Netflix Conjoint Analysis: The Effects of Advertisements, Password Sharing, and Live TV on Utility Rate

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Abstract

According to Time Magazine, Netflix shares are still down nearly 65% for the year, a slump that's wiped out roughly $70 billion of the streamer's market capitalization and prompted shareholders to file a lawsuit alleging that the company misled investors about declining subscriber growth [1]. In response to its economic problems, Netflix fired hundreds of staff, moved to stop password sharing across households, and announced that after years of debating the idea, it would finally start testing a lower-cost, ad-supported membership tier. Netflix stated in its letter to shareholders that it is now concentrating on a variety of initiatives targeted at growing subscriber counts and creating new income in the face of growing uncertainties about the streaming industry.

This study uses a survey methodology to determine the importance of password sharing, live TV and advertisement in Netflix pricing. By asking American individuals to rank potential Netflix offers with the aforementioned offers included, a conjoint analysis regression model was done on data collected in June 2022 from 106 respondents. The analysis from the regression results helped determine the utility of other new profiles as well as the desirability of each attribute. It was found that the live TV attribute was the highest desired feature. Afterwards, it was found that video quality was second in terms of its high desirability, with its utility rates being nearly as high as the utility rate for live TV. If Netflix is able to include the live TV feature into one of its new subscriber plans, and also maintain it's high video quality plans, the conglomerate has the potential to target a new audience and gain more subscribers.

0.1 Keywords

Conjoint Analysis, Streaming Service, Regression, Survey, Netflix, Password Sharing, Advertisements

1 Introduction

With 183 million paying subscriptions in more than 190 countries, Netflix has grown to be one of the top streaming media providers in the world, offering TV series, films, and blockbuster movies in a wide range of genres and languages. With its online streaming services, users may access material whenever they desire, wherever, and on any network device. The firm creates its own original material in conjunction to collaborating with content suppliers to obtain streaming rights for a range of TV series and movies [2].

Concentrating on international markets is one of Netflix's strategies to stay relevant in the ever-changing streaming industry. For instance, Netflix made the decision to invest billions of dollars in regional language entertainment creation in commercially important countries including India, Eastern Europe, Latin America, and Asia in 2020. Because of the predicted rise in network utilization in heavily populous areas like Asia and Latin America, this technique enabled Netflix to dominate a particular target market while also growing total subscribers.

Netflix's online platform was launched in 2007 and quickly became the favorite streaming service due to its extensive selection of original and international programming, extensive content library, and carefully selected user suggestions. Over 3,600 movies and 1,800 TV series are now available on Netflix. In 2020, Netflix had a total profit of $25 billion. After the firm announced that it had gained 8.5 million new customers and would no longer need to incur debt, Netflix shares reached an all-time high in January 2021. It's noteworthy that Netflix won't need to incur debt going forward since, in contrast to other companies, it prioritized gaining market acceptance over total financial development.

A study performed in 2021 by Morgan Stanley revealed that 38% of respondents believe Netflix delivers the finest original programming, and that 58% of respondents use Netflix, providing quantitative support of it's popularity. The survey also discovered that Netflix's wide range of material, excellent original programming, addition of engaging content for a diverse audience, and the absence of ads were the biggest factors for users to remain loyal to the company. Additionally, despite having the greatest amount of original content, Netflix has recently engaged in a number of business transactions to acquire the rights to stream well-known movie franchises and well-liked international films.

However, as pressure grew as a result of the growing success of a number of rival streaming platforms, like Disney+ and Peacock, Netflix started to explore abroad to optimize the breadth of its content library. Netflix is concentrating on creating local language content at a quicker rate than its competitors since doing so would provide them a long-term competitive edge. Additionally, Netflix's goal on expanding its worldwide footprint has given them access to a larger choice of lower-cost production due to international reach [3].

Yet, Netflix's ultimate decline despite their persistent attempts to stay at the top of the market was accompanied by both new and seasoned rivals. Customers have more alternatives for where to watch entertainment videos due to different

streaming services. Such rivals, like AppleTV+ and Disney+, are able to provide engaging content at competitive prices. Therefore, Netflix runs the danger of losing its user base if it does not pursue the creation of new hit products. Given that there is no barrier to the subscriber to convert to a different service under the existing Netflix subscription model, the company runs risks [2].

