LLE section

Spencer Ferguson-Dryden

5/25/2021

LLE

Method

The LLE analysis was run on the cleaned dataset of feeling thermometer responses. After removing null values, the dataset contained 1,732 observations across 31 input features. The feeling thermometers included notable public figures and politicians, including Obama, Bill Clinton, John Roberts and Pope Francis, attitudes toward demographic groups such as Muslims, wealthy people, and feminists, and attitudes toward various political elements such as Black Lives Matter, the Supreme Court, and labor unions.

Before running the LLE algorithm, we found the optimal K value to determine appropriate neighborhood size. The graph below shows the output for the calc_k function. The function took about 30 minutes to run with a possible k-value range of 1 to 200. The minimum is located at k=96. With this k-value, an LLE fit was created using two dimensions. The resulting output is shown below.
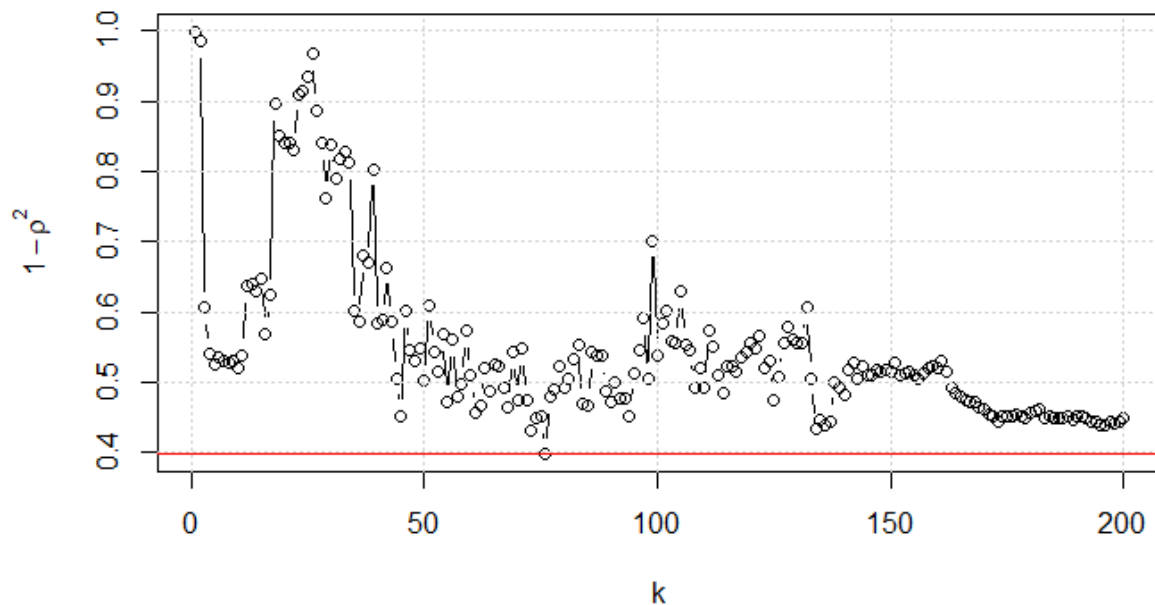

Figure 1: Optimal k-value search results.
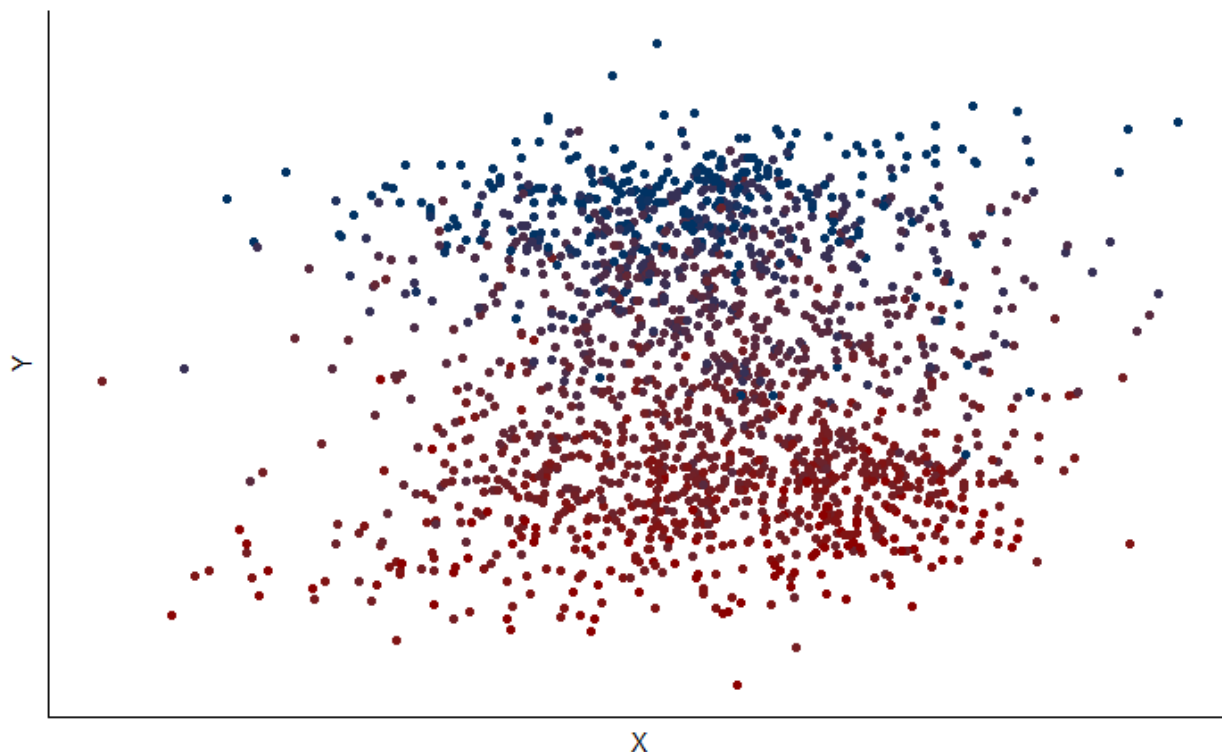
Initial Analysis

Figure 2: Overview of the LLE data space.

At a first glance, the LLE fit captures the separation in both party and ideology of the respondents. Using all seven ideology categories, we see complete separation between the Extremely Liberal and Extremely Conservative categories. Recoding ideology into two categories shows a similar separation, although a slight amount of overlap is apparent in the center. Respondents self-identifying as moderate can be found spread rather far throughout the data space.

Separation by self-identified party follows the same structure. There is some overlap between Democrats and Republicans in the center, while self-identified Independents are clustered in the center, but do exist toward the fringes as well.

Radio Analysis

For the most part, there is very obvious separation in terms of radio listeners across a variety of programs. The *All Things Considered* show, for example, has an audience that mainly skews liberal, although it gains some traction in the moderate space. Rush Limbaugh's show, which is notable for its long history of conservative bias, has exclusively conservative listeners. We see a similar pattern for many of the other shows.

