



Data Analysis Portfolio



Professional Background



I am an ambitious and motivated individual who has recently embarked on a journey to become a skilled Data Analyst. With a solid educational foundation in Finance and Business Administration, combined with a passion for sustainability and social innovation, I have developed a diverse skill set that complements data analysis.

My academic journey began with a Bachelor of Science in Finance from the University of Lagos, Nigeria, where I graduated with First Class honours in 2019. Before that, I obtained a National Diploma in Business Administration with Distinction from Yaba College of Technology, Nigeria. Additionally, I pursued several relevant certifications and courses to expand my knowledge and enhance my career prospects. I completed a Diploma in Sustainable Management and acquired expertise in corporate sustainability, social innovation, and sustainable development. I also completed courses on the Finance of climate change and innovation management.

I have gained valuable experience in various roles throughout my professional career, showcasing my ability to adapt and contribute effectively to different organizations. My extracurricular and volunteering experiences have further shaped my leadership and interpersonal skills.

With a solid educational background, a passion for sustainability, and a drive to learn and excel, I am eager to apply my skills and contribute as a Data Analyst to the success of your organization. I possess excellent verbal and written communication skills, a strategic mindset, and a solid ability to analyze and interpret data. My proficiency in SPSS, Excel, Google Sheets, Tableau, and other digital tools further strengthens my capabilities.

Overall, I'm confident that my dedication, adaptability, and problem-solving skills will enable me to excel in this role and make valuable contributions to your data-driven initiatives.

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Udemy Data Analysis

Project Description:



- *As a Data Analyst at Udemy, my objective is to analyze course sales and trends to identify opportunities for increasing quarterly earnings. Udemy is an education technology company that operates an online learning platform with millions of learners, thousands of courses, and numerous instructors. By leveraging the available data, I will explore patterns and insights to help Udemy make informed decisions on various aspects such as course popularity, pricing strategies, and targeted marketing efforts.*
- *This project is carried out to better understand the pricing and subscriptions data of Udemy courses for four different subjects – Web Development, Business Finance, Graphic Design, and Musical Instruments - and identifying their trends and patterns*
- *This analysis will help us to:*
 - *Identify for which subject more courses should be created*
 - *Create targeted strategies to increase the company's revenue*
 - *Evaluate the relationship between subjects with potential for price increases without negative impacting sales*
 - *Analyze the effectiveness of free courses under each subject in encouraging paid subscription*

The Business Problem and Key Questions:



The business problem that will be addressed with data analysis is how to increase Udemy's next quarterly earnings. To achieve this, I will focus on understanding and optimizing the following key areas: Course Popularity Analysis, Pricing Optimization, Marketing and Advertising Targeting, and Course Content Enhancement. This will be streamlined in the following key questions:

1. *What are the total numbers of subscribers in each subject?*
2. *How does the average content duration/price/number of students vary across different subjects?*
3. *How many courses are free and paid for each subject?*
4. *What is the average price of web development courses at different levels?*
5. *What are the 20 most popular courses? Also, include the following information:*
 - *Their level*
 - *Whether they are free or paid*
 - *Whether any are free beginner courses,*
 - *and the duration of the courses.*
6. *Does content duration impact the price of the course?*



Findings & Insights

1. What are the total numbers of subscribers in each subject?



Finding 1

Table 1: Total Subscribers by Subject

subject	SUM of num_subscribers
Business Finance	1,868,711
Graphic Design	1,063,148
Musical Instruments	846,689
Web Development	7,981,935
Grand Total	11,760,483

The analysis of the total number of subscribers per subjects reveal that Musical Instruments has 7.2% of the grand total, Graphic Design took 9%, Business Finance settled for 15.9%, while Web Development took the larger chunk with a whooping 67.9% of the total subscribers.

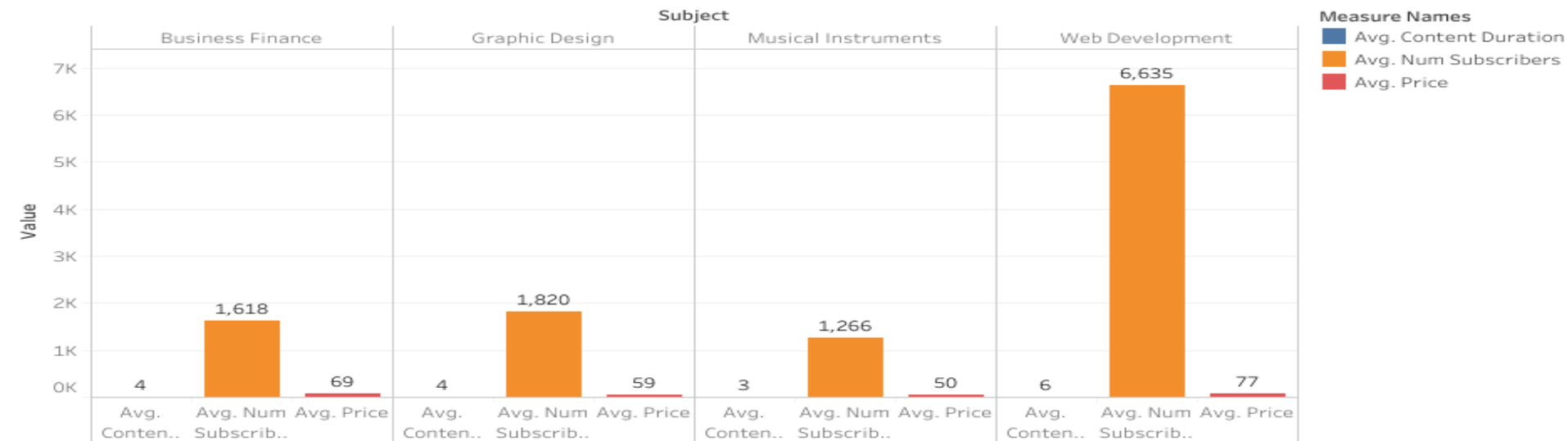
2. How does the average content duration/price/number of students vary across different subjects?



Finding 2

Figure 1: Averages by Subject

Averages by Subjects



The analysis of the different averages shows that Web Development had the highest across all categories, meanwhile the opposite was the case with Musical Instruments. One could infer from here that so long as a quality content is provided, the duration and price will not deter subscribers. This doesn't mean Musical instrument content is not of quality, rather it begs the question if there're enough subscribers that really wants to learn the subject. A poll among Udemy subscribers could help bring clarity to that. Business Finance and Graphic Design, though, seem to deviate from this inference. With a longer content duration and a fairly low price Graphic Design attracted more customers compared to Business Finance. This perhaps reveals that where content duration are not so far apart, then the price of the subject plays a huge role in attracting subscribers.

3. How many courses are free and paid for each subject?



Finding 3

Table 2: Free/Paid Courses by Subject

COUNTA of Free or Paid			
subject	Free or Paid		
	Free	Paid	Grand Total
Business Finance	96	1059	1155
Graphic Design	35	549	584
Musical Instruments	46	623	669
Web Development	134	1069	1203
Grand Total	311	3300	3611

The most popular course here is Web Development and this could be down to it having more free courses for subscribers. The other effect of this subject having more free courses is that it encourages subscribers to key into the paid version as well. If Udemy is to increase its quarterly earnings, then this is the go-to subject to increase in terms of the free and paid courses. The same strategy could be employed for Business Finance. These courses are ideal perhaps because of their importance, demand in the work place, and popularity. On the other hand, Musical Instruments do not command same attention and so lesser resources should be committed to it, and instead channeled into the other three subjects, particularly Web Development.

4. What is the average price of web development courses at different levels?



Finding 4

Table 3: Average Price by Web Development Levels

AVERAGE of price level	subject Web Developer
All Levels	74.54976303
Beginner Level	78.54265403
Expert Level	67.14285714
Intermediate Level	85.07462687
Grand Total	77.03657523

The average price of Web Development courses across different levels shows that the prices are highest at the Intermediate Level perhaps because it's aimed at providing a deeper understanding of web development concepts. Prices are lowest at the Expert level because the courses cater to subscribers who already possess a high level of expertise. They need an extra incentive and that comes in form of a fairly low price. The Beginner Level average price is slightly more expensive than the overall average because they contain the building blocks of web development. The All Levels price is fair enough considering the fact that the courses are suitable for learners at any experience level. Overall, the pricing could also have been influenced by other factors such as course duration, instructor reputation, course content, additional resources provided, and any discounts or promotions available at the time of purchase.

