Title: In-Depth Analysis of Netflix's Content Strategy: A Data-Driven Approach

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Abstract

This study provides a data-driven analysis of Netflix's content strategy using a comprehensive dataset from Kaggle. Focusing on Exploratory Data Analysis (EDA), it examines Netflix's content distribution, genre diversity, and global production trends. Key findings highlight a strategic emphasis on movies, particularly International Movies, Dramas, and Comedies. The analysis also reveals significant shifts in content addition over time, influenced by global events like the COVID-19 pandemic. Moreover, it explores the geographical spread of content production, with the United States, India, and the United Kingdom as notable contributors. This research offers valuable insights into Netflix's market positioning and its influence on evolving digital media consumption trends.

Keywords -, Genre Analysis, Python, R, SQL

I. INTRODUCTION

In the ever-evolving world of digital streaming, data analysis emerges as a key tool for deciphering and influencing content strategies. This project undertakes a thorough examination of Netflix's approach, a frontrunner in the streaming sector, through an in-depth data-driven study. Utilizing a detailed dataset obtained from Kaggle, the research seeks to uncover the nuances of Netflix's content strategy, offering insights into how this streaming powerhouse meets the demands of its diverse audience worldwide. The analysis begins with a deep dive into the distribution and characteristics of Netflix's content, exploring the balance between movies and TV shows, and examining the evolution of content addition over time. This is particularly relevant in understanding Netflix's strategic choices, especially in response to global events like the COVID-19 pandemic which have significantly impacted media consumption patterns.

Further, the research extends to a genre and country analysis, highlighting Netflix's commitment to diversity in content. By examining the production and popularity of various genres across different countries, the study sheds light on Netflix's global footprint and its approach to international markets. This includes a focus on major content-producing countries such as the United States, India, and the United Kingdom.

The project also explores the roles of directors and cast members, offering insights into the creative forces behind Netflix's content and their contribution to the platform's worldwide appeal. Additionally, the analysis of content ratings reveals a strategic emphasis on mature audiences, aligning with global viewer preferences.

Overall, this introduction sets the stage for a detailed exploration of Netflix's content strategy, employing advanced data analysis techniques to provide a nuanced understanding of the

streaming giant's position in the digital media landscape.

Research questions:

- What do the yearly trends in the volume of movies and TV shows added to Netflix?

- What is the yearly comparison of works produced within the last 2 years versus those produced more than 2 years ago?

- Which genres have seen the most significant growth in Netflix's library over the years, and how might these trends be influenced by changing viewer preferences or content availability?

- What does the analysis of the genre popularity by the top 5 content-producing countries tell us about Netflix's international content strategy?

- Which rating is the most important to focus when producing new content?

II. Literature Review

The field of streaming content strategy, particularly focusing on Netflix's operations, has been explored in various studies, each delving into aspects such as regional content preferences and transnational media flows. These research works provide crucial insights into Netflix's approach towards content distribution and production across different global regions.

Asem Khmag (2022) conducted a significant study investigating viewing preferences in Southeast Asia, examining content types favored in Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Utilizing pivot table analysis and Random Forest Classification, the research revealed a pronounced preference for dramas and international movies, with notable variations across these countries. This finding underscore Netflix's strategy of tailoring content to cater to diverse regional tastes.

Amanda D. Lotz, Oliver Eklund, and Stuart Soroka (2022) carried out another pivotal research, focusing on the broader implications of global streamers like Netflix on transnational media flows. The study highlighted Netflix's use of extensive behavioral data in curating its content library, signaling a departure from traditional media distribution methods. It revealed significant variation in Netflix's library compositions across nations, reflecting a strategy of local responsiveness within a global framework.

Furthering this exploration, Amanda D Lotz (2021) analyzed Netflix's investment in original scripted series within the European context. This research focused on the company's strategic collaborations across borders and the blending of local-global content aspects. It highlighted the importance of rights retention and premium content offerings, with a growing trend of investing in full originals in major European markets, thereby balancing transnational appeal risks.

