Usability Evaluation and Comparison of two leading subscription-based video streaming services, namely Netflix and Amazon Prime Video

A System Usability Scale (SUS) Analysis of Two Popular Streaming Services

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ABSTRACT

Using Human Computer Interaction (HCI) principles, this study intends to comparison the usability of two validating subscription streaming content platforms, Amazon Print Video and Netflix. And during the COVID-19 pandemic, the demand for online streaming has only grown. We performed usability evaluation through SUS (System Usability Scale) based on self-evaluation after using both applications for similar tasks. We managed and analyses the SUS responses to create a comparative score on the user experience of each platform. Our results reveal that Netflix provides a richer content, with higher usability thanks to intuitive navigation, consistent layout, and ease of access to features. Prime Video, while feature-rich, presented more complexity and inconsistency in design. This analysis highlights the importance of user-centered design in enhancing digital streaming experiences.

CCS CONCEPTS • Human-centered computing → Usability testing Human-centered computing → Empirical studies in HCI Information systems → Multimedia streaming

Additional Keywords and Phrases: **Amazon Prime Video, HBO, HCI Principles, Netflix, Subscription Streaming, Survey evaluation.**

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1 INTRODUCTION

Usability is a measurement of the degree to which a specific user in a specific context can use a product or design to achieve a given goal successfully, with effectiveness, and satisfyingly. Designers typically evaluate usability at different points along the course of the development process from wireframes through to final deliverable—to confirm a high-quality user experience. This definition is taken from several conceptualizations of usability. The product oriented view takes into account the ergonomic attributes of the product, while the user-oriented view is interested in mental effort and attitude on the part of the user during product use. The user performance view takes usability into account based on the way the users employ the product, that is, ease of use and realistic acceptability. These perceptions are also complemented by the context-dependent view, whereby usability is considered user dependent or dependent on the specific user or group of users being researched.

The internet era has ensured that entertainment sources such as films, series, and comedy programs are much easier to access. We no longer have to download anything or even use physical media such as CDs. Instead, streaming media such as Netflix and Amazon Prime Video give individuals access to lots of content at any moment simply by paying a subscription fee. Both services are among the most popular today, with many using them on a daily basis including ourselves. However, based on our experience, we encountered a variety of usability issues. For example, search results on Amazon Prime Video do not relate to those on Netflix. Additionally, Netflix has videos play out smoothly even in slower bandwidth, whereas Amazon Prime requires a much higher bandwidth just to have an equivalent experience. Furthermore, playback quality of Amazon is typically poor although downloaded material appears much nicer.

These issues interested us and compelled us to explore the use of such an application in our bachelor's thesis. In our early research, we discovered that few studies have been conducted on this topic, and most of the studies available either use the question of content availability or price rather than usability. While there are a number of studies that do utilize usability, these are not performed using a systematic framework based on established usability guidelines. This gap encouraged us to adopt a more thorough investigation of the usability of Netflix and Amazon Prime Video, rooted in Human-Computer Interaction (HCI) guidelines, to be able to make worthwhile contributions to this fairly recent body of work.

1.1 Aims and Objectives

This work aims to determine which application between Amazon Prime Video and Netflix, best follows usability heuristics and provides the best user experience by applying survey evaluation.

Objectives are as follows:

- Studying and using both applications Amazon prime video and Netflix and then finding the importance of both.
- Exploring all the features of these applications. • Creating user tasks on Amazon Prime Video and Netflix like creating the user accounts, watching a video, downloading any content from the applications.
- To apply the **System Usability Scale (SUS)** as a standardized tool for quantifying and comparing the perceived usability of Netflix and Amazon Prime Video.
- To identify specific usability issues faced by users while interacting with both platforms.
- To compare the overall usability performance of the two platforms based on both qualitative and quantitative data.

1.2 Applications Background

Subscription Streaming Service:

Over-the-top (OTT) media services are media services that provide video content to users directly through the internet without going through traditional cable or satellite television. These services enable streaming of movies, programs, and other media without the need for downloading the media entirely. They need an internet connection and are viewed through internet-connected devices such as smartphones, smart TVs, and computers.

