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SUS-Based Usability Evaluation of Windows 10 OS: An Analytical Survey

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Abstract

This study evaluates the usability of the Windows 10 operating system using the System Usability Scale (SUS)-based questionnaire. The findings highlight the operating system's strengths including a user-friendly interface improved performance and enhanced security features. However, areas of improvement were identified notably in accessibility, smoothness of updates and the transparency of data policies. Addressing these aspects can further increase user satisfaction and provide a more seamless user experience. The study underscores the importance of continuous usability assessments in enhancing the overall effectiveness and appeal of widely used software systems.

Keywords: SUS-Based Usability Evaluation; Windows 10 OS; Analytical Survey

1. Introduction

To evaluate Windows 10's usability, one must first be able to access its user interface. In Windows 10, Microsoft created an operating system that is popular and well-known for its practical features (Dopp et al., 2019). A usability review involves a detailed analysis of Windows 10's functionality, user interface design, and friendliness to ensure that it meets user demands. This evaluation aims to identify the operating system's design and interface features' strong points, weaknesses, and areas for improvement (Peart et al., 2019). A Windows 10 usability study is a structured examination of the operating system. It uses a variety of methods, including usability testing, evaluation, and user surveys, to gather data (Hamid et al., 2023). The evaluation's conclusions demonstrate that Windows 10 provides a convenient and productive computing environment and highlight areas. Microsoft released Windows 10 in July 2015, and to improve its usability and functionality, it went through multiple usability tests. Clarity, uniformity, and intuitiveness of the interface were evaluated. Microsoft concentrated on enhancing its accessibility features for people with disabilities. Assessments were carried out to verify suitability with different assistive technologies and to improve usability for every user (Hamid et al., 2022). To improve speech recognition, search functionality, and general operating system integration, the usability of Cortana, the digital assistant, was evaluated. This hybrid device-designed capability was assessed to guarantee seamless tablet and desktop transfers (Hamid et al., 2022). Just as Evaluating Datagram Congestion Control Protocol (DCCP) for Real-Time Applications: A Comparative Study with TCP in Multi-Node Networks applies a comparative performance analysis to assess protocol efficiency (Hassan et al., 2024), the present study SUS-Based Usability Evaluation of Windows 10 OS: An Analytical Survey adopts a systematic evaluation approach to measure user experience and usability outcomes.

2. Literature Review

The convenience assessment of Windows 10 was important for persistent development in Microsoft's way of dealing with client experience and connection point plans. Microsoft's way of dealing with the Windows operating system has developed from before adaptations (like Windows 95, XP, 7, 8) to Windows 10, accentuating more client-focused plan standards, taking into account client criticism. This considered more continuous updates, client testing, and iterative enhancements in light of client criticism and convenience assessments. With Windows 10, Microsoft fundamentally stressed gathering client criticism through programs like the Windows Insider Program, including a local area of clients in testing and giving input on pre-discharge variants (Muhammad et al., 2022). Over the long haul, there was a developing accentuation on openness, prompting the combination of greater openness highlights in Windows 10, guaranteeing ease of use for a more extensive scope of clients. Windows 10 looked to lay out steady plan rules and norms across various gadgets (computers, tablets.) to make a more consistent client experience. With progressions in innovation and client research strategies, Microsoft probably consolidated new assessment procedures, for example, eye following, broad client examination,

