

SURV727 Final Project Report

Yael Beshaw

Github Link

<https://github.com/ybeshaw/SURV727-Final-Project.git>

Health Communication and Technology in Healthy People Agendas 2020 and 2030

Abstract

This project aims to analyze the volume of coverage regarding the Health Communication and Technology objectives of Healthy People Agendas 2020 and 2030.

Introduction

Healthy People Agendas for the 2020 and 2030 is a CDC, HHS, and OASH joint effort to track and achieve health goals for the US Public. Here, we take a look at a topic relatively new in the scope of public health-Health Communication and Technology. In the Healthy People Agendas, objectives that fall under Health Communication and Technology refer mainly to how the public engages with their health using technology and the internet.

Research Question

How prevalent are these topics across different stakeholders (citizens, news, lawmakers) and does prevalence differ across the progression of these objectives?

Methods

For the purposes of this project, “coverage” encompasses Google search trends, news media coverage, and congressional bills related to these objectives.

This project utilizes the gtrendsR package to assess results related to keywords associated with these objectives from Google Trends. Additionally, it utilizes the Dow Jones Factiva API to scrape articles that include the keywords and lastly, it observes how many bills were introduced in Congress related to these topics. We observed 6 objectives, 3 from Healthy People 2020 and 3 from Healthy People 2030, with one of each in the “Target Met”, “No Change”, and “Getting Worse” progression category.

Objectives of Interest

Healthy People 2020 (January 2015- December 2019)

1. Target Met: HC/HIT- 5.1 Persons using the internet to keep track of personal health information
2. No Change HC/HIT- 9 Internet users that can easily access health information.
3. Getting Worse HC/HIT-6.2 Persons with broadband Internet access.

Healthy People 2030 (January 2020- December 2024)

1. Target Met HC/HIT- 07 Increase the proportion of adults who use information technology (IT) to track health care data or communicate with providers.
2. No Change HC/HIT- 09 Increase the proportion of people who can view, download, and send their EHR.
3. Getting Worse HC/HIT- 05 Increase the proportion of adults with broadband internet access.

Data Collection

Data collection was conducting utilizing Google Trends, Dow Jones Factiva, and GovTrack.

Google Trends

Collected data from January 1st 2015 to December 31st 2019 or January 1st 2020 to December 1st 2024 depending on whether the objective is part of 2020 or 2030. For the purposes of this project, two keywords/objective were collected. Due to Google Trends Rate Limit, we save the results as datasets, extracting the datasets we are interested in observing.

Healthy People 2020: Target Met

- i. Keywords: “mychart”, “health track”

Healthy People 2020: No Change

- i. Keywords: “electronic health records”, “symptoms”

Healthy People 2020: Getting Worse

- i. Keywords: “mychart”, “health track”

Healthy People 2020: Target Met

- i. Keywords: “mychart”, “health track”

Healthy People 2020: No Change

- i. Keywords: “electronic health records”, “symptoms”

Healthy People 2020: Getting Worse

- i. Keywords: “broadband internet”, “high speed”

Dow Jones

Collected data from the Dow Jones Factiva for each of the six objectives. For this project we look at data from the New York Times, Wall Street Journal, and National Public Radio. Each query was done individually and results were combined in file “hit727.csv”.

Congressional Terms

Collected data utilizing GovTracker and filter across the past five congressional terms (2015-present). Observed 3 subtopics of congressional bills related to the objectives.