Also of note is the structure of the answer to "Do you use the radio to consume media?" The highest density of respondents who do not listen to the radio is located in the center of the data space, while the fringes have a higher density of radio listeners. This suggests that there is some grouping behavior not only by the show listened to, but also by the medium itself.
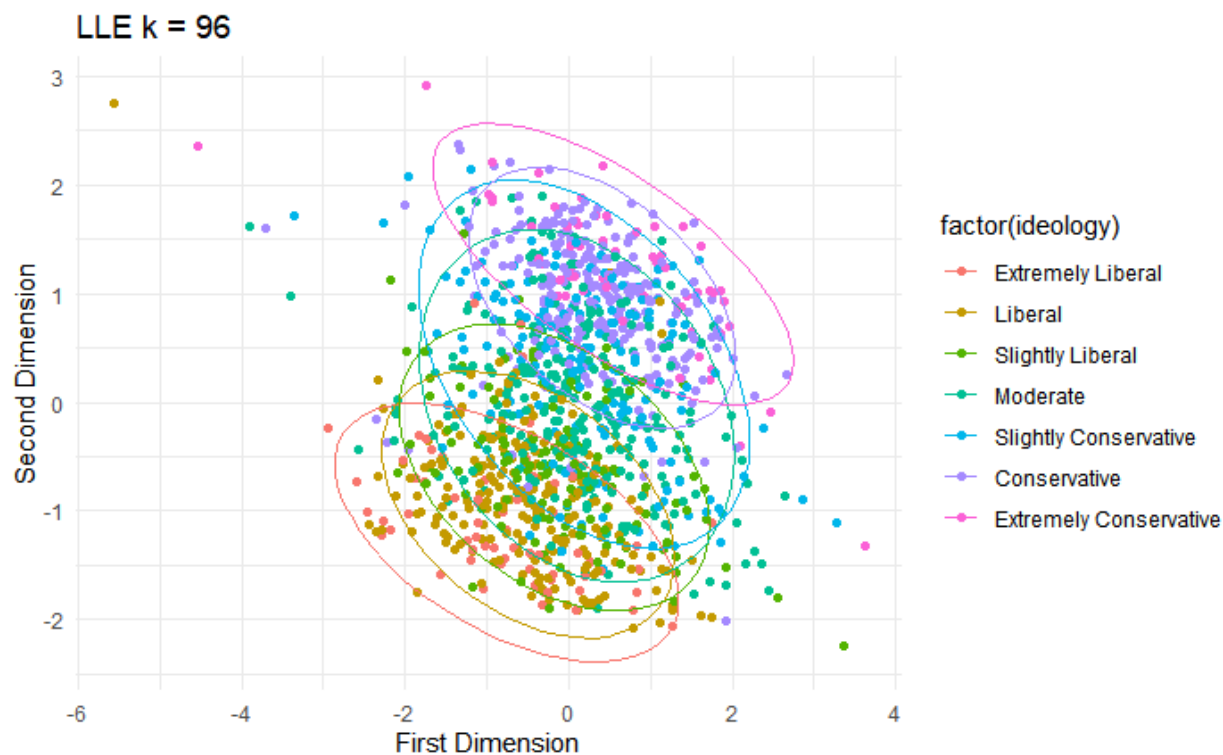
Figure 3: Ideological separation using 7 self-reported categories.
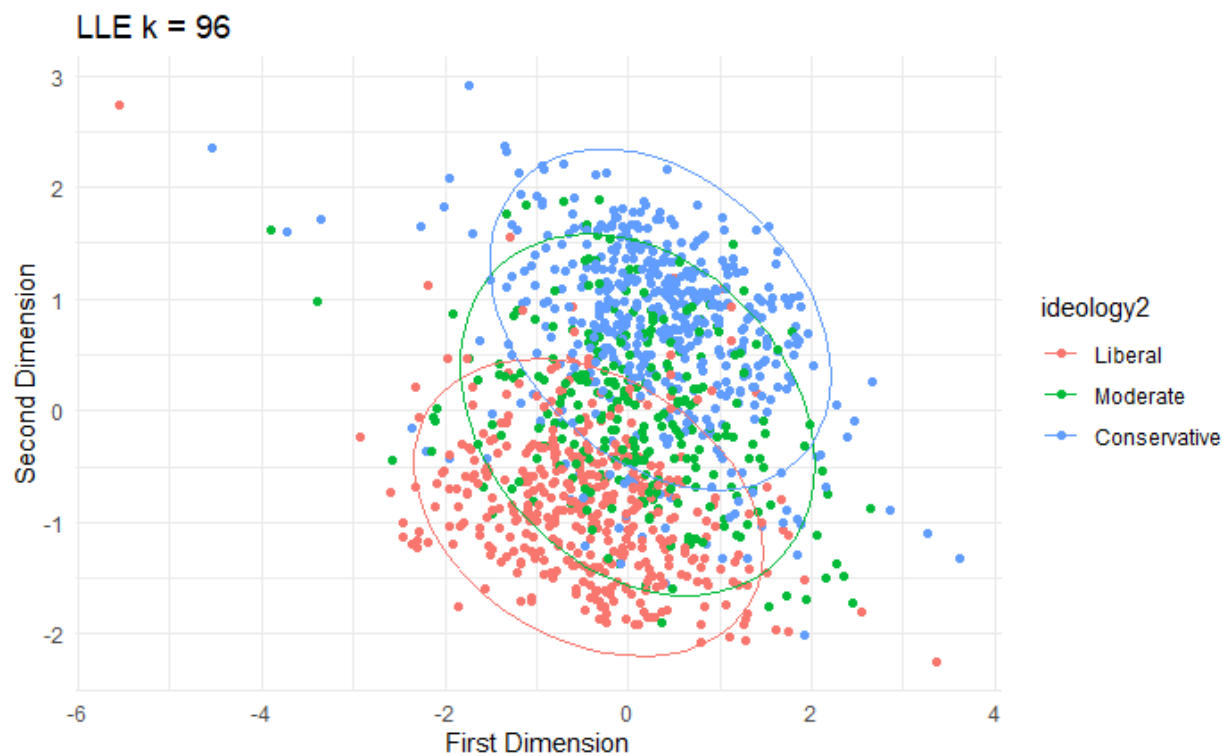