and intensity guides to grasp client conduct in Windows 10 (Nazir et al., 2023; Aqeel et al., 2023). The verifiable setting of Windows 10's convenience assessment mirrors a shift towards a more client-driven plan, expanded client contribution, and a promise to make a more open and easier-to-use working framework. How the plan components, like design, symbols, menus, and generally speaking connection points, influence client experience. Assessing the openness highlights consolidated in Windows 10, like magnifiers, straightforward entry, and their viability for clients with handicaps. Looking at how clients can perform normal undertakings, similar to recording the board, programming establishment, and performing multiple tasks. Evaluating the effect of updates and advancements in Windows 10 on ease of use and client fulfillment over the long run. Contrasting Windows 10 and past Windows adaptations or other working frameworks to figure out its assets and shortcomings in ease of use. A heuristic Assessment includes ease-of-use specialists reviewing the point of interaction in light of perceived convenience standards or heuristics, to distinguish and focus on convenience issues. Client Testing Includes genuine clients communicating with Windows 10, giving input, and their cooperations are seen to comprehend how they explore, and what issues they experience. In Convenience Principles and Rules include the Microsoft Plan Standards, and Windows Connection point Rules to guarantee a steady and easy-to-understand insight. The investigation includes separating exercises into moves toward survey usability and proficiency. In Openness Assessment Surveying the framework's inclusivity and consistency with availability guidelines to guarantee it obliges clients with incapacities. In Eye Following Investigations Utilizing eye-following innovation to comprehend where clients concentrate and how they explore the connection point, which works on the design and data order. Moreover, usability remains a critical factor in operating system adoption, recent advancements such as AI-based intrusion detection systems by Ahmad et al. (2024) highlight the parallel importance of integrating security mechanisms to ensure both user satisfaction and data protection. Furthermore, AI-driven compliance models in Anti-Money Laundering employ algorithmic detection and adaptive learning to address regulatory complexities (Rajpoot & Raffat, 2024), the SUS-based usability evaluation of Windows 10 provides a systematic and quantifiable framework to detect usability inefficiencies, ensuring that the operating system aligns with established human–computer interaction standards

3. Methodology

The study used survey-based approaches for assessing Windows 10's usability with the SUS scale.

3.1 System Usability Scale (SUS)

This questionnaire offers a rapid and accurate approach to assess Windows 10's usability. Users use remarks about the system's usability to rate it.

3.2 Task-based Survey

Create a survey with a focus on particular Windows 10 tasks. Users can assign a difficulty rating to actions such as configuring the system, altering settings, or carrying out particular operations.

The methodology commonly used in survey forms is called survey methodology. It encompasses various techniques and approaches for designing and analyzing surveys to collect data and information from respondents.