1. Internet, web applications, social media
2. Health information and medical records

3. Health promotion and preventative care

Congressional Terms:

114; 2015-2017

115; 2017-2019

116; 2019-2021

117; 2021-2023

118; 2023-2025

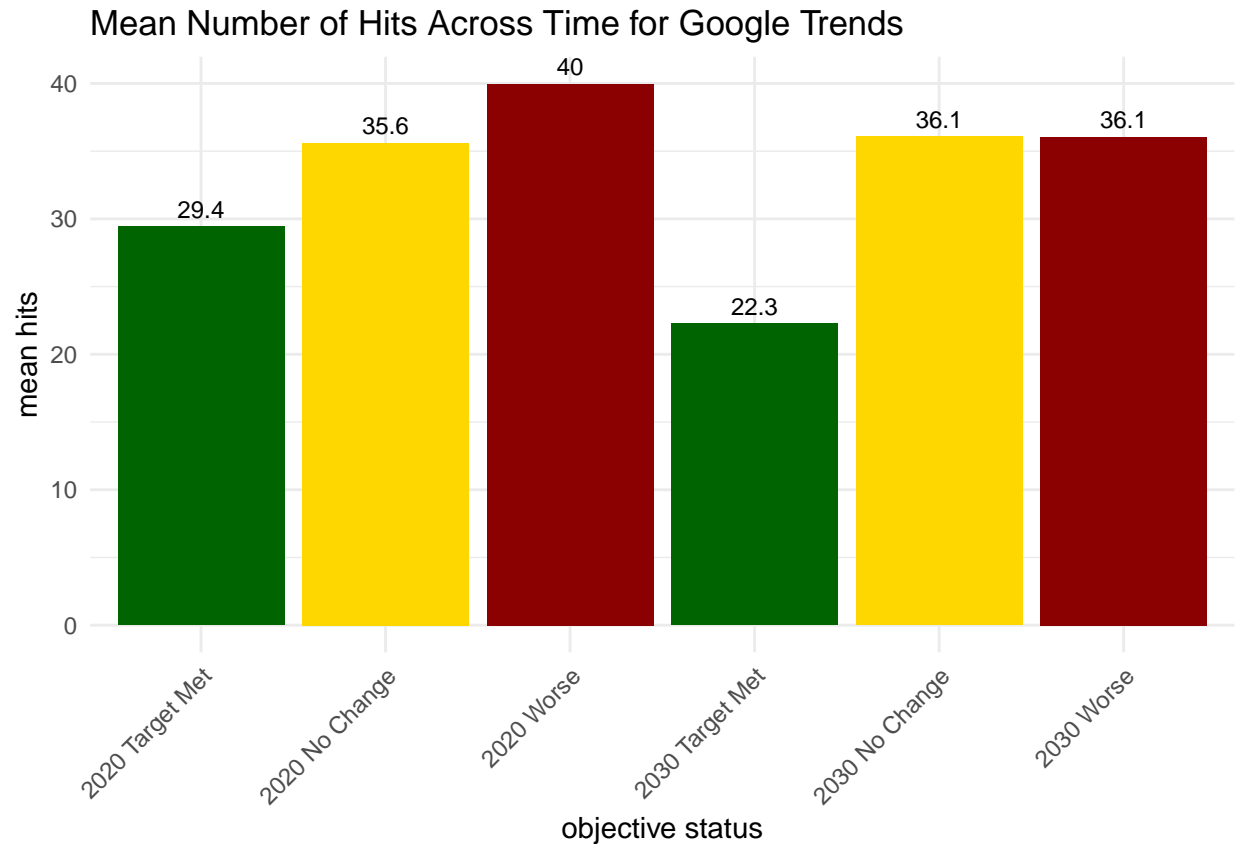
Based on results we create a dataframe containing how many bills were introduced (House vs Senate), how many were signed into law by the President and which of the 3 subtopics the bill falls into.

Analysis and Results

Compare the volume of coverage for objectives between both agendas and across their respective progression status.

