RESEARCH IN PROGRESS

User's Dilemma: A Qualitative Study on the Influence of Netflix Recommender Systems on Choice Overload

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Abstract In the digital era, where choices saturate daily life, the phenomenon of choice overload becomes a significant concern in consumer behavior and psychology. Recommender systems, exemplified by Netflix's sophisticated model, play a transformative role in navigating the vast landscape of digital entertainment. This qualitative study examines the impact of recommender systems on choice overload through 12 semi-structured interviews with Netflix users, revealing the intricate dynamics between personalization algorithms and user decision-making processes. The study is guided by the following research questions: (1) How does the Netflix recommendation system influence users' experiences of choice overload and ease of decision-making? (2) To what extent do users perceive Netflix's recommended content as appealing and diverse, and how reliant are they on these recommendations for content selection? (3) How do user interactions with Netflix's recommendation system, including user feedback, impact variables such as search time, choice effort, and choice satisfaction? The findings reveal a notable absence of explicit user feedback and the presence of choice overload in Netflix users. This is evident in prolonged search times, heightened choice effort, and moderate satisfaction levels, coupled with perceptions of unattractiveness and limited diversity in the recommended content. Negative emotional responses during content selection further underscore the challenges users face on the platform. Paradoxically, this gives rise to a potential "user's dilemma," as the study exposes a high reliance and trust in recommendation lists. However, this reliance also results in users frequently experiencing frustration and disappointment when recommendations fail to meet expectations. The study provides valuable insights into the nuanced interactions between users and the Netflix platform and offers a foundational framework for ongoing refinement of recommender systems in the ever-evolving landscape of streaming services and emphasizes the need for recommendation lists to strike a delicate balance between effective guidance and user exploration.

Keywords Choice overload · Decision-making · Recommender systems · Recommendation lists · Streaming platforms · Netflix · User experience

Introduction

In the contemporary digital era, the ubiquity of choices has become an inherent aspect of daily life. Whether individuals are deciding on the next binge-worthy series or selecting the ideal dress for an upcoming event, they consistently face a multitude of decision-making opportunities. Despite the apparent advantages of having numerous options, this abundance can give rise to a phenomenon known as choice overload or "the paradox of choice," extensively discussed in the realms of consumer behavior and psychology. Choice overload is characterized by the heightened difficulty and discomfort individuals experience when confronted with an extensive array of choices (Iyengar & Lepper, 2000; Schwartz, 2004). Within this context, recommender systems have revolutionized the presentation and navigation of choices, particularly in the realm of digital entertainment.

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Netflix, a prominent global streaming platform, stands at the forefront of this transformation with its sophisticated recommender system. This system, utilizing advanced algorithms and user data, personalizes content recommendations. Known as a hybrid model of content-based and collaborative filtering, Netflix's recommender system analyzes users' historical viewing behaviors, preferences, and interactions with the platform to suggest a tailored selection of movies and TV shows (Chong, 2020). While Netflix's recommender system undeniably succeeds in enhancing user engagement and content discovery, as evidenced by the company's data showing that 80% of streaming hours originate from the homepage recommendation system, it raises a crucial question: Does this system effectively alleviate or exacerbate choice overload among its users? This qualitative study seeks to explore the impact of Netflix's recommender system on choice difficulty, elucidating the intricate dynamics between personalization algorithms and user decision-making processes. Conducting semi-structured interviews with Netflix subscribers, the research aims to delve into the user's perspective on Netflix's recommender system. The objective is to investigate users' search and selection processes on the platform, identifying whether they experience any level of choice difficulty or information overload during platform use and understanding how this influences their decision-making process. Through this inquiry, the intention is to provide valuable insights that can inform the design of recommender systems and enhance user experiences in the digital content consumption era.

Theoretical Framework

The paradox of choice, as described by Schwartz (2004), highlights the phenomenon where an increase in available options leads to a decrease in perceived benefits, resulting in reduced satisfaction and increased regret during decision-making. In this contemporary world, marked by an abundance of choices, this paradox has become a significant concern, suggesting that an excess of options can negatively impact decision-making and satisfaction (Iyengar & Lepper, 2000). Various factors, such as option attractiveness, consumer expertise, time pressure, and product type, contribute to the potential exacerbation or alleviation of choice overload (Schwartz, 2004).

Choice overload can affect variables such as choice effort, quality, and satisfaction, with increased emotional and cognitive costs potentially leading to negative emotions like regret (Schwartz, 2004). Choice effort is typically measured by indicators like the time taken to make a decision or the extent of product search (Xiao & Benbasat, 2007). Choice quality can be gauged by assessing a consumer's confidence in their decision, for example, whether they would change their choice if given the opportunity (Haubl & Trifts,

2000). Choice satisfaction reflects the consistency between a consumer's expectations and the actual performance of the chosen option (Xiao & Benbasat, 2007). It is crucial to evaluate satisfaction not just at the final purchase stage but throughout the entire decision-making process, including the stages of information search, evaluation, and comparison of alternatives (McKinney et al., 2002).

The digital era, particularly in domains like e-commerce, streaming, and social media, has exacerbated choice overload, prompting the emergence of recommender systems to assist users in navigating vast arrays of choices (Xiao & Benbasat, 2007). Recommender systems play a pivotal role in supporting decision-making, mitigating information overload, and enhancing choice satisfaction (Pu & Chen, 2011; Ricci et al., 2011). Essential requirements for effective recommender systems, outlined by Tintarev and Masthoff (2007), include transparency, scrutability, trust, decision-making enhancement, and user satisfaction. Transparency involves clear explanations of system operations and recommendations, scrutability enables user assessment and correction, and trust boosts user confidence in the system.

Studies by Bollen et al. (2010), Willemsen et al., (2011, 2016), and Knijnenburg et al. (2012) have explored the impact of diversity in recommendation lists on decision-making processes. Their findings suggest that a well-balanced blend of attractiveness and diversity can mitigate choice difficulty, reduce the likelihood of choice overload, and enhance the overall user experience with recommender systems. The studies highlight that choice difficulty is more pronounced in the presence of large, highly appealing item sets lacking diversity, as making trade-offs and comparisons becomes challenging (Bollen et al., 2010).

Efficient recommender systems, like that of Netflix, address decision-making challenges by suggesting items aligned with user preferences, introducing novelty, ensuring diversity, and enhancing overall user satisfaction (Gomez & Hunt, 2015). The Netflix recommender system, a blend of content-based and collaborative filtering, analyzes user data, viewing history, and preferences to curate a personalized viewing experience. The Netflix Recommendation Engine (NRE) operates through algorithms that customize content recommendations based on historical data and collaborative filtering (Pajkovic, 2021).

User interactions on Netflix, such as rating titles, adding to watchlists, setting reminders, and using personal profiles, generate data that power the platform's algorithms (Gomez & Hunt, 2015), highlighting the importance of user feedback. The more users engage with the platform, by clicking, searching, and watching, the more data the recommender system can extract, leading to increasingly accurate and personalized recommendations (Pajkovic, 2021).

While the recommender system enhances user engagement, potential negative aspects must be acknowledged.

These include the "cold start" problem, which occurs when there are insufficient data about user preferences, especially for new users. Privacy concerns are also significant due to the extensive collection of user data (Lu et al., 2020; Ricci et al., 2011). Feedback loops and filter bubbles can occur, where the algorithm reinforces existing preferences and limits exposure to diverse content. Overdependence on algorithms, as noted by Banker and Khetani (2019), may lead consumers to blindly trust recommendations without evaluating their quality, potentially harming users' well-being. The Netflix recommender system aligns with the company's goal of maximizing engagement, which also reflects financial interests. To sustain this engagement, the platform may prioritize content that encourages users to return or extend their viewing time. However, this content does not always align with users' specific tastes, raising concerns about the balance between user satisfaction and profit maximization (Pajkovic, 2021). Understanding the intricacies of the Netflix recommender system is crucial for both users and the platform, especially as these systems continue to evolve. Exploring the impacts of recommender systems on user behavior and content consumption remains a valuable area for future research.