Disney+, one of Netflix's rivals, already has a substantial archive of material, and because it owns well-known properties like Marvel and Star Wars, it has an endless supply of original material to add. For instance, since they want to publish over 10 new, leading Marvel shows, featuring the audience's beloved heroes like *Loki* and *I Am Groot*, only on Disney+, they have a hold on the Marvel fan base. Disney was able to distinguish itself from the several newly launched streaming services thanks to their tremendous library of well-known brands that includes innovative original programs like *The Mandalorian* [3]

2 Literature

Unfortunately, "Netflix reports that it lost nearly 1 million subscribers in the second quarter of 2022, but that was better than the 2 million it had forecast" [4]. The company is now at a crossroads in which it must reevaluate its existing position in the market. Now, competitors such as Amazon Prime and Hulu persist in their growth in popularity as Netflix loses its position of dominance.

Research by Deloitte and PricewaterhouseCoopers suggested a new change in the streaming environment due to the plethora of streaming alternatives and growing subscription prices; people are eager about new streaming services like Disney+. To create way for the latest services, over two thirds of subscribers plan to cancel or downsize one or several of their existing subscriptions. Additionally, it appears that customers desire lower-cost subscriptions plans that are subsidized by ads. In the most recent Deloitte Digital Media Trends poll, 65% of respondents said they would watch advertisements to get rid of or lower membership rates. 70% of Hulu's members select the service's less expensive, ad-supported subscription. Peacock, NBC's own streaming service, recently debuted with a free ad supported subscription. This, however, goes against Netflix's "no advertisements" and upscale distinctive brand narratives [5].

Companies use conjoint analysis, a type of statistical analysis, in market research to comprehend how consumers value various aspects or qualities of their goods or services. Choice-Based Conjoint (CBC) Analysis was the sort of analysis used in this research. This is one of the more popular types of conjoint analysis and is used to determine how respondents value particular feature combinations. The research and development pipeline of a corporation can benefit from conjoint analysis, for the information gathered may be used to decide whether new features should be included in the company's goods or services [6].

There has been conjoint analysis conducted on Netflix already, an example being a study conducted by Universitas Garut students and published in the Jurnal Pandidikan Manajemen Bisnis. They also used the survey research method

and quantitatively analyzed a random sample of 30 respondents' answers. The found that the perceived pricing characteristic, which has the maximum level of relevance in terms of customer preference for Netflix, is ranked top in terms of importance value. Because Netflix's rates are so varied and can be altered to meet customer demands, respondents generally cite price as the most important consideration. The hoped that in future study researchers will be able to fully utilize conjoint analysis or combine it with other analytic techniques by adding more attribute characteristics to evaluate and explore a number of digital video on-demand platforms [7].

Another analysis was conducted on the Chinese and South Korean market by a group of Korea University students and published in the Elsevier Journal. The main characteristics and customers' marginal willingness to pay (WTP) for over-the-top (OTT) services are investigated in this study using conjoint analysis. They identified video quality, viewing options, and recommendation algorithms as crucial OTT service product qualities that affect consumers' willingness to pay in China and South Korea. Resolution was the most significant feature for Chinese OTT service users, closely followed by the recommendation system and viewing options. The recommendation system, followed by viewing choices and resolution, was rated as the most valuable feature for Korean users. Chinese customers' monthly WTP averaged 3.4 USD, compared to Korean consumers' monthly WTP of 3.1 USD for OTT services [8].

Similar to the previously mentioned conjoint analyses, this study aims to analyze survey responses to determine the utility rate for Netflix offers and understand what would be the best subscription plan they would be able to offer. However, there are consistent gaps in the previous conjoint analysis that this study aims to fill. For example, the live TV and password sharing attributes are not considered in any of the previous studies. Furthermore, the market that some of these studies are focused on international markets, whereas this study was relevant only to the American market.

3 Data Analysis

3.1 Attributes

The attributes that are tested in the survey are the subscription price per month, the video quality, whether or not subscribers would prefer advertisements, the number of screens that a subscriber can use with one Netflix account, whether a subscriber would prefer live TV to be included with their account, and whether or not a subscriber would be willing to pay an extra $3 per month to share one Netflix account across multiple households. All the attributes used in the conjoint analysis can be seen Table 1.

As of now, Netflix's current subscription plans are $9.99 per month, $15.49 per month, and $19.99 per month. The reason that the $5.99 offer was added in this survey was because "each plan has around $4 difference between them, so if Netflix follows this trend for the ad-supporter tier, it makes most sense to

Attribute	Levels
Price	$4.99, $9.99, $15.49 $19.99
Number of screens	1, 2, 4
Video quality	SD, HD, UHD
Password sharing	Yes, No
Live TV	Yes, No
Advertisements	Yes, No

Table 1: Attributes used

charge something like $5.99 per month" [9]. They are currently in the process of working with renowned technology corporation Microsoft to introduce an ad supported tier at a lower cost in the beginning of 2023.