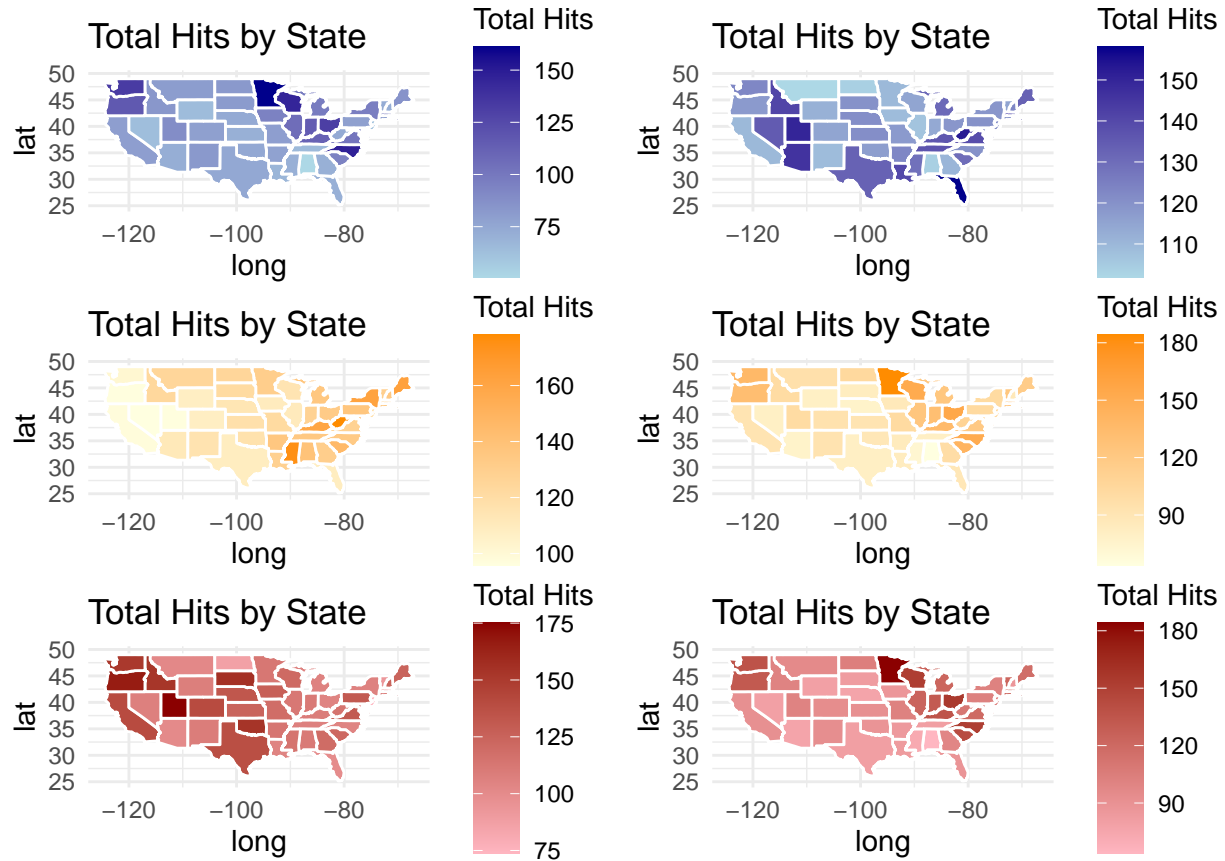
Google Trends

This plot reflects the mean number of hits across the respective 5 year periods of data I have for each agenda. We see that across the board there is relatively similar interest with broadband internet topics being high despite their lackluster progression.