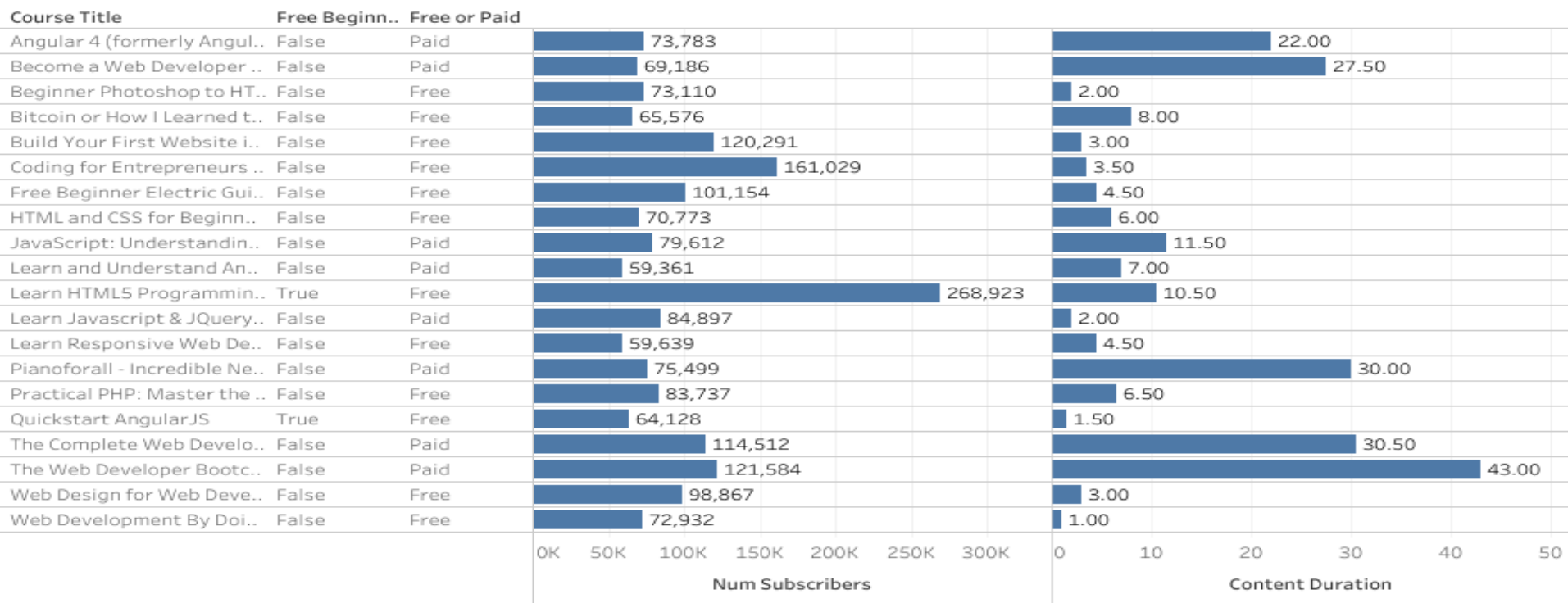


Finding 5

5. What are the 20 most popular courses?

Table 4: 20 Most Popular Courses

20 Most Popular Courses



One of the key features of this analysis is that there are only two free beginner courses in the 20 most popular courses. Also, there are more free courses than paid ones. However, the paid courses tend to have longer content duration compared to the free ones. Finally, there are more subscribers going for the All Level courses with the Beginner Level courses coming closest.

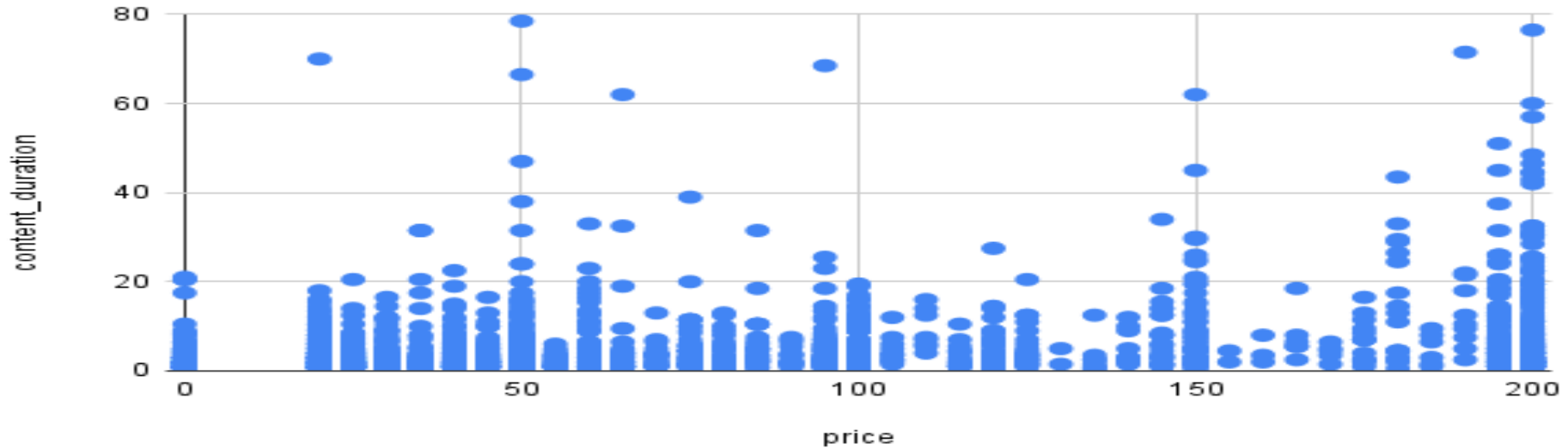
6. Does content duration impact the price of the course?



Finding 6

Figure 2: Content Duration by Price

content_duration vs. price



Generally, the diagram shows that as the price increases, the course duration also follow suit. This means that more expensive courses tend to be more comprehensive and cover more materials, and by extension have longer content duration. However, it is important to note that there're some expensive courses with short duration as well. This variation in data is probably owing to the quality of the course content, the instructor's experience, and the course's learning objectives. Finally, the fact that the data points are clustered close to the line shows that there's a strong relationship between the price and content duration.



Summary

Summary of Findings:



- **Top 5 courses:**

- Almost 68% of subscribers come from Web Development and the top 5 courses are for Web development as well
- 60% of the top 5 courses are free, but the paid ones have a longer content duration
- The only 2 paid courses in the top 5 fall under Web Development, and subscribers seem willing to pay premium price for them.

- **Business Finance vs Web Development:**

- Business Finance and web development have almost equal number of total courses (1155 vs 1203), but web development course are almost 2x in content duration and have 4x the average subscribers
- While the business finance has a higher rating than web development (799.7 vs 773.59), web development commands a higher total course price and an overwhelming number of reviews
- Business Finance seems to have the potential to generate more revenue for Udemy, but it'd require an upgrade in the number of free and paid courses than it currently provides to achieve such feat.

- **Course Pricing:**

- Udemy subscribers tend to be willing to pay higher prices for web development courses
- Prices of courses and content duration have a strong and positive relationship. Thus, longer content duration should be encouraged in order to justifiably increase course price
- Special attention should be paid to the intermediate level courses, particularly that of Web Development, as they provide an opportunity for price increment across all subjects



Actions & Recommendations



Recommended Actions:

Product recommendations:

- *Given that almost 68% of subscribers come from the Web Development category and the top 5 courses are also focused on Web Development, it is evident that there is a high demand for these courses. Udemy should consider expanding its offerings in this area by developing more courses to cater to the growing audience.*
- *Business Finance has the potential to generate more revenue for Udemy. To tap into this potential, Udemy should focus on upgrading its Business Finance course selection by increasing the number of both free and paid courses. This will attract a wider audience and help increase revenue in this category.*
- *Graphics Design and Musical Instruments could benefit from adopting the same approach (above) as Business Finance*
- *Just as Web Development did with the free HTML course, the other subjects could develop more free courses with lengthy content duration to attract more subscribers.*
- *To maintain the popularity and high demand for Web Development courses, Udemy should emphasize the quality of these courses by encouraging instructors to create content that consistently receives positive reviews. This will help solidify the reputation of Web Development courses and attract more subscribers.*

Marketing recommendations:

- *Our data tells us that web development courses are most popular and people are willing to pay for it. Marketing and advertising campaigns should therefore be channeled towards increasing awareness on the value of Web development Courses, especially the free ones.*
- *Graphic Design shows potential considering it has a higher number of subscribers compared to Musical Instruments though the latter has a lower number of courses. To increase subscribers for Graphic Design, Udemy can explore offering discounted prices for a limited time and providing high-quality content*
- *To increase the likelihood of potential students subscribing for Musical Instruments courses, preview videos should be provided to showcase the quality and value of the courses.*
- *In order to help Business Finance do better then more reviews and ratings should be encouraged from existing students. This can be done by sending them personalized messages or providing a gentle reminder within the course*



