



Eastbourne ALIVE Evaluation Report:

Appendix D: Press sentiment analysis

Last updated 25 Apr 2024

Our report contains a light press media sentiment analysis. This appendix details our methodology.

Downloading press articles

We used LexisNexis¹ to download articles containing the word 'Eastbourne'. We focused primarily on national newspapers, excluding regional and local, and also excluded any articles containing the keyword 'tennis'.

Analysing the articles

The articles downloaded from LexisNexis were collated using a Python script. In total, 4,564 articles were analysed, split into the differing time periods:

- 2,295 articles from before announcement of Eastbourne as hosts of Turner Prize 2023 – earliest being after 1/1/21 at 00:00
- 1,526 articles between announcement of Eastbourne as hosts and opening of the Turner Prize exhibition at Towner Eastbourne
- 742 articles after opening of the exhibition, latest being before 14/3/24 at 00:00

Training the AI

We used ChatGPT², an AI chatbot, to conduct sentiment analysis. In order to ensure the results from the AI sentiment analysis were accurate, we trained the AI using a subset of articles. We also validated the results we received. 20 articles were randomly chosen as the training set and 20 articles were randomly chosen as the validation set.

Two human labellers from the RMR team independently assigned sentiment and relevance scores (1-5) to each article in each set. The two labellers scores were the same in 90% of cases. The training set was used to refine a 'prompt' for GPT-3.5-turbo. The prompt was refined to match as closely possible the training scores using few-shot learning.

We then ran the GPT model with the refined prompts over the articles in the validation set. There was no bias (mean difference between human and GPT in validation set very close to zero), meaning we could be confident in our results. In half the cases, GPT labelled identically to humans. In just 10% of the results, the difference in scores was greater than 2.

¹ <https://www.lexisnexis.co.uk/>

² <https://chat.openai.com/>



Conducting the analysis

28 articles were removed from the dataset as they were longer than 10,000 words, exceeding the GPT context window. The prompt was then applied to the entire remaining dataset using gpt-turbo-3.5. Articles mentioning 'covid' (case insensitive) were filtered from the results. Articles with Eastbourne relevance score less than 3 were removed from the results. Exploratory data analysis and preliminary time-series analysis was performed on remaining results. The prompt we used for ChatGPT can be seen below.

ChatGPT prompt

You are a researcher helping to analyse the impact of the Turner Prize on attitudes to Eastbourne. Please analyse the newspaper article below and then fill out the following form.

Publication:

Publication date: [D/M/Y]

Short summary of relevance to Eastbourne:

Short summary of relevance to Turner Prize:

Short summary of sentiment:

Relevance score towards Eastbourne: [1-5] (1 = no mention; 2 = only mentions the word Eastbourne but little direct relevance; 3 = article contains at least substantial fact about Eastbourne; 4 = more relevance to Eastbourne; 5 = Entire article is about Eastbourne)

Relevance score to Turner Prize: [1-5] (1 least relevant with no mention, 5 most relevant)

Sentiment score: [1-5] (1 = bad; 2 = not good; 3 = neutral, 4 = some positive, 5 = positive)

The relevance and sentiment scores should be independent, i.e. please rate the sentiment score on the overall sentiment of article.

Sentiment should not be positively rated based solely on the fact that Eastbourne hosted the Turner; there should be additional aspects of the article for ratings which are non-neutral. In first example below, Eastbourne has been mentioned as the *best* place to stay, and so it receives the maximum sentiment.

Example 1:

"... A SLEEPY coastal town in the southeast of England has been crowned the best place for a British day out in 2023. Time Out has named Eastbourne, East Sussex, as the best place for a day out or overnight trip in 2023. ..."

Sentiment score: [5]



Example 2:

A woman in Eastbourne reported being injected while on a night out in the town

Sentiment score: [1]

Example 3:

Mentions a cottage on the outskirts of Eastbourne

Relevance score towards Eastbourne: [2]

Example 4:

The killer of Sabina Nessa returned to Eastbourne after committing the crime.

Relevance score towards Eastbourne: [3]

Sentiment score: [1]

Example 5:

Mentions a preliminary round tie between Shoreham and Eastbourne where the visitors won 3-1

Relevance score towards Eastbourne: [2]

Example 6:

Mentions Eastbourne in the context of a letter from a reader

Relevance score towards Eastbourne: [2]

Example 7:

Konta pulled out of tournaments in Birmingham and Eastbourne to protect her knee before Wimbledon.

Relevance score towards Eastbourne: [2]

Example 8:

This article Mentions that Josh Oyinsan joined Dumbarton from Eastbourne in January.

Relevance score towards Eastbourne: [2]

Example 9:

The grandmother-of-three was on holiday in Eastbourne when she received a WhatsApp message.

Relevance score towards Eastbourne: [3]

Here is the actual article to classify.

Article:

{article}



Mapping the data

To reduce 'noise', scores were then mapped onto a chart over time in three plots: a 60 day moving average, a 200 day moving average and a 600 day moving average. Key moments in the Turner Prize were also noted on the chart – announcement of Eastbourne's hosting and the opening of the exhibition. A further note was made of a particularly negative event in terms of press sentiment (the killing of Sabrina Nessa by a man from Eastbourne which hit national media) and also the end of Covid lockdown (off the chart below) which at a national level appears to have had a very positive impact on press sentiment.

In terms of reading effect, the 60 day plot is probably the best indicator in this timeframe of where changes were most likely to align with the moments noted; however, the 200 day moving average would be where a more sustained change could be noted.



We had hoped to do further work on the press sample exploring which themes most affected this likely increase in positive sentiment, and the change in incidence of stories about arts and culture over time. Unfortunately, time and resource constraints made this impossible at this point, but the code and sample are available for future research.