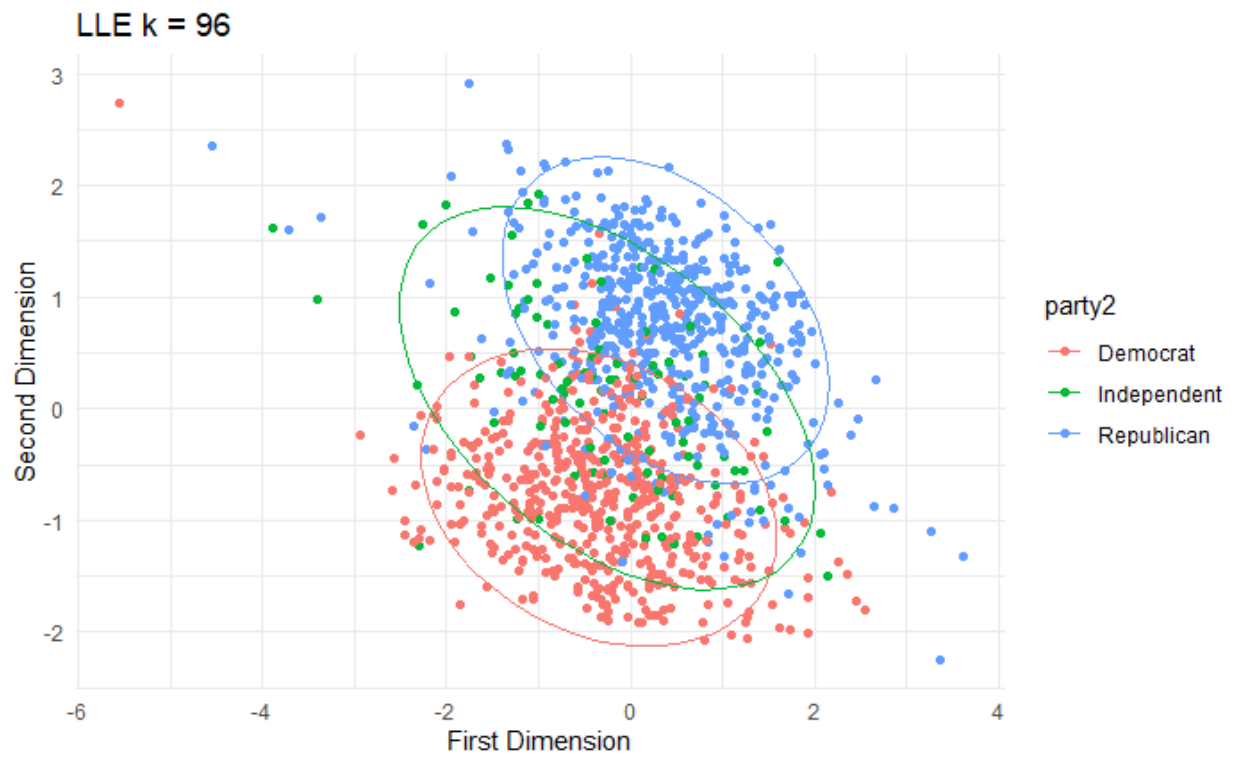Figure 4: Ideological separation using 3 self-reported categories.

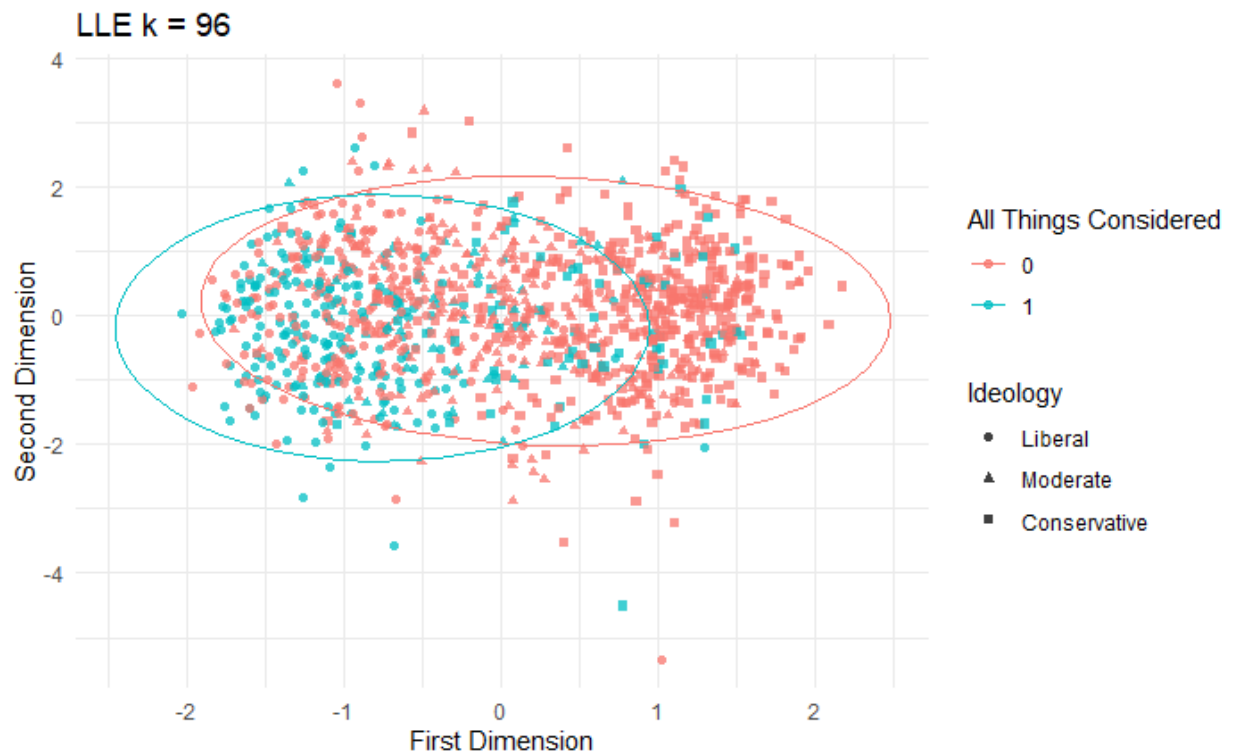Figure 5: Party separation using 3 self-reported categories.