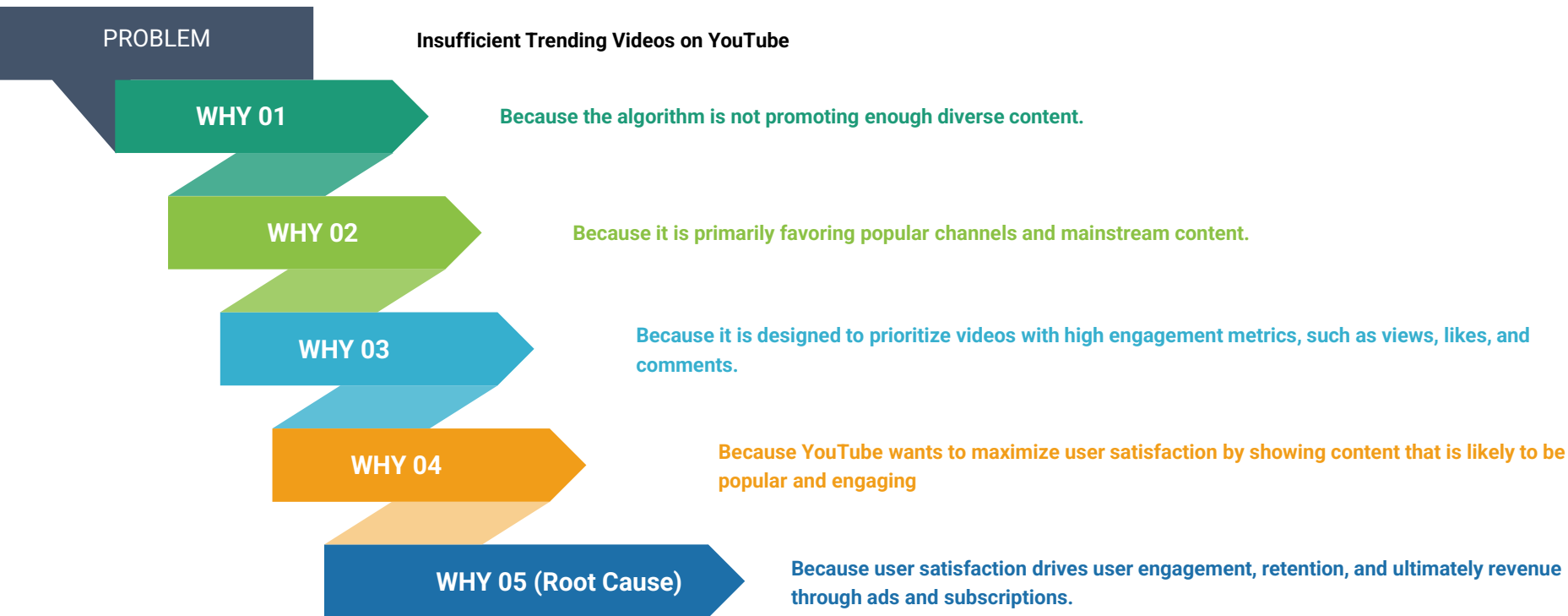
YouTube Data Analysis

Project Description:



- *As a Data Analyst with YouTube, the objective of this project is to leverage the available data on YouTube trending videos to provide actionable insights and recommendations to increase earnings. By understanding patterns and identifying opportunities within the platform, YouTube can tailor its business model, marketing efforts, and advertising strategies to maximize revenue.*
- *Having being presented with a host of dataset, I eventually settled for the “YouTube Trending” dataset provided by Kaggle. To better understand the viewing patterns across different countries, I initially defined the problem, thereafter came up with possible questions to gain insights into the reason for insufficient YouTube trending videos and how to optimize the platform to meet the evolving needs and preferences of its users while maximizing profitability. However, before embarking on an in-depth analysis, I cleaned the raw data using Google Sheet by identifying and removing duplicates, carrying out descriptive statistics to gain an understanding of the dataset and its key characteristics, and, finally, ousting rows with 0 responses to ensure the quality and integrity of the data. It is this cleaned data that was analyzed using Google Sheet and Tableau.*
- *Through data analysis and insights, this project aims to:*
 - *Identify which category more videos should be created for*
 - *Create targeted strategies to increase the company revenue*
 - *Provide YouTube with actionable recommendations to enhance its business model*
 - *Increase viewership and trending videos, and subsequently meet viewers’ diverse needs*

Root Cause Analysis: 5 Whys



The Business Problem and Key Questions:



The business problem of insufficient trending videos on YouTube is being framed and addressed using data analytics. By analyzing the available data on YouTube trending videos from multiple countries, we can gain insights that will help us understand patterns, identify opportunities, and make data-driven decisions to increase viewership and engagement on the platform. The following key aspects need to be addressed through data analysis: Identifying Countries with Low Trending Video Engagement, Discovering High-Performing Content Creators, and Targeting Marketing and Advertising Efforts. This will be streamlined in the following key questions:

- 1. What are the total numbers of view in each country?*
- 2. How do the average views/likes/dislikes/comments vary across different countries?*
- 3. Are there any specific video categories that consistently perform well across all countries?*
- 4. Do certain days or times of the week show higher viewership or engagement rates in particular countries?*
- 5. What are the 20 most popular trending videos among these countries:*
 - Which channel contributes the most to the top 20 trending videos?*
 - Which category has the most significant number of viral videos?*



Findings & Insights

1. What are the total numbers of viewers in each country?



Finding 7

Table 5: Total Engagements by Country

Country	SUM of views	SUM of likes	SUM of dislikes	SUM of comment_count
Britain	3,634,118,299.00	123,321,677.00	4,012,160.00	10,659,833.00
Canada	2,194,820,750.00	78,364,979.00	3,230,666.00	8,753,771.00
Denmark	957,199,447.00	32,847,296.00	1,429,263.00	3,657,138.00
France	770,392,303.00	35,944,473.00	1,095,640.00	2,952,134.00
India	1,442,956,302.00	32,543,530.00	1,570,088.00	3,600,155.00
Japan	276,086,665.00	7,077,618.00	324,975.00	916,424.00
Mexico	557,656,833.00	28,214,220.00	1,023,308.00	3,281,304.00
Russia	321,305,424.00	16,817,761.00	2,022,076.00	2,277,996.00
South Korea	749,497,291.00	19,706,560.00	509,643.00	2,895,457.00
USA	2,320,050,184.00	88,875,756.00	3,273,347.00	8,738,821.00
Grand Total	13,224,083,498.00	463,713,870.00	18,491,166.00	47,733,033.00

This table depicts that Britain recorded the highest number of views, likes, dislikes, and comments among the ten countries under review

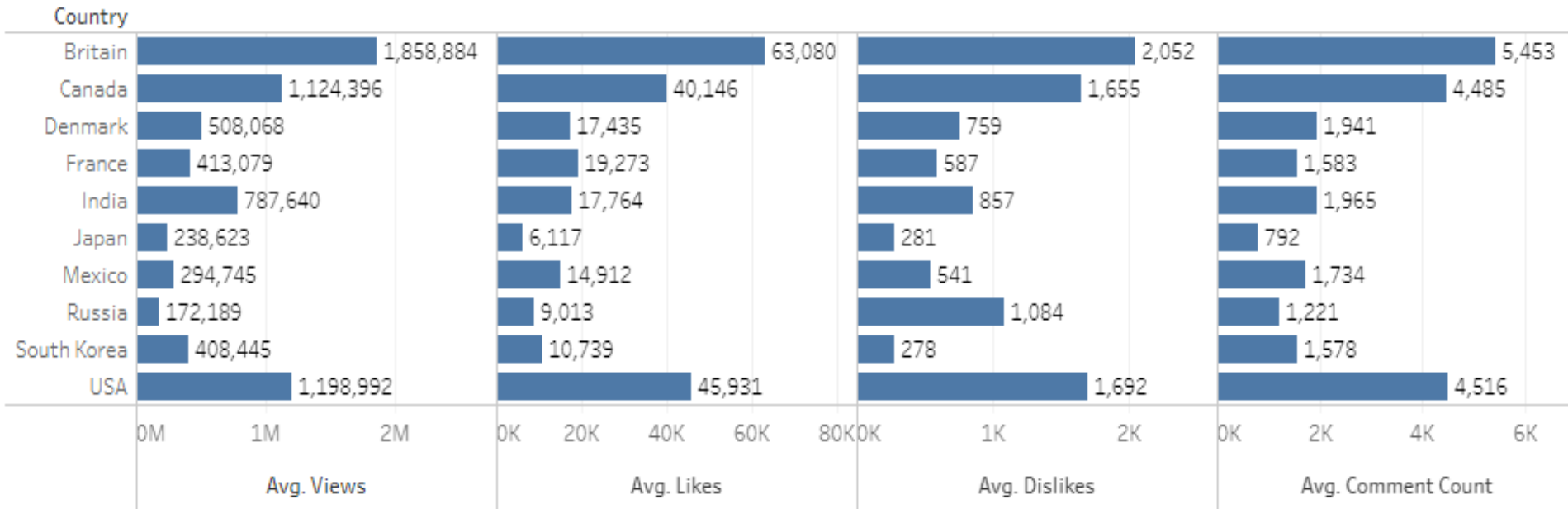
2. How do the average views/likes/dislikes/comments vary across different countries?