The Current Study

This qualitative study aims to explore how Netflix's recommender system influences choice overload experienced by its users. It seeks to understand how Netflix's recommendations shape users' decision-making processes and affect their emotional responses and behavioral outcomes. Given Netflix's global reach, with over 238 million users as of the second quarter of 2023 (Statista, 2023), and the fact that its recommendation system accounts for approximately 80% of the total hours streamed on the platform (Gomez & Hunt, 2015), Netflix offers a pertinent context for investigating these dynamics.

While prior research has extensively examined recommender systems, including Netflix's, it has primarily focused on technical aspects and algorithmic complexities, often neglecting critical consumer perspectives. This study addresses this gap by emphasizing user experiences through qualitative methods, specifically through semi-structured interviews.

The study will investigate factors related to choice overload in the context of selecting content to watch on Netflix. These factors include ease of decision-making, the diversity and attractiveness of the content catalogue, the extent of user feedback, satisfaction with selected content, and overreliance on the recommender system. The aim is to determine whether users experience a streamlined selection process or encounter increased choice complexity due to

Netflix's recommendations (e.g., Pajkovic, 2021). This will be explored through the following research questions:

(1) How does the Netflix recommendation system influence users' experiences of choice overload and ease of decision-making?
(2) To what extent do users perceive Netflix's recommended content as appealing and diverse, and how reliant are they on these recommendations for content selection?
(3) How do user interactions with Netflix's recommendation system, including user feedback, impact variables such as search time, choice effort, and choice satisfaction?

Methodology

Participants and Procedure

The study comprised 12 Netflix users in Colombia, aged between 30 and 36 years ($M = 32.8$, $S.D. = 1.9$), with 7 of them being females (58.3%). Gender was not a primary focus during the interview selection process, but it was preferred to maintain an equal gender proportion in order to ensure greater diversity within the participant pool. Participants had diverse occupations and work fields, including sales, finance, engineering, public relations, and graphic design. The research sample was obtained using non-probabilistic sampling, specifically employing the convenience approach. Potential participants were enlisted by publishing a message on an ex-alumni platform of a Colombian university. This message included a description of the study's objectives and purposes, with no incentives or contributions offered to participants. It was explicitly stated that participation was voluntary. Throughout the study, interviews were conducted only with participants who reported frequent use of the platform to focus on typical Netflix users (60% of the participants reported watching Netflix more than twice per week, while 40% reported using the platform more than three times per week). Additionally, the study specifically targeted adults between the ages of 30 and 40, aligning with research indicating that the median age of Netflix's core subscribers falls between 35 and 44 (True List, 2023). In total, 12 participants who met these criteria agreed to participate in the study. The interviews were conducted via the Google Meet platform, and the discussions were transcribed, with sensitive data omitted. With the prior consent of the participants, only the audio of the interviews was recorded, and a numerical code was assigned to each participant to protect their privacy.

Addressing ethical concerns that commonly emerge in qualitative research, it is imperative that participants are

provided with clear and concise information about the project and their role before participating in the research (UK Statistics Authority, 2022). Each participant received detailed information about the study's objectives and their rights as research participants. These rights involved privacy and anonymity, with an assurance that their identities would remain confidential, known only to the researcher. Additionally, it was made clear that their interview transcriptions would be accessible solely to the researcher and, if necessary, the thesis mentor. Furthermore, participants were informed of their right to withdraw their information at any point if they chose to do so.

A semi-structured interview protocol was employed to evaluate the experiences of users regarding choice overload when using the Netflix platform and to investigate the influence of the recommendations list on choice difficulty and related factors. Following the guidance provided by the Harvard "Strategies for Qualitative Interviews" published in 2009, the interview commenced with an introduction of the interviewer, followed by a brief explanation of the interview's purpose and motivation. Warm-up questions were posed at the outset, while the core questions were strategically positioned in the middle and toward the end of the interview, allowing trust to develop between the researcher and the interviewee. Throughout the interview, a combination of direct questions and follow-up questions was employed, accompanied by attentive listening to elicit valuable responses. The questions were constructed to be open-ended, providing ample space for the interviewee to elaborate on their thoughts regarding the discussed topics.

The interview questions aimed to explore users' experiences while navigating and selecting a new movie or show to watch. These open-ended questions covered a range of topics, including perceptions of the size of the Netflix catalogue, the diversity and attractiveness of recommendations, user feedback, the ease of decision-making, and the emotions experienced during interactions with the platform.

The interview schedule was divided into various sections, each addressing specific aspects or variables:

(A) Interaction with the Netflix Recommendation System (sample questions included: "Do you use features like adding titles to your watchlist or rating the content you watch?"; If not, "What would you attribute as the reason for not using these system features?").

(B) Current levels of choice overload while using the platform (sample questions included: "Can you describe the process from the moment you sit on the couch until you make your selection?"; "When you enter the platform and see the number of available options, how do you feel?"; and "Have you ever given up on the task of choosing something to watch, meaning you've exited Netflix before making a decision?").

(C) Perception of Recommended Content (sample questions included: "Do you think the content recommended on Netflix is attractive to you?"; "Do you think the recommendations are diverse?").

(D) Influence of Netflix Recommendations on content selection (sample questions included: "How often do you choose something from the recommended lists?"; "How do you think recommendation lists affect variables such as time spent searching, choice effort, and choice satisfaction?"; and "How would you feel if Netflix removed the recommendation system?").

A pretest was conducted to address potential issues with the interview guide, such as question quantity, terminology simplicity, and data collection procedures. The goal was to ensure that questions did not confuse respondents (Hurst et al., 2015). The pretest involved two individuals who were not participants in the main study and aimed to verify whether the questions effectively addressed the research objectives and also to enhance the interviewer's confidence. As a result of this pretest, visual aids (i.e., showing a Netflix main page) were added to two questions to provide context and improve participant understanding. Additionally, in cases where clarification was necessary, short definitions of specific concepts were provided to ensure participants understood the questions (e.g., simple definitions for choice effort, choice satisfaction, attractiveness, diversity, recommender system, among others). Furthermore, three unclear questions were removed, and five new questions were introduced, resulting in a revised guide consisting of 20 questions.

The interviews took place in August 2023 (conducted via the Google Meet platform), with participants communicating in their native language, which was Spanish. Quotations included in this report were translated into English for reference. On average, these interviews had a duration of approximately 20 min. The interview sessions were audio-recorded and later transcribed to facilitate the subsequent analysis.

Data Analysis

In this study, all interviews underwent audio recording and subsequent transcription through an online speech-to-text conversion application. The data analysis followed a thematic analysis approach, as outlined by Braun and Clarke (2006), encompassing six key phases. These phases encompassed the initial familiarization with the data, the generation of initial codes, the identification of recurring themes, the comprehensive review of these themes, the subsequent definition and naming of said themes, and finally, the creation of the research report. Additionally, to aid in the coding and retrieval of qualitative data, the study employed ATLAS.ti (Web Version) as a supplementary tool. According to

Braun and Clarke (2006), the primary objective of thematic analysis is the identification of themes or patterns within the data, specifically emphasizing those that hold significance or are noteworthy. These identified themes are then applied to address the research questions and provide insights into relevant issues. It is crucial to emphasize that thematic analysis goes beyond a mere summary of the data; instead, it involves the processes of interpretation and sense-making. The chosen analytical approach followed to a top-down, or theoretical thematic analysis, as prescribed by Braun and Clarke (2006). This methodology is driven by the specific research question(s) and the analyst's focus, characterized by a detailed analysis of particular aspects of the data rather than an extensive description of the overall dataset. This approach was selected because the research has already established a theoretical framework, and the analysis is guided by the predefined research questions. Moreover, the analysis adopted a thematic analysis at the latent level, delving beyond the semantic content of the data. At the latent level, the analysis extends beyond the surface-level statements and begins to identify and examine the underlying ideas, assumptions, and conceptualizations that are theorized to shape or inform the semantic content of the data (Braun & Clarke, 2006). In accordance with the six-phase approach, in the first stage,

a repeated reading of the data was performed, and a search for meanings and patterns was initiated. During this phase, notes were taken along with initial coding ideas. In the second stage, the data were organized in a meaningful manner, building upon the initial coding ideas established in the previous step. For instance, topics such as negative feelings associated with choice overload while using the platform, the perception of receiving unattractive recommendations, and the frequent use of Netflix recommendation lists were consistently encountered in most of the interviews. These topics were highly pertinent to the research questions. Each transcript was systematically worked through, with every text segment relevant to or directly addressing the research questions being coded. New codes were generated, and in some cases, previous ones were modified. The emerging codes from this step are presented in Fig. 1.