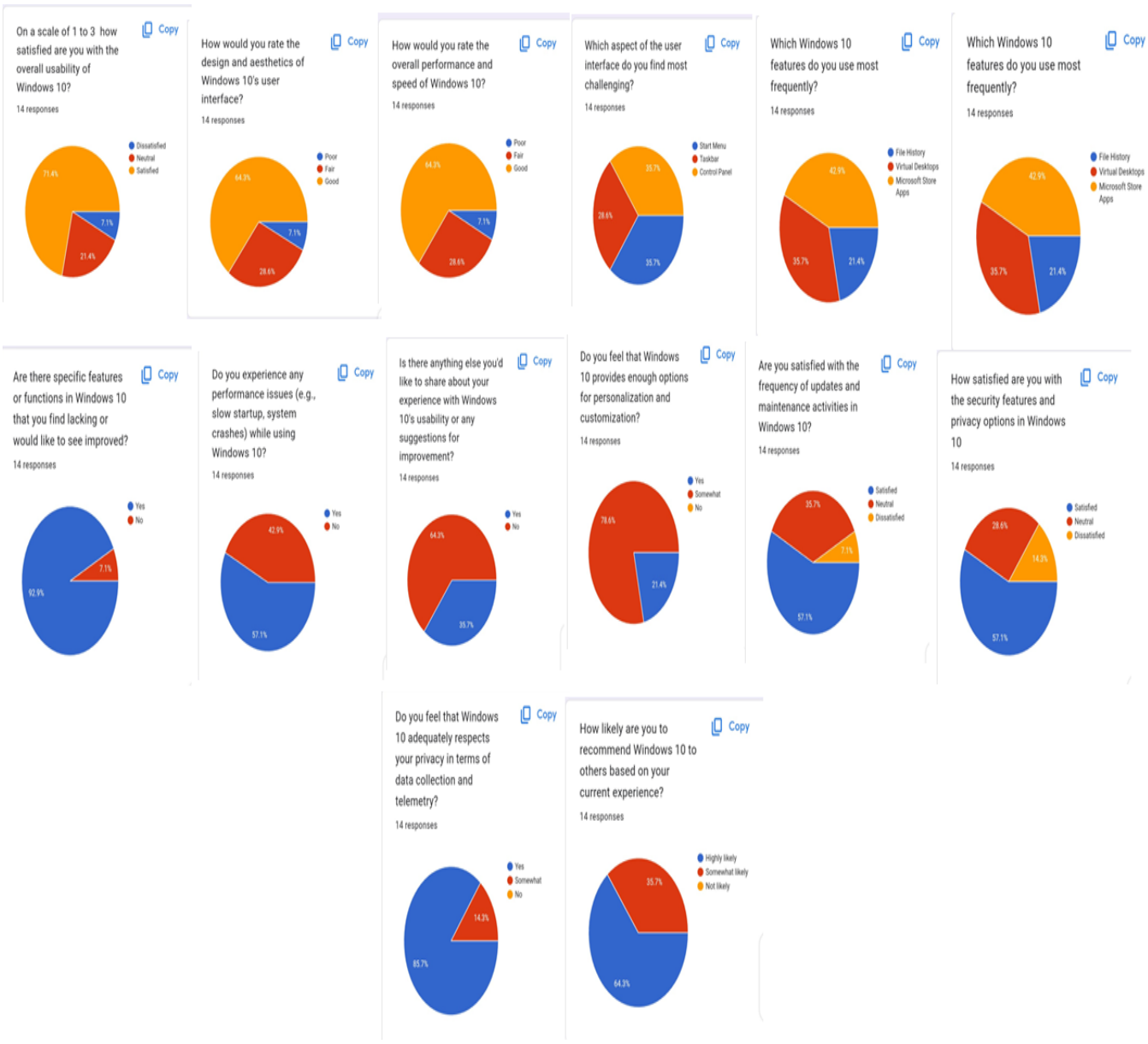
Table No 1: Questionnaire

SR#	Questions	A	B	C
1.	On a scale of 1 to 3 how satisfied are you with the overall usability of Windows 10?	Dissatisfied	Neutral	Satisfied
2.	How would you rate the design and aesthetics of Windows 10's user interface?	Poor	Fair	Good
3.	How would you rate the overall performance and speed of Windows 10?	Poor	Fair	Good
4.	Which aspect of the user interface do you find most challenging?	Start Menu	Taskbar	Control Panel
5.	Which Windows 10 features do you use most frequently?	File History	Virtual Desktops	Microsoft Store Apps
6.	Are there specific features or functions in Windows 10 that you find lacking or would like to see improved?	Yes	No	somewhat
7.	Do you experience any performance issues (e.g., slow startup, system crashes) while using Windows 10?	Yes	No	somewhat
8.	Is there anything else you'd like to share about your experience with Windows 10's usability or any suggestions for improvement?	Yes	No	somewhat
9.	Do you feel that Windows 10 provides enough options for personalization and customization?	Yes	Somewhat	No
10.	Are you satisfied with the frequency of updates and maintenance activities in Windows 10?	Satisfied	Natural	Dissatisfied
11.	How satisfied are you with the security features and privacy options in Windows 10?	Satisfied	Natural	Dissatisfied
12.	Do you feel that Windows 10 adequately respects your privacy in terms of data collection and telemetry?	Yes	Somewhat	No

13.	How likely are you to recommend Windows 10 to others based on your current experience?	Highly likely	Somewhat likely	Not likely

4. Results and Discussion

Figure No 1: Results of SUS-Based Questionnaire about Usability Heuristics



The survey-based study produces the following results with the help of an SUS-based questionnaire. The usability heuristics-based survey results show that there are improvements required in a few areas like accessibility, smoother updates and transparent data policies for further

increasing the satisfaction level of users. On the other hand, efficiency effectiveness, learnability, memorability and design have good approaches in concerning operating systems.

4.1 Analysis

The usability evaluation of Windows 10 using the System Usability Scale (SUS) provided a comprehensive insight into its performance. Key findings include:

User-Friendly Interface: Participants rated the interface high, citing ease of navigation and visual appeal.

Performance: Improved speed and system responsiveness were frequently mentioned as strengths, contributing to positive user experiences.

Security Features: Enhanced security mechanisms such as advanced threat detection and built-in encryption were appreciated by users for ensuring data protection.

Accessibility: The study highlighted significant gaps in accessibility particularly for users with disabilities. Limited support for assistive technologies was noted as a barrier.

Users expressed dissatisfaction with the process and reported interruptions reporting unpredictability at the updates process.

Data Privacy Privacy and Transparency: Concerns regarding privacy policies and transparency in data collection were prevalent, highlighting the need for clearer communication from developers.

Windows 10 has an excellent SUS score reflecting its strengths in interface design performance and security. However, addressing the identified challenges in data transparency and accessibility could further improve its usability and user satisfaction.