Netflix is also planning on cracking down on password sharing. Since many profile users share their subscriptions beyond the home, account sharing presents difficulties for service providers. Illicit sharing is a practice that is quite common, and it costs service providers a lot of money. Service providers, however, use extreme caution when going after offenders since it can be difficult to spot illegitimate shared accounts. First, human processing of the data is impractical because of the enormous amount of unorganized and inconsistent data. Additionally, it is legal for family members to utilize as many devices and any place to share an account. It might be difficult to tell the difference between allowed and illegal sharing. Netflix is presently taking action against this practice and will impose a $2.99 fee on users who share an account [10].

3.2 Survey

A number of inquiries were included in the questionnaire/survey in order to document customer preferences for a particular group of subscription profiles. To guarantee that the analysis is reflective of all the profiles, the selection of such profiles is constructed. Based on the characteristics mentioned above, the respondents rate these offers. Based on these rankings, desires for the subscription plan qualities may be inferred and percentages can be established. The survey was created using an application called Conjoint.ly, an established survey research platform.

First questions such as age, pronouns, and employment were asked to gain background knowledge on the participants themselves. This information was used to determine a general age group and location from which anonymous respondents were completing the survey from. They were them asked to choose which streaming services they already pay for, and this information was used to gain information on how much experience each respondent had with streaming platforms, as well as how many streaming platforms they are subscribed to.

In order to determine the offers that respondents would be asked to rank and to not overwhelm participants, an orthogonal plan was conducted to reduce the number of total offers (4 price options * 3 screen options * 3 video quality

options * 2 password sharing options * 2 live TV options * 2 Advertisement options = 288 offers) into 19. The survey divided the 19 offers into three groups with 6 offers in two groups and 7 offers in one. Before they were exposed to the groups of offers, a diagram was shown that described all the attributes each offer had, as well as the different answers each attribute could offer. For example, once the password sharing attribute was explained, underneath the explanation were the two ways in which one could respond to the the inclusion of the attribute in an offer, yes or no. Once the surveyors clicked "next", the first group of offers they were shown were the least desirable. The next group had the most desirable offers. Finally, the last group they were asked to rank had offers with medium desirability.

4 Data Processing

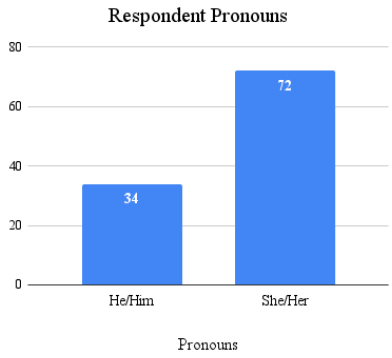
4.1 Survey Respondent Demographics

The majority of the survey respondents can be divided into two age groups, teenagers and middle aged people. The age range for the majority of teenage respondents was 16 - 18 and the majority of middle aged respondents were in the 40 - 52 age range. While there was no significant pattern regarding what groups of people use streaming services (and if so, which ones), there was an expected correlation found between age group and employment. Those who were middle aged were nearly all employed, however only have of the teenagers are employed. The division between she/her pronouns and he/him pronouns was nearly 50%, so the distribution in gender of the respondents is fairly equal.

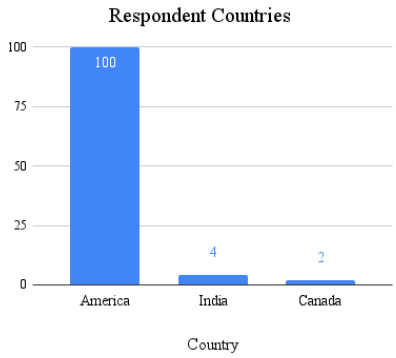
Once all survey respondents' rankings were collected, they were analysed. First, the three groups of the rankings were combined so that they could be compared against one another to make a total of 19 rankings. This was done by ranking the middle group of offers (which were the most desirable offers out of the 19) amongst themselves, then the last group of offers were added to the ranking (which were deemed the middle in terms of desirability) and then finally, the first group of rankings were added on to the two groups at the end. The first group was deemed to be the least ranked in terms of desirability, so it was added at the end. Once each respondent had 19 offers ranked from 1 to 19, the data was imported into Microsoft Excel. The database computed the regression results, including coefficients of each attribute.

