

# Analysis on Elvis Presley: Increased Energy Level of The Fans\*

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This paper analysed the albums of Elvis Presley on spotify. We find that as the energy of these albums have increased over the years, similar trend is not seen on tempo. Which indicates that as taste of music of Elvis fans have shifted toward more energetic. The favor of tempo have not changed.

## 1 Introduction

Elvis Presley (1935-1977) is an American celebrity who gained immense popularity worldwide beginning in the 1950s. His enduring fame allows us to analyze how audience tastes have changed over the years. We find that as the energy of these albums have increased over the years, while tempo have stayed constant. Which indicates that as taste of music of Elvis fans have shifted toward more energetic and the favor of tempo have not changed.

In this paper, we make use of R (R Core Team 2023) and the tidyverse package (Wickham et al. 2019) with supporting package dplyr(Wickham et al. 2023) to analysis Spotify(An online music platform launched in 2008) around Elvis Presley (1935-1977). The data set is from spotify API (Spotify 2024), gathered using spotifyr (Thompson et al. 2022).The graph is created using ggplot(Wickham 2016) and gridExtra(Auguie 2017) packages in R. We have used some information and codes form the book Telling Stories With Data(Alexander 2023) on accessing API.

The remaining part of this paper is structured as follows: We discuss the basic aspects of the data in the [Data](#) section. Then, we analysis the data in the [Results](#) section. We then discusses our finding and draw on possible limitations in the [Conclusions](#) section.

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\*Code and data are available at: [https://github.com/UTDQi/Elvis\\_Analysis](https://github.com/UTDQi/Elvis_Analysis)

## 2 Data

In this section, we will discuss some aspect of the data, and outline how we will use the data.

As shown in Figure 1, the date of album release span across 1956 to 2024. Note that album release was suspended at 1977(the red dotted line), when Elvis Presley passed away, and resumed from 2010 onward. This is due to Spotify’s new licensing agreements allowed releases of new albums of classic artists.

There were also many albums released in 1997, 20 years after Elvis Presley passed away. These albums were released to recognize this event.

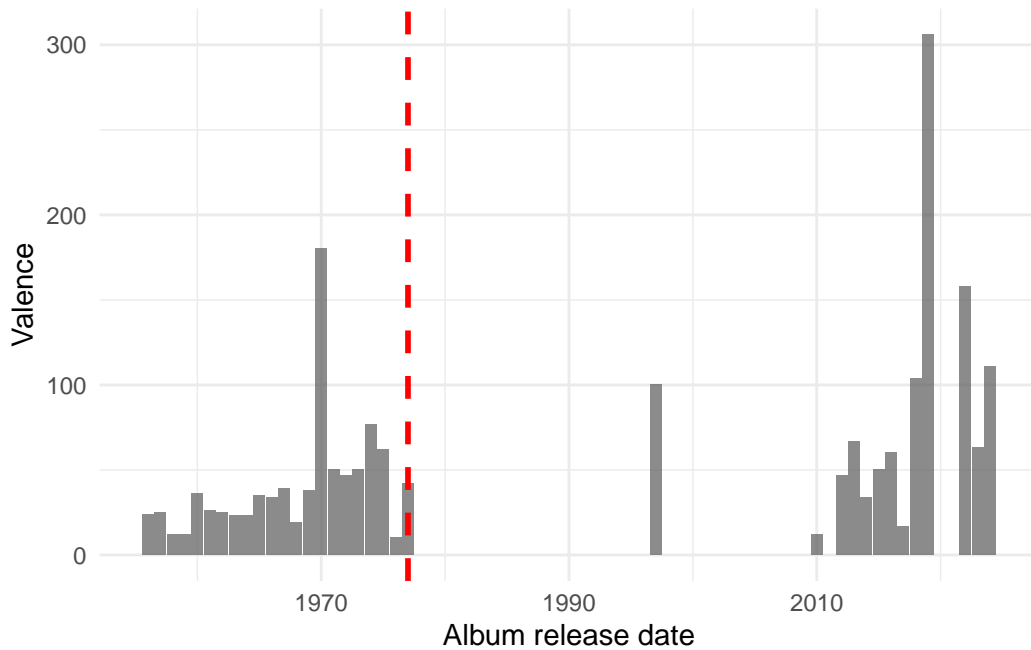


Figure 1

In this paper, we will analysis these two groups of albums to see how people’s tastes have changed over these 30 years. We note that albums released reflect the general taste of the audience at the time, as albums makers tends to select and remix songs according to this taste.