In the third phase, the analysis shifted its focus toward broader themes rather than individual codes. Various codes were grouped into potential themes, and all relevant data extracts associated with these themes were compiled. In the subsequent stage, the preliminary themes identified in the previous phase underwent a comprehensive review, modification, and refinement process. Some themes were either eliminated or integrated into new ones. Furthermore,

Fig. 1 ATLAS code distribution view

the data linked to each theme were revisited to verify its alignment with the respective theme. During Stage five, the final refinement of the themes occurred, encompassing the definition of theme names and descriptions, together with a thorough analysis of the data within each theme. This analysis involved an examination of the themes both in isolation and in relation to each other. In addition, sub-themes were identified to establish a more organized framework for the collected insights. Following this process, four major themes emerged from the interviews: User Feedback, Perceptions of Choice Overload when using the platform, Perceptions of Recommendations, and the Influence of Recommendation Lists on decision-making. The themes are summarized in Fig. 2.

Results

Theme 1: User Feedback

Use of Feedback Features

Regarding their level of interaction with the system, all participants reported using a personal profile to watch content. Half of them (6) mentioned that they add content to their watchlist ("My List"), while the other half stated that they do not utilize this feature. Among those who use the "My List" feature, only one participant mentioned consistently removing watched content from the list, while the remaining five participants stated that they rarely or never updated

their watchlist and did not remove content they had already viewed:

"Well, I do it sometimes, but honestly, I tend to forget". Participant 3.
"Not really… well, sometimes I do, but not immediately. When I remember to check the list, I go through it and remove everything I've already seen. But it's not something I do constantly; maybe once per year or so". Participant 12.

Regarding content rating (thumbs up or thumbs down), the majority of participants, specifically, 10 out of 12, mentioned that they did not use this feature:

"Well, to be honest, I rarely do that. Only when a movie is really good I do rate it". Participant 4.
"No, I never really pay attention to that". Participant 5.

These responses highlight that participants are not providing substantial feedback to the system, which could potentially impact the accuracy of the recommendations.

Causes of Feedback Absence

When questioned about why they refrain from providing feedback to the system, such as not using the "My List" or not rating content, many participants cited a lack of interest or a lack of understanding regarding how these features function and their significance. Others simply found it easy to forget to engage with these features:
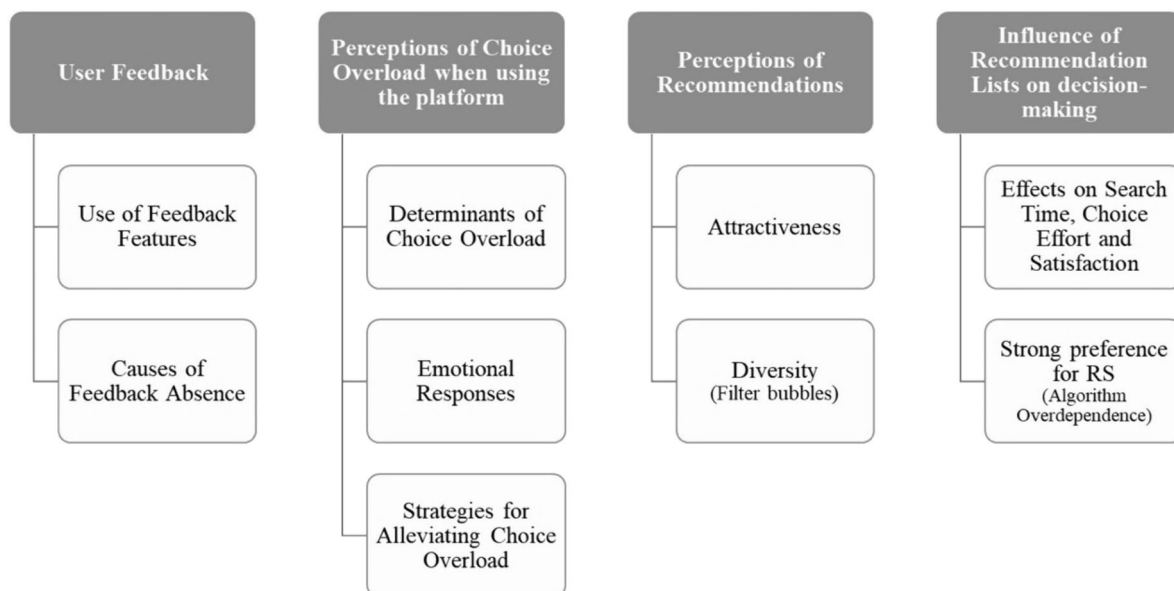
Fig. 2 Themes and sub-themes

"It doesn't seem very useful to me. Honestly, I've never really thought about it, but I don't interact much with those features on the platforms". Participant 1.

"I never really got the hang of it because it doesn't seem very intuitive, so I don't rate them because it's not very easy to use". Participant 4.

"I don't know. I never really thought about it. Maybe I just felt lazy to do it". Participant 6.

"I'm not very good with technology. I often get confused with streaming platforms, so I just do the basics, you know?… Really, I'm not sure how to use those features, like the lists". Participant 8.

"I think I forget, like… for example, the thumbs up or down option appears even before you start watching the program. So, it's like you forget to go back and rate it after you've finished watching it". Participant 10.

"I don't rate content because I don't feel like it makes any difference in the content that becomes available to me, and I don't remove movies I've watched from my list because I usually forget to do it". Participant 11.

"I think I don't use them because I often forget, or I'm not entirely sure if it makes a difference… I don't believe it changes anything". Participant 12.

According to these participants, there is a need for system improvements aimed at enhancing the user-friendliness and appeal of these feedback features. Furthermore, these insights reveal that there is still some confusion regarding how these interactions can impact the content displayed to the user and, consequently, the overall viewing experience.

Theme 2: Perceptions of Choice Overload when Using the Platform

Before delving into questions specifically related to the recommender system, participants discussed their general experiences with Netflix. This segment of the interview unveiled that all users had encountered some degree of choice overload when using the platform. It also led to the identification of factors contributing to this choice overload, common emotional responses, and strategies employed by Netflix users to alleviate it.

Determinants of Choice Overload

Catalogue Size, Higher Choice Effort, and Longer Search Times:

As factors contributing to choice overload, the majority of the participants (10 out of 12) pointed out that the platform featured an excessive number of options to choose from. They linked this factor to increased search times and, consequently, greater choice effort. Some statements specifically emphasized the vast size of the catalogue:

"I would say it's a bit challenging to choose on Netflix because there's so much available, but sometimes not much of it attracts my interest". Participant 4.

"Well, I think the catalogue it's good, but it's quite extensive, right? Maybe it's too much". Participant 5.

"When I open the platform, I start looking at everything, trying to decide what to watch first. So, it does affect me (the size catalogue) because I have to choose from that large number which one to watch and which not to". Participant 9.

"I'd say it's… well, it's quite extensive, like, there are many series and movies available. I think it's a broad catalogue, but… but maybe not always filled with new and exciting options". Participant 10.

"Having so many options on the platform makes the process more difficult because I always evaluate all the available options before making a decision to try and choose the best one possible". Participant 11.

"Well, it's actually quite extensive (the catalogue). There are many series and movies available. It's a vast catalogue, but it might not be as fresh". Participant 12.

Only two participants mentioned that they perceived the catalogue as small or limited. Participant #7, in particular, explained the reason for this perception:

"… there are many articles on the internet about "what you haven't seen," "closed lists" … like "Netflix's secret catalogue", things like that, you know? So, it gives you the impression that there's a much wider selection of movies and series than what is shown in your usual lists. So, I feel like the way it displays the series gives you the impression that the catalogue is smaller than what the application could actually offer… that just gives me the feeling that the catalogue is very limited". Participant 7.