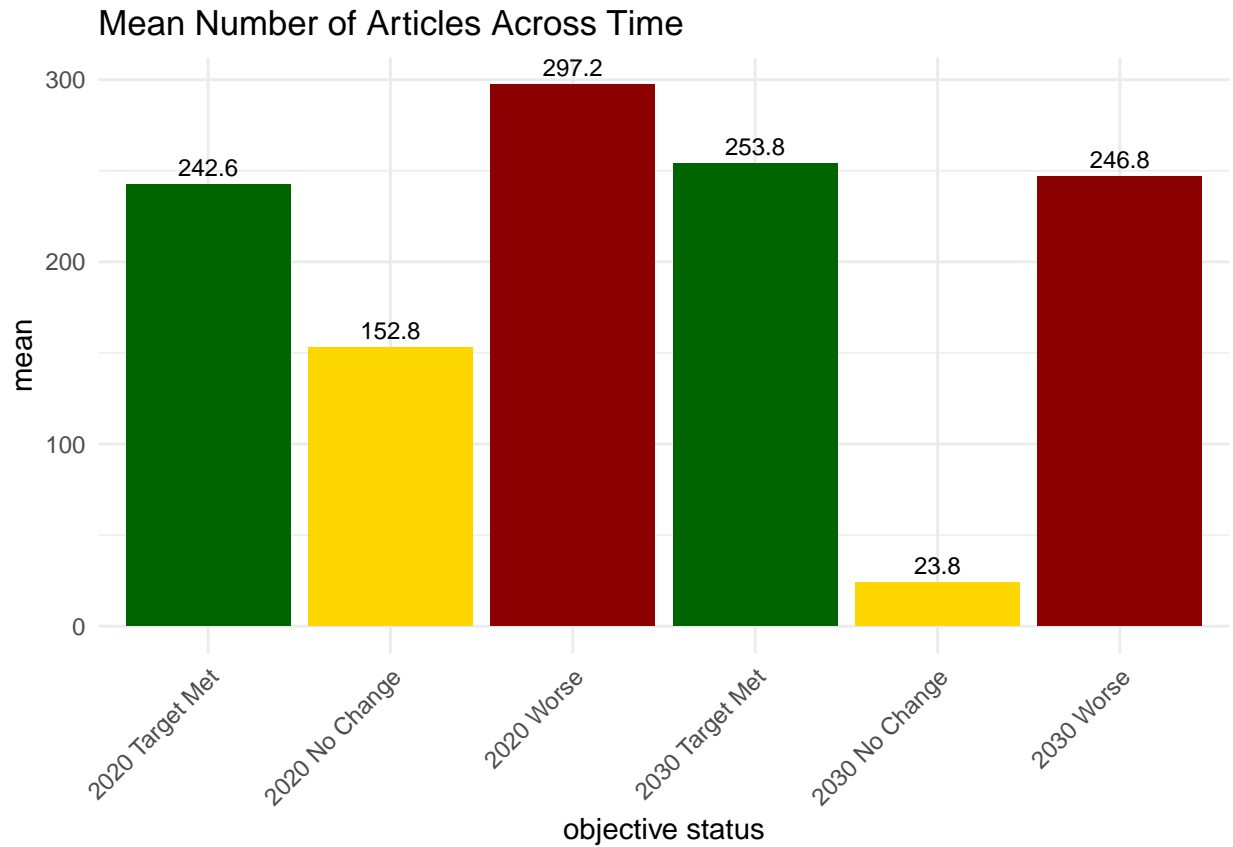
Next, we assess the total number of hits and mapped it across the states to observe where the Google trends data volume is coming from. We do this in order to salience of these topics within the general public and

locate where in the general public we observe this. We see that for target met objectives there is a spread of states with 120 hits and above in both agenda periods. For no progress we see there is a belt of high hits from northeast to south in 2015-2020 but then it seemingly rotates to density in Wisconsin to South Carolina in 2020-2024. Lastly, for worsening progress, we see that the searches are dense across the board and in states such as California and Oregon which are not usually associated with the “rural and poor” label that comes with a lack of internet.