In conclusion, these studies collectively illustrate that Netflix's strategy is adaptive and data-driven, characterized by its regional customization within a global appeal framework. This literature review provides a comprehensive understanding of Netflix's content strategy, aligning with broader trends in transnational media consumption and production, and laying a foundation for future research and industry practices.

III. Dataset and Methods

The dataset for this analysis was sourced from a Kaggle, which was publicly available for academic and research purposes. This dataset, provided in a CSV file format for ease of use, encompassed a wide range of attributes including show titles, genres, viewer ratings, release dates, and more. It comprised over 8,799 data points, with each entry representing a Tv show or movie available on Netflix. The extensive nature of this dataset allowed for a detailed exploration of viewing trends, preferences, and content distribution on the Netflix platform.

ATTRIBUTES	DATA TYPE
show_id	Nominal
type	Nominal
title	Nominal
director	Nominal
cast	Nominal
country	Nominal

date_added	Nominal
release_year	Ratio
Rating	Nominal
Duration	Nominal
listed_in	Nominal
decription	Nominal

In my study of the Netflix dataset, I employed a systematic approach involving R, Python, and SQL to extract meaningful insights. The process began with data cleaning and preprocessing in python, where I meticulously handled null values and standardized string entries to ensure data integrity. This foundational step was crucial for accurate analysis. Then, leveraging Python and R, I crafted several visualizations to depict various aspects of the dataset, such as the annual addition of works to Netflix, the distribution of works based on their production date, genre analysis, and the prominence of top contributing countries. These visualizations were instrumental in revealing trends and patterns in the content available on Netflix. Furthermore, I demonstrated my proficiency in SQL by defining a schema for the dataset, loading it into a database, and executing basic queries. These queries provided summarized views of the data, offering a straightforward understanding of key aspects like content frequency and category distribution. This multi-tool approach allowed for a comprehensive and nuanced understanding of the Netflix dataset, blending data manipulation, visual storytelling, and analytical querying.

IV. Results

### Figure 1: Distribution of Content Type
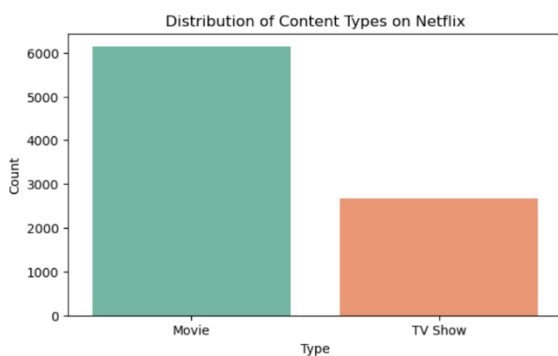
The bar chart presents a clear comparison between the two primary content types available on Netflix: movies and TV shows. With a substantially higher count, movies dominate the platform, outnumbering TV shows. This significant difference suggests that Netflix's content acquisition strategy may prioritize movies, potentially due to their broader appeal or differing consumption patterns among subscribers.

Figure 2: Number of contents Added by Year
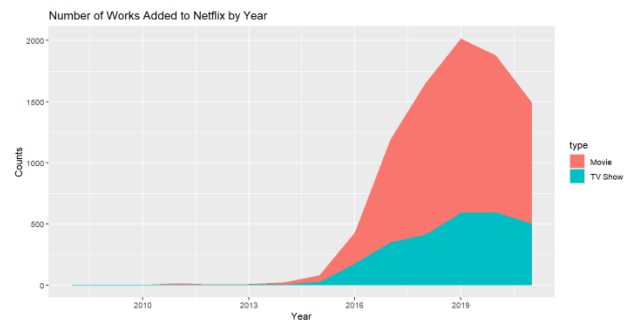
The stacked area chart illustrates a significant growth in the number of movies and TV shows added to Netflix from 2010 to 2019. The volume of movies shows a particularly steep increase, overshadowing the growth of TV shows, especially from 2016 onwards. This trend could indicate a strategic push by Netflix to enrich their movie catalog, possibly in response to consumer demand or market trends.

