Main Concerns for Nuclear Energy Public Opinion Draft

Introduction

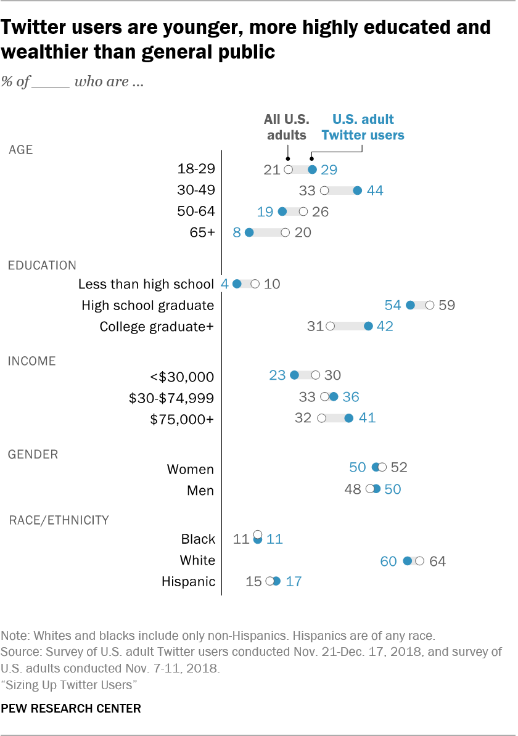
The nuclear energy business is surrounded by confusion which people are polled towards pro or against this form of energy. The opinion of the people in a community typically determine the longevity of a business and if one side is much more heavily favored compared to others, governments and major corporations are forced to change their systems. This practice is also applied to nuclear plants with some nuclear plants being shutdown due to public opinion in the masses. Although, these cases exist the public view is still heavily divided, providing evidence to both pro and against using nuclear energy. In a study from the National Public Opinion Survey on Nuclear Energy, 65% of U.S public expressed support for nuclear energy.

Literature Review

1. Article about twitter more specifically demographics on who uses it

<https://www.pewresearch.org/internet/2019/04/24/sizing-up-twitter-users/>

According to the article, Sizing UP Twitter Users by the Pew Research, the current demographics of the twitter community were taken for last year in the US. These statistics will give an understanding of who is commonly using the application and what percentage of people are likely to be speaking about these issues online. Last year, approximately 10% of users had nearly 80% of the tweets for adult users stated by the article. Thus majority of active users have low tweets posted but still use to read others tweets, predominantly the 10% tweeters. This heavily affects twitter opinions on debates because the more traction a user can provide the greater impact in society it affects. The average age of a twitter user is very well spread with the biggest age group, 30 – 49 having nearly half the activity on the site. The gender is almost split evenly where the low active female users have a 2 percent edge compared to the male low active users. Majority of the twitter users that are active have a high school diploma with 50 to 59 % of users and the major ethnicity group using the site is White who are around 60 – 64 % of the active users. These statistics help understand the twitter community and who will tweet about these topics by knowing about their general backgrounds and age groups.



1. Article about nuclear energy and what it is
2. Article about positives of nuclear energy

**Power to Save the World: The Truth about Nuclear Energy**

By Gwyneth Cravens

The nuclear power ideology has been given a negative view in the past few decades by a fair amount of people. However, there are activists today that have proof and statistics stating that the problem is not the energy or power plants but rather the incompetence. In fact the book, Power to Save the World: The Truth about Nuclear Energy, states how not only is nuclear energy not harmful but rather helpful and promotes an eco-friendly option for energy resources. The book states how power plants have grown in popularity in recent ages due to the immense energy that is produced from a single location which is more than enough to energize the cities surrounding it. The energy produced will produce leakage but if disposed properly will not have as major of an impact if mishandled. The nuclear energy trend has surfaced internationally where in France, 80% of energy is nuclear electricity. Japan is also changing its resources towards nuclear energy while seeing the benefits as well, and in the USA the booming increase in nuclear reactors and nuclear power is growing till this day.

1. Article about negatives of nuclear energy

**The Pros and Cons of Nuclear Power**

By Ewan McLeish

The nuclear power and energy is more notable for there negative impacts to society. The major problems that people bring up is that the energy hurts the environment, is harmful to people and can massively affect nearby citizens when near power plants. The first issue that was discussed in the book, The Pros and Cons of Nuclear Power, is the ecosystem harm it causes, where when handled properly still has affects to the environment and when handled poorly which is fairly common could result in a grave harm to the nearby ecosystem. The leakage that occurs from nuclear power plants happens fairly often leading to shutdowns of entire plants due to these incompetence’s. Typically, workers that are exposed to the nuclear energy are wearing full portative suits and respirators to protect from breathing in these harmful chemicals but when leaked people are inhaling these directly causing major incidents, some fatal. Thus, the growth of the nuclear power grew with the protest against it because the more that existed the more hate it received.