Finding 8

Figure 3: Average Engagements by Country

Averages Across the 10 Countries



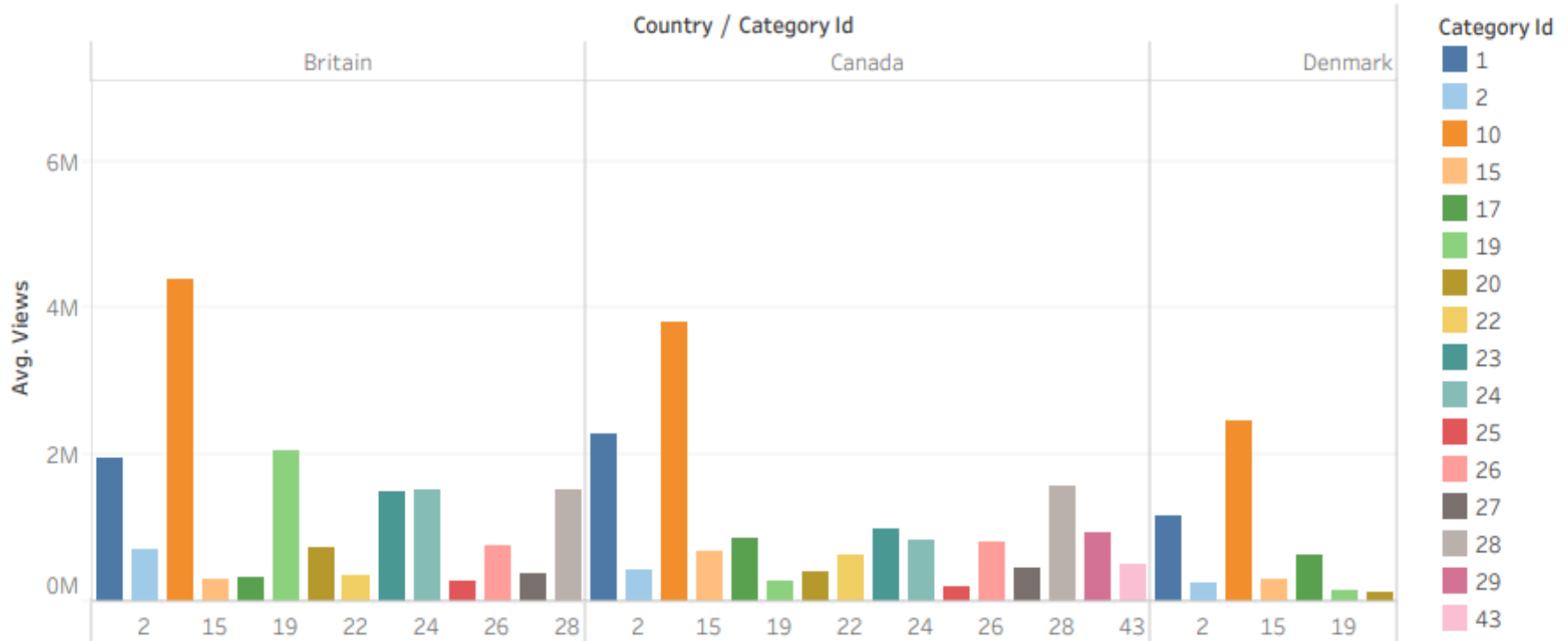
The data shows that Britain recorded the highest averages across board. Canada and USA were not so far apart but the latter closely edges the former. The other countries alternate their superiority over the averages.