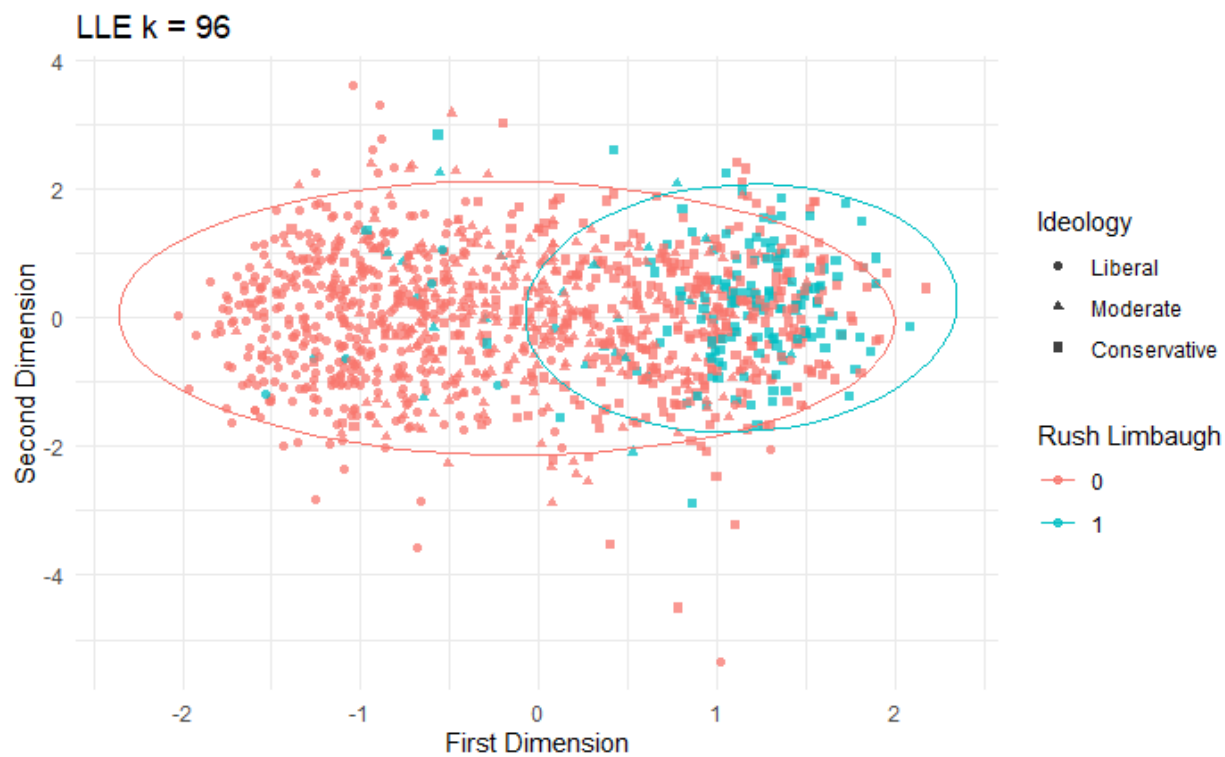Figure 6: Separation in radio consumption: All Things Considered

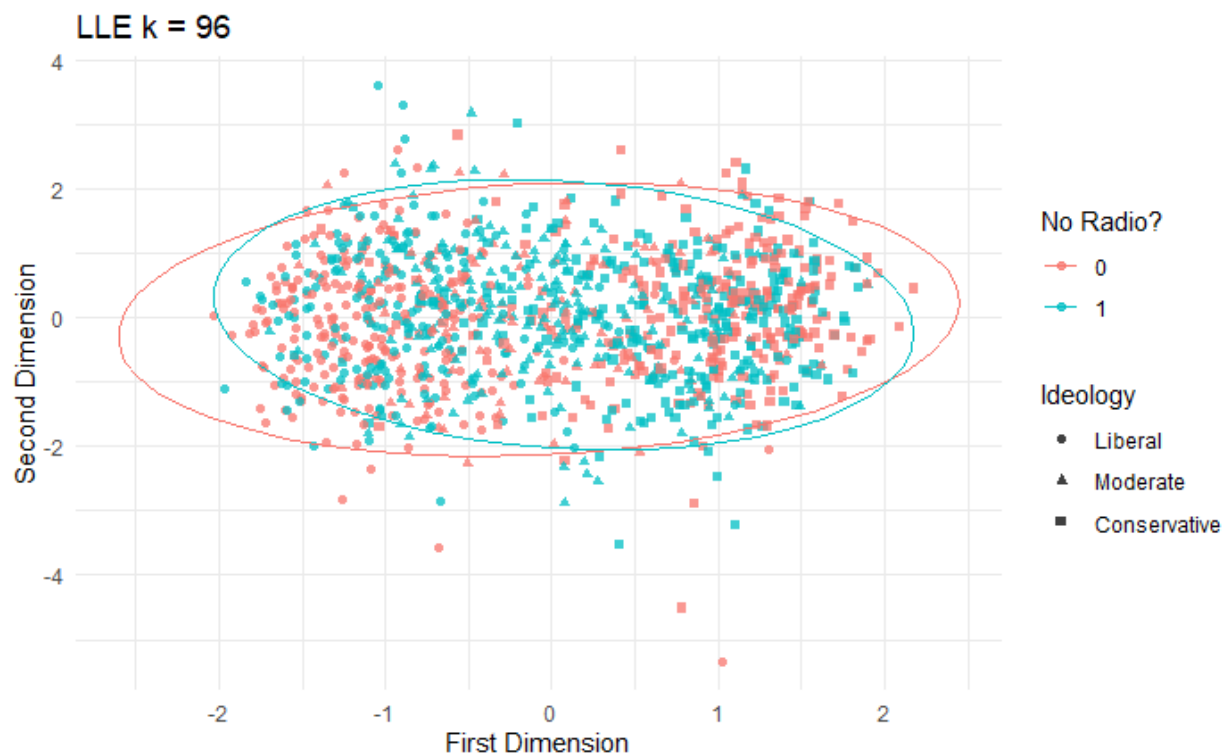Figure 7: Separation in radio consumption: Sean Hannity

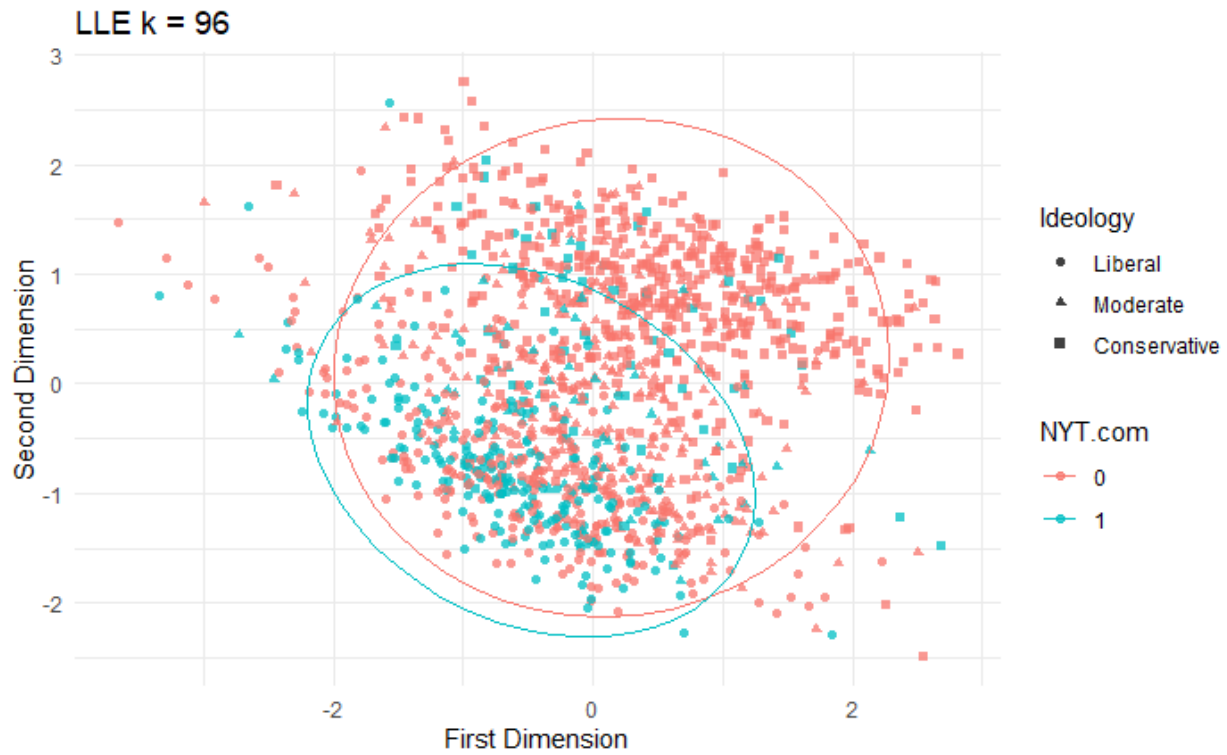Figure 8: Separation in radio consumption: radio usage