To represent the abstract concept of ‘taste,’ we will use data on the energy and tempo of the music. It’s important to note that this data is generated by a machine learning model about which we have limited information on. As a result, it may not accurately reflect the actual ‘energy’ or ‘tempo’ of the music. However, it serves as a useful generalization of these factors. The fact that Spotify uses this data indicates its usefulness in data analysis.

### 3 Results

#### 3.1 Energy

We first analysis the energy. Figure 2 and Figure 3 shows the change in energy across the years.

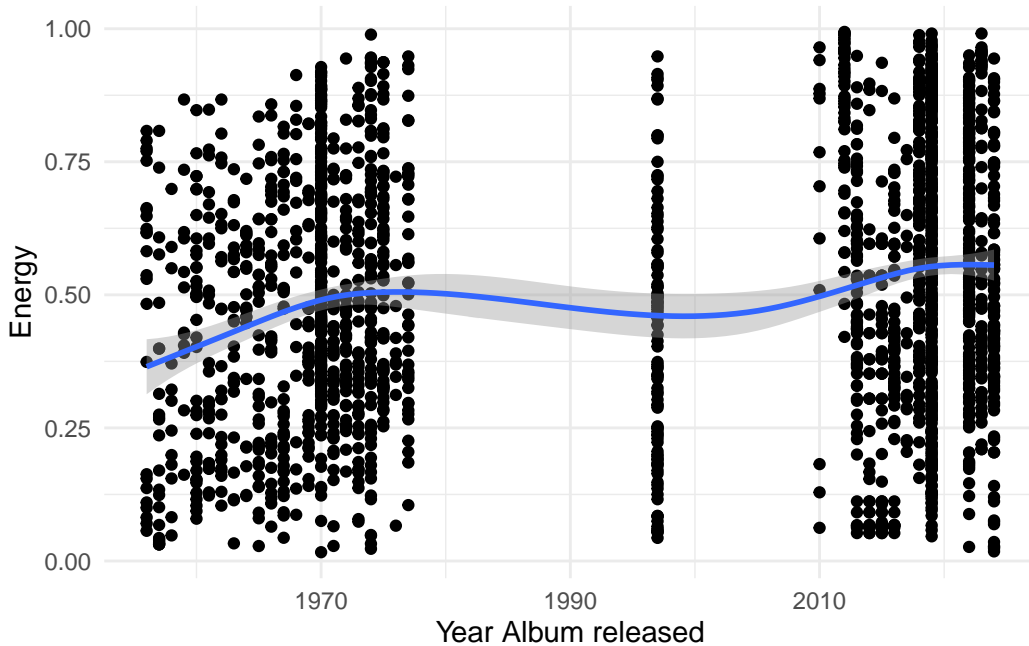


Figure 2

Initially, in the pre-1970s era, the energy levels of albums are relatively moderate, with a gradual increase reaching a peak around the 1980s. This trend reverses continues after the year 2010, where the energy levels of albums rises again, reflecting a general increase in the intensity or dynamism of music in more recent years. For instance, from Figure 3, we can see the mean of count(the red dashed lines) for the energy before 2010 is 0.467, and instead the mean of count for the energy after 2010 have increased to 0.549. Overall, the graph suggests that while music energy has increased, more recent albums tend to have higher energy on average.

#### 3.2 Tempo

We now turn to analysis the tempo. Figure 4 and Figure 5 shows the change in tempo across the years.