Netflix and Amazon Prime Video are two prominent over-the-top (OTT) subscription streaming services providing users with on-demand access to movies, TV shows, documentaries, and original programming. Both services are international and both provide streaming on a wide range of internet-connected devices including smartphones, tablets, smart TVs, gaming consoles, and web browsers. Netflix, founded in 1997, transitioned from a DVD rental service to a streaming service in 2007 and has become a leader in original content production and user experience design. It has an intuitive, easy-to-navigate interface, adaptive streaming based on bandwidth, and a sophisticated algorithm that makes highly personalized content recommendations. It is also known for having minimal buffering, efficient bandwidth use, and a seamless cross-device viewing experience. Amazon Prime Video, launched in 2006, is offered as a component of Amazon's broader Prime membership but also as a standalone subscription in some markets. It offers a mix of Amazon Originals, third-party licensed content, live events, and an additional feature called Prime Video Channels that allows users to add other streaming subscriptions within the same interface. In contrast to Netflix, Amazon provides the option of renting or purchasing individual titles that are not included in the subscription. That being said, from a usability standpoint, Prime Video has been faulted for having a cluttered interface, an ineffective search engine, and low streaming quality, especially upon playback. Some users also find fault with the interface for lacking intuitive content categorization and being unfriendly to use, especially for beginners.

2 METHOD

2.1 Evaluation

This section outlines how the SUS evaluation method was used to assess the usability of Amazon Prime Video and Netflix. The evaluation aimed to determine which streaming platform provides the best user experience. The System Usability Scale (SUS) was administered to a single participant, who evaluated both platforms. The participant, in this case, provided feedback on their experiences with both services, focusing on aspects such as ease of use, navigation, efficiency, and overall satisfaction. The responses were then analyzed to compare the usability of Amazon Prime Video and Netflix, which helped to identify which platform offers a superior user experience.

Netflix and Amazon Prime Video are among the most popular over-the-top (OTT) subscription streaming services on the internet, offering on-demand streaming of a variety of content such as movies, TV shows, documentaries, and original programming. The two services are available worldwide and can be accessed on a large array of devices from smartphones and tablets to smart TVs, video game consoles, and web browsers. Netflix, established in 1997, initially operated as a DVD rental service before transitioning to streaming in 2007. Since that time, it has emerged as a leader in the production of original content and in the design of user experiences, characterized by an intuitive interface and a sophisticated algorithm that generates personalized recommendations. Additionally, Netflix is recognized for providing minimal buffering, efficient bandwidth utilization, and a seamless viewing experience across multiple devices. Amazon Prime Video, launched in 2006, is included in Amazon's overall Prime membership but is also sold as a standalone subscription in some markets. It offers a combination of Amazon Originals, third-party licensed content, live shows, and other features such as Prime Video Channels, which provide the ability for viewers to subscribe to various streaming services within the same interface. Unlike Netflix, Amazon also provides the option to rent or purchase individual titles that are not part of the subscription.

Content-wise, Netflix has a solid reputation for its bountiful selection of original content, including extremely popular shows like Stranger Things, The Crown, and Narcos. The service also has a wide range of licensed content in numerous genres to offer. Amazon Prime Video, while delivering some popular original series like The Boys, The Marvelous Mrs. Maisel, and Jack Ryan, is more diverse in what it delivers by giving customers access to third-party subscriptions through its Prime Video Channels, allowing customers to customize the experience. While both deliver excellent content, Netflix is typically regarded as the premium pacesetter in the creation of exclusive content. From the perspective of user interface, Netflix has a clean and well-structured design that allows users to discover content with ease. The website methodically categorizes content according to user preference and viewing history, thereby providing a personalized experience. Amazon Prime Video's interface, by contrast, is usually criticized for being complicated and less intuitive. The search engine is not as effective, often giving irrelevant results, and the categorization of content is sometimes hard to follow.

