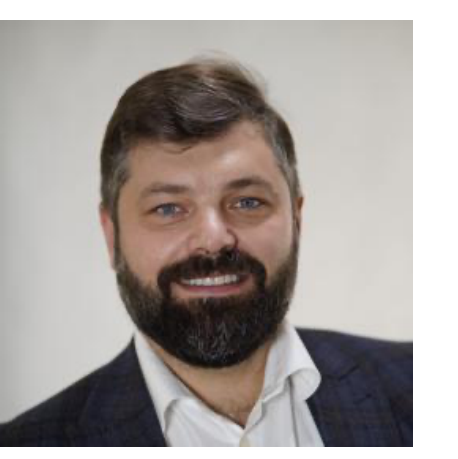Politechnika Wrocławska

Katedra Sztucznej Inteligencji

prof. Tomasz Kajdanowicz

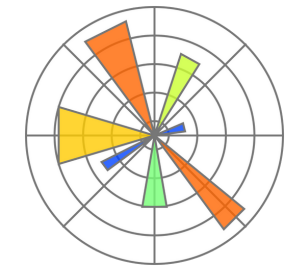Adrian Berdowski   Tymoteusz Dolega   Danill Hardzetski

VOICE OF STEAM

01 Introduction

The goal of our project was to study the gaming community on the "Steam" platform. We focused on analyzing the reviews they put out and their sentiment. We studied the life cycle of games. We also debunked the stereotype of gamers being aggressive.
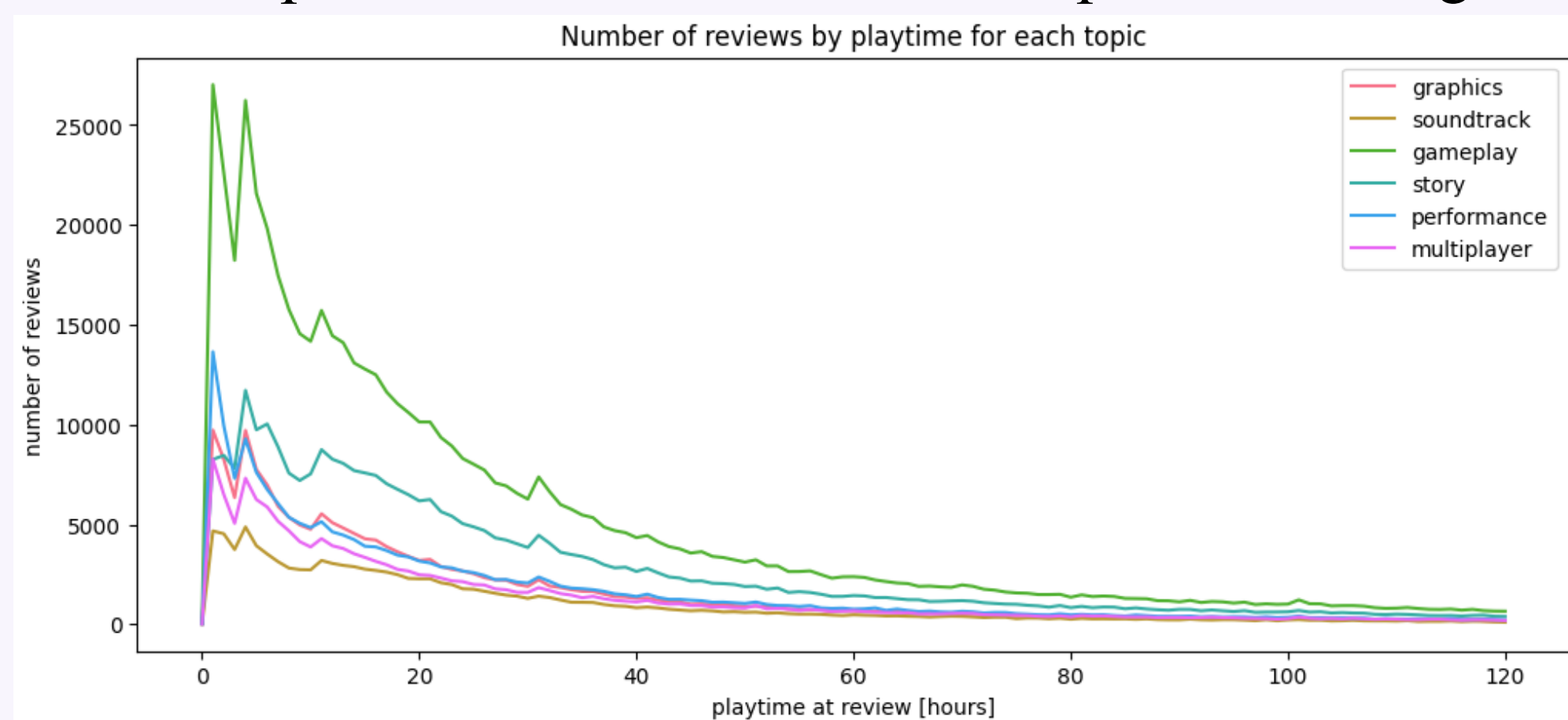
02 Data