3. Are there any specific video categories that consistently perform well across all countries?

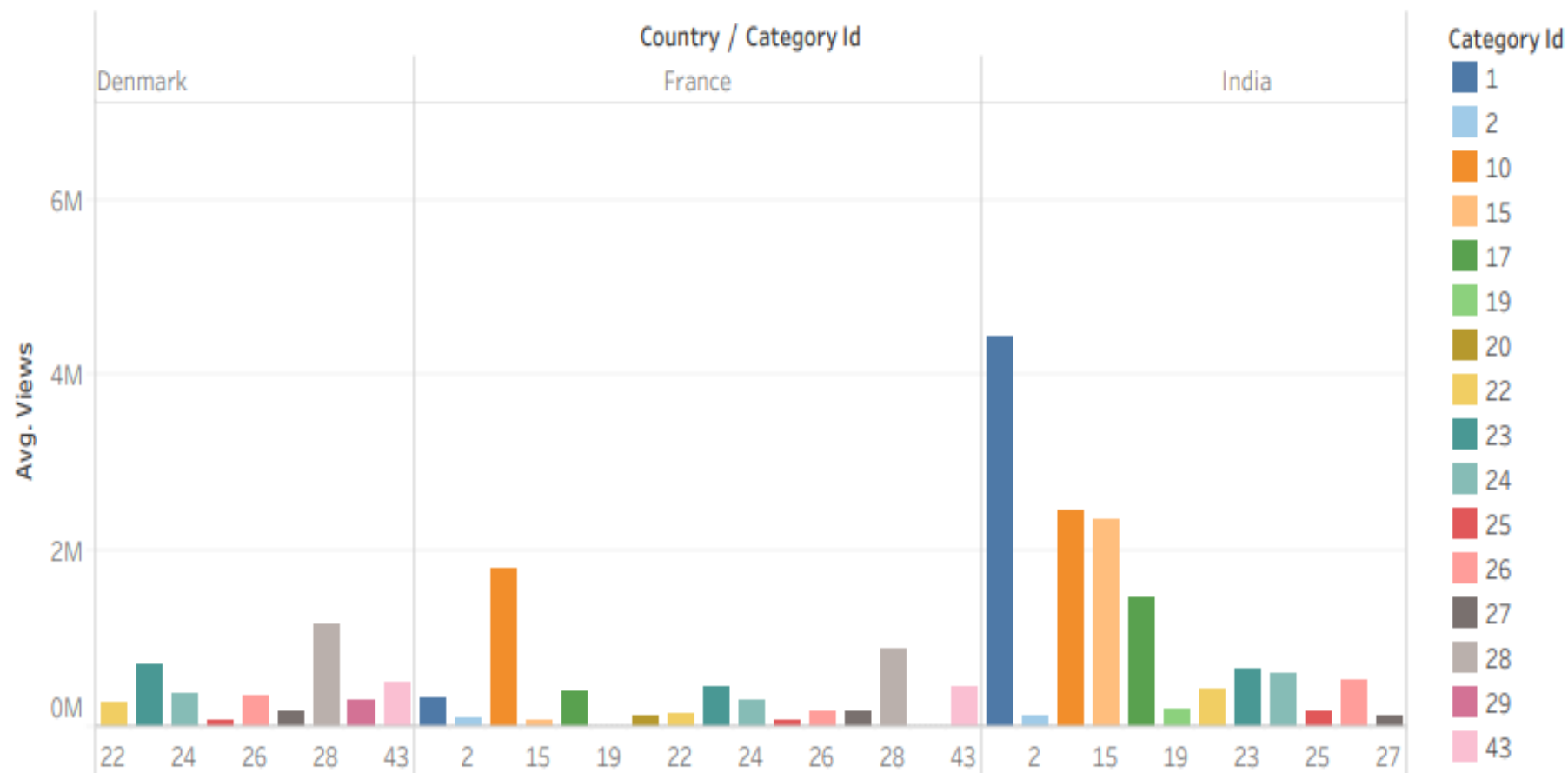
Finding 9

Figure 4: Categories by Country

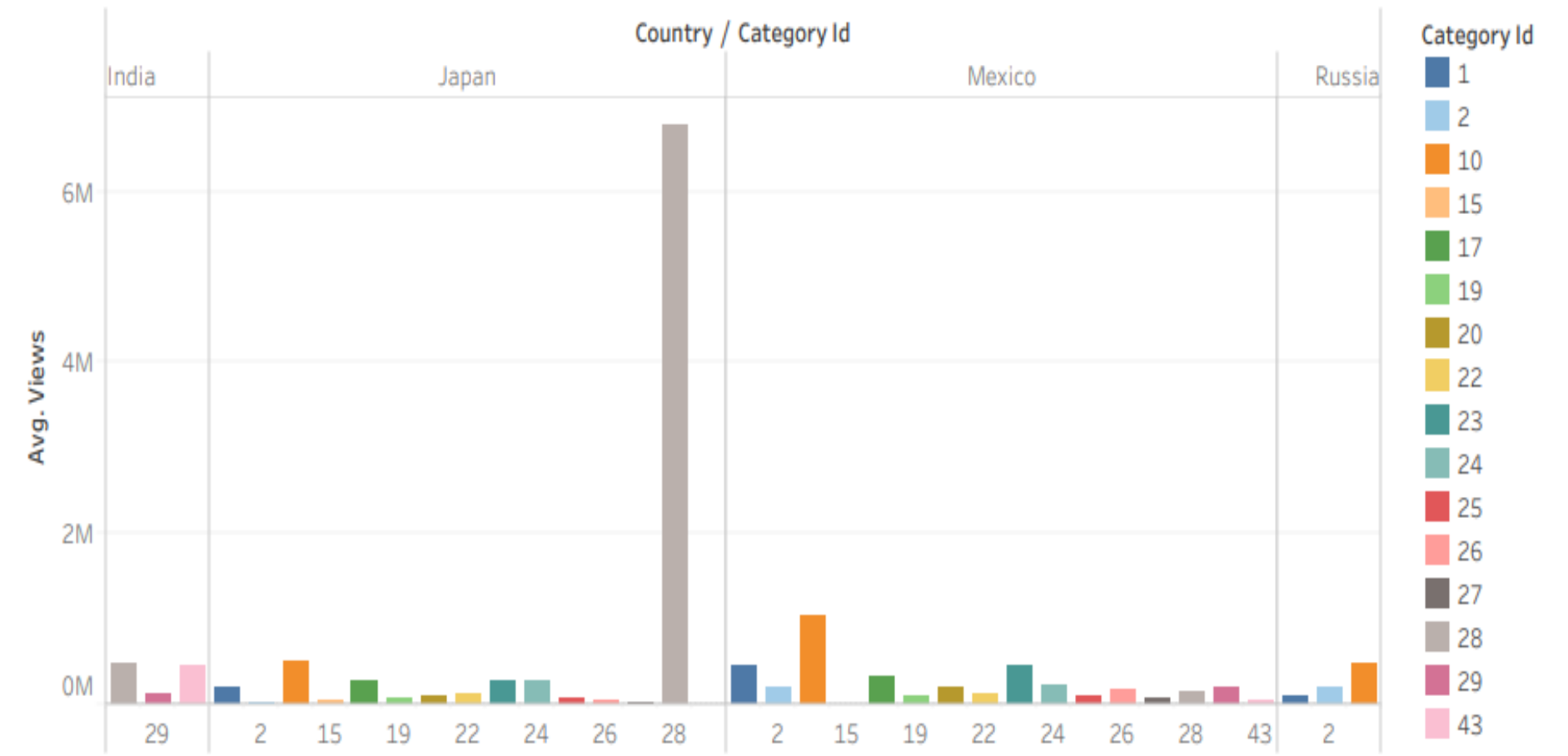


Finding 10

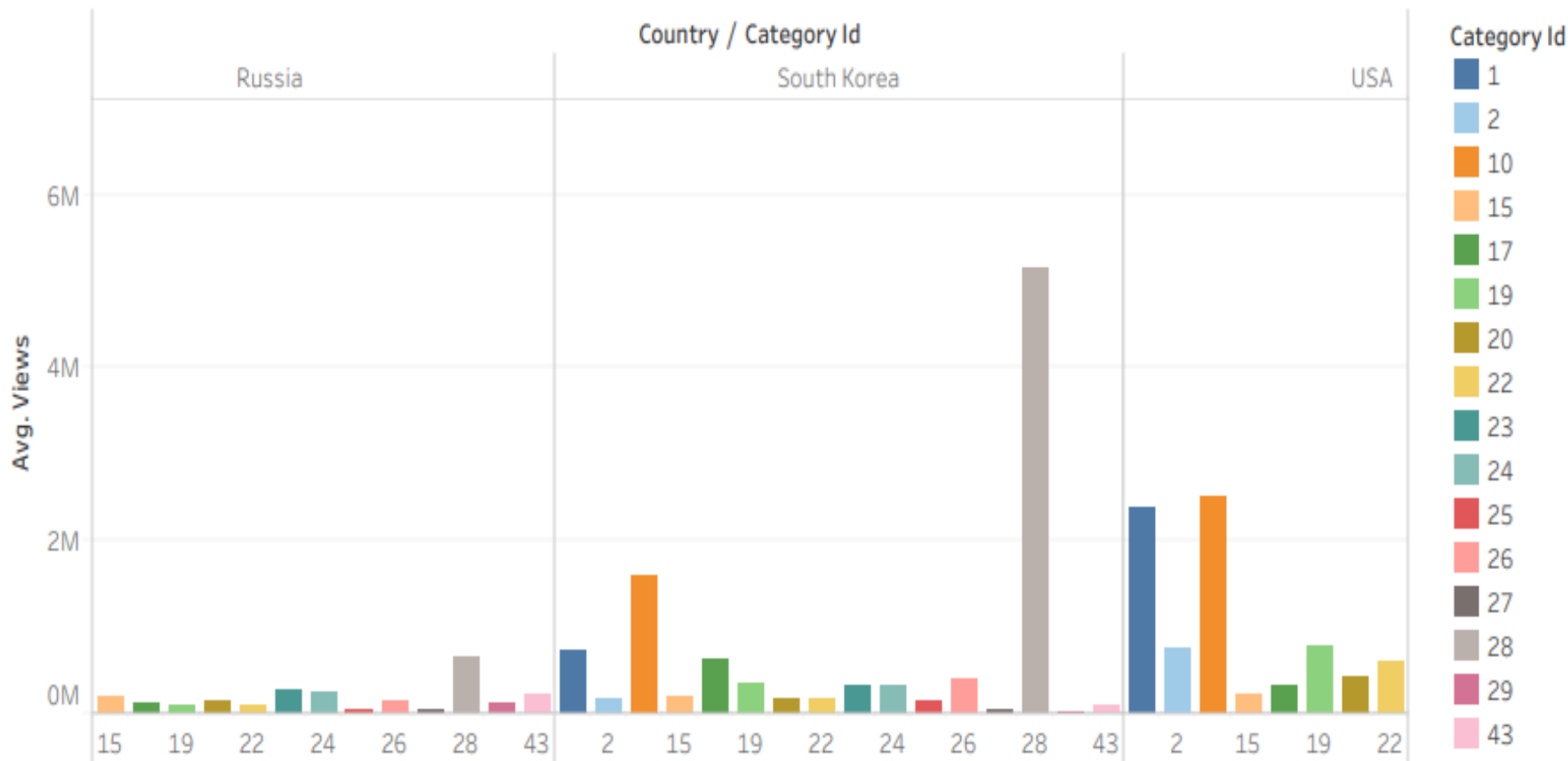
Figure 5: Categories by Country



Finding 11
Figure 6: Categories by Country



Finding 12
Figure 7: Categories by Country



Finding 13
Figure 8: Categories by Country



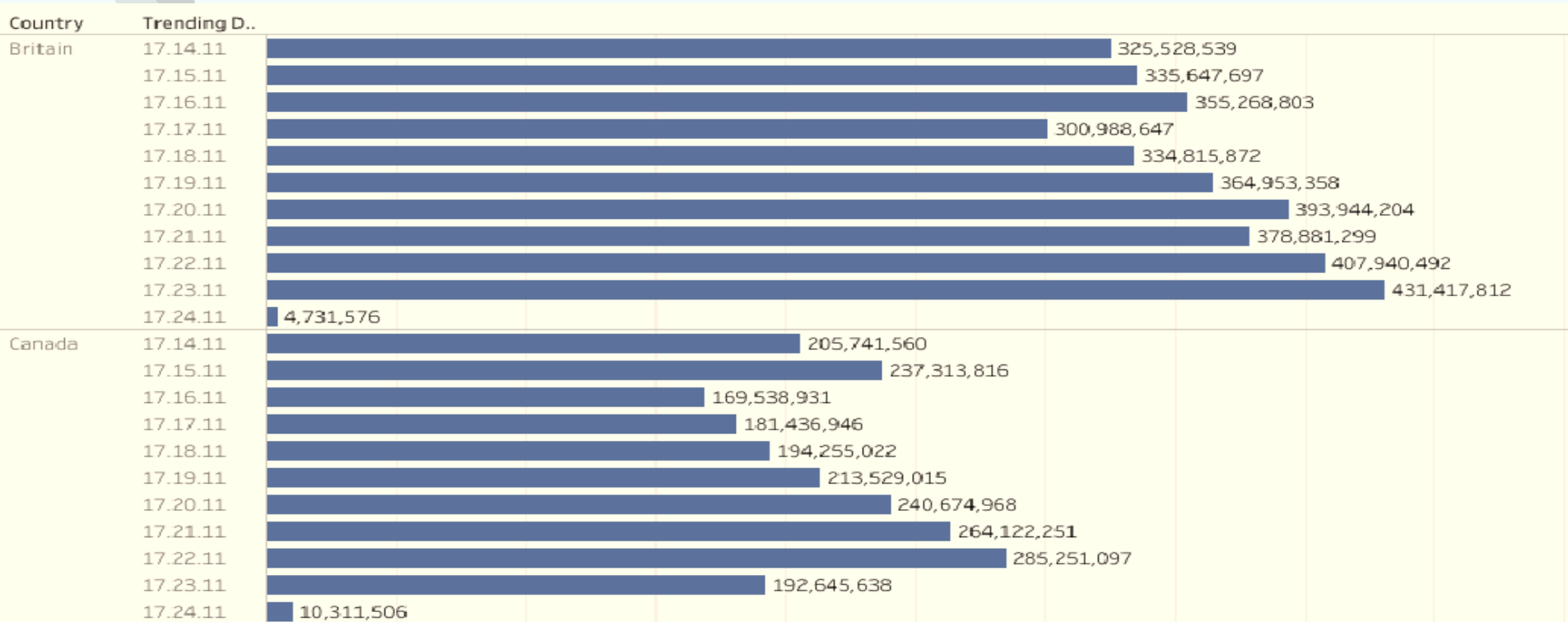
From Figure 3 – Figure 7, video category 10 appeared to consistently perform well across all the 10 countries that were analyzed



