

Perceptions and Discussion of IQOS on Twitter within the United States versus the United Kingdom

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Introduction

IQOS has gained lots of popularity around the world in recent years, it is a heated tobacco product that is manufactured by Phillip Morris International and first released in 2014¹. Marketed as a harm reduction product to less of the use of traditional cigarettes and vaping alternatives. IQOS was approved by the FDA on April 30, 2019, but was later banned in the US on Sept 29, 2021, due to a patent infringement³. We aim to compare the perceptions and discussions of IQOS on Twitter between US's and UK's twitter users.

Methodology

Using data abstraction, we were able to sort through our dataset of 1,915,260 tweets posted between March 10, 2021, to June 10, 2022. We then used induction to narrow down our dataset to 16,646 relevant tweets that mentioned IQOS. Additionally we applied a geolocation program that filtered out any tweets from outside the US or UK. Next, we developed the codebook shown in figure 1 based on 200 random tweets, with any discrepancies discussed among a group of four members. The sample tweets were then used to calculate the percent agreement kappa value. After obtaining a kappa of 0.73, indicating substantial agreement between coders, we were able to split the remaining tweets and hand-code them independently.

Sentiment	Topic
Positive	Financial aspect of IQOS
	Quitting Smoking/vaping and switching to IQOS
	Supporting the FDA approval of IQOS
	Positive testimony
Neutral	Other Positive
	Information about IQOS
	Information about the FDA policy
	Import ban of IQOS
	Neutral testimony
	Other Neutral
Negative	Health caused by IQOS
	Switching from IQOS to another product
	Financial cost of IQOS
	Against the FDA approval of IQOS
	Combustion in relation to IQOS
	Lack of education/information about IQOS
	Negative testimony
	Other Negative

Figure 1. Codebook topics sorted by sentiment.

Results

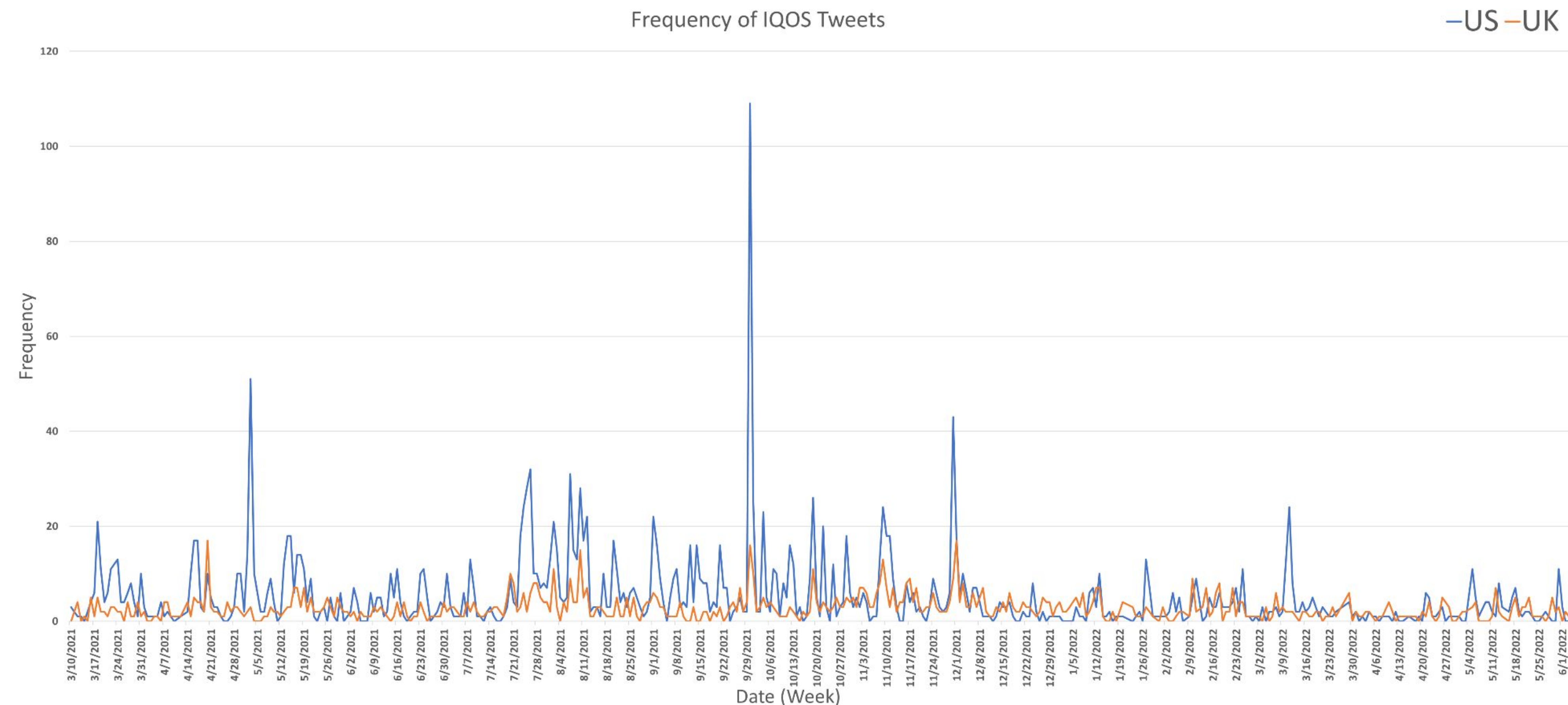


Figure 2. Longitudinal trends of the number of tweets related to IQOS in the US and UK sorted by week.