Figure 3: Yearly Comparison (New content Vs Old content)
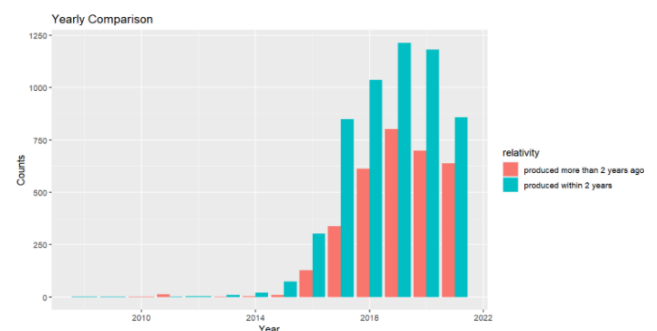
The bar chart provides a clear distinction between content added to Netflix that was produced within the last two years versus content produced more than two years ago. Despite a growing trend in the addition of recent content over the years, there is a noticeable decrease in the most recent

year displayed. This downturn can likely be attributed to the global COVID-19 pandemic, which had a profound impact on the film and television industry, leading to production delays and halts as people were unable to gather for filming. Consequently, this period saw a reduction in the availability of newly produced titles for streaming platforms like Netflix.

**Figure 4: Top 10 genre in Netflix**

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Top 10 Genres on Netflix
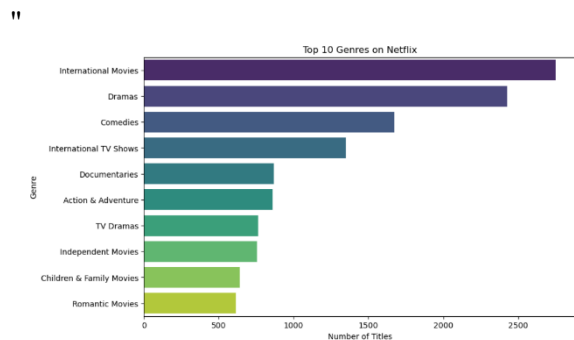
The bar chart showcases 'International Movies' and 'Dramas' as the most prevalent genres on Netflix, followed closely by 'Comedies'. The popularity of these genres suggests a strategic alignment by Netflix and content producers to cater to a wide audience preference for diverse storytelling and cultural representation.

Figure 5: Top 10 Countries producing contents.

Top 10 Countries Producing Netflix Content
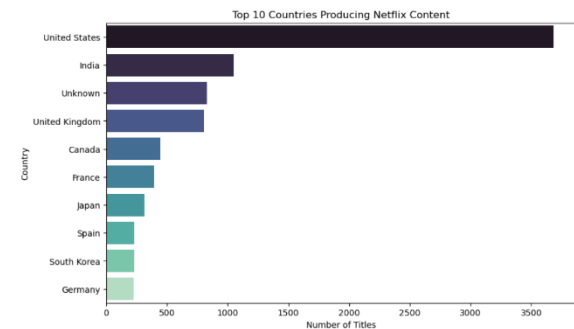
The horizontal bar chart reveals the United States as the leading producer of Netflix content, followed by India and the United Kingdom. This distribution underscores the significant role these countries play in the global content landscape of Netflix. The high volume of content from these regions may be reflective of both the production capabilities and the cultural influence they have on the global entertainment market.

Figure 6: Genre popularity by Top 5 countries.

Cross-Analysis of Genre Popularity by Top 5 Countries
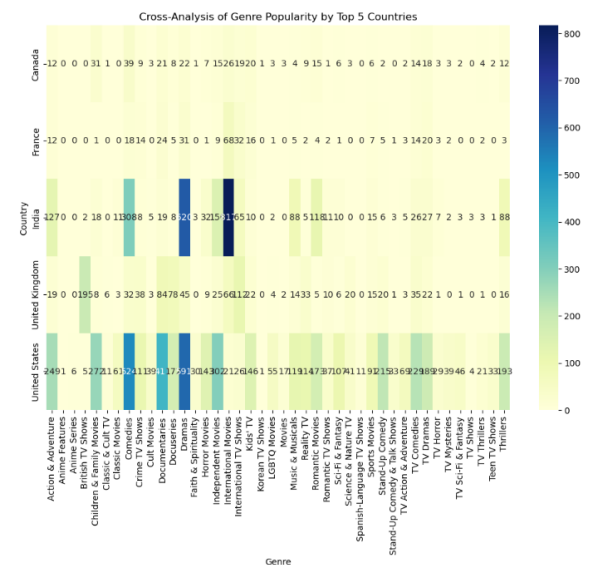
The heatmap illustrates the popularity of various genres within the top 5 content-producing countries on Netflix. The United States shows a diversified genre distribution, with 'Dramas', 'Comedies', and 'Action & Adventure' being particularly popular. India's content leans heavily towards 'International Movies', indicating a focus on showcasing local culture to a global audience. The United Kingdom, Canada, and France also display varied genre preferences, with each country contributing significantly to specific genres like 'Crime TV Shows' for the UK and 'Documentaries' for Canada. This suggests that content producers consider local genre preferences when creating content for Netflix, which in turn impacts global content strategies.