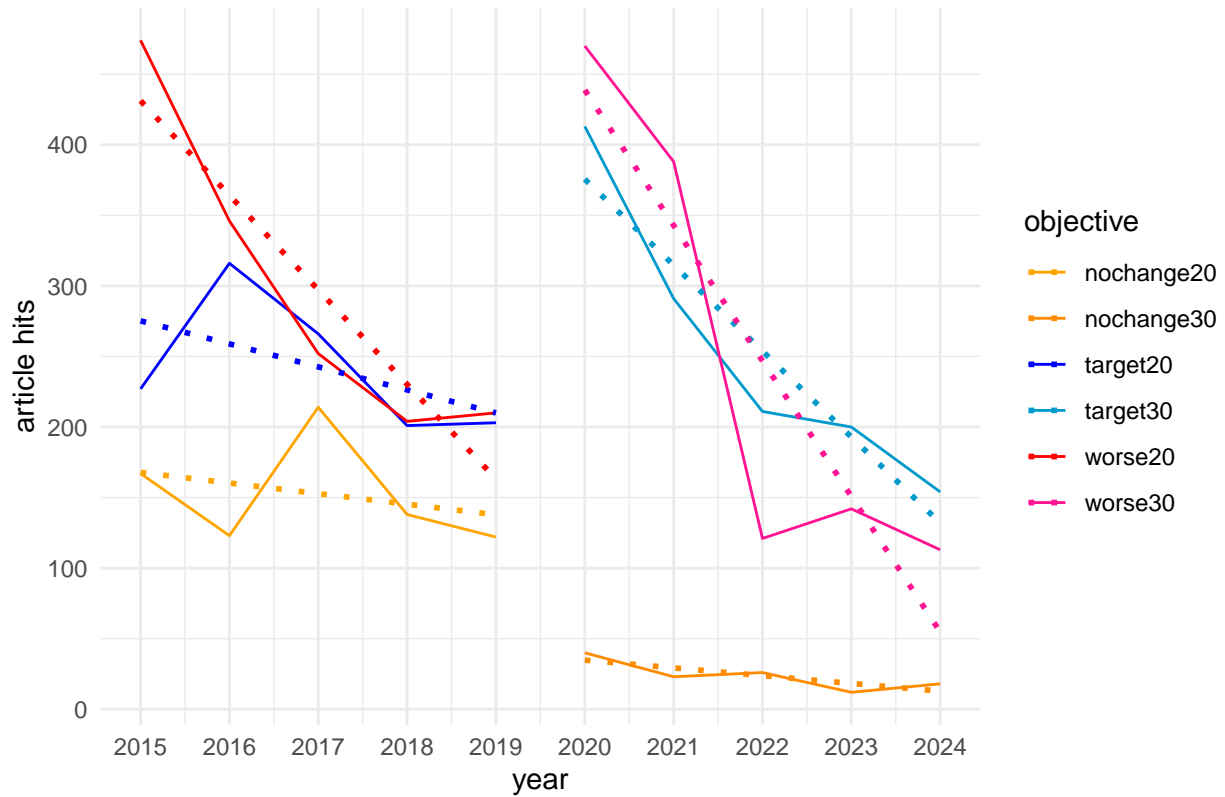
Dow Jones

We see again that there is high interest for broadband internet topics but surprising much lower interest for our in progress topic of accessing health information (EHR) by assessing the mean number of articles per objective.