We selected the 10 most interesting game publishers, and we scrapped all reviews for their games released between 2018 and 2023. We ended up with 256 games with a total of 2 550 144 reviews written by 1 894 548 players. Reviews are divided into positive and negative* and also contain information how many people found them popular or funny.

*positive review - a player recommended the game
*negative review - a player advised against the game

03 Methodology

There are 3 main stages of our work. First is data acquisition: we used the 'steamreviews' Python library to access Steam API for getting players' reviews and the 'selenium' library to scrap games' metadata. Second is feature extraction, to analyze data we used HuggingFace models for sentiment and Python libraries for topic modeling. Also, we defined our topics regarding aspects like gameplay and sound. The third and final stage is the visualization and analysis of the acquired data and getting the results of our project.

## 04 When did players give the most reviews?
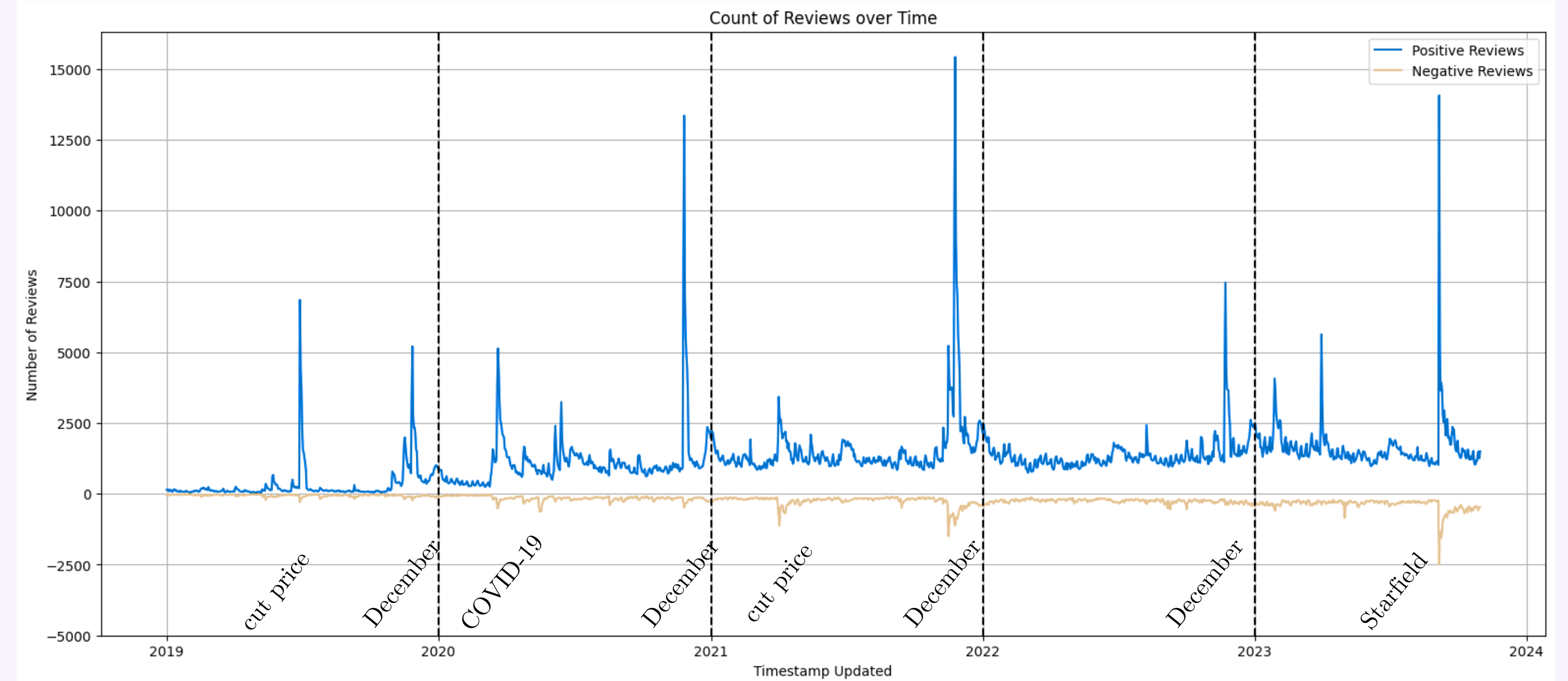
We are able to see when there was the most interest in playing. Also, the labels show the most important events, i.e. Christmas. The spikes of user activity usually happen at December and when a game is on a sale. A notable mention here is the beginning of COVID-19 pandemic, that forced many people to stay at home.