On the streaming quality front, Netflix is widely praised for its adaptive streaming technology that adjusts the video quality according to available bandwidth and thus enables seamless playback with reduced buffering. Additionally, Netflix also provides content in 4K resolution with High Dynamic Range (HDR) for users with compatible devices. Amazon Prime Video, though providing acceptable quality in some instances, has been plagued by criticism for video quality and buffering, particularly in the case of streaming live content or utilized in bandwidth-limited setups. Nevertheless, the streaming quality in Prime Video is considerably better when viewers opt to download content for offline streaming. Furthermore, Prime Video does not include some of the features available on Netflix, like skipping the intro or recap of a series. As far as pricing is concerned, Netflix has three subscription plans: Basic, Standard, and Premium, with varying features such as the number of screens that can be streamed simultaneously and the video quality (HD, Full HD, or 4K). Although Netflix is more expensive than other services, this is well compensated for by its enormous library of original content and enhanced user experience. Amazon Prime Video comes as part of the larger Amazon Prime membership that offers additional benefits such as free delivery, Prime Music, and other such perks. In markets where Prime Video is offered as a standalone service, it tends to be cheaper than Netflix but without the same volume of original content.

Both sites demonstrate support for a wide array of devices, including smart TVs, laptops, smartphones, and streaming devices. Still, Netflix tends to provide a smoother experience on more devices with less playback or interface failure problems. In comparison to this, Amazon Prime Video, although providing support for a great number of devices, at times experiences problems on some platforms, like smart TVs or streaming boxes. In summary, while Netflix excels in terms of user experience, streaming quality, and content, Amazon Prime Video is versatile by way of its add-on functionalities like content renting, third-party channels, and the availability of Prime perks; however, one should point out that its user interface and streaming performance may require some tweaks. Ultimately, the decision between the two services would greatly rely on the user's preference for content selection, cost, and how much interface design and streaming quality are of concern.

2.2 Data Gathering

Data gathering in this usability testing aimed at gauging the user experience of Netflix and Amazon Prime Video using the System Usability Scale (SUS). The process of data gathering involved the acquisition of subjective opinion from a single participant, who provided his thoughts regarding his personal experience with the two services.

2.2.1 Participant

The usability test was conducted on a single user, who coincidentally is both streaming services' reviewer. The participant used both Amazon Prime Video and Netflix like average users. The participant was required to perform everyday activities such as content searching, playback, and navigation in the apps. This allowed for the establishment of an authentic comparison of the usability of both platforms. Data was collected based on the participant's experience without interfering with the responses.

2.2.2 Test Protocol

The test routine was specially formulated so that there would be a fair and controlled comparison of Amazon Prime Video and Netflix as over-the-top streaming websites. The user was requested to use both websites under the same conditions, opening them from the same device using the same internet connection to nullify extraneous factors that could influence usability. A series of common tasks related to streaming was established and assigned, including activities like logging in to the platform, navigating categories, using the search bar to locate specific films or TV shows, playing and pausing videos, adjusting subtitles and playback options, viewing user profiles, and adding content to a watchlist. The tasks were designed to reflect general user interaction and test the general usability of key features relevant to everyday streaming behavior.

In the comparative analysis of Netflix and Amazon Prime Video, particular attention was placed on comparing their user interfaces (UI) to ascertain how design elements affect usability, effectiveness, and customer satisfaction overall. The two services were subjected to a single device a laptop with an internet connection that offered a reasonable testing environment for the purposes of comparison. The user, who was the sole participant, accessed both services through their web-based interfaces, which are popularly used by a significant number of consumers.

Figure 1: Amazon Prime Video is finally revamping its interface, via Tech Advisor. (https://www.techadvisor.com/wp-content/uploads/2022/07/Amazon-Prime-Video-is-finally-revamping-its-interface.jpg?quality=50&strip=all)

Starting with Amazon Prime Video, the interface was tested. After logging in, the homepage displays a more compact design with a combination of included with Prime, rent or buy, and channel-based content. Unlike Netflix, Prime Video lacks clear distinction between subscription-based content and paid content, which confuses users. The top navigation bar comprises broad categories such as Home, Store, Channels, Categories, and My Stuff; though some of these, such as Live TV or Sports, may be less useful for users whose interest is in on-demand content only.