$$Y_i = \alpha + \beta_1 X_i + \epsilon \tag{1}$$

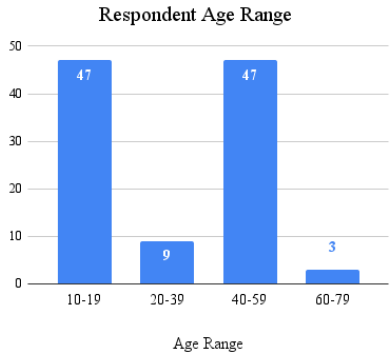
The general regression formula, shown above, applied into this experiment, is shown below.



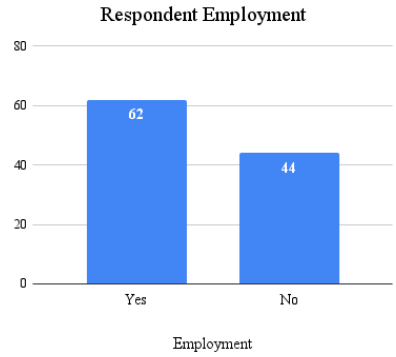
(a) Gender



(b) Country



(c) Age



(d) Employment

Figure 1

$$
\begin{aligned}
\text{Utility}_t = \alpha &+ \beta_1 \text{Price}_t \\
&+ \beta_2 2\_\text{Screens}_t \\
&+ \beta_3 4\_\text{Screens}_t \\
&+ \beta_4 \text{Password\_Sharing}_t \\
&+ \beta_5 \text{HD}_t \\
&+ \beta_6 \text{UHD}_t \\
&+ \beta_7 \text{Advertisement}_t \\
&+ \beta_8 \text{Live\_TV}_t + \epsilon
\end{aligned}
$$

In the equation above, all attributes, as well as the intercept are listed, and that is what makes the utility, or ranking, of each offer. As computed by Microsoft Excel, the Intercept (or alpha, as shown in the equation above) is 7.0218, and that value must be added whenever computing the utility. The 1_Screens and SD attributes are not listed on the equation above because they are considered to be the standard offer, and as such, they won't have to be added to compute the utility.

To compute the utility of an offer, if the offer includes an attribute it will be one. However, if an offer does not include an attribute, then it will be 0.

$$
\$9.99 = \begin{cases} 1, & \text{if \$9.99 monthly subscription} \\ 0, & \text{otherwise,} \end{cases}
$$

$$
\$15.49 = \begin{cases} 1, & \text{if \$15.49 monthly subscription} \\ 0, & \text{otherwise,} \end{cases}
$$

$$
\$19.99 = \begin{cases} 1, & \text{if \$19.99 monthly subscription} \\ 0, & \text{otherwise,} \end{cases}
$$

$$
HD = \begin{cases} 1, & \text{if HD video} \\ 0, & \text{otherwise,} \end{cases}
$$

$$
UHD = \begin{cases} 1, & \text{if UHD video} \\ 0, & \text{otherwise,} \end{cases}
$$

$$
Password\_Sharing = \begin{cases} 1, & \text{if paying extra for password sharing} \\ 0, & \text{otherwise,} \end{cases}
$$

$$
Live\_TV = \begin{cases} 1, & \text{if live TV added} \\ 0, & \text{otherwise,} \end{cases}
$$

$$
Advertisements = \begin{cases} 1, & \text{if advertisements included} \\ 0, & \text{otherwise,} \end{cases}
$$

For example, if an offer does include advertisements, the advertisements coefficient will be added to the utility equation. However, if that same offer does not contain live TV, then the live TV coefficient will not be added to the utility equation. Using the coefficients for each attribute, a utility rate was computed for all of the 288 offers. After they were computed, the offers were ranked and analysed.

5 Findings

Attribute	Coefficients
Price	-0.0229
2 screens	1.0342
4 screens	0.5250
HD	2.0063
UHD	2.1338
Password sharing	1.4153
Live TV	2.3486
Advertisements	-0.7626

Table 2: Coefficients

Table 2 show the utility that can determine the respondent's preference for a level of each attribute. The higher the utility estimate value, the higher the desirability. Since price and advertisements have a negative utility, the addition of those attributes to a subscription offer are not preferred.