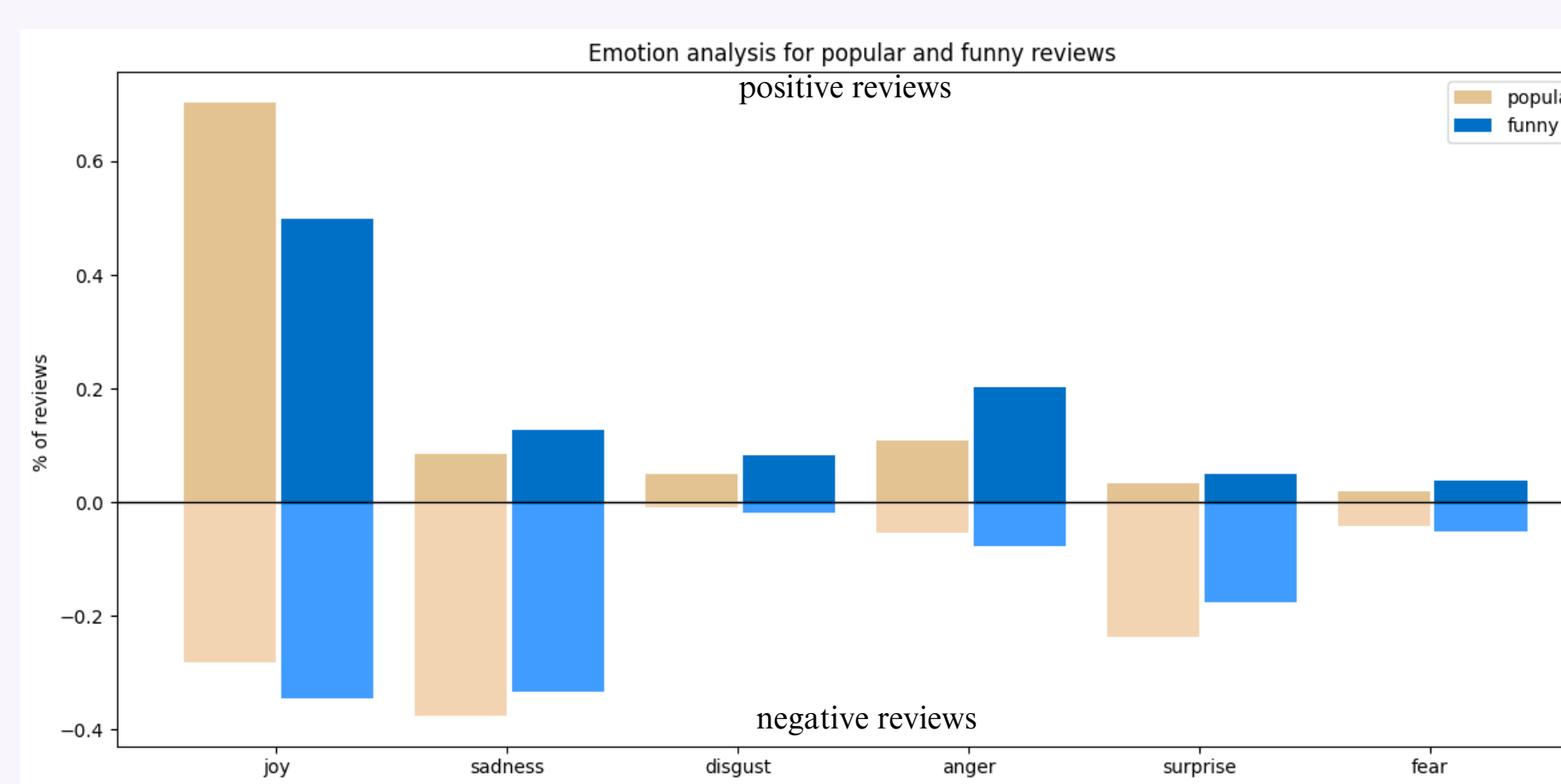## 05 What are the key words in the reviews?