In completing tasks, navigating to a specific genre or filtering just free-to-watch titles required more steps than on Netflix. While Amazon Prime includes unique features like renting or buying additional titles, this feature set can cause cognitive overload for those users who are primarily interested in subscription-based streaming.

At the end of both sets of tasks, users filled out the System Usability Scale (SUS) survey to rate each system on basic metrics of usability, including ease of use, consistency, complexity, and user confidence. Netflix ranked higher in usability because it had a less cluttered design, quicker task execution, and more clear content categorization. Amazon Prime Video, although rich in features, did not rank as well in terms of interface transparency, simplicity, and user guidance.

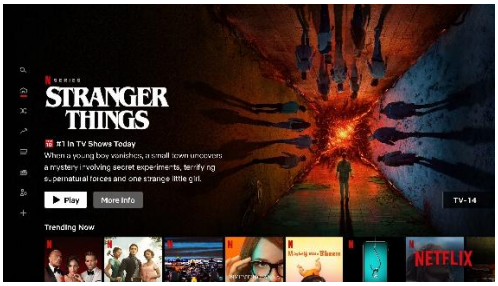

Figure 2: Netflix is testing a new redesigned homepage for its TV app, via Neowin (https://www.neowin.net/news/netflix-is-testing-a-new-redesigned-homepage-for-its-tv-app/)

In contrast, Netflix's interface immediately presents a sleek and elegant look. Logging in, the home page is immediately taken over by a massive banner promoting highlighted or trending content, followed by neatly arranged rows such as "Popular on Netflix," "Continue Watching," and "Because You Watched.". Employing large, high-definition thumbnails along with preview-on-hover functionality greatly improves the web-browsing experience.

The performance of operations on Netflix was seamless and trouble-free. Searching for a particular movie, moving between genres, altering playback quality, enabling subtitles, and adding titles to "My List" involved very little clicking. Each action appeared to be responsive and cleanly integrated. The website's interface is dynamic, reconfiguring itself dynamically according to the content with which one engages.

The System Usability Scale (SUS) questionnaire was administered electronically, and responses were noted upon completion of the testing for each platform. This provided participants with time to reflect on their experiences prior to scoring the ten standardized usability statements. The data gathered using the SUS was then converted into individual usability scores for both Netflix and Amazon Prime Video, forming the basis upon which comparative analysis would be established throughout the subsequent sections of the report.

2.2.3 System Usability Scale Implementation

System Usability Scale (SUS) was used to assess the usability of Netflix and Amazon Prime Video. The SUS survey includes 10 statements intended to measure different dimensions of usability, including ease of use, efficiency, and user satisfaction. The respondent was required to indicate their level of agreement or disagreement with each statement using a 5-point Likert scale ranging from 1. The feedback received from the SUS test was utilized to compute the usability ratings for both websites.

2.3 Scoring Methodology

The System Usability Scale (SUS) was implemented to assess the usability of Amazon Prime Video and Netflix. The SUS consists of 10 statements that the participant must rate based on their experience with each streaming platform. The participant was asked to score each statement on a 5-point Likert scale, where 1 indicates strong disagreement, and 5 indicates strong agreement. The statements are designed to measure aspects of the system such as ease of use, user satisfaction, complexity, confidence, and the need for support.

The specific SUS questions are as follows:

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.

For the evaluation, the participant rated these 10 statements for both Amazon Prime Video and Netflix. The responses were recorded, and the SUS scoring methodology was applied as follows:

- For the odd-numbered questions (1, 3, 5, 7, 9), 1 was subtracted from the response score.
- For the even-numbered questions (2, 4, 6, 8, 10), the response score was subtracted from 5.