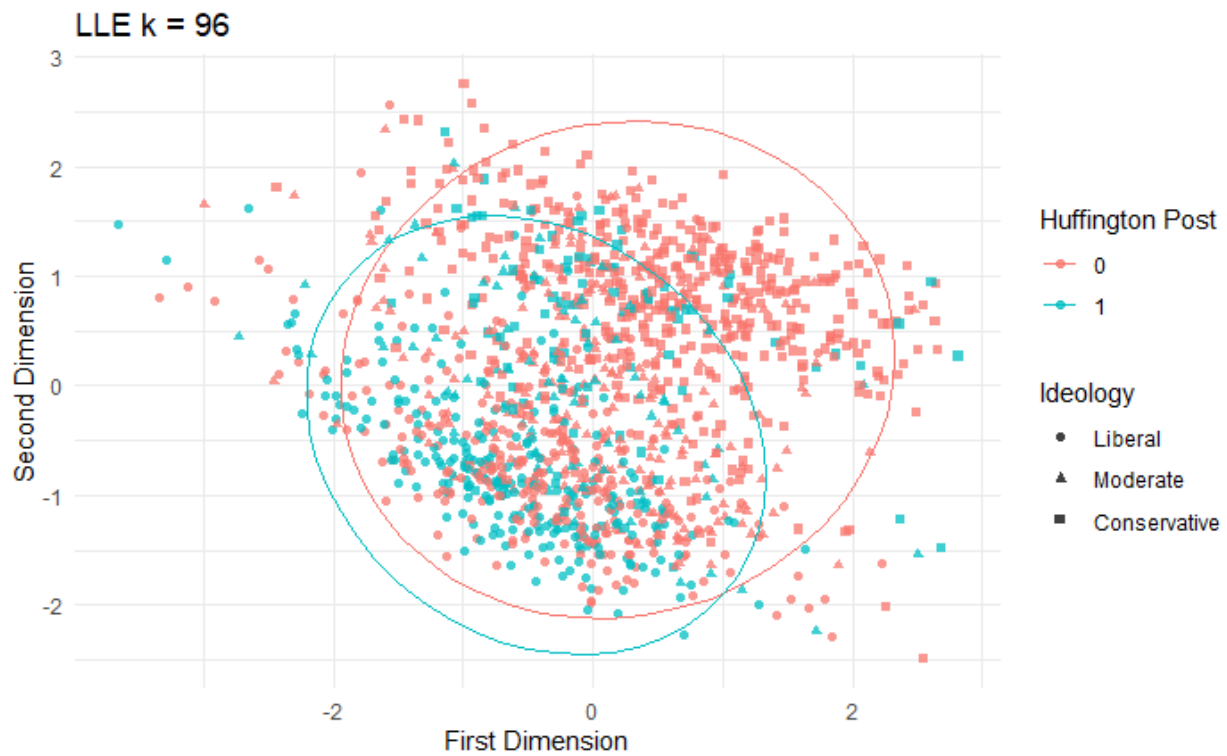Figure 9: Separation in websites visited: New York Times

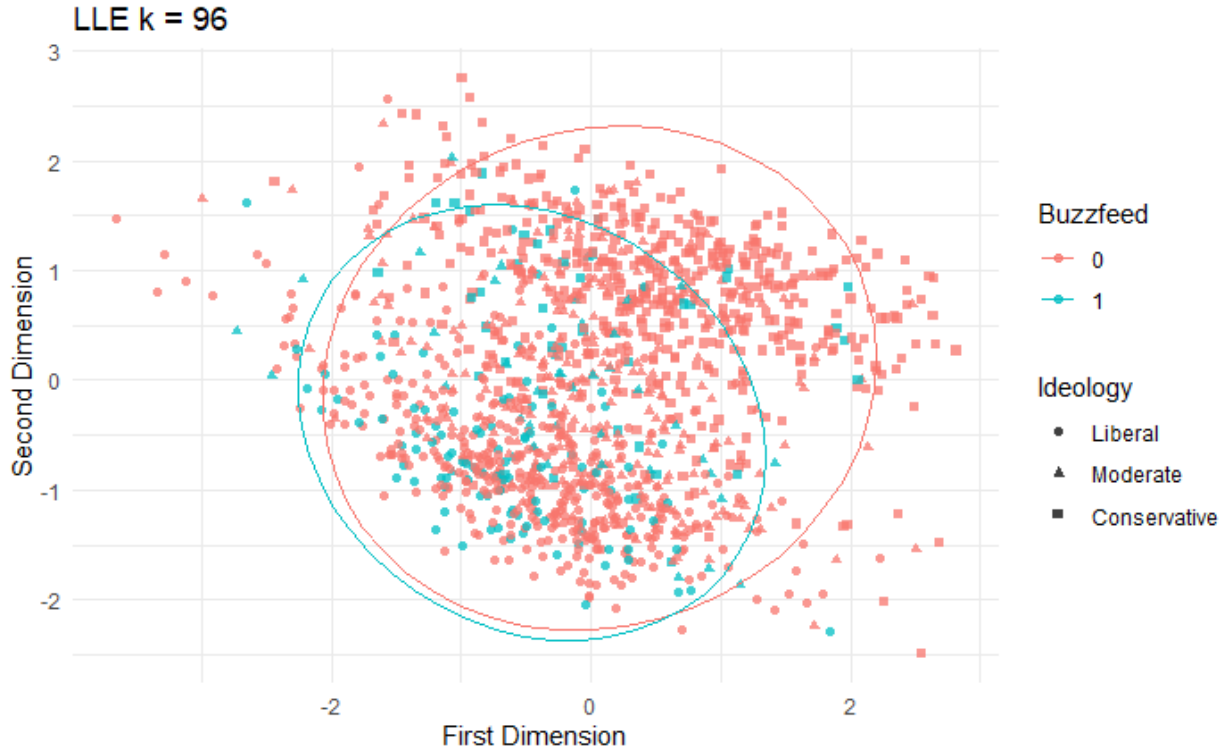Figure 10: Separation in websites visited: Huffington Post

Figure 11: Separation in websites visited: Buzzfeed

Web Analysis

Like the radio analysis, there is clear ideological separation in the websites respondents visit in order to consume their news. On the liberal side, we see respondents heading to Buzzfeed, Huffington Post, and the New York Times website. On the conservative side, respondents tend to head to Fox News. These are not surprising findings given the well-documented partisanship of the American news environment, but do provide evidence to suggest that ideological clustering extends to Internet media sources as well as traditional media sources.