Here are the most frequent and the most descriptive words (and phrases) for positive and negative reviews. We can see that most of the words have a direct positive or negative connotation.

## 06 What do players of different games focus on?
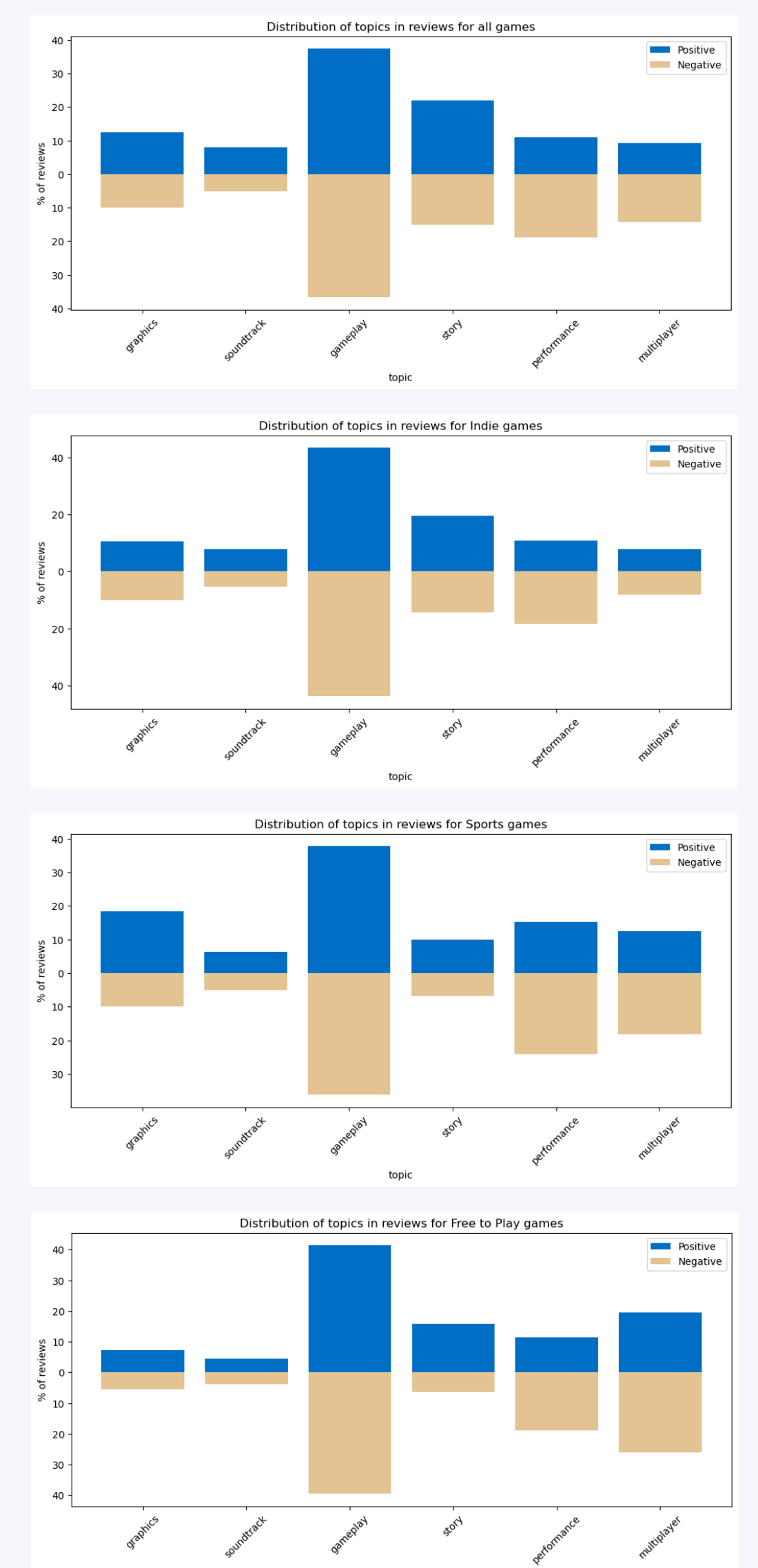
What players focus on in positive and negative reviews. It can be seen that regardless of the genre, the most important thing is always gameplay, and the least is written about the soundtrack.