Other statements focused on the high level of choice effort required while browsing through the catalogue. Participants described how challenging it was to make a decision and mentioned reviewing multiple pieces of information about the content before making a selection:

"For example, when I want to watch a series, I first check how many episodes it has. If there is a lot of episodes, I also look at the duration of each episode. Before starting, I also read the description of the series. Then, I start watching… But I always, always, check how many episodes there are. When it comes to movies, it's different because I always go through the process of reading the description and checking the category it's in… So, yes, I typically go through this before selecting". Participant 8.

"I believe I spend time scrolling, looking at images, and reading descriptions to see if I like something.

I watch at least five trailers before making a choice because if something doesn't immediately grab my attention, I need to see more". Participant 12.

Furthermore, participants indicated that they experienced prolonged search times while using the platform. All participants mentioned that they took at least 10 min just browsing and looking at the different options, with search times up to 30 min. The prolonged search times were also related to finding new content on the platform (not something they had watched before). Below are some significant statements:

"Usually, when it's something new, something I haven't seen and I'm not sure what to watch, it takes me a long time. So, I browse and browse, trying to find something that might catch my interest… It usually takes me a long time when it's something I'm not familiar with". Participant 1.

"I keep scrolling to see if there's anything in the "Top 10" or some other list. But I'd say I usually take about 10 min to make a choice". Participant 4.

"Since I'm so indecisive, I think it can take me up to 20 min to decide what to watch". Participant 7.

"If it's something I haven't decided on, something that hasn't been recommended to me, and I'm going to explore the system or look at the list, I'd say it takes me at least 15 min to decide what I want to watch". Participant 8.

"I think it takes a lot of time. Sometimes, I'm not even aware, and when I look at the clock, it's been like 30 min since I opened Netflix, and I still haven't found anything". Participant 11.

These comments underscored how the majority of users perceived the catalogue as extensive and how, in combination with unattractive or uninteresting recommendations, it made decision-making more challenging, increasing choice effort and search time.

System Interface:

Regarding the interface's visual design, two participants mentioned that the arrangement of lists on the platform was another factor contributing to choice overload. Although this was only mentioned by few participants, these insights were included due to their relevance, as the influence of the visual interface was also explored in the background section as a potential cause of choice overload. Their statements were as follows:

"For me the lists or tags aren't easy to navigate… I think that more than the catalogue being larger or smaller, for me, the issue lies more in how the app shows that catalogue, because I feel some lists should not always appear at the top or you should have the option to rearrange this list order, you know what I mean?… Perhaps, I don't know… for example, I like

horror movies, so it would be better the app had an option that allowed me to remove or prioritize horror movies and removing other comedy or romantic movies from my lists that I probably will never watch… that would make the experience better for me". Participant 7.

"I think the catalogue kind of confuses me. In the sense that there are things to watch horizontally and vertically. Vertically, there are these predefined lists that Netflix puts up like New Releases, Most Popular, and so on… So, you have to look at those, but I don't always want to see them, so I feel obligated to go through these lists first. It frustrates me that I can't remove them. And for example, if you find something in these vertical categories that might interest you, them you have to go to the horizontal part afterward… So, for me, it's weird. I don't feel like this way of presenting information helps at all". Participant 12.

These statements indicated that some users desired more interaction with the system, such as the ability to rearrange or remove options that appear on their main page. Additionally, these users found the way the lists were presented to be confusing, which affected their ability to navigate the system effectively.

Emotional Responses

Negative feelings when using the platform:

Through the interviews, it became evident that most users (11 out of 12) typically experience negative emotions while using the platform, not only during the search process but also while watching their selections. The following are some of the most significant comments:

"Initially I might like the idea or theme of the series or movie… I think I might like it. But when I start watching it, I get a bit disappointed because it's not what they promised, you know? It's not like what they made it out to be; it ends up being something different. So, it's a bit disappointing and confusing". Participant 1.

"Sometimes it's overwhelming (to search for something to watch)". Participant 2.

"Sometimes it's like… stressful. Having to sit down and read through everything… It can be stressful because, at this moment, the platform I use is solely Netflix, and I'd like to find something good to watch right away". Participant 3.

"It generates discomfort and annoyance (to watch a bad movie or show) … like, "Ugh, I wasted my time". Participant 5.

"What would be the feeling? it's like… it's frustration, or how should I describe it, I don't know, it's like a feeling of laziness or annoyance, thinking that

I have to search a lot to be able to select something I like". Participant 7.

"I think it just doesn't surprise me (the catalogue); it's all normal, very normal… like boring". Participant 9.

Only one participant mentioned experiencing positive feelings while using the platform, as follows:

"It generates a positive feeling for me (browsing the catalogue) because I know I'm entering a world where I can entertain myself… So, I actually find it satisfying to search and explore. It doesn't stress me out; I find it enjoyable to have some options to choose from". Participant 8.

These statements reveal that the user experience with the platform often evokes feelings of frustration, boredom, disappointment, stress, and annoyance in almost all participants.

Decision Paralysis:

The majority of participants (10 out of 12) reported experiencing decision paralysis at least once when using the Netflix app, leading them to exit the platform without making a selection. This phenomenon, common in choice overload scenarios, also elicited various emotional responses. The following are some statements:

"When I first started using Netflix a while ago, it wasn't like that… But nowadays, it's more common for me to exit the platform before choosing… I get tired of searching and somethings I ended up just turning off the tv and doing something else". Participant 1.

"I mostly do it (exit the platform) if I've been on there for a long time… like I start feeling fed up with searching for things. So, I just exit and do something else". Participant 4.

"I also think it depends on your mood. Some days you have more patience, but there are days when you really, after a while, say: "Oh no, this is too much" because you search and can't find anything, so that's when I say: "Oh no, I'd better exit"". Participant 5.

"It often happens (exit the platform), I'd say about 70% of the time… Realizing that choosing takes so long frustrates me and makes me look for another thing to do. In those cases, I switch to YouTube because, you know, the YouTube algorithm is more efficient in recommending videos on topics that interest me". Participant 7.

"It has happened to me, yes, sometimes I leave Netflix before choosing… Then I go to look on HBO or Amazon Prime". Participant 9

"It happens quite often (exit the platform), I would say at least once a week. It happens when I check the "Top 10" list and don't find anything I like or some-

thing I haven't seen…In those cases, I prefer to exit". Participant 11.

"It has happened to me quite a few times. I think the reason that leads me to say: "I'm not searching anymore, I'm leaving" is the time it's taking me. I start looking through all those categories, and if I don't find anything interesting, I have to look at another list, and so on. It ends up making me tired, and I'd rather turn it off". Participant 12.

Only two participants mentioned that they have never left the platform without making a selection:

"That hasn't happened to me so far. Even if it takes a while, I prefer to wait until I've chosen something because when I sit down to watch Netflix, it's usually because I don't have anything better to do, and I don't use other platforms". Participant 3.

"I don't think I've ever done that. It doesn't really bother me to keep searching, and in the end, I always find something to watch". Participant 8.

These statements highlight that decision paralysis is a common phenomenon among these Netflix users, primarily caused by the vast number of options and the lack of appealing content, leading to extensive search times and user frustration. Consequently, these users often exit Netflix to engage in other activities or explore alternative streaming platforms.

Strategies for Alleviating Choice Overload

Participants mentioned several strategies or actions they employ while using the Netflix platform to simplify their decision-making process. The most frequently mentioned shortcut was the use of the recommendation lists provided by the system.

Use of Netflix Recommendation Lists:

Most participants (11 out of 12) highlighted the use of Netflix recommendations as their primary tool for browsing the catalogue and selecting content to watch:

"I usually use the recommendations; I don't typically hit "Follow" on anything or add movies or series to my list, I'm not a fan of any particular show… But yes, many times, I see what the lists suggest". Participant 2.

"It's very common that I choose something that appears in these recommendation lists… I check the "Top 10" available at the moment to see if there's a movie related to a topic I like and then I just start watching it". Participant 3.

"The first thing I check when I open the platform is if any of the series or movies that I had seen were coming out soon are already available, so I check the "New and Hot" section". Participant 4.

"I start scrolling, looking at the images of what's being advertised, what most people are watching. For example, the "Top 10" is what sometimes works best for me because the platform itself creates these lists based on your profile… Having these lists helps quite a bit. I almost always choose something from these lists". Participant 5.

"I think having the recommendation lists influences me a lot. I almost always look at what's there. I usually go to see the recommendations they show on the main page". Participant 6.