TV Analysis

With the TV analysis, we were able to understand how ideological clustering can exist in the entertainment space as well as the news media space.

First, we see the predictable results that *Sean Hannity* and *O'Reilly* Factor viewers skew toward the conservative space. On the other hand, viewers of the *Rachel Maddow Show* skew liberal. Interestingly, the density of the *Sean Hannity* and *O'Reilly Factor* clusters are much denser than the *Rachel Maddow* cluster - and indeed the rest of the shows catering to liberal audiences. Perhaps some aspect of conservative ideology predicts a tigher groupin in terms of what is presented on TV. On the other hand, liberal news media may also try to cater to moderate audiences as well. We also see that the *Rachel Maddow* cluster only includes a part of the liberal data space, suggesting that the show perhaps caters to only a subset of liberal issues.

Moving into the entertainment space, we fail to see the same, consistent level of ideological separation. *The Big Bang Theory*, a popular sitcom, has a reach that spans nearly the entire data space. We find a similar lack of separation across all types of shows, from sitcoms to cop shows to action shows to reality TV.

Two exceptions do stand out: *Stephen Colbert* and the TV show *Empire*. Stephen Colbert is known for
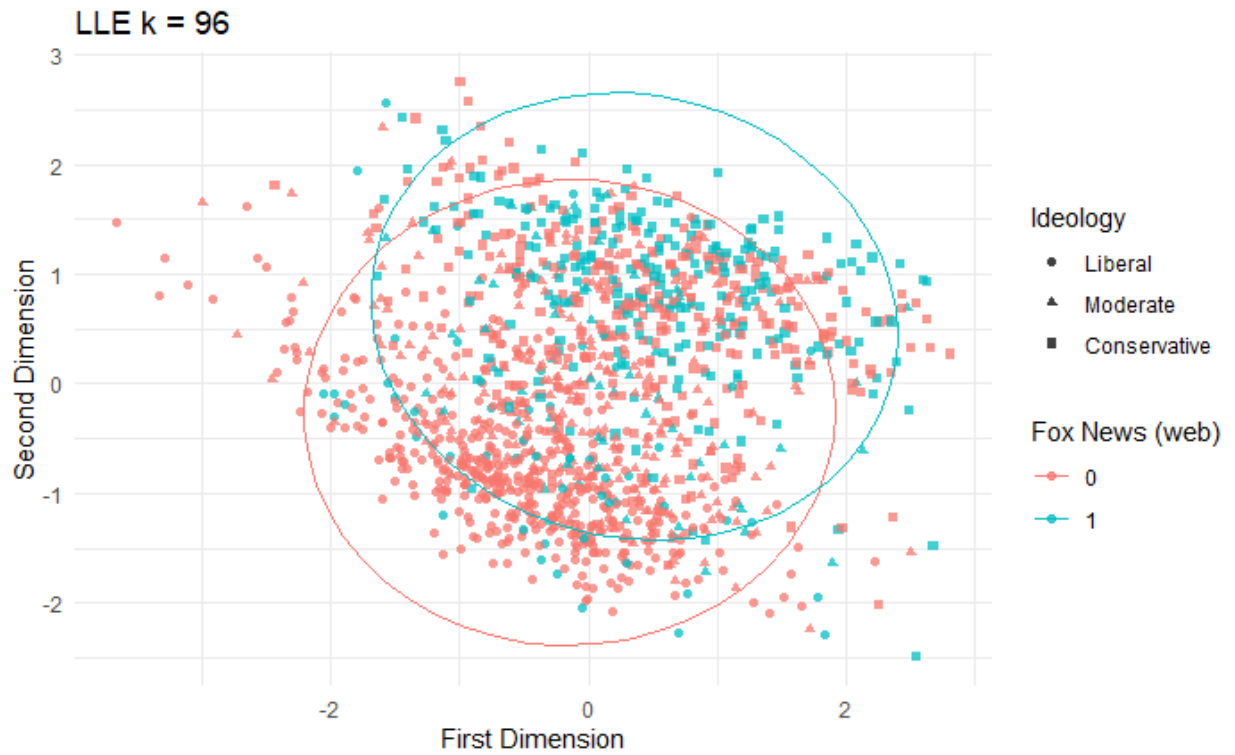
7

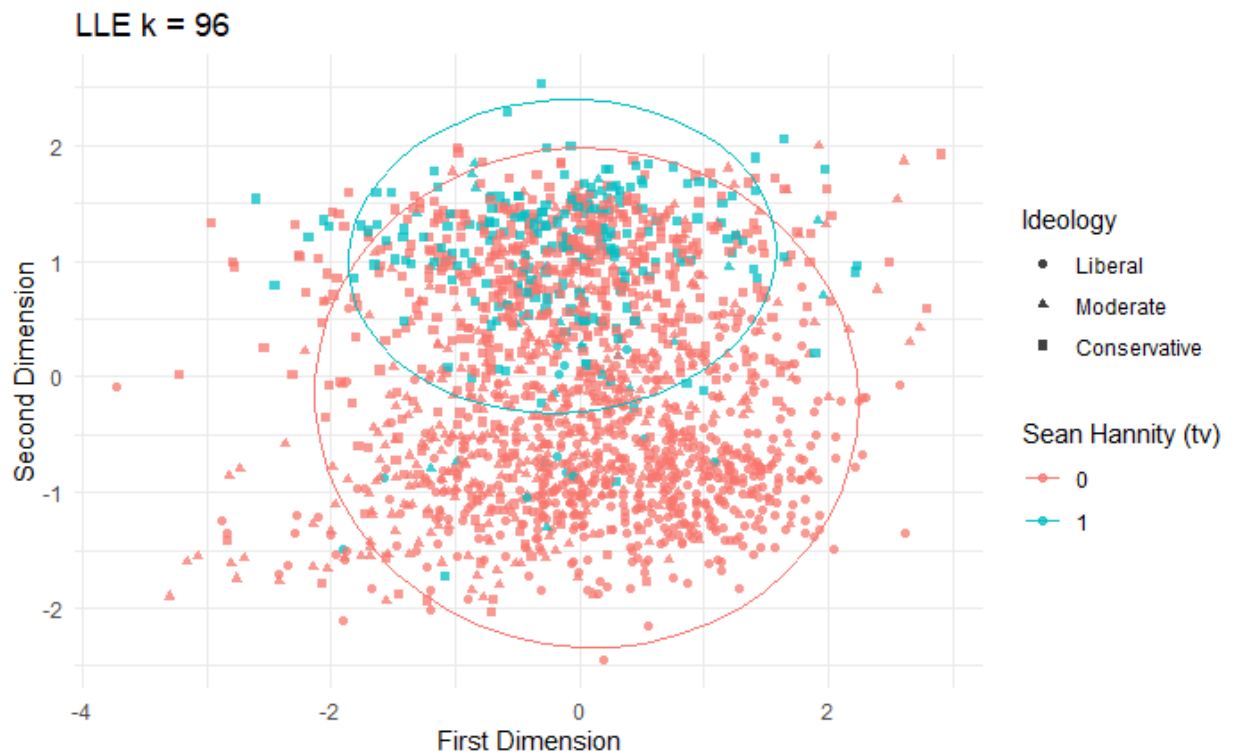Figure 12: Separation in websites visited: Fox News