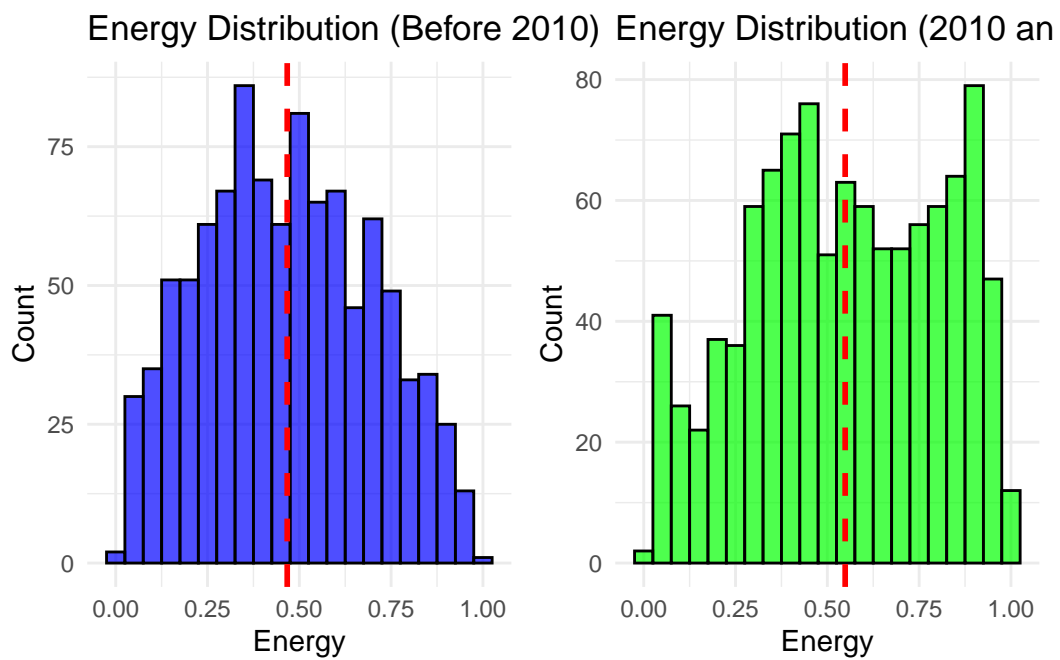


Figure 3

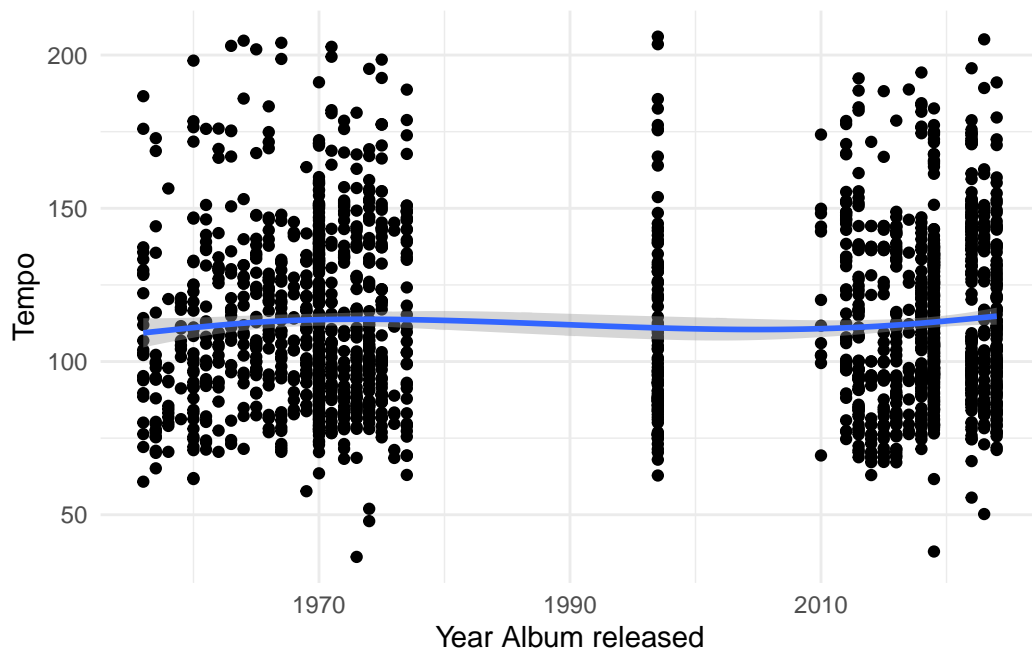


Figure 4

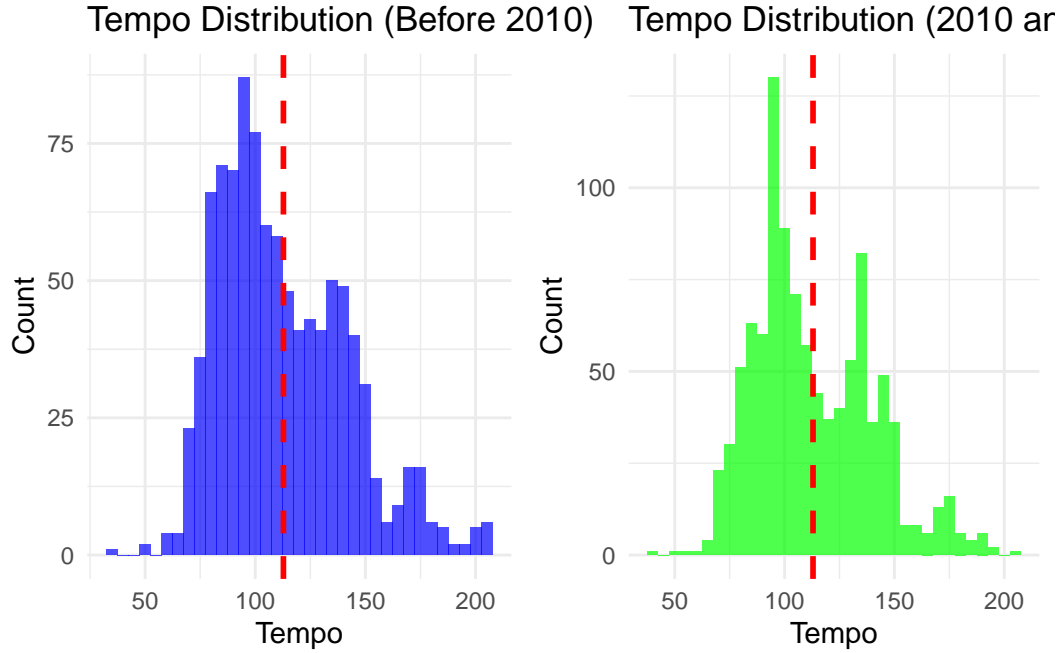


Figure 5

For tempo, we see a different trend, the tempo of the musics selected to be included in the album of Elvis Presley have not changed much over the times. From Figure 5, we can see the mean of the tempo(the red dashed lines) before 2010 is 112.78, and the mean after 2010 have have changed 112.94. Which is a very small change. The shape of the two graphs in Figure 5 are also similar, suggesting the selection of music have experienced no major change if we evaluate form tempo. Figure 4 also showed the Smoothed conditional means close to a straight line, indicating that the tempo have not changed over time

## 4 Conclusions

Form our Results section, we see that the energy of the music have experienced a increase over the years. This signifies that, in the 21<sup>st</sup> century, Elvis Presley songs that are more energetic tend to be selected into new albums, and people tend to make new remixes of these songs that are more energetic.

However, energetic does not mean fast. People's taste of tempo have not changed much over the time. And there is no similar favor over faster music.

## 4.1 Limitations

We note that Energy is a variable that is difficult to find the meaning to, and may not perfectly match our instinctive definition of “energy of music”.

Also, this analysis only reflect the change in musical tasted of Elvis Fans, which is very small proportion of the general population, future research may use data on more artists to gain a comprehensive on the subject.

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