**Figure 7: Rating across Netflix**

Ratings across Netflix
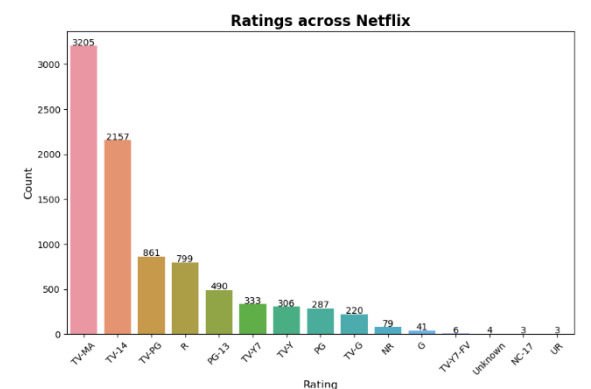
The bar chart delineates the frequency of content ratings on Netflix, revealing a significant prevalence of 'TV-MA' rated titles, which are

intended for mature audiences. This is followed by a considerable count of 'TV-14' content, suitable for viewers over 14. The prominence of these ratings suggests that Netflix's library is heavily skewed towards adult viewers, with a focus on mature and sophisticated themes. The distribution of ratings also indicates the platform's lesser focus on content for younger audiences, such as 'G' or 'TV-Y', which have the lowest counts. This ratings distribution could be strategic, targeting the platform's largest subscriber demographic, or it might reflect a broader trend in viewer content preferences.

Application by SQL:

Step 1: make the schema and table
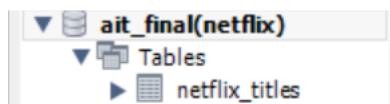
Step 2: Load a data.

Step 3: Simple queries

V. Limitations and Further Research Needed

The study on Netflix's content strategy, while comprehensive, faced certain limitations that could be addressed in future research. Firstly, the research primarily relied on existing datasets from platforms like Kaggle, which might not encompass the full spectrum of Netflix's content. The datasets primarily focused on readily available metrics like genre, country of production, and release dates. However, deeper insights into viewer demographics, detailed viewer preferences, or proprietary data held by Netflix could significantly enhance the analysis.

Another limitation was the methodological approach. The study predominantly used quantitative analysis methods. While these methods are effective in identifying trends and patterns in large datasets, they might not fully capture the nuances of content strategy, such as the qualitative aspects of viewer engagement or the cultural significance of certain content types.

Moreover, the scope of the study was confined to Netflix's global content strategy, with a particular focus on certain regions. Expanding this analysis to include a comparative study with other streaming services could provide a richer understanding of the competitive landscape and different content strategies employed by these platforms.

For future research, several areas could be explored:

Incorporating Viewer Demographics and Preferences: Future studies could benefit from including viewer demographic data and preferences, which would offer a more targeted analysis of content strategies aimed at specific audience segments.

Qualitative Analysis: Employing qualitative research methods, such as content analysis or viewer surveys, could provide deeper insights into the effectiveness of content strategies in terms of viewer engagement and satisfaction.

Comparative Studies with Other Streaming Services: Comparative analyses with competitors like Amazon Prime, Disney+, or Hulu could highlight unique aspects of Netflix's strategy and reveal industry-wide trends.