5. Conclusion

In conclusion, the study evaluates the Windows 10 operating system on the basis of SUS-based questionnaire. The Windows 10 operating system offers a user-friendly interface, improved performance and enhanced security, there's a need for better accessibility, smoother updates and more transparent data policies to further enhance user satisfaction.

References

Ahmad, R., Salahuddin, H., Rehman, A. U., Rehman, A., Shafiq, M. U., Tahir, M. A., & Afzal, M. S. (2024). Enhancing database security through AI-based intrusion detection system. *Journal of Computing & Biomedical Informatics*, *7*(02).

Aqeel, M., Hamid, K., Muhammad, H., & Iqbal, M. W. (2023). Response surface methodology-based usability evaluation of apps for visually impaired persons. *Jilin Daxue Xuebao Gongxueban (Journal of Jilin University, Engineering and Technology Edition), 42*, 532–545. https://doi.org/10.17605/OSF.IO/7G29Z.

Dopp, A. R., Parisi, K. E., Munson, S. A., & Lyon, A. R. (2019). A glossary of user-centered design strategies for implementation experts. *Translational Behavioral Medicine, 9*(6), 1057–1064. https://doi.org/10.1093/tbm/iby119

Hamid, K., Iqbal, M. W., Nazir, Z., Muhammad, H., & Fuzail, Z. (2022). Usability empowered by user's adaptive features in smartphones: The RSM approach. *Tianjin Daxue Xuebao Ziran Kexue Yu Gongcheng Jishu Ban (Journal of Tianjin University of Science and Technology), 55*, 285–304. https://doi.org/10.17605/OSF.IO/6RUZ5

Hamid, K., Muhammad, H., & Iqbal, M. W. (2022). Usability evaluation of mobile banking applications in digital business as an emerging economy. *International Journal of Computer Science and Network Security, 22*(2), 250. https://doi.org/10.22937/IJCSNS.2022.22.2.32

Hamid, K., Muhammad, H., Iqbal, M. W., Bukhari, S., Nazir, A., & Bhatti, S. (2022). ML-based usability evaluation of educational mobile apps for grown-ups and adults. *Jilin Daxue Xuebao Gongxueban (Journal of Jilin University, Engineering and Technology Edition), 41*, 352–370. https://doi.org/10.17605/OSF.IO/YJ2E5

Hamid, K., Muhammad, H., Iqbal, M. W., Nazir, A., Shazab, & Moneeza, H. (2023). ML-based meta model evaluation of mobile apps empowered usability of disables. *Tianjin Daxue Xuebao Ziran Kexue Yu Gongcheng Jishu Ban (Journal of Tianjin University of Science and Technology), 56*, 50–68.

Hassan, A., Memon, V., Shaikh, F. B., Alahmari, S., Iqbal, M., & Azam, F. (2024, December). Evaluating Datagram Congestion Control Protocol (DCCP) for Real-Time Applications: A Comparative Study with TCP in Multi-Node Networks. In *2024 International Conference on Engineering and Emerging Technologies (ICEET)* (pp. 1-6). IEEE.

Muhammad, H., Iqbal, M. W., Hamid, K., & Nazir, A. (2022). *Usability impact of adaptive culture in smartphones.*

Nazir, Z., Hamid, K., Muhammad, H., & Fuzail, Z. (2023). Voice-assisted real-time object detection using YOLO V4-Tiny algorithm for visually challenged. *Tianjin Daxue Xuebao Ziran Kexue Yu Gongcheng Jishu Ban (Journal of Tianjin University of Science and Technology), 56*, 2023. https://doi.org/10.17605/OSF.IO/APQYH

Peart, D. J., Balsalobre-Fernández, C., & Shaw, M. P. (2019). Use of mobile applications to collect data in sport, health, and exercise science: A narrative review. *Journal of Strength and Conditioning Research, 33*(4), 1167. https://doi.org/10.1519/JSC.0000000000002344

Rajpoot, M. H., & Raffat, M. W. (2024). The AI-Driven Compliance and Detection in Anti-Money Laundering: Addressing Global Regulatory Challenges and Emerging Threats: AI-Driven AML: Compliance Threat Detection. *Journal of Computational Science and Applications (JCSA), ISSN: 3079-0867 (Onilne)*, *1*(2).