4. Do certain days or times of the week show higher viewership or engagement rates in particular countries?

Finding 14

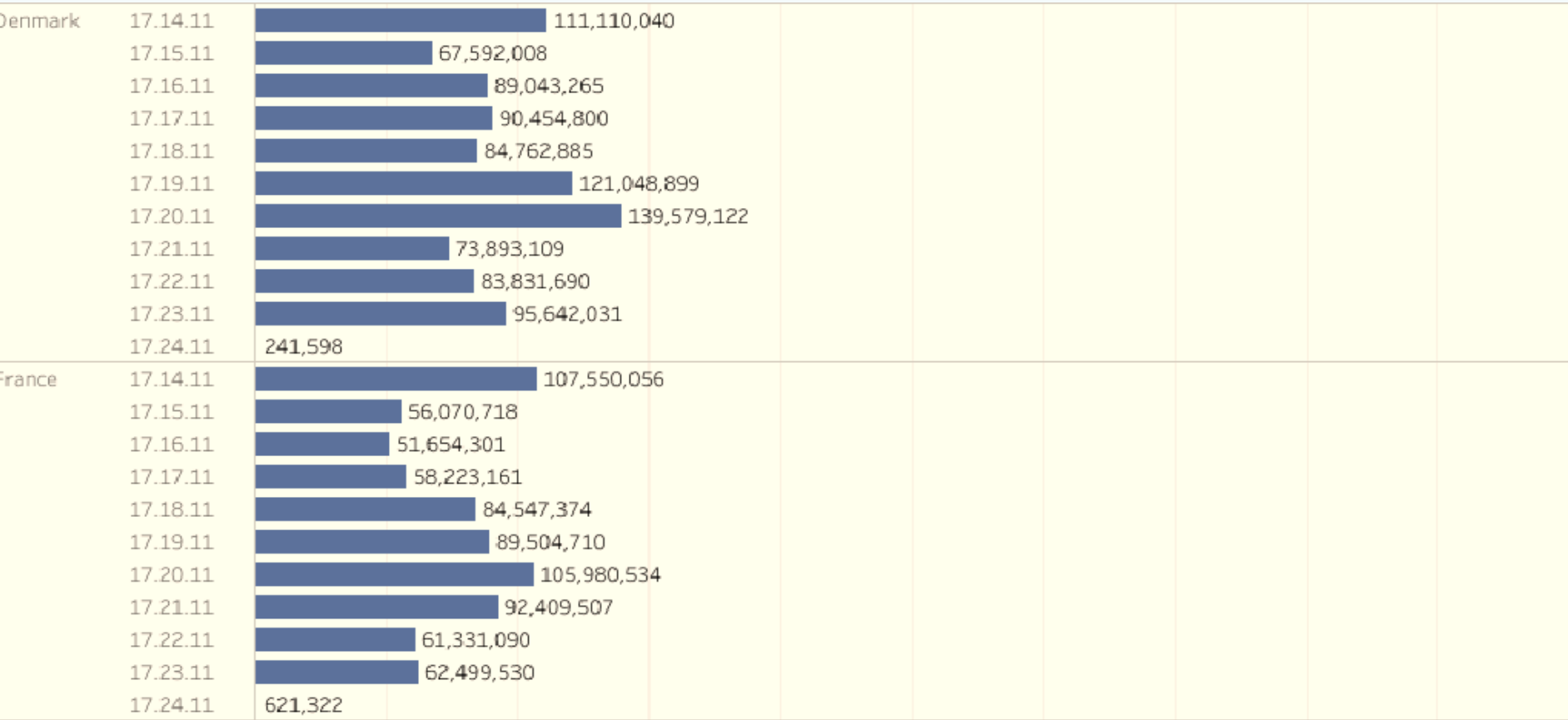
Figure 9: Trending Date by Country



The data shows that Trending dates 17.23.11 and 17.22.11 have the highest engagements for Britain and Canada, respectively.



Finding 15
Figure 10: Trending Date by Country

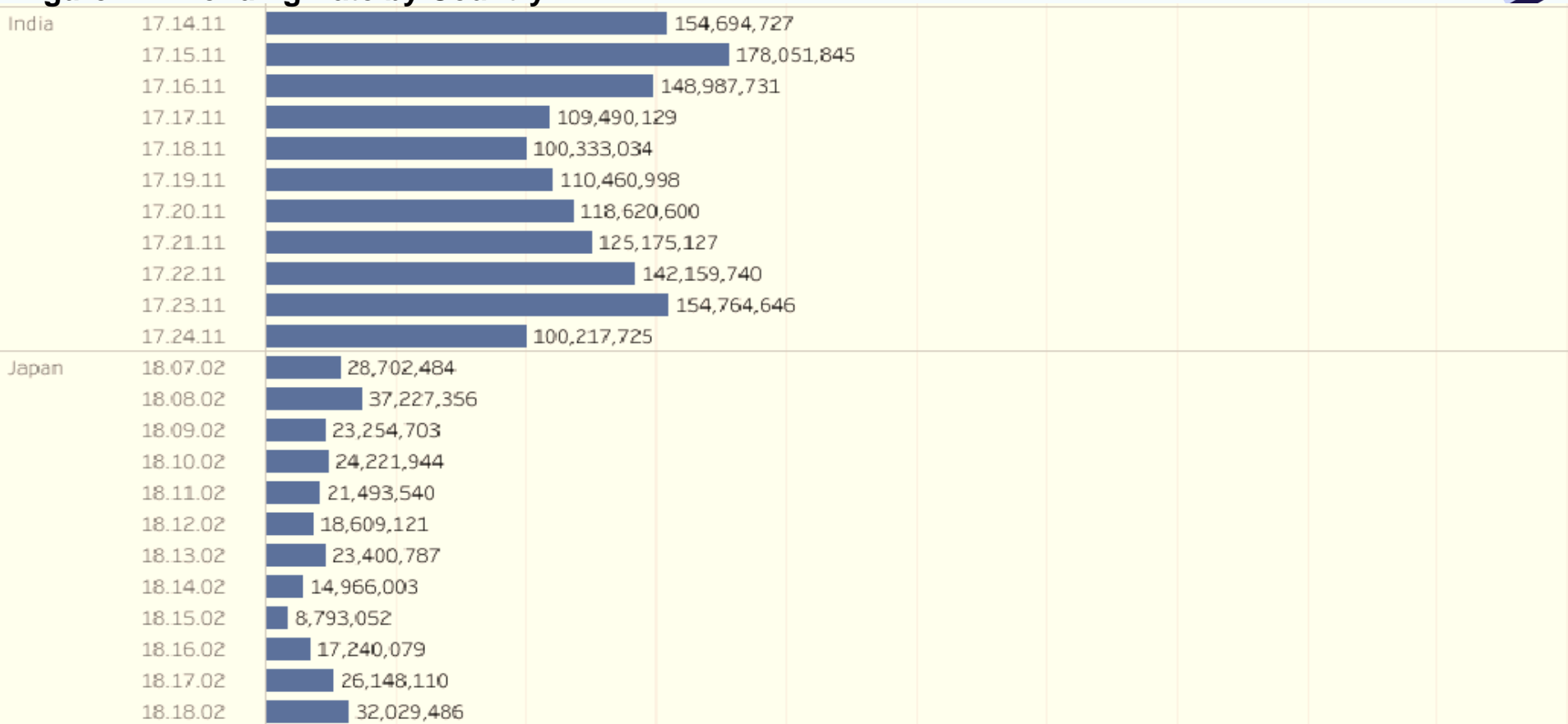


The data shows that Trending dates 17.20.11 and 17.14.11 have the highest engagements for Denmark and France, respectively.