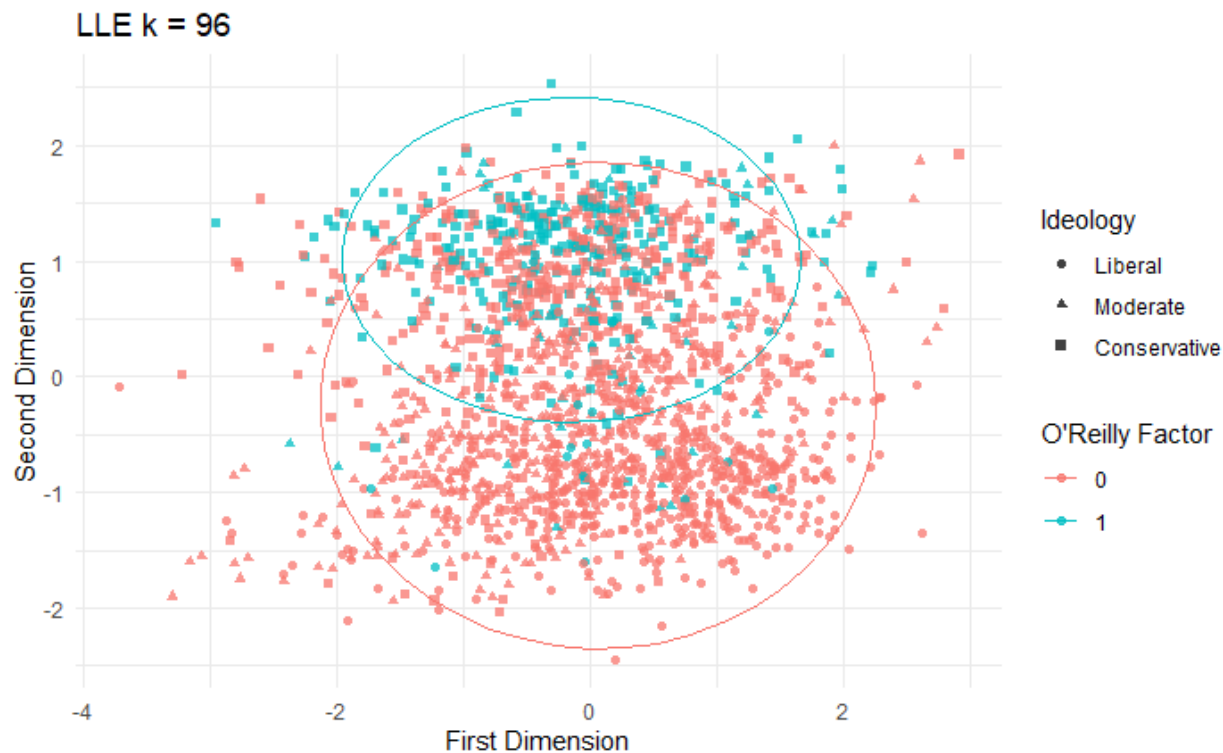Figure 13: Separation in TV shows watched: Sean Hannity

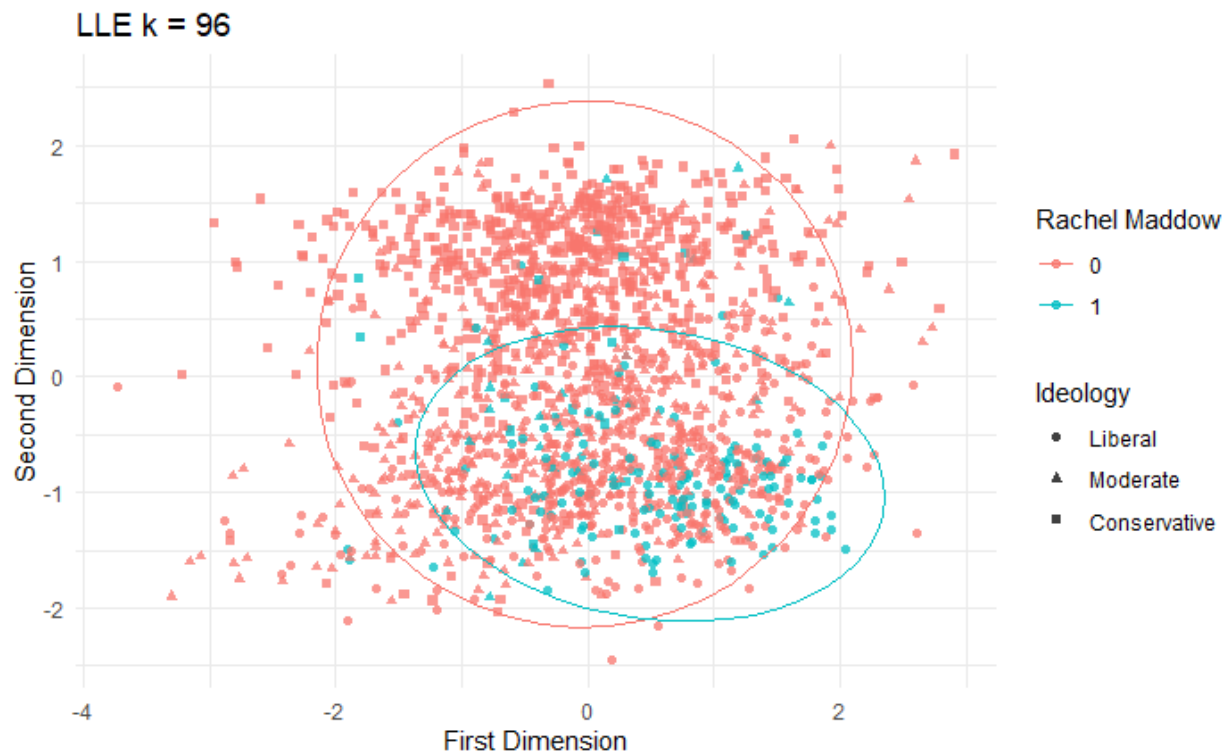Figure 14: Separation in TV shows watched: the O'Reilly Factor