ADD MORE EXPLANATION

Price	Video Quality	Ads	Live TV	Password Sharing	Number of Screens	Rank
$9.99	SD	No	No	No	1	6.7932
$15.49	HD	No	No	No	2	9.7078
$19.99	UHD	No	No	No	4	9.2231

Table 3: Current Netflix Subscriptions

Currently, Netflix has 3 subscription plans, as listed in the Table 3. However, this experiment yielded results that showed offers with a higher ranking than the current subscriptions, but different attributes as part of their subscription plan.

As shown in Table 4, the current $9.99 monthly subscription plan, the first row, has a ranking of 6.7932. However, the utility rate significantly increases if a different plan were to be implemented. If the $9.99 plan had advertisements before, in the middle of, or at the end of videos, but users were able to view on two screens simultaneously rather than one, it would be more preferred. As

Price	Video Quality	Ads	Live TV	Password Sharing	Number of Screens	Rank
$9.99	SD	No	No	No	1	6.7932
$9.99	SD	Yes	No	No	2	7.0648

Table 4: Comparison of Current Plan #1 with Potential Plan #1

such, it shows how subscribers are willing to have advertisements if it allows for two screens to be viewed at the same time, rather than one.

Price	Video Quality	Ads	Live TV	Password Sharing	Number of Screens	Rank
$15.49	HD	No	No	No	2	9.7078
$15.49	HD	Yes	No	Yes	4	9.8513

Table 5: Comparison of Current Plan #2 with Potential Plan #2

As shown in this Netflix profile, the current $15.49 plan has a ranking of 9.7078 as shown in the top row. The potential subscription plan not only has a higher ranking (9.8513), but it shows that users are willing to watch advertisements if they are able to view simultaneously on four screens rather than two. thus, they are willing to sacrifice their current ad-free viewing if they are able to watch on more than 2 screens at once. Also, users are willing to pay for password sharing rather than not having it at all. Table **??** shows that people would pay the extra $3 on top of the $15,49 per month if that means they are able to keep the password sharing feature.

Price	Video Quality	Ads	Live TV	Password Sharing	Number of Screens	Rank
$19.99	UHD	No	No	No	4	9.2231
$19.99	SD	No	Yes	No	4	9.4379

Table 6: Comparison of Current Plan #3 with Potential Plan #3

Table 6 shows two $19.99 monthly subscription plans that have different utility scores. The top row shows the current monthly subscription plan, and the bottom row shows a potential alternative with higher utility rate. If the $19.99 plan has Standard Definition video quality rather than ultra high definition, but users are able to also view live TV with that plan, they would much rather prefer it. As such, it can be determined that users are willing to give up video quality for the addition of live TV in a subscription plan.

When analysing all of the 288 offers, data showed that the highest ranked 34 offers included the password sharing attributes. Additionally, the highest ranking 68 offers all contained the live TV attribute. From this information it can be concluded that, if available, users are interested in a live TV option being added into Netflix's current subscription plan. This could help Netflix

raise viewer counts that are slowly falling. Furthermore, if Netflix allows for people to pay extra for the password sharing feature, users would also prefer that over losing the password sharing feature in its entirety.

Another plan that was considered was a cheaper monthly subscription offer to compete with the cheaper prices of Netflix's competitors. AppleTV+ and Peacock have monthly subscription costs of just $4.99 per month, and Netflix has the power to implement something similar. If the $5.99 plan has all attributes of the $9.99 plan, including ads, then it shows that people are interested in selecting a lower cost subscription while letting go of a add free subscription.

6 Conclusion

By using the results from this study, it may be possible to provide answers to the issues that were explored using the conjoint analysis approach. However, there are some limitations. While the survey was sent out and accepting responses for nearly 3 weeks, the people who have responded represent a small percentage of all people. As such, their opinion is not representative of the entire population. Many of the respondents also do not currently have a Netflix subscription, as such, they may not understand the password sharing attribute to the fullest extent because that attribute is specific to only Netflix; competitors like Amazon Prime TV and AppleTV+ do not have a password sharing feature.

In regards to the results of this study, firstly, adding Live TV to Netflix's current offerings will be advantageous. Users are drawn to the idea of getting everything they need from one place. However, they are still quite price-sensitive, so Netflix must consider the expenses involved before deciding. Additionally, customers would like to view commercials while paying less than more. To boost their user base, it is advised to Netflix to implement a new strategy that targets budget-conscious consumers. As a result, Netflix will attract more users and generate more money from delivering commercials. To further investigate the budget range for which people are prepared to view advertising while leaving everything else unchanged in the plans, another conjoint analysis would need to be conducted.

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