07 What topics are discussed at different phases of the game?

The plot shows how the review topics are distributed about the number of hours of play after which the player gave a review. Most reviews are written after about 4 hours of play and are mostly about gameplay. The number of hours does not noticeably affect the distribution of topics.

## 08 What emotions are in popular and funny reviews?

We performed sentiment analysis using the model from Hugging Face. The emotion of "joy" dominates both types of reviews.

## 09 Feedback and its effects on player activity
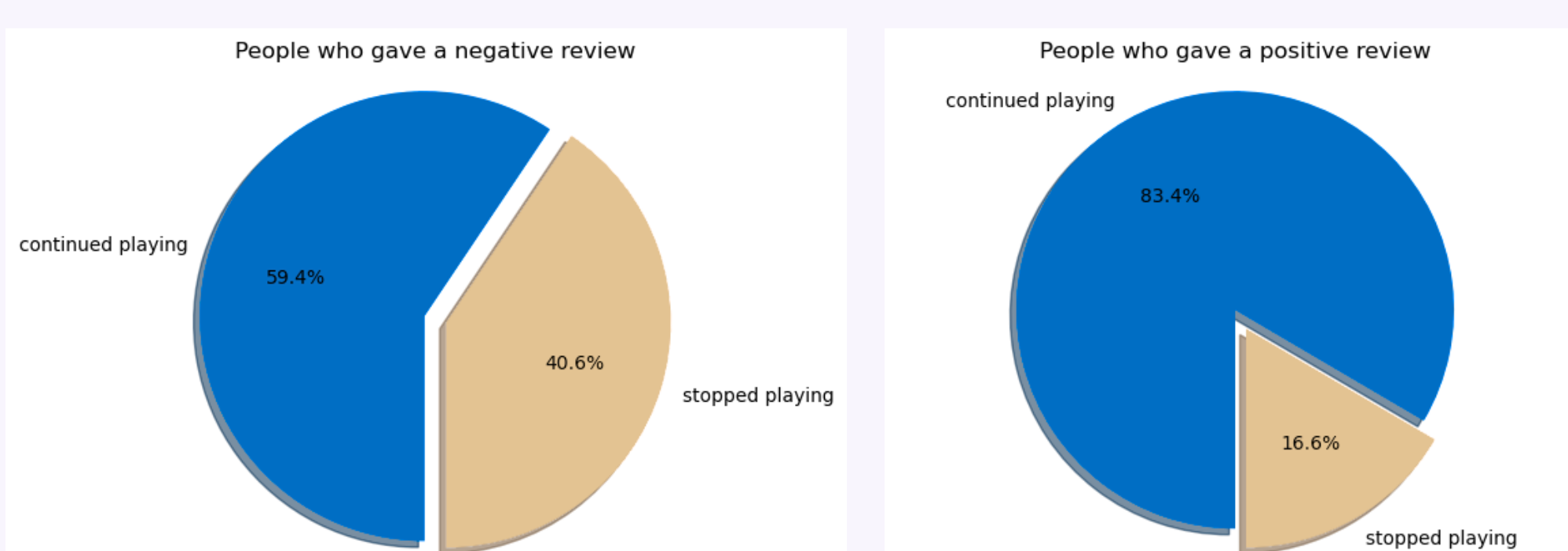
The chance of a player dropping the game after leaving a positive review is significantly lower than after leaving a negative review.