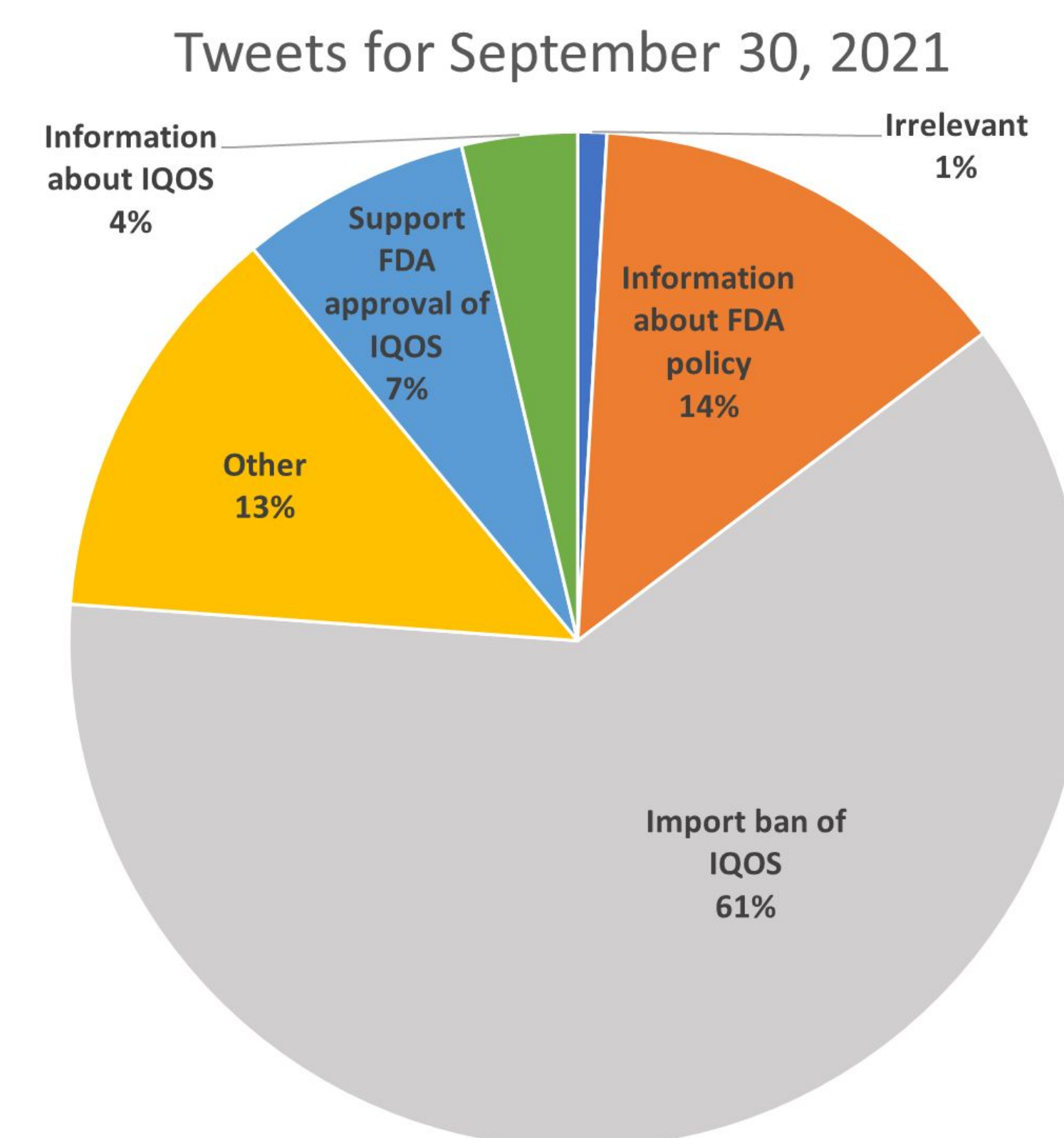


Figure 3 A pie chart that showcases the topics discussed in tweets from Sept 30, 2021.

Figure 2 shows a clear peak on September 30, 2021, which is the day after the IQOS import ban in the United States was announced. From this peak we then produced figure 3, highlighting that 75% of all tweets that day were in relation to the FDA or the import ban. Figure 4 shows that the US had a higher percentage of tweets overall independent of sentiment, and that both the US and UK both have significantly more neutral tweets than those of other categories. To compare the proportions for both countries, a two-tailed two sample z test was conducted for each sentiment, with all three categories yielding a p-value below .05, indicating the differences in the two proportions are significant.