The adjusted scores from all 10 questions were then summed, and the total was multiplied by 2.5 to yield the final SUS score for each platform. This score, ranging from 0 to 100, provided an overall measure of usability, which could then be used to compare the relative user experience between Amazon Prime Video and Netflix. The SUS score calculation process involves a mathematical formula that incorporates the previously explained adjustment methods.

$$SUS = [i = 1,3,5,7,9;\ \sum(Qi - 1) + j = 2,4,6,8,10;\ \sum(5 - Qj)] \times 2.5$$

Equation 1: SUS score calculation method

Table 1: The SUS score grading scale

SUS Score Range	Grade	Percentile Range
84.1 - 100	A+	96 - 100
80.8 - 84	A	90 - 95
78.9 – 80.7	A-	85 - 89
77.2 – 78.8	B+	80 - 84
74.1 – 77.1	B	70 - 79
72.1 - 74	B-	65 - 69
71.1 – 72.5	C+	60 - 64
65 - 71	C	41 - 59
62.7 – 64.9	C-	35 - 40
51.7 – 62.6	D	15 - 34
0 – 51.7	F	0 - 14

Source: ResearchGate (https://www.researchgate.net/figure/The-SUS-score-grading-scale-adopted-from-the-study-by-10_tbl1_350586028)

Table 1 presents a detailed grading scale for the System Usability Scale (SUS) scores, which helps in interpreting the usability performance of a digital system or application. The SUS score range is segmented into twelve distinct categories, each associated with a letter grade (from A+ to F) and a corresponding percentile range.