10 Does getting the game for free affect opinion?
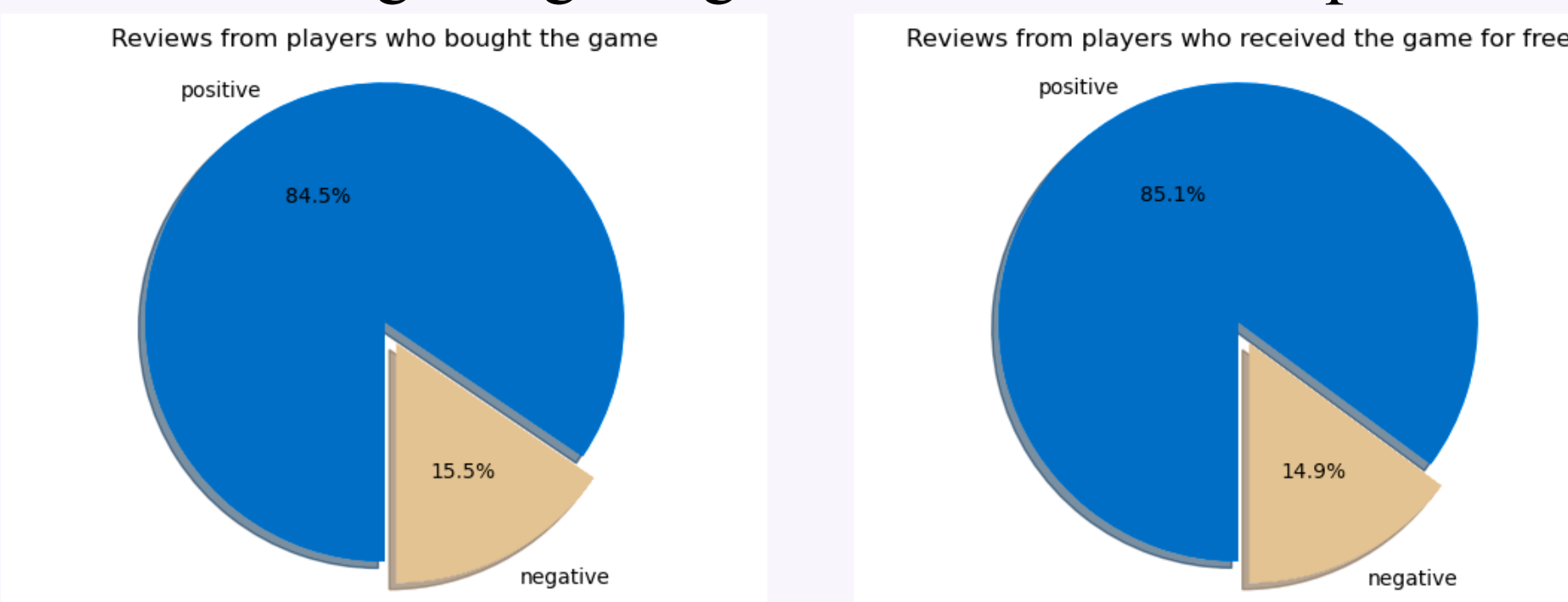
Here we compare players who received the game for free with players who bought it with their own money. We didn't find any bias.