Figure 15: Separation in TV shows watched: Rachel Maddow

9

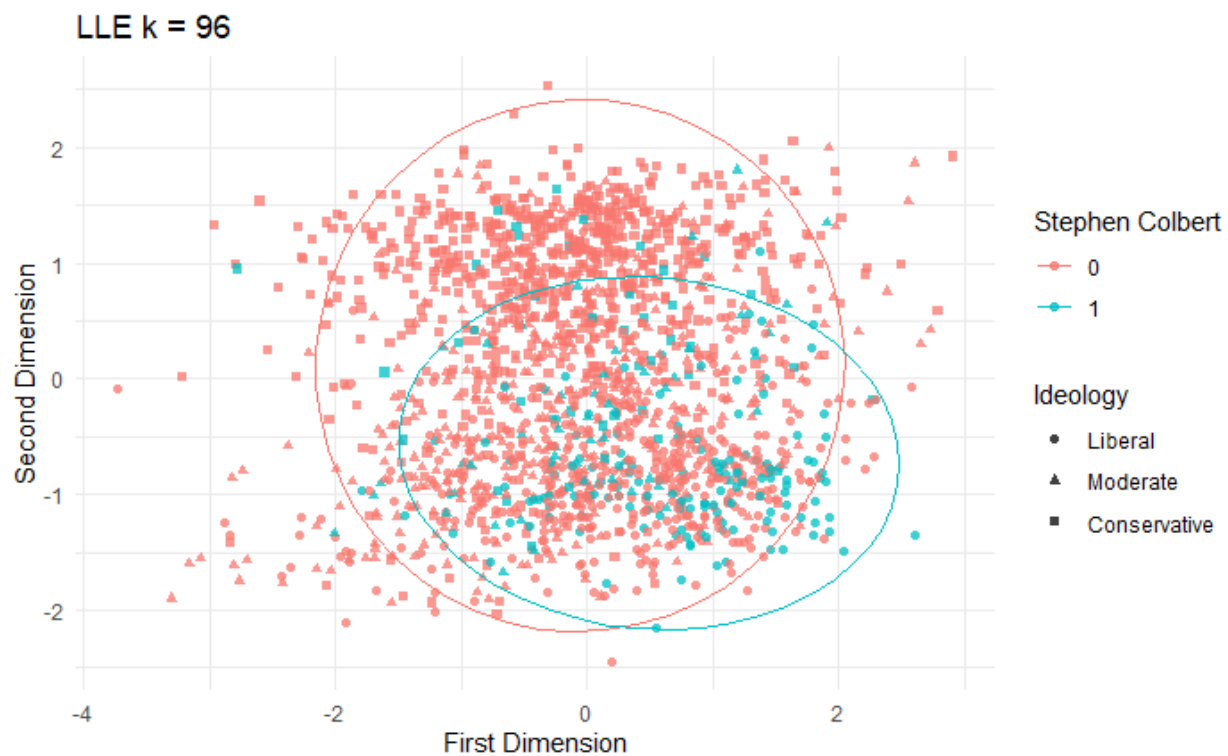Figure 16: Separation in TV shows watched: The Big Bang Theory

Figure 17: Separation in TV shows watched: Stephen Colbert

his character that satirizes conservative news hosts. Despite his show being primarily comedy, the themes heavily cater to liberal and moderate audiences.
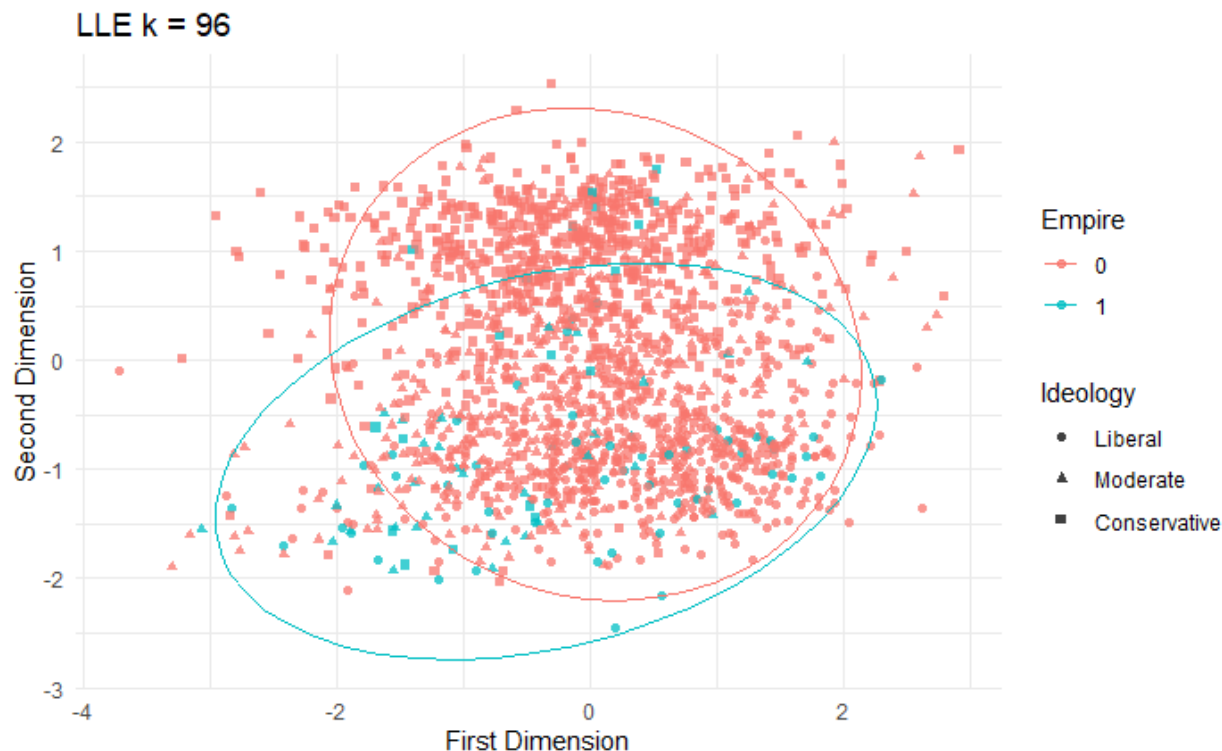

Figure 18: Separation in TV shows watched: Empire

Empire is interesting because its viewers extend into the lower-left extremity of the data space. This is the area that left-leaning media, such as the *Rachel Maddow Show* failed to capture. *Empire* is a drama series featuring a predominantly Black cast, suggesting that its appeal to non-white audiences allowed it to gain traction in the left-leaning space not reached by other shows. It also suggests that ideological groupings in entertainment can be predicted by facets of self-identification beyond political ideology.

Moving beyond LLE, the finding about *Empire* suggests that analyzing certain cross-sections of the data space may yield more interesting separation. For example, individual cop shows failed to produce separation, but taking that genre as an aggregate and filtering by respondents who also view conservative new media may yield more interesting results.