Telegram received high ratings in the elements of Usability, Reliability, Functionality, Convenience and Pleasurable factors. However, ratings for the Meaningful, Political conflict, Moral and ethical responsibility elements were below 4 points. With tthe exception of the 'Has an overall brand, system, and consistency' element in the Meaningful category, all ratings were also below 4 points. In contrast, WhatsApp received high ratings in most elements of usability, convenience, and reliability. However, similar to Telegram, WhatsApp also received the lowest ratings in the Political conflict and Moral and ethical responsibility elements.

[Table 1] The Factors Mean and SD by Messengers

Factors	Telegram		WhatsApp	
	Mean	SD	Mean	SD
Functionality	4.17	1.10	3.91	1.05
Reliability	4.24	1.05	4.08	0.88
Usability	4.32	1.00	4.18	0.94
Convenience	4.09	1.08	4.17	0.96
Pleasureable	4.04	1.08	3.74	1.03
Meaningful	3.85	1.15	3.7	1.06
Moral and ethical responsibility	3.21	1.31	3.01	1.25
Political conflict	3.24	1.26	3.31	1.07

Thus, for WhatsApp, improvement is needed in the elements of functionality, pleasurable, meaningful, political conflict, moral and ethical responsibility. Meanwhile, for Telegram, despite the overall high rating, improvement is required in the elements of meaningful, political conflict, and moral and ethical responsibility, where the ratings turned out to be low.

[Table 2] shows the ranking of the Telegram application derived from survey results, with factors organized based on average scores. Usability received the highest ranking, indicating strong user satisfaction. Reliability follows, underscoring the importance users place on the application's dependability. Functionality claims the third spot, highlighting user interest in diverse features. Convenience and Pleasurable factors follow suit, while Meaningful, Political conflict, and Moral and ethical Responsibility occupy lower positions in user priorities.

[Table 2] Telegram Ranking

Rank	Factors	Mean
1	Usability	4.32
2	Reliability	4.24
3	Functionality	4.17
4	Convenience	4.09
5	Pleasurable	4.04
6	Meaningful	3.85
7	Political conflict	3.24
8	Moral and ethical Responsibility	3.21

[Table 3] shows the ranking for the WhatsApp application. The ranking is derived from survey results, with factors organized based on average scores. Usability received the highest ranking, indicating strong user satisfaction, closely followed by Convenience and Reliability. Functionality claims the fourth spot and user interest in diverse features. Pleasurable and Meaningful factors follow suit. Political conflict and Moral and ethical Responsibility occupy lower positions, indicating that users may perceive these aspects as less influential in their assessment of the WhatsApp application.

[Table 3] WhatsApp Ranking

Rank	Factors	Mean
1	Usability	4.18
2	Convenience	4.17
3	Reliability	4.08
4	Functionality	3.91
5	Pleasurable	3.74
6	Meaningful	3.7
7	Political conflict	3.31
8	Moral and ethical Responsibility	3.01

3.2 Qualitative Survey Results

The findings of a qualitative survey revealed that primary among the concerns voiced by WhatsApp users was dissatisfaction with a prominent drawback in the messaging platform. They specifically highlighted the susceptibility to receive messages from any individual in possession of their phone number, leading to an unwarranted influx of unwanted information in the form of spam.

Second in frequency was a functional limitation. For instance, one user pointed out that WhatsApp lacks certain features, such as the ability to pin messages in chats and permanently delete sent messages. The user observed that, although the deletion process is technically executed, the conversation partner is still notified about the message being sent and subsequently deleted.

Conversely, Telegram users raised issues pertaining to the moral and aesthetic responsibility factor. Several users conveyed discontent with Telegram, contending that, in their view, the increased confidentiality of the platform at times enables its utilization for illicit activities.

Under 'Moral and Ethical Responsibility', respondents expressed reservations about the degree of user privacy provided by both messengers. Additionally, concerns were raised regarding the effectiveness of these platforms in curbing the dissemination of fake news and unreliable information, as well as their ability to filter content containing violence, hatred, or other objectionable materials.

In the realm of 'Political Conflict', respondents perceived shortcomings in the current role of messengers concerning political conflicts and social movements. There were doubts about the political neutrality of both messengers, with some respondents indicating a belief that the messengers might take sides in political matters. Moreover, concerns were raised about the perceived application of content censorship in connection with political conflicts.