11 How playtime affects opinion?
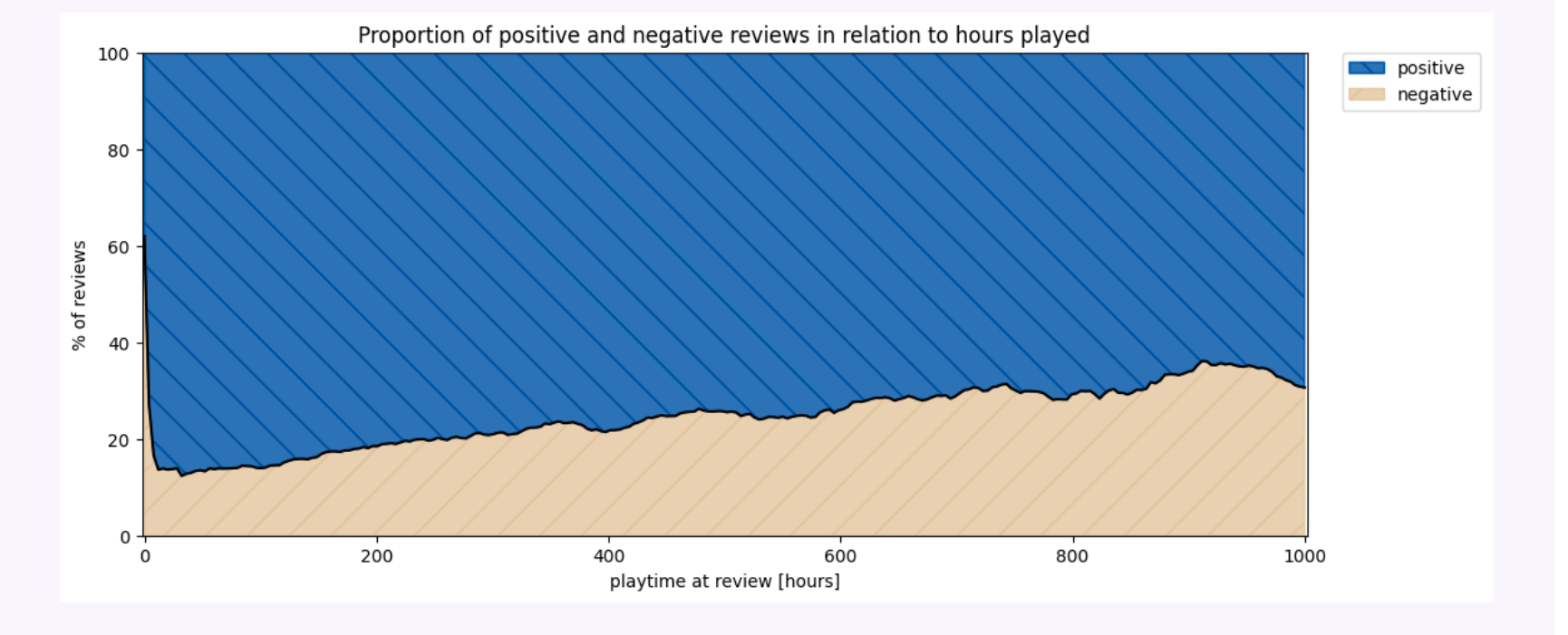
As a player's playtime grows the chance of the player leaving a negative review increases, the exception here is the very start of the game, where negative reviews dominate.