"I also look at its (movie) position on Netflix, like if it's in the top section, the ones that are featured prominently on Netflix, which are like number one, two, three… I also see if it's located there and in what position, to decide which one I'm going to watch. I always pay attention to what Netflix automatically recommends based on what I've watched before". Participant 8.

"I start looking at the lists that appear there, like the "Top 10" or the new releases. I begin to explore all those lists to see if I find something interesting… These lists are the first thing you see and they're like the first option that comes to mind for making a choice. So, personally, I would say that I often choose what to watch from one of these recommendations". Participant 10.

"I open my Netflix profile, and usually, the first thing I do is check the recommendations, especially the "Top 10". If I see something that really catches my eye there, I just start watching it". Participant 11.

Only one participant mentioned not making use of the recommendation lists:

"The recommendation lists are not that useful for me. Either because they show me a lot of things I've already seen and don't want to watch again, or because they only show me what's most recent or what everyone else is watching… Very rarely does the content I watch come from these lists, I'd say about 20–30% of the time". Participant 7.

These statements demonstrate how the majority of participants rely on the recommendation lists to choose the content they watch, with a particular focus on lists featuring new and popular content. For many users, browsing through these lists is the first step they take after opening the platform.

Complementing with Other Strategies:

Half of the participants mentioned that they also rely on recommendations from friends or online sources to simplify their decision-making process. They tend to complement or compare the recommendation lists provided by Netflix with these word-of-mouth recommendations:

"I follow a lot what my friends recommend me to watch but surprisingly these recommendations are usually among the top 10, or the most viewed or something like that, so they often appear in the recommendations". Participant 1.

"If I've seen something online about a new show or have heard about a movie, I will try to find it on the home page to see if its popular". Participant 2.

"Mostly, I rely on something someone recommends to me, or I see on the internet that someone recommends it". Participant 7.

"When something has been recommended by others, I already know what I'm looking for, so it's faster to search by the name in the search section". Participant 8.

"Generally, when I press play on something, it's because I've already read reviews or because, for example, I see mentions of the movie or series in the Google News panel, and they talk about it having a good rating or a good review… so I enter the platform and look in the listings to see if I can find that series or movie". Participant 9.

"If I see interesting things in the recommendations but I'm not completely convinced, I look for reviews on the internet, like on Rotten Tomatoes or a similar website. If it has good reviews, I watch it". Participant 11.

Other participants mentioned that when they find it increasingly challenging to make a choice by browsing through the main page, they prefer to do a manual search by name or look into particular categories:

"If I don't see something interesting, I go into the menu and search directly by name, If I feel like watching a particular movie, something like action or comedy, which is what I usually watch". Participant 4.

"To find these other options, I usually search by genre, mostly by genre… So, for example, fantasy or comedy, and then the options start appearing, and I read the synopses or watch the trailer, and that's when I decide whether I'm interested or not". Participant 9.

"If nothing there catches my eye, or if I have something specific in mind, I search through Netflix categories like Fantasy or Horror, which are my favourites, to find something there". Participant 12.

Another strategy used by some participants was to re-watch a series or movie they know they liked in the past, especially when they encounter a high choice effort or feel they are taking too much time in the search:

"I have like a selection of good shows that I would watch over and over again, so If I don't have anything else urgent to do and I don't find anything new to watch, I just go with those series I know I'll enjoy… I

mean in the worst-case scenario I'll repeat series I've already watched". Participant 4.

"For instance, I have a few series that I'm rewatching, ones I liked before and am rewatching on the platform, because sometimes I cannot find something better". Participant 7

These statements offer insights into how users actively seek strategies to mitigate choice overload and the associated negative emotions. They also highlight that recommendation lists are a primary tool used by most participants to facilitate a smoother and quicker decision-making process, although their effectiveness may vary among users.

Theme 3: Perceptions of Recommendations

How the participants perceived the recommendations in terms of attractiveness and diversity was a relevant theme to report, as it was one of the main aspects discussed in the choice overload background section. The insights resulting from the interviews regarding this important topic are reported below.

Attractiveness:

The perception of attractiveness was generally more negative than positive. Most of the participants (10 out of 12) mentioned occasions when they encountered recommendations that were not very appealing to them or did not fully align with their preferences. One of the most commonly cited reasons for considering recommendations as unattractive was the perception of a lack of new content. Here are some significant statements:

> "There's so much quantity but not everything seems very interesting… you end up starting to explore the unknown, meaning you have to find something that looks decent, try it out, and if you don't like it, stop watching it, and keep searching". Participant 4.
> "The catalogue shows you many things, but they're not always good… Just as there are moments when I say, "Oh no, there's nothing good to watch" there are times when I get hooked and find very interesting things. So, it's quite variable". Participant 5.
> "Lately I think I'm starting to use it less (Netflix) because I feel they're not frequently innovating with movies. There aren't many options in the categories I like, so sometimes, I end up looking at other categories that aren't really my taste, and then I might have to change the movie I initially chose or switch to another platform". Participant 6.
> "Sometimes when you open the platform and see all those things… sometimes none of them appeal to you, or it shows you things you've already seen. It's like,

I don't know, sometimes I feel a bit frustrated". Participant 10.
"I think there are many options in terms of quantity, but at the same time, there isn't enough change or innovation. It feels like the same options are always there. They (Netflix) take a long time to release new series". Participant 11.
"I'd say two things come to mind at the same time about this. First, it has a lot of content, but second, there's a little bit of content that interests me. So, I don't know, it has many things like romance series or Korean series that I'm not interested in at all… But in terms of what I like, such as Fantasy, Sci-Fi, or Horror, there isn't much content available. It doesn't always have cool things". Participant 12.

Only two participants found the recommendations to be interesting for them:

> "Most of the lists seem appealing to me, very much in line with what I like". Participant 8.
> "On average, yes, they are appealing… Most of the time, almost always, I find interesting things for me". Participant 9.

These statements underscore that for users, the abundance of options to choose from, combined with the perception that these options are neither interesting nor novel, intensifies the effort needed to make a decision.

Diversity and Filter bubbles:

In terms of diversity, a consensus emerged among the participants, with 11 out of 12 individuals agreeing on the deficiency of diversity within the recommendations. They expressed a sense of limited variety in the movies or shows presented in their profiles, indicating a lack of diverse content in terms of genres and topics of interest. Some representative statements included:

> "I believe they are not that diverse; just a little because sometimes you can see how they switch from one topic to another… But that is not always the case". Participant 1.
> "Sometimes they are diverse (recommendations), sometimes they're not. I would say about 50% of the time they show things that are different. It would be good to have a good mix of both—stuff that matches your tastes but isn't always the same". Participant 2.
> "It's a bit tricky to say how diverse they are because I mainly watch action, adventure, sometimes comedy, and occasionally documentaries. So, in that regard, I'd say they are diverse because they don't show me anything that I'm not asking for… but they stay within those themes, if you want something different, you

have to go into the menu and actively search for other options". Participant 4.

"I also feel that the diversity is very low. It very rarely shows series that could be of different types and interesting… unless you specifically search in the menu for another series or category, so that it starts showing you that kind of content". Participant 7.

"They are not totally diverse… For me it's hard to explain because while there are certain genres that I prefer and have defined, I also want the option to see what else is available". Participant 9.

"When it comes to actors or the countries of origin, I think there is diversity… But if I think about the themes or genres, they don't change much. I believe that diversity should be seen more in that aspect, showing new themes or things that I wouldn't normally watch but might surprise me". Participant 11.

Furthermore, several participants noted that they often encountered content that reinforced their previous viewing choices, which limited access to diverse content. This phenomenon, driven by personalized recommendations and known as "filter bubbles," was a concern expressed by several participants. Key statements regarding this issue were:

"I believe that, in a way, recommendations can limit the possibilities because there might be something interesting to watch that's outside my personal comfort zone and it might not show it to me. I think I'd like it to be more diverse because when you scroll through the available movies, it keeps showing the same type of things that I always watch, but there's no option for something different". Participant 4.

"I always go to the same category, comedy. So, I feel like everything they recommend is focused on the same thing". Participant 6.