Finding 16

Figure 11: Trending Date by Country

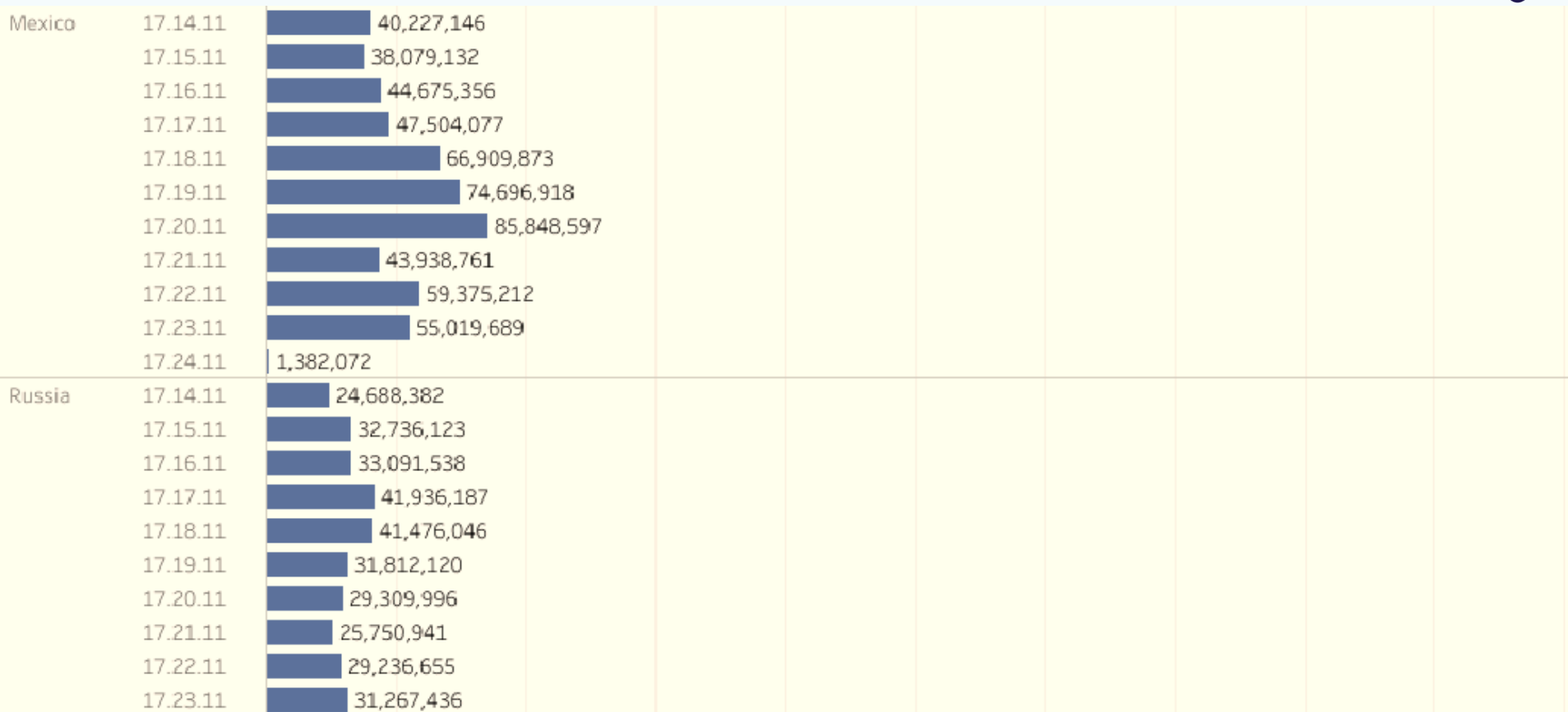


The data shows that Trending dates 17.15.11 and 18.08.02 have the highest engagements for India and Japan, respectively.



Finding 17

Figure 12: Trending Date by Country

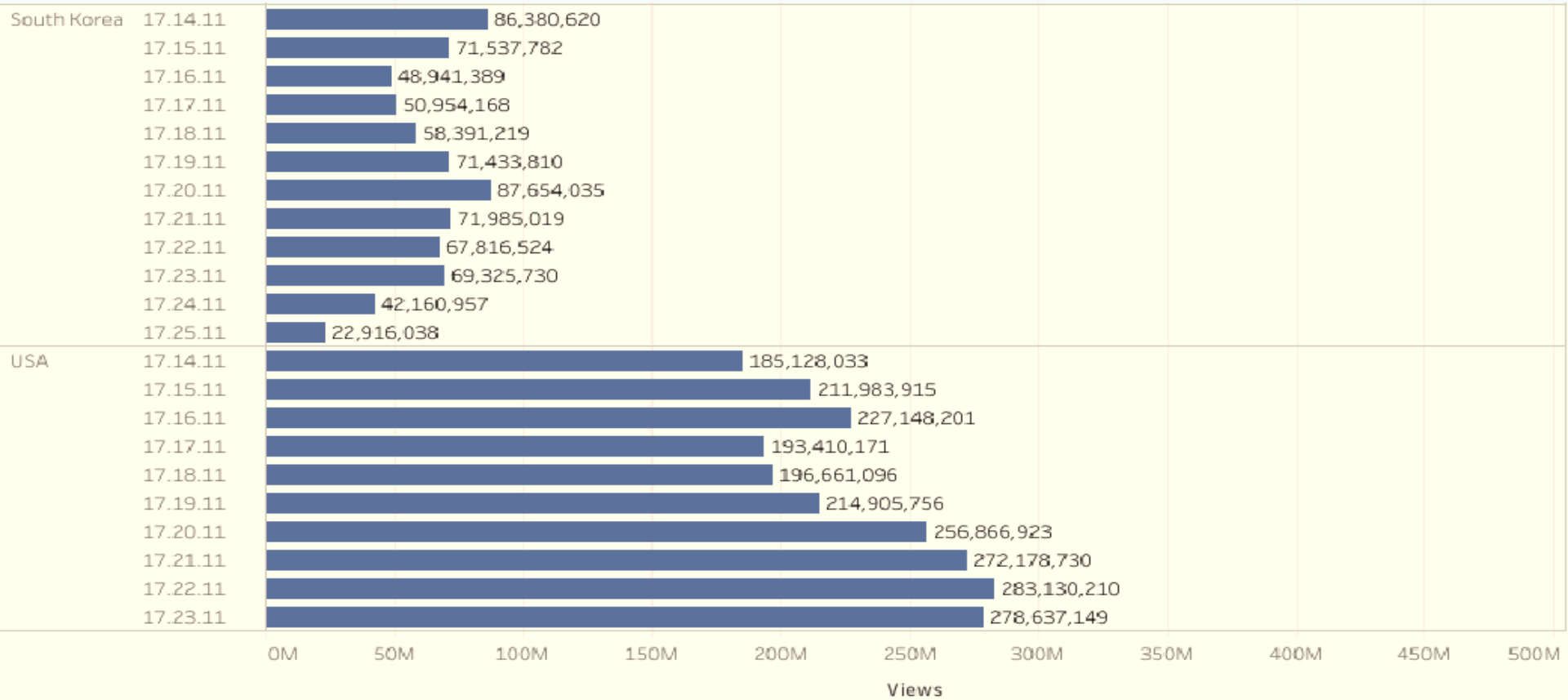


The data shows that Trending dates 17.20.11 and 17.17.11 have the highest engagements for Mexico and Russia, respectively.



Finding 18

Figure 13: Trending Date by Country



The data shows that Trending dates 17.20.11 and 17.22.11 have the highest engagements for South Korea and USA, respectively.

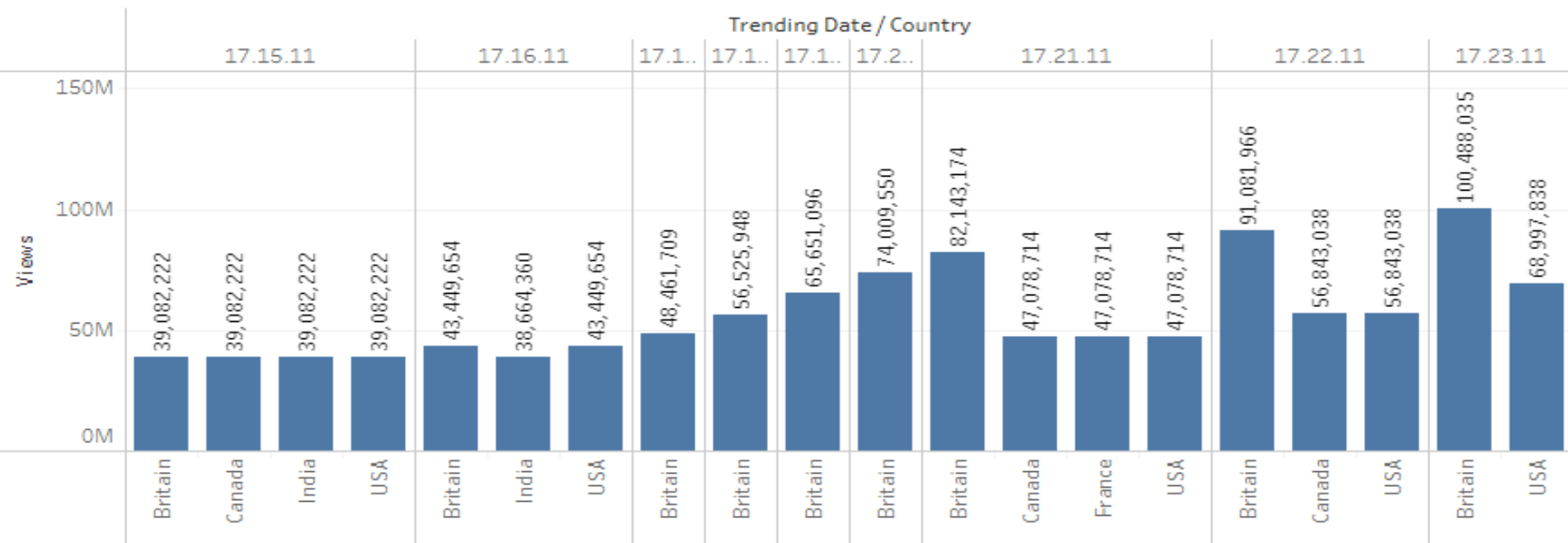
5. What are the 20 most popular trending videos among these countries?