3 RESULT AND DISCUSSION

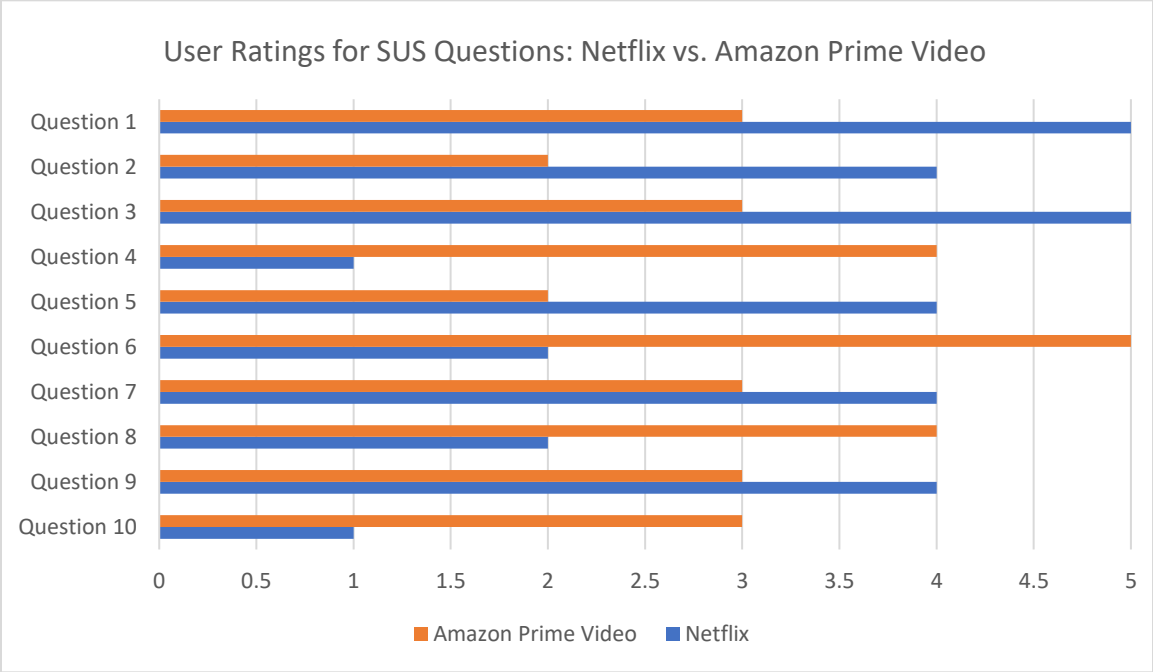

Figure 3: User Ratings for SUS Questions, Netflix vs. Amazon Prime Video

Figure 3 presents the individual SUS ratings given by the user for each of the ten standard usability questions comparing Netflix and Amazon Prime Video. For Question 1, Netflix received a score of 5 and Prime Video received 3, indicating that while both platforms were seen as generally useful, the user showed a slightly stronger inclination to use Netflix frequently. A clearer contrast appears in Question 2, where Netflix scored 4 compared to Prime Video's 2. This suggests that Prime Video was perceived as more difficult to use, likely due to its busy interface and the added complexity of features like purchases and rentals, which can be confusing to new users. Netflix, on the other hand, was noted for its cleaner and more intuitive design. In Question 3, Netflix achieved a perfect score of 5, highlighting its ease of use, whereas Prime Video received a 3, likely due to its more complicated menu structure. Question 4 further emphasized this disparity; Netflix scored 1, suggesting little need for technical assistance, while Prime Video's score of 4 indicates the user found it more difficult to navigate without help. In Question 5, which evaluates system integration, Netflix scored 4 and Prime Video scored 2. This suggests that while both systems may function well once learned, Netflix is more seamlessly integrated. Question 6 showed Netflix with a score of 2 and Prime Video with 5. This implies the user found Prime Video inconsistent in design, as its layout and interaction patterns varied across devices. For Question 7, Netflix scored 4 while Prime Video scored 3, showing that Netflix was easier to learn for new users. In Question 8, which assesses how cumbersome the system feels, Netflix again outperformed Prime Video, with scores of 4 and 2 respectively, suggesting Netflix's interface felt smoother and more responsive. In Question 9, Netflix scored 4 while Prime Video scored 3, reflecting higher

user confidence when using Netflix. Finally, for Question 10, Netflix scored 1 and Prime Video scored 3, showing that Netflix required less prior learning to operate efficiently. Overall, Netflix consistently received higher ratings across the majority of questions, highlighting its superior usability and more user-friendly design.

After gathering the responses, the SUS score was calculated using the standardized method. The scores are as follows:

Netflix:

$[((5-1) + (5-1) + (4-1) + (4-1) + (4-1)) + ((5-4) + (5-1) + (5-2) + (5-4) + (5-1))] \times 2.5$

$= [(4 + 4 + 3 + 3 + 3) + (1 + 4 + 3 + 1 + 4)] \times 2.5$

$= (17 + 13) \times 2.5$

$= \mathbf{30 \times 2.5 = 75.0}$

Amazon Prime Video:

$[((3-1) + (3-1) + (2-1) + (3-1) + (3-1)) + ((5-2) + (5-4) + (5-5) + (5-2) + (5-3))] \times 2.5$

$= [(2 + 2 + 1 + 2 + 2) + (3 + 1 + 0 + 3 + 2)] \times 2.5$

$= (9 + 9) \times 2.5$

$= \mathbf{18 \times 2.5 = 45.0}$

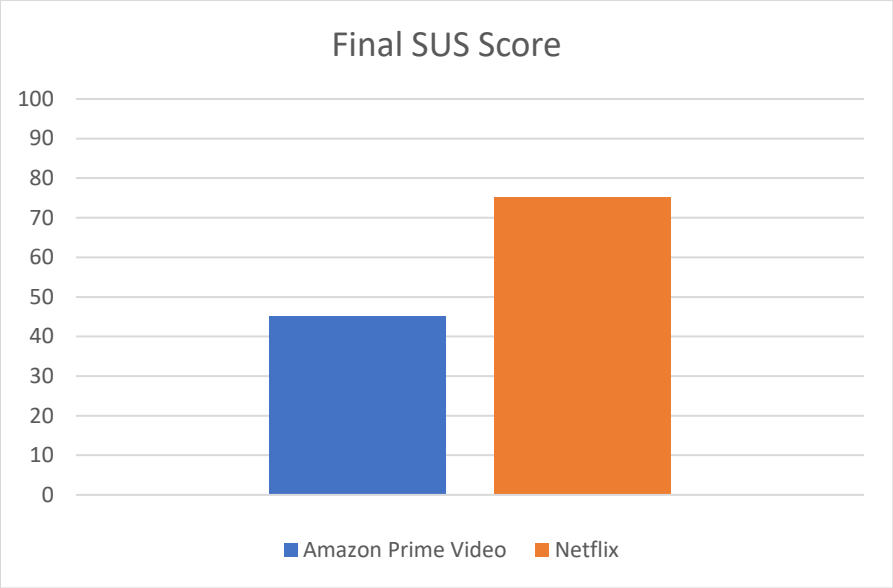

Figure 4 : The Final System Usability Scale (SUS) Score, Netflix vs. Amazon Prime Video