"For example, I often find myself in situations where I've been watching one particular type of content, like reality shows, for a few days, and then all the recommendations become exclusively about that genre… like if I enter the platform, they just show me reality shows. It's like the system forgets that I also like other genres. So, I think it leans too much towards what you have been watching recently, and sometimes it doesn't show enough diversity". Participant 10.

"What I've noticed is that the platform focuses a lot on what you've been watching in recent days. So, the recommendations that appear after you've watched a lot of a particular type of program are very similar. For example, I watch a lot of anime, so usually Netflix starts showing me more of the same. But let's say I've just finished an anime series; obviously, I don't want to watch more anime immediately… So, for you, as user it becomes worse because you've moved past the anime phase, but Netflix keeps pushing more anime your way, it´s very annoying. It kind of blocks you from seeing other things". Participant 12.

These comments highlight that users perceive the Netflix recommendation system as lacking diversity, with some feeling that it confines their content choices, emphasizing the need for more varied options and reducing the dominance of a single genre or topic.

Theme 4: Influence of Recommendation lists on Decision-Making

Effects on Search Time, Choice Effort, and Satisfaction:

Through the interviews, the study identified how the use of recommendation lists affects various variables associated with choice overload, such as search time, choice effort, and choice satisfaction. Regarding the time spent searching for and selecting a new movie or show to watch, the majority of participants (10 out of 12) reported that using recommendation lists shortened the decision-making process compared to not using them. They shared the following insights:

"Using the lists make me spend less time choosing, because they provide a small filter among all the movies and catalogues on Netflix, so it saves time". Participant 3.

"I usually choose from the lists, so I spend less time choosing If I find something on the recommendations first". Participant 4.

"It does have an influence (recommendations) because it seems like an easier way to save time on searching. So, when Netflix presents a new series or movie as recommended for me, I usually check the description to decide whether to watch it. It does make the process a bit easier for me". Participant 8.

"They (recommendations) make me spend less time because otherwise, I'd have to search through all the possible options, and I think I'd go crazy". Participant 11.

However, two users mentioned that they felt they spent more time deciding what to watch when using recommendation lists. Their perceptions were as follows:

"If I used the lists, it would take me more time to choose, for sure… as I mentioned I don't really used them a lot, they're not very interesting to me". Participant 7.

"Some of these recommendations are sometimes confusing because they show me things that I'm not interested in at all. These boring recommendations cover a significant part of the screen, and I have to spend a lot of time scrolling to go through all those

categories that don't interest me… You can lose, I don't know, 5 min, 3 min, or whatever, just to get to the category that truly interests you. It generates frustration, honestly". Participant 12.

Regarding choice effort, 9 out of 12 participants commented that recommendation lists made the decision-making process easier by reducing the amount of information they needed to review or consider before making a choice:

"It makes it easier to choose. It facilitates it because it applies filters, so you don't have to put in as much effort; you already have a starting point". Participant 3.
"I think it makes it easier. I mostly look at what's on the main page, so I don't have to think too much". Participant 4.
"It makes it easier for me because they categorize it for me… they categorize it based on the genre or category that may suit my profile better. So, it's easier for me to choose from those lists the movie that I might like the most". Participant 8.
"They (recommendations) make the process of selecting easier and less effortful because without these recommendations, I'd have many more options to compare, and I'd have to read more about each one". Participant 11.

Three participants had a more neutral stance regarding the effect of recommendations on choice effort, with two noting that they always put in a lot of effort when choosing and other mentioning that the level of choice effort would depend on the quality of the recommendations. Their perspectives were as follows:

"I think I always put a lot of effort before choosing, so for me there is not a difference on this aspect (when using recommendations) …because as I mentioned, I'm a very indecisive person". Participant 7.
"I think the effort can also be less with these lists, but it also depends. If you have these lists with very good recommendations, then it's easier. But if you have many recommendations that aren't actually good, it becomes more difficult". Participant 10.
"I don't think they (recommendations) change the level of effort because even with the lists, I examine the content thoroughly before making a choice. So, my mental process for deciding whether to watch something is the same, whether it came from a recommendation or if I searched for it myself". Participant 12.

Regarding choice satisfaction after selecting content from recommendation lists, the reactions varied among participants. While most (9 out of 12) reported feeling satisfied and happy with their choices, some did not attribute this satisfaction solely to the fact that the content was recommended, and a few had mixed feelings:

"Most of the time, I'm satisfied with what I watch". Participant 2.
"I always finish the movie or episodes; I always do… It's very common because I set up alerts for upcoming releases and add the suggested content to my list, so I usually watch things I´ve been waiting for… It hasn't disappointed me so far". Participant 3.
"I would say that I'm almost always satisfied when I watch something recommended there. I'm happy, not 100% of the time, but most of the time, I think there are good recommendations". Participant 6.
"For me, recommendations usually align with what I'm looking for and what I like… So, is not fully guaranteed that I'll like it, but in most cases, it meets my expectations, and I do enjoy what's recommended to me". Participant 8.
"I'm generally satisfied, but there have been times when I think, "What I just watched doesn't surpass this other series or this other movie," as I always compare it to the last thing, I watched… but generally, I'm satisfied. There are more times when I've liked what I've chosen". Participant 9.
"I think that's relative. I couldn't say it's always the case, but generally, I would say I feel satisfied". Participant 10.
"I generally feel satisfied with the content I watch… But that's because I choose very carefully. Although the recommendations give me initial information and show me things that I might like, I complement this by watching trailers or reading reviews to be even more sure that I'll be happy with my choice". Participant 11.

These statements illustrated that for most participants, recommendation lists shortened search times and reduced choice effort. However, when it came to satisfaction with the selected content, users were more cautious in declaring their levels of satisfaction.

Strong Preference for Recommender Systems and Algorithm Overdependence:

In this study, the majority of participants exhibited a strong preference for recommendation lists. A significant portion, nine out of twelve participants, asserted that they would not opt to remove these recommendation lists if given the choice and preferred keeping the current system. Their sentiments were as follows:

"Gosh! I definitely wouldn't like that change (not having recommendation lists). I think I'd feel even

more overwhelmed than usual. There are already so many things to watch, so not having those filtered lists would be even worse… it would be terrible". Participant 2.

"It would be awful (not having recommendation lists), you'd be immersed in a universe of movies, documentaries, and tv series, and it would take a lot more effort to find something… At least the recommendation filters help you optimize your time". Participant 3.

"I've already gotten used to the lists making everything easier for me and recommending things that are almost guaranteed to be to my liking. So, I wouldn't want to change that feature of the platform… I like and I use those lists, and I'd like to continue using them". Participant 8.

"I would think Netflix don't care about the user (by removing recommendation lists). Because the system keeps track of your activity and suggests things based on what you've seen. So, when it no longer shows you, anything based on what you've watched, I would feel… I don't know, lost". Participant 9.

"I think it would make life difficult for me (not having recommendation lists). It would generate more anxiety for me because, already, for me, making a choice is difficult…. So, imagine having to enter and not seeing any sort of guidance but having to search for everything, I think it would make the process more complicated". Participant 10.

"I think if they removed the recommendation lists, I would lose the visibility of new content on the platform. It would be challenging to distinguish what's old from what's new. Also, with so much to choose from, the selection process would likely take even longer… I wouldn't like it at all". Participant 11.

On the contrary, three participants held opposing viewpoints, expressing a preference for a hypothetical scenario where recommendation lists were eliminated. Their comments were as follows:

"Hmm, that's a great question… I have two thoughts. One is that it might be overwhelming because there would be so many options. But the other thought is that it would give you more freedom to choose and decide for yourself what to consume and watch. So, it could be better, I believe". Participant 1.

"Well, let's say I would like it a lot more (not having recommendation lists), for me, it would be a much more pleasant experience… because I do like the movie categories, being able to navigate through the categories, but Netflix's predetermined categories are not very effective because they don't show everything available, or the titles don't match the category they appear in". Participant 7.

"Having the catalogue completely open might take more time because I'd have to explore each category and so on… It might make me take longer, but I think it could be better for me because I don't like how the recommendations work currently. Thinking about how recommendations are now, I might even prefer searching by myself". Participant 12.