This collective feedback suggests a need for both WhatsApp and Telegram to reassess and enhance their approaches to moral and ethical responsibility, as well as their involvement in political contexts. Addressing these concerns may involve improving user privacy features, implementing more robust mechanisms to combat misinformation, and ensuring a balanced and politically neutral stance.

4. Discussion

Using the Creating Pleasurable Interfaces model to analyze the average UX, the results indicate that WhatsApp received scores below 4 on most points related to functionality, pleasurable experience, meaningful experience, moral and ethical responsibility, and political conflict, but scored higher on

factors such as reliability, convenience, and usability. This study underscores the imperative for WhatsApp to actively address and enhance various facets of user experience, as indicated by the suboptimal ratings across key dimensions: functionality, pleasurable interaction, meaningful engagement, moral and ethical responsibility, and political neutrality. For functionality, WhatsApp must persist in refining its performance reliability, error prevention capabilities, and feature set diversity, incorporating additional functionalities such as word search, chat pinning, and message editing and cancellation to contribute to an improved score in this category. In terms of pleasurable experience, creating personalized services, refining the interface for aesthetic pleasure, and ensuring an engaging user experience are pivotal considerations. WhatsApp should attend to individual user preferences and invest in the visual design aspects of the application. Regarding meaningful experience, collaborative value creation with users, maintaining a consistent brand image, and upholding system-wide coherence are critical elements to address. WhatsApp should intensify its efforts to interact with users in a manner that resonates with their emotional, mental, and social values. In terms of moral and ethical responsibility, ensuring a high level of user privacy, effectively curbing the dissemination of fake news, and robustly filtering content containing violence, hatred, or other undesirable materials represent ethical imperatives. WhatsApp should adhere to these principles in fulfilling its moral and ethical responsibilities. Regarding political conflict, WhatsApp needs to vigilantly assess its role in political conflicts and social movements, maintaining political neutrality, refraining from taking sides in political matters, and implementing content censorship judiciously in the context of political conflicts are essential considerations. Addressing these facets comprehensively will contribute to an augmented and refined user experience within WhatsApp, aligning the application more closely with the expectations and preferences of its diverse user base, low ratings indicating the need for a comprehensive review including basic functionality aspects.

In conclusion, for an improved user experience on the Telegram messaging platform, concerted efforts should be directed towards addressing low scores in meaningful, moral and ethical responsibility, and political conflicts. Telegram needs to focus on collaborative value creation with users, maintain a unified brand, system, and consistency, while also fostering emotional, mental, and social values. Prioritizing a high level of user privacy, combating fake news, and efficiently filtering undesirable content are imperative for upholding moral and ethical standards. Furthermore, active endeavors to maintain political neutrality, ensure transparency in censorship during political conflicts, and carefully assess the platform's role in social movements will contribute to an enhanced user experience, aligning Telegram more closely with the expectations of its diverse user base.

5. Conclusion

The study offers valuable insights into user experiences on the messaging platforms Telegram and WhatsApp, employing the 'Creating Pleasurable Interfaces' model. The two-stage approach, consisting of an online survey and in-depth interviews. The findings in this study indicate that both messengers have room for improvement in critical areas. For WhatsApp, it is recommendable to refine reliability, error prevention, and add features like word search and message editing. Improving aesthetics and engaging experiences is crucial for a pleasurable interaction. For meaningful engagement, collaborative value creation, brand consistency, and system-wide coherence are vital. Ethical responsibility requires high user privacy and robust content filtering.

To improve the Telegram messaging platform's user experience, focus on enhancing scores in meaningful engagement, moral and ethical responsibility, and political conflicts. Prioritize collaborative value creation, maintain a unified brand, and uphold moral and ethical standards. Ensure high user privacy, combat fake news, and filter undesirable content. Actively maintain political neutrality, transparent censorship in political conflicts, and assess the platform's role in social movements for an enhanced user experience, aligning with diverse user expectations.

Addressing these concerns could contribute to a more positive user experience and a stronger perception of moral and ethical responsibility in the digital communication landscape. A potential limitation arises from the exclusive focus on users experienced with Telegram and WhatsApp. To address this, diversifying the sample to include users with varying experience levels or those not using these platforms regularly can be done fo the future research.

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