Finding 19

Figure 14: Views by Country

Top 20 Trending Videos Across Countries



The data shows that Britain has the highest number of trending videos among the countries and across the trending dates.

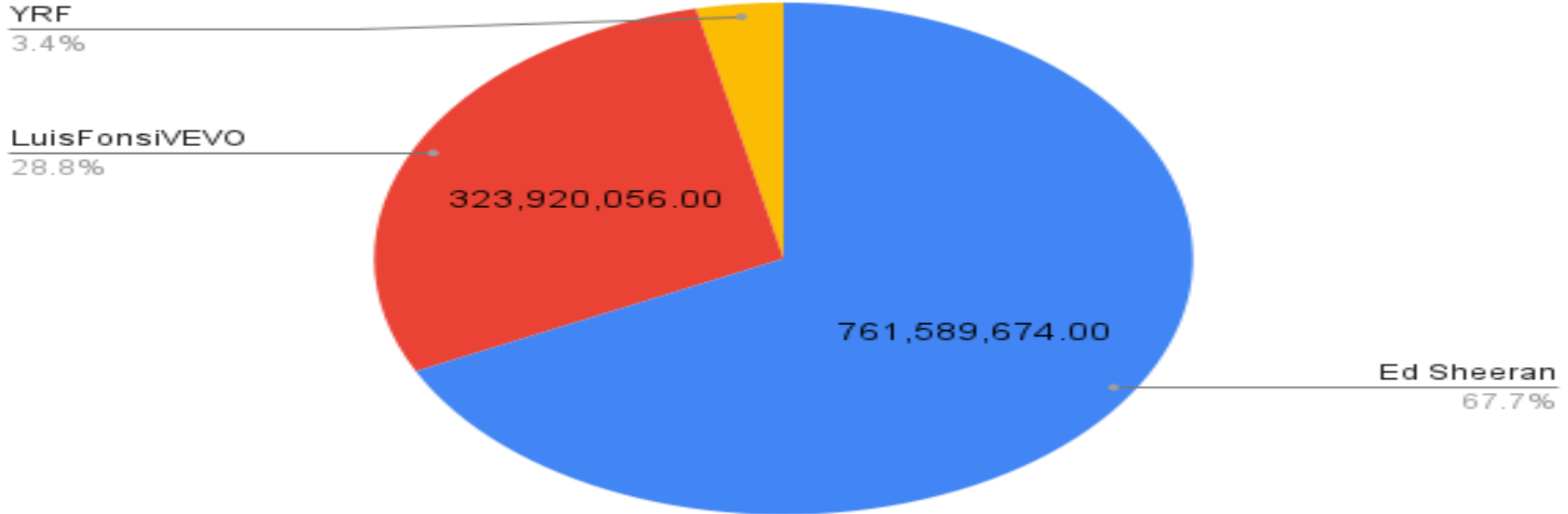
5a. Which channel contributes the most to the top 20 trending videos?



Finding 20

Figure 15: Views by Channel

Sum of Top 20 Views by Channel



The data shows that Ed Sheeran contributed 67.7% to the top 20 trending videos among the countries analyzed, however 46.6% of this was channeled to Britain.

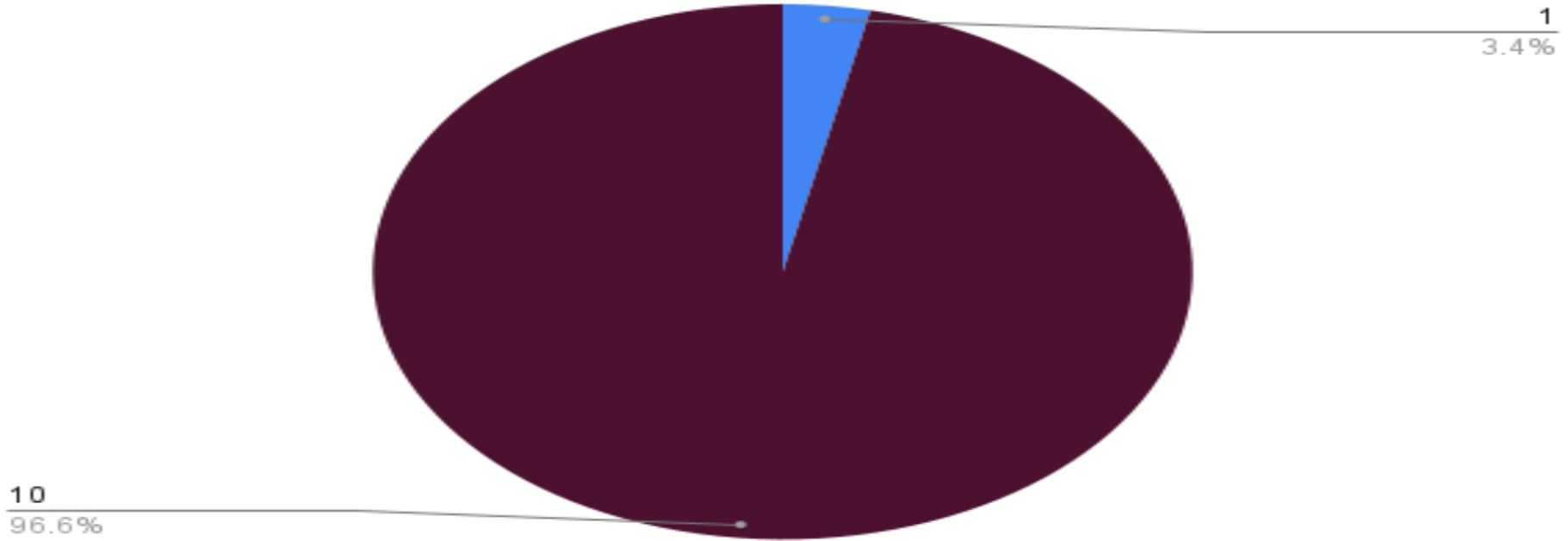
5b. Which category has the most significant number of viral videos?



Finding 21

Figure 16: Views by Category

Sum of Top 20 Views by Category



The data shows that Category 10 contributed 96.6% to the top 20 trending videos across the countries analyzed, while Category 1 contributed the remaining 3.4%.



Summary

Summary of Findings:



- **Top 20 trending videos:**

- 9x out of 20x, Britain had the most significant amount of views in the top 20 most popular trending videos
- While Ed Sheeran contributed 67.7% to the top 20 trending videos, only 21.1% of those times were his contribution not associated with Britain
- Category 10 contributes 96.6% to the top 20 trending videos, while Category 1 tabled 3.4% to this cause.

- **USA vs Canada:**

- The USA and Canada have almost equal views (2,320,050,184 vs 2,194,820,750), but the USA has slightly higher likes and dislikes.

- **Generally:**

- Category 10 videos perform well consistently 60% of the time across all the countries
- There is a positive correlation between the number of views and other engagement metrics, particularly the likes and dislikes
- 30% of the countries (France, Mexico, and South Korea) had their highest views on the Trending Date 17.20.11, 20% (Canada and USA) on 17.22.11, while the other countries recorded theirs on different Trending Dates



Actions & Recommendations

Recommended Actions:



Videos recommendations:

- *Since Britain had the most significant amount of views in the top 20 trending videos, it would be beneficial to create and promote content that appeals to the British audience.*
- *Ed Sheeran contributed significantly to the top 20 trending videos. To leverage his popularity, YouTube should explore collaboration opportunities with him or feature his music more on their site.*
- *Category 10 videos perform consistently well across countries. Therefore, YouTube should focus on creating content that falls into this category or aligns with its themes.*
- *Where specific dates consistently perform well in certain regions, YouTube should plan content releases and promotional strategies around those dates to maximize visibility and engagement.*

Marketing recommendations:

- *YouTube can utilize data on user preferences and viewing history to provide personalized recommendations to users. By suggesting relevant content based on their interests, YouTube can increase user engagement and prolong their time on the platform, which can ultimately lead to increased revenue through ads or premium subscriptions.*
- *Encourage collaboration between creators to cross-promote content and increase visibility. YouTube can identify creators who complement each other's styles or target similar audiences. By leveraging their combined reach, the platform can attract more viewership and increase revenue opportunities.*
- *YouTube can highlight the reach and engagement metrics of the trending videos to demonstrate the value of advertising in this section to advertisers.*
- *The platform can provide advertisers with detailed insights and analytics on the performance of their ads. Metrics such as view-through rates, click-through rates, and conversions should be highlighted to demonstrate the effectiveness of their campaigns.*

Appendix



Google Sheets Dataset for Udemy Project retrieved from
<https://app.entrylevel.net/data-analyst-level-1-a5c53ace39d245eda33af9ed21090be8/mission-2-1-data-collection-1cf99a332ea642bab26ec5b02caf5c6f>

Tableau Data Visualization using Tableau Public for Udemy Project, retrieved from
<https://www.tableau.com/tableau-login-hub>

Google Sheets Dataset for YouTube Project retrieved from
<https://www.kaggle.com/datasets>

Tableau Data Visualization using Tableau Public for YouTube, retrieved from
<https://www.tableau.com/tableau-login-hub>



Thank you!