1. Article about people most impacted by nuclear energy

# Values, Perceived Risks and Benefits, and Acceptability of Nuclear Energy

[Judith I. M. de Groot](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorStored=de+Groot%2C+Judith+I+M)

The impact that nuclear energy has to people in their neighbourhoods and past historic events alter peoples opinions on the usage of it. The article states how depending on the mindset of individuals they trend toward a certain opinion on nuclear energy. For example, people that are pro nuclear energy tend to have and egoistical belief where they typically look at the positives that the energy has for them and how it could make life easier. This correlates to the previous positives to nuclear energy since it provides a significant amount of energy from a single plant. The negative people typically are more ecological and altruistic because they believe that the harms that are caused to the environment are too impactful and cannot be beneficial. The people that do not believe in the nuclear energy are typically fixed on their position on the topic as well even if evidence can be provided to show positives in the environment and people’s well being. The reason people are firm to their beliefs is due to the past, which in the article acknowledges the harm that is caused from harnessing the nuclear energy. The most notorious act of human cruelty was the bombing in Japans using the nuclear energy to flatten the city and leave high remnants of radioactivity causing even more fatalities. Thus, currently peoples positions on nuclear energy revolve around these ideologies.

1. Article about keywords and selecting them

Meertens, R. W., & Stallen, P. J. (1981). Opinions on nuclear energy: Evaluations, beliefs, and attitudes. Nederlands Tijdschrift voor de Psychologie en haar Grensgebieden, 36(1), 45–55.

The typical topics of discussion when trying to extract information from text and messages is to know what are the keywords or ideals that cover the main categories for the discussion. In the case of nuclear energy, the article goes on to mention what are the main constructs of the nuclear energy discussion. The typical topics are the society/societal attributes, technical and economic attributes of nuclear energy for the positive opinions or the pro-nuclear energy believers. The topics for those that oppose typically revolve around bio-friendly, environmental and human rights when discussing why they think it should not be used. The arguments and words may be spoken eloquently or simply as possible but the thought behind people’s opinions typically are rooted in any of these topics. When looking for keywords especially when to group individuals, it will be helpful to correlate their sayings with what their stance on the topic is.

1. Article about Text Classification

<https://dl.acm.org/doi/abs/10.1145/1835449.1835643>

# Short text classification in twitter to improve information filtering

Text classification is a tool used to classify a message, an opinion or any textual, non-numeric dataset into classifications based on the conditions predefined by the user. In the case for the twitter messages, the classification would be the question to classify if a user opposes or upholds the arguments against nuclear energy. This can only be done using text classification because all the arguments being made are in text and will have to classify them into one of the three groups which are agree, disagree or not applicable. Text classification will determine using the keywords to deduce what tweets classify an individual into whichever category. In the article, a user had performed text classification using twitter as well and had gone about it by taking short texts from the massive raw dataset and classifying each segment based on the conditions provided. This was done because the more text that is provided into a single classification, the more variables are add in play which may defer the actual result rather than doing separate classifications and combining the results to see which result is heavily favored and that will be the classification. Twitter themselves use this approach when labeling tweets in categories such as News, Events Opinions and so on.

1. Article about Predictive Analysis

<https://www.jstor.org/stable/23042796?seq=1>

# Predictive Analytics in Information Systems Research

Predictive analysis essentially is predicting a future result based on the previous results and analytical behaviour. In the article it mentions how that predictive analysis uses statistical and other methods that generate data predictions as well as methods for future predictions. This means that not only does predictive analysis provide results but it can also provide a means of getting continual future results as long as the conditions for the situation do not change. This flexibility and applicability is why many applications and large companies invest into predictive analysis, to see their longevity. The variety of applicability for predictive analysis makes this a universal field because it can be used to proves theories and test models, test experiments, predict outcomes, show timelines and solve important matters depending on the usage. Thus, when applying the proper result causes more influence in the field as well. However, since it is a prediction the results are only a high probability of what occurs and is not necessarily a guaranteed result because the one thing that cannot be predicted are radical, instantaneous changes that alter prior conditions in a set. Although, taking all this into account predictive analysis will be used to help find out what type of individuals are voting for which side based on the results that are found from the text classification.

1. Article about dataset cleaning or outliers
2. Article about influence on opinion based on status specifically twitter status

Dataset

The data source is called: Judge emotions about nuclear energy from twitter.

The source was retrieved from the open source website: <https://www.figure-eight.com/data-for-everyone/>

Approach

1. Remove outliers from the dataset that are irrelevant to the comparison
2. Remove further outliers that are redundant and can be assimilated with other data present to make the process faster
3. Then using Text Classification, pull out certain words that show the most prominent affect to the Classification of either yes or no towards public opinion on nuclear energy
4. From the words that were classified predict the words that will be tweeted to show consistency with the nuclear energy stance
5. Post predictive analysis to test upon a random part of the dataset using either 10-fold or test vs trial data sets
6. Conclusively answer the questions that pertain to the research questions that are given