Figure 4 illustrates the final System Usability Scale (SUS) scores for both Amazon Prime Video and Netflix based on user evaluation. According to the results, Netflix received a significantly higher score of 75.0, whereas Amazon Prime Video obtained a lower score of 45.0. This indicates that Netflix has a more user-friendly interface and better usability overall compared to Amazon Prime Video.

Referring to the SUS grading scale, the score for Netflix falls within the "B" grade, which suggests good usability with minor areas for enhancement. On the other hand, Amazon Prime Video falls into the "F" grade, indicating poor usability and a need for considerable improvement in terms of user experience design.

These results were calculated based on user responses to the standard 10-question SUS questionnaire, where each platform was evaluated individually. The difference in scores reflects the participant's experience interacting with the platforms, such as ease of navigation, clarity of layout, and overall satisfaction.

4 CONCLUSION

From the usability test carried out through personal testing and the System Usability Scale (SUS) approach, one can conclude that Netflix offers a more efficient and user-friendly experience than Amazon Prime Video. Both of the services were subjected to the same conditions and the same set of tasks, such as content searching, playback, and interface navigation. The SUS scores indicate that Netflix's interface is more intuitive, more navigable, and less technically effortful to use effectively.

Though Amazon Prime Video is feature-rich, with options like rentals and Prime membership integration, it has been found to have a slightly cluttered interface, less responsiveness in search, and occasional playback issues. Netflix, in comparison, performed better in content organization, seamless playback, and accessibility across platforms.

While both sites provide excellent streaming experiences, the findings of this specific usability test indicate that Netflix is cleaner and more convenient to use on a regular basis, especially for users who prefer simplicity and consistency in what they view.

5 APPENDIX

Throughout the usability evaluation and analysis process, various prompts were utilized to assist in data collection, content generation, and the overall development of insights. These prompts were primarily directed toward AI tools to streamline the research and support the report-writing process. One of the main tools used was ChatGPT (OpenAI), which played a key role in generating detailed textual analysis, paraphrasing content for clarity, formulating relevant questions aligned with the System Usability Scale (SUS), summarizing the outcomes of the evaluation, and refining the academic tone and structure of the report. The AI tool significantly contributed to enhancing the efficiency and coherence of the documentation process.

Example Prompts Used:

- Summarize the comparative usability performance of two streaming platforms in an analytical tone suitable for academic reporting.
- Suggest improvements for enhancing the clarity and coherence of a section discussing interface design.
- Describe key usability features that differentiate modern streaming services in the context of user experience.

6 REFERENCES

[1] "What is Usability?" The Interaction Design Foundation. https://www.interactiondesign.org/literature/topics/usability/ (accessed Apr. 08, 2022).

[2] "Experts in usability, UX and interaction design Usability Partners." https://www.usabilitypartners.se/ (accessed May 11, 2022).

[3] "Detailed Comparison between Netflix and Amazon Prime Video." https://startuptalky.com/netflix-vs-amazon-prime-how-to-compare/ (accessed Apr. 18, 2022)

[4] "Amazon Prime UX and Netflix UX – A Comparative Study," CronJ, Sep. 17, 2020. https://www.cronj.com/blog/amazon-prime-ux-and-netflix-ux-a-comparative-study (accessed May 11, 2022).

[5] "Netflix," Wikipedia. May 10, 2022. Accessed: May 10, 2022. [Online]. Available: https://en.wikipedia.org/w/index.php?title=Netflix&oldid=1087110085

[6] "Amazon Prime Video," Wikipedia. May 03, 2022. Accessed: May 10, 2022. [Online]. Available: https://en.wikipedia.org/w/index.php?title=Amazon_Prime_Video&oldid=1085981922 .