Additionally, when participants contemplated their levels of satisfaction with selected content in a scenario without recommendations, a trend toward algorithm overdependence became apparent. The majority (9 out of 12) of participants expressed a reliance on algorithm-generated recommendations and believed that the system's recommendations might surpass their own choices in terms of satisfaction. Their statements included:

"If I had to choose just one way to select content, I would stick with the recommendation lists because Netflix is already focused on what I watch; it knows my preferences". Participant 4.

"I think the algorithms are important because they sort of filter things for us. So, I believe that the way it's currently managed, where the system chooses things for you, is good. In terms of satisfaction, liking what you watch, I think it might be better when using the recommendation lists". Participant 5.

"My level of satisfaction might be lower because I guess the algorithm must select based on my category preferences, actors, types of movies… so maybe the alignment with what I like would be less if we don't use the algorithm". Participant 6.

"I think my satisfaction with what I watch would be affected because I'd be choosing something without knowing what it's about, so I'd be going in blindly, and I believe I'd be less satisfied if I had to choose on my own. I prefer to follow the recommendations". Participant 8.

"I wouldn't know if these new options (not choosing from a recommendation list) would satisfy me or not, I don't know if these options can surpass the recommendations that the system gives me". Participant 9.

"Well, I'm not sure. I think satisfaction is somewhat relative. I wouldn't be very sure if it would improve or worsen… But what comes to mind is that it might affect it because, as I mentioned, you might end up choosing to watch something that doesn't align with your preferences, maybe solely based on the title or image, and then you might not like it when you actually watch it… So, I do think it might lead to slightly lower satisfaction because the system would lose that component where it already knows there's something in that show or movie that I would like". Participant 10.

"Actually, I trust what the recommendations show me because I believe that if something is in the "Top 10", it's because Netflix has already rated those movies or series. So, if they appear there, it's because they're highly rated by all users… Also, since the system has information about what I watch, it should have an idea of what type of content would catch my attention. Without these lists, I might end up choosing a movie that might not be enjoyable when I watch it". Participant 11.

Conversely, three participants believed they would be happier and more satisfied if they could choose content independently, primarily due to the sense of freedom it would offer:

"I believe I would be more satisfied because I think what I choose would be more in line with what I really want to watch that day. It wouldn't follow the pattern that Netflix wants to show me; instead, I would choose what I truly want to watch. I would be more satisfied and happier, I think". Participant 1.

"I think I would feel even more satisfied because I could truly see everything the app has to offer, not just what's recent or what everyone else is watching, but I could access other older movies or different styles that I haven't seen… These options might not appear in my recommendations, but they could be cool choices for me to select now". Participant 7.

"I think I might feel better because I'd be aware that I made the choice by myself. I would think, "I was responsible for this" and no one forced me to watch it. So, I might be happier with what I chose, and it might make me feel better because, after watching something I liked, I'd think, "Wow, what a good choice you made" … Of course it will depend on how the choice turns out". Participant 12.

These insights underlined participants' overreliance on recommendation lists and their preference for having this tool available, despite acknowledging that recommendations did not always meet their expectations fully. The hypothetical scenario of the recommendations' removal even elicited emotional responses, including surprise, frustration, and hints of irritation among participants.

Discussions

The primary objective of this qualitative study was to explore the impact of the Netflix recommender system on the phenomenon of choice overload among its users. The study revealed a potential user dilemma, wherein participants heavily relied on recommendation lists as a coping strategy for managing choice overload. However, an analysis of variables such as search time, choice effort, and choice satisfaction indicated that users still grapple with varying levels of choice overload and often experience negative emotional responses while interacting with the platform. Furthermore, participants demonstrated an awareness that recommendation lists do not consistently meet their expectations across different aspects. Despite this, they continue to prefer recommendation lists as their primary decision-making shortcut, displaying reluctance to explore alternative methods of searching and selecting content on the platform. The study has provided valuable insights into several key aspects, including the lack of user feedback provided to the system, instances of choice overload during platform use, perceptions of the attractiveness and diversity of recommendations, and the substantial influence of recommendations on the decision-making process.

Lack of User Feedback

The key insight regarding this topic centers on the notable lack of explicit feedback provided by a substantial majority of users to the Netflix recommender system. Specifically, users rarely rate the content they consume. Despite the system's consideration of various other variables, such as viewing history and completion rate, explicit user-provided data, including content ratings and setting notifications for new releases, significantly influence Netflix's algorithms and enhance the effectiveness of the recommendation system (Gomez & Hunt, 2015). It can be inferred that the absence of such user feedback might be impacting the accuracy of recommendations, thereby influencing the overall user experience with the platform. Furthermore, the study revealed that a majority of participants lacked knowledge on how to utilize these feedback features and did not grasp the significance of providing feedback. This suggests a potential shortcoming in the transparency of the Netflix recommender system, a crucial aspect for an effective recommender system. A transparent system enables users to understand the connection between their feedback and the resulting recommendations, providing clear explanations of how the system functions (Tintarev & Masthoff, 2007). Consequently, enhancing the user-friendliness and transparency of explicit feedback features may improve their utilization rate. Participants also indicated that the system restricts the level of feedback users can provide, especially regarding recommendation lists. They expressed a desire for more explicit guidance options, such as specifying preferences before opening the main page or rearranging/removing recommendation lists deemed irrelevant. Currently unavailable on the platform, these suggestions highlight the potential benefits of incorporating additional features that enable users to scrutinize the system more effectively. Scrutability in a recommender

system is crucial, allowing users to critically assess and potentially adjust the system's recommendations, fostering a sense of user empowerment (Tintarev & Masthoff, 2007).

Occurrences of Choice Overload while Using the Platform

Choice overload refers to the negative effects that an excessive number of options can have on an individual's decision-making process, leading to poor choices, decision paralysis, reduced satisfaction, and often frustration (Iyengar & Lepper, 2000; Schwartz, 2004). The study found that most participants exhibited these characteristics, confirming that some extent of choice overload is present when using the platform.

Users frequently described feeling overwhelmed by the number of options available, highlighting the challenges in deciding what to watch. This abundance of choices led to increased search times and greater effort in making decisions. Additionally, most participants found the catalogue extensive but lacking in exciting or new options. Some also mentioned that the visual interface of the main page could be confusing and difficult to navigate.

Participants reported exerting considerable cognitive effort during the decision-making process, with some stating that they spent up to 30 min simply browsing and evaluating options (raising questions about the accuracy of these self-reported times). They meticulously scrutinized lists, viewed trailers, and read descriptions in an attempt to make the best choice. This extended browsing phase suggests an increased risk of user frustration and a potential inclination to migrate to competing platforms.

The majority of the participants reported experiencing cases of decision avoidance, preferring to exit the platform before selecting something to watch. This phenomenon, known as decision paralysis, occurs when individuals experience cognitive burden and fatigue and are unable to choose between options (Adriatico et al., 2020). This perception suggests that despite Netflix's constant efforts and new developments in its recommender system, the amount of information available on the platform remain overwhelming for most participants. Given that Netflix's revenue is directly linked to the number of subscribers and its primary goal is to maximize engagement and increase user retention rates (Gomez & Hunt, 2015), these observations shed light on a potential problem that the company should address.

Negative emotional responses were commonly associated with the platform, further indicating the negative impact of information overload on users' emotions. Most participants reported experiencing various negative emotions both during the search process and while watching their selections. A frequent sentiment was disappointment, which often arose from a disconnect between the anticipated and actual quality of the content. After investing time and effort in choosing something to watch, users felt their selection time was wasted when the content proved unsatisfactory. This can intensify feelings of choice overload by increasing frustration and confusion about content selection.

Participants also reported stress and overwhelm during the search process. These emotions suggest that the sheer volume of choices, coupled with the challenge of evaluating them, contributes significantly to a heightened sense of choice overload. To cope with choice overload, participants employed various strategies. The most prominent was relying on Netflix's recommendation lists, particularly the "Top 10" and new releases, as shortcuts to quickly identify potentially appealing content. Recommendations from friends and online sources were also commonly used to complement Netflix's suggestions, reducing uncertainty in decision-making. Other strategies included manual searches for specific titles and rewatching content they had previously enjoyed. The importance of having new and trending shows was emphasized, highlighting the significance of novelty in the recommender system (Ricci et al., 2011). These insights underscore the complexity of choice overload in the context of recommender systems, emphasizing the need to consider variables such as attractiveness and diversity of recommendation lists, in addition to the sheer size of the content library. The study suggests potential areas for improvement in Netflix's recommender system to enhance user experience and address the challenges associated with choice overload.