Longitudinal Analysis: A longitudinal study, examining how Netflix's content strategy evolves over a more extended period, would be beneficial. This could reveal how strategies are adapted in response to changes in viewer preferences,

technological advancements, or competitive pressures.

Impact of Regional and Cultural Differences: An in-depth analysis of how regional and cultural differences influence content popularity and viewer preferences could provide valuable insights for content localization and customization strategies.

By addressing these limitations and exploring these areas in future research, a more holistic understanding of content strategy in the streaming industry can be achieved, leading to more effective and audience-centric content development approaches.

VI. Discussion and Conclusion

The comprehensive data analysis conducted in this study illuminates the intricacies of Netflix's content strategy, answering the research questions with insightful findings.

Yearly Trends in the Volume of Movies and TV Shows: The analysis showed a strategic emphasis on movies, suggesting a response to viewer demand and market trends. This trend may indicate Netflix's focus on providing a diverse mix of content.

Recent vs. Older Works Comparison: The study revealed a focus on adding newer content, highlighting Netflix's strategy to keep its library fresh and appealing to a viewer base that prefers current content.

Growth in Genre Popularity: The analysis highlighted significant growth in genres such as International Movies, Dramas, and Comedies, likely influenced by changing viewer preferences and a strategy for global expansion.

Genre Popularity in Top Content-Producing Countries: The findings on genre popularity across the top content-producing countries demonstrate Netflix's nuanced approach to international content strategy, tailoring its content to resonate with regional tastes and preferences.

Importance of Ratings in New Content Production: The study suggests that content with broader appeal ratings tends to have more significant impact and appeal. This indicates that for new content production, a focus on materials accessible to a larger demographic could be beneficial for platform growth and viewer satisfaction.

In conclusion, this research provides a detailed picture of Netflix's content strategy, showing how the platform maintains its competitive edge and market dominance. The increasing volume of movies, the focus on recent productions, and the strategic emphasis on specific genres, along with the attention to ratings in content production, reveal Netflix's dynamic approach to content management. The regional differences in genre popularity and the importance of ratings underscore the company's commitment to catering to a global audience while considering diverse viewer needs.

As the streaming industry continues to evolve, the insights from this study offer valuable perspectives on content strategy, emphasizing the importance of responsiveness to market trends, viewer preferences, and cultural nuances. The adaptability and foresight demonstrated by Netflix in its content strategy are key to its ongoing success and will remain pivotal in navigating the rapidly changing media landscape.

VII. Glossary

- Content Strategy: The planning, development, and management of content, usually in digital media. Specifically, it refers to how Netflix decides what types of movies and TV shows to offer.

- Genre Diversity: Refers to the variety of genres (such as drama, comedy, thriller) present in Netflix's content catalog.

- Quantitative Methods: Research methods dealing with numbers and anything that is measurable. They are used for statistical analysis and objective measurements.

- Exploratory Data Analysis (EDA): An approach to analyzing data sets to summarize their main characteristics, often using visual methods.

VIII. Reference (APA)

1. Kamarudin, N., Daheche, A., & Khmag, A. (2022). Netflix User and Movies Interest

Analysis for Asian Countries. In 2022 9th International Conference on Electrical and

Electronics Engineering (ICEEE) (pp. 339-343). Alanya, Turkey.

https://doi.org/10.1109/ICEEE55327.2022.9772585

2. Lotz, A. D., Eklund, O., & Soroka, S. (2022). Netflix, library analysis, and globalization:

Rethinking mass media flows. Journal of Communication, 72(4), 511–521.

https://doi.org/10.1093/joc/jqac020

3. Lotz, A. D. (2021). In between the global and the local: Mapping the geographies of

Netflix as a multinational service. International Journal of Cultural Studies, 24(2), 195-

215. https://doi.org/10.1177/1367877920953166

4. Iordache, C., Raats, T., & Afilipoaie, A. (2022). Transnationalisation revisited through

the Netflix Original: An analysis of investment strategies in Europe. Convergence, 28(1),

236-254. https://doi.org/10.1177/13548565211047344

5. Bansal, S. (2021). Netflix Movies and TV Shows [Dataset]. Kaggle. https://www.kaggle.com/datasets/shivamb/netflix-shows/data

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