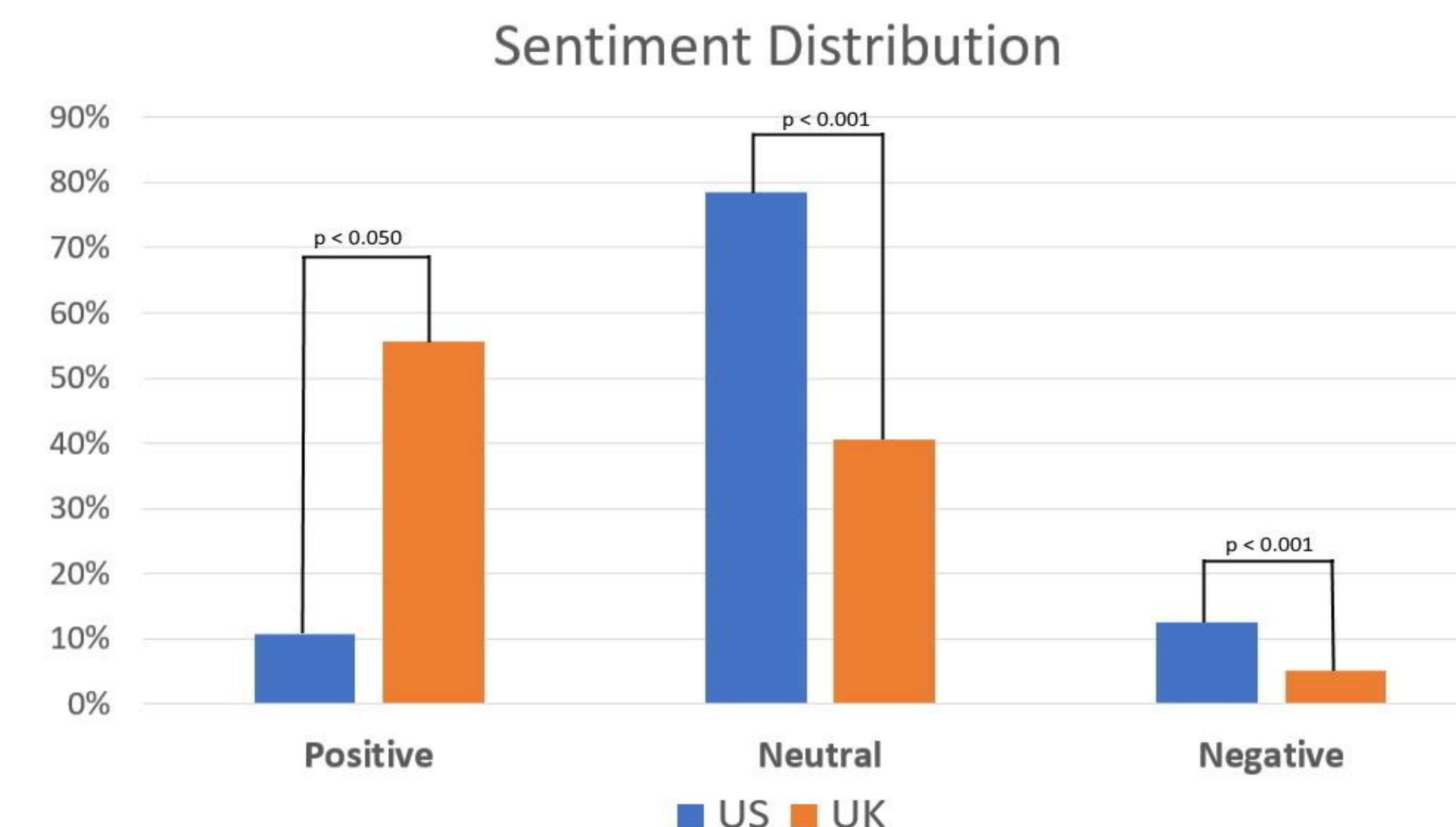


Figure 4. A bar graph showcasing the sentiment differences between the US and UK.

Conclusion

In conclusion, we determined that majority of the tweets from both countries were neutral. We believe that one of the reasons for this was due to the short nature of tweets that don't always allow the user to express much sentiment. However, there were a lot of informative tweets about the FDA policy, the patent infringement case conducted about the IQOS product, and the import ban resulting from the lawsuit. Overall, there seems to be more of a negative sentiment towards IQOS in the United States than the United Kingdom. Most of the negative tweets from both countries discussed how the product is marketed as non-combustible despite the patent case revealing that there was a least partial combustion in IQOS devices. Lastly, since the United Kingdom does not have regulation on IQOS, which resulted in significantly more tweets advertising the product than in the United States.

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