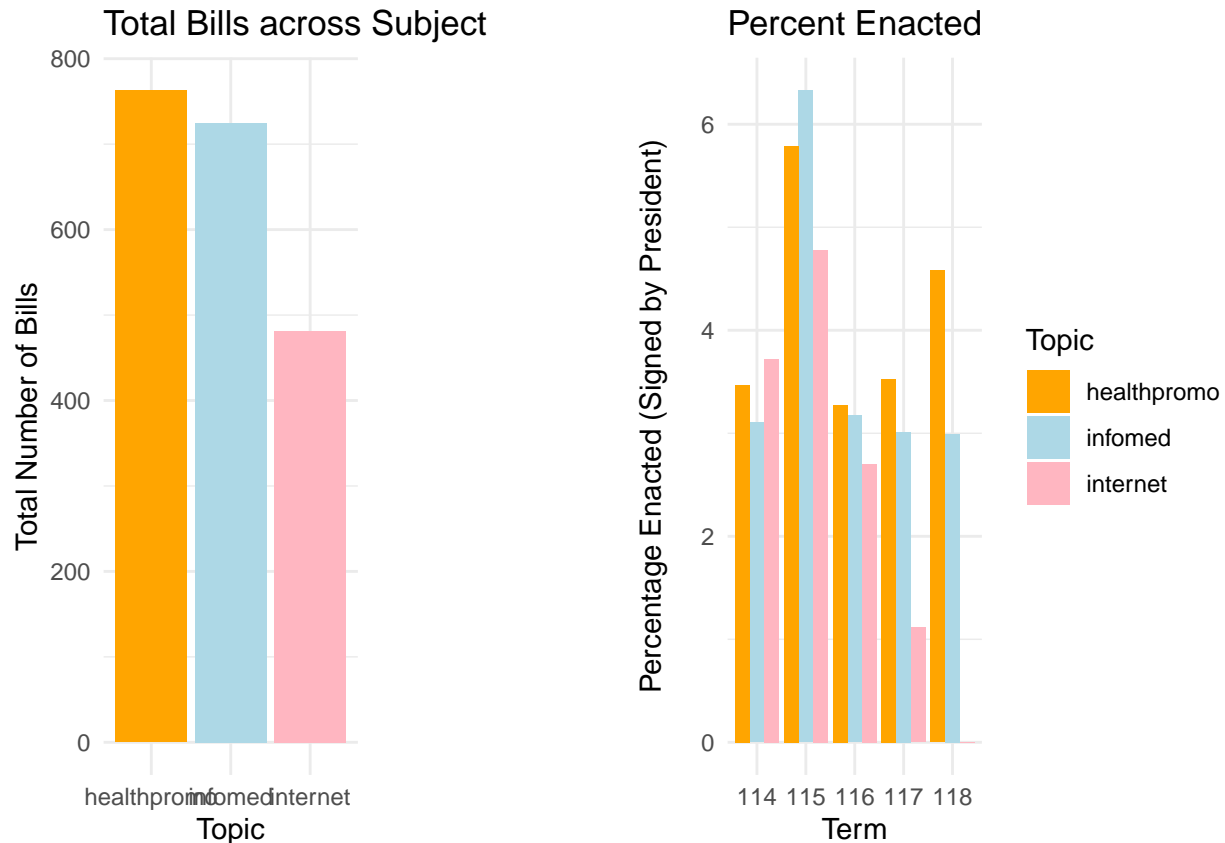
We then look at this plot below to observe the overall trend of these objectives in news media. As a whole, we see a decrease in articles over time, but we see that this decrease occurs at different rates per objective.

Articles Over Time by Objective



Congressional Terms

Here, we observe the total number of bills introduced by the House and Senate across each topic. We compare that to the percentage of bills that are enacted (signed by the President) across topic and congressional term. We see here that bills regarding the internet are much less than that of medical information or health promotion. Despite this we still see a similar percentage of laws that are enacted across topic. However, since the 117th congressional term, the percentage of bills enacted regarding the internet have been much lower.



Conclusions

Based on these findings, we are able to assert that objectives across progression status have similar prevalence across the stakeholders we observed (general public, news media, and lawmakers). Thus, we can not certainly say that an objective that has worsening progress is not an objective that is salient. Instead, these results show us that there is an interest regarding objectives that are not progressing well and that there is an opportunity to use that interest to assist with progression efforts. For example, as seen in the US Map, interest regarding broadband internet is across the nation and in very diverse states. We may be able to focus efforts in states that are already very interested in this topic to address progress and expand methods outward. Additionally, we see that news media does not favor the objective that has no change/progress, as the mean number of articles published relating to it is much smaller than that of the other two. This indicates that we have an opportunity to encourage news media to talk more about topics relating to this subject, as searches related to it are still high based on Google Trends results. We hope that increased news coverage may be able to address the interest and concerns that the public has and thus influence lawmakers to do more regarding these topics.

References

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