Perceived Attractiveness and Diversity of Recommendations

Individuals assess alternative options by carefully considering the likelihood and value of their potential outcomes (Van der Pligt, 2001). The decision-making process involves several stages: setting goals, prioritizing them, listing and evaluating options, making a choice, assimilating the results, and using those outcomes to guide future decisions (Schwartz, 2004). As the number of options increases, the effort required to make an informed decision also rises, and consumers may feel overwhelmed as each stage of the process becomes more complex. Factors such as the attractiveness and diversity of the presented options can help reduce this feeling of overwhelm (Bollen et al., 2010; Willemsen et al., 2011, 2016).

The role of attractiveness and diversity in mitigating choice overload within recommender systems is well established, suggesting that a choice set with higher attractiveness and diversity can facilitate the decision-making process by making comparisons and justifications easier (Willemsen et al., 2016).

This study reveals that participants overwhelmingly held negative perceptions regarding recommendation

attractiveness, citing instances where recommendations failed to capture their interest or align with their preferences, often attributed to a perceived lack of fresh and exciting content within Netflix's catalogue. Participants expressed frustration when faced with unappealing recommendations, linking the absence of novel and captivating content to heightened choice effort. The deficiency of diversity in recommendations, reinforcing existing viewing preferences, prompted participants to advocate for a broader range of content. A scarcity of appealing options, combined with a lack of diversity, compels users to invest more effort and time in decision-making, contributing to choice overload (Willemsen et al., 2016). The emergence of Filter Bubbles (Pajkovic, 2021) was noted as a consequence of the system's personalization, restricting users within the boundaries of their previous choices and impeding access to novel content, exacerbating choice overload. A recurring pattern was the widespread reliance on the "Top 10" recommendation list by participants, potentially contributing to the perceived lack of diversity and attractiveness in Netflix's recommendations. Despite claims of daily refreshment, exceptionally popular titles could persist on the list, reinforcing the perception of monotonous content. Users' limited exploration of alternative recommendation lists suggests room for improvement in promoting other lists to a level of popularity comparable to the "Top 10" list, highlighting the potential value of enhancing personalized recommendations and improving platform navigation.

These findings underscore the challenges users face when navigating extensive content libraries lacking attractiveness and diversity. The connection between low recommendation attractiveness, limited diversity, and choice overload is evident in participants' statements. To facilitate the decision-making process, it is imperative that a choice set possesses attributes of both attractiveness and diversity. Diversification proves advantageous in mitigating effort and simplifying decision-making complexity, enabling users to make more informed trade-offs between options and enhancing the precision of recommendations (Knijnenburg et al., 2012).

Influence of Recommendations Lists on Decision-Making

Several factors influence the decision-making process, especially when faced with a large number of options. These factors include insufficient time to review all available information, difficulty in predicting how each choice will affect us, and challenges in properly evaluating or weighing alternatives (Schwartz, 2004). This often leads individuals to rely on heuristics or rules of thumb as shortcuts. Such heuristics, or cognitive biases, are seen as a result of the limitations in human information processing (Shafir & Tversky, 1992). In the context of choice overload, these heuristics become even

more prominent as coping mechanisms against information overload (Kahneman & Tversky, 1974). Recommender systems can be viewed as a type of heuristic that simplifies the decision-making process. The study confirms this by showing a strong preference among participants for retaining Netflix's recommendation lists, with many expressing reluctances at the thought of these lists being removed.

Participants asserted that recommendation lists were indispensable tools for navigating the extensive content library on Netflix, citing concerns about potential information overload and increased difficulty in content discovery without them. Conversely, a minority favored the elimination of recommendation lists, perceiving it as a means to attain greater autonomy and freedom in content selection. These insights into the prevalent reliance on and preference for Netflix recommendation lists suggest potential signs of Algorithm Overdependence (Banker & Khetani, 2019). Most participants exhibited a high level of trust in the algorithms' ability to understand their preferences, believing that system recommendations often led to more satisfying choices. The absence of algorithmic guidance in a scenario without recommendations was envisioned as potentially resulting in less satisfying selections. These findings indicate that the growing popularity of recommender systems in streaming platforms like Netflix might be fostering an increased dependency on system recommendations, leading users to question the quality of choices made without such assistance (Banker & Khetani, 2019). This suggests that recommendation lists have become ingrained in users' decision-making processes, making it challenging for some to consider alternatives.

The collected insights also shed light on the impact of using recommendation lists on variables associated with choice overload, including search time, choice effort, and choice satisfaction. Regarding search time, the majority of participants noted that recommendation lists significantly expedited their decision-making process, serving as efficient filters to simplify the vast content array on Netflix and save valuable time. However, despite the reduction in decision time, participants reported spending a substantial amount of time browsing options, suggesting room for improvement in search efficiency. Choice effort was another aspect notably influenced by recommendation lists. Participants expressed that these lists made the decision-making process less effortful by categorizing content and providing a valuable starting point. However, perceptions on this aspect varied among participants, with some noting that recommendation lists did not significantly diminish their choice effort. Satisfaction with chosen content emerged as a debated topic, highlighting the subjective and complex nature of customer satisfaction (De Riberolles, 2020). While most participants reported satisfaction with selections from recommendation lists, mixed feelings and the influence of other factors on

choice satisfaction were identified. Some attributed satisfaction to social recommendations or meticulous consideration of options, suggesting that while recommendations streamline the selection process, they do not consistently ensure satisfaction with the chosen content.

These findings collectively underscore the gap between user expectations of a recommender system and its current functionality. User statements related to choice effort and choice satisfaction with the Netflix recommender system highlight ongoing challenges in fully mitigating the effects of choice overload. Furthermore, users' trust in these algorithms, coupled with a strong preference for recommendation lists, emphasizes the need for a delicate balance between algorithmic guidance and user autonomy to enhance the overall viewing experience.

Limitations and Future Research Directions

This qualitative study presents some limitations that should be taken into account when interpreting the findings. Firstly, the original interviews were conducted in Spanish, and while diligent efforts were made to ensure accurate translation, nuances of meaning and context may have been lost during the translation process. Secondly, the study did not consider the participants' personality traits and their potential influence on the perception of choice overload. Another notable limitation pertains to the study's methodology. Participants were asked to imagine the process of using Netflix and interacting with recommendation lists, rather than engaging in real-time, real-world interactions with the platform. This simulation approach may not fully capture the nuanced behaviors and decision-making processes that occur in the authentic context of Netflix usage. In addition to these specific limitations, it is important to acknowledge inherent limitations in qualitative research, such as potential researcher bias, subjectivity in data interpretation, and the absence of statistical generalizability (Creswell, 2017). Despite these limitations, this study offers valuable insights into the complex relationship between recommendation lists and decision-making, shedding light on the experiences and perspectives of a subset of Netflix users. Future research should aim to address these limitations and further expand knowledge of this evolving area of study.

Conclusion

This study provides valuable insights into the impact of the Netflix recommender system on choice overload. Key findings reveal a significant lack of user feedback and the prevalence of choice overload, characterized by longer search times, increased choice effort, and negative emotions associated with the decision-making process. Users often find the catalogue overwhelming and uninspiring, yet they continuously rely on recommendations as a coping mechanism. This reliance creates a "user's dilemma," where users trust the recommendations but face disappointment when expectations are unmet or when they feel trapped in filter bubbles. These findings highlight the need for ongoing innovation in recommendation systems and the development of more user-friendly feedback mechanisms.

Moreover, the outcomes of this study highlight some potential psychosocial implications of using recommender systems. Heavy reliance on algorithm-driven recommendations may reduce users' autonomy in decision-making, leading to passive content consumption and less critical evaluation of choices. Additionally, filter bubbles could reinforce existing biases and limit exposure to diverse content, potentially fostering narrow worldviews and reinforcing stereotypes, such as those related to specific countries or cultures. These issues require further investigation to fully assess the impact of recommendation systems in today's context.

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants followed the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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