

Understanding the escalation of the ageism in Social Media during Covid-19 pandemic using content, sentiment and network analysis

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Introduction

Eighteen years ago, one of my applied developmental psychology professors was studying the influence of children's TV shows such as "Sesame Street" and "Mister Rogers' Neighborhood" (Walker, 2003). As a young new immigrant who was also pregnant at that time, those North American children's TV shows described from an academic perspective had great influence on me. Children's TV shows and its influence was a well studied area, where there was no long term studies conducted on using cell phones and tablets from a young age at that time. A couple years later, taking a Gerontology course, the ageism in the children's TV show and TV show in general became evident especially in North American culture. My daughter was about two years old and she was about to start watching some children's TV shows. She started to watch "Dora the explorer" once or twice a week for 30 minutes (Dora the explorer, 2000-2019). A few months later, my two-year-old said "There is a grumpy old man sitting on the bench". From my perspective, this negative perception was formed with the combination of the regular character, the grumpy old troll from the "Dora the explorer", the grumpy troll from the book "Three Billy Goat graph" and some of our family members using a negative tone to talk about older people (Dora the explorer, 2000-2019; Asbjornsen, 1991). Her grandmother was in her early 50s and might not be perceived as an older adult. A two year old somehow put those information together and formed the ageist attitude. On the contrary, most of the studies show that children 3-6 years old have a neutral or positive view towards older people despite their parents' negative stereotype. Children who have more interaction with their grandparents have a more positive view toward older people in their young age. However by the time children reach 7-10 years old, their view toward older people gets negative (Babcock et al., 2016; Flamion et al., 2020). Sooner or later young children tend to form the negative ageist's attitude toward older adults. There are many studies indicated that since Covid-19 started, ageism has accelerated especially in social media with hashtag such as #BoomerRemover and #OK, Boomer (Kornadt et al., 2021; Meisner, 2020; Soto-Perez-de-Celis, 2020). However this is hard to understand since the average age of current U.S. congress is 59, the U.S. president Joe Biden being 79 years old and the former president Donald Trump being 75 years old. In the previous election of 2020, Elizabeth Warren, 72 years old and Bernie Sanders, 80 years old were well supported by the younger generation (Megan, 2021). The late RBG who died at age 87 had a tremendous influence on the younger generation in her late years (Ruth Bader Ginsburg, 2022). Ageism is getting worse in social media with Covid-19 pandemic and older adults are portrayed as a burden to society, helpless and expendable individuals. However we have 5 people who are over 65 in the top 10 world richest people, Bill Gates(65), Larry Ellison(77), Bernard Arnault(72),

Warren Buffett(91), and Steve Ballmer (65) (Cannon, 2022). It seems like fictional TV shows, younger people's tweets, and posts in social media carry more weight than influential and powerful older people from real life you see on TV such as politicians and financially successful billionaires from economic sectors. In this study, using social network analysis tool, NodeXL, sentiment and content analysis is conducted and compared among the ageism related keywords: "baby boomer", "aging", "seniors", "elderly" and "old age pensioner" and the generational groups such as baby boomer in order to examine the root cause of the recent increase in ageism associated with Covid-19 pandemic.

Background

There are five age related keywords in the focus of study. Even though they all indicate the individuals in roughly the same age group, each word has slightly different pre-existing notions. Baby boomer is a term used to describe an individual who was born between 1946 and 1964 and it is the name of the generational group or cohort. The generational cohort followed by baby boomers are Gen X, Millennials and Gen Z (Generation, 2022). Although ageing and the elderly is used worldwide, ageing is spelled aging in the USA. Seniors is a term used in the U.S.A and old age pensioner is mainly used in Britain to describe older adults (Old age, 2022).

Reaching up to the Covid-19 pandemic, there is increased tension between the generational cohorts especially between Baby Boomers and Millennials. Dr. Reich warned in 2012 that we will face a budget and policy battle over medicare and social security towards older adults and domestic and educational funds for the younger and the poor. He said in his speech hosted by UC Berkeley that "The frustration will most likely generate anger but we cannot let that frustration and anger divide us" (Reich, 2012). However despite his warning, the divide and tension between baby boomers and Millennials continue to rise. In 2010, David Willetts who has been a member of parliament in the UK published a book called "The Pinch: How the Baby Boomers Took Their Children's Future - and Why They Should Give it Back". In 2019, millennials outnumbered boomers for the first time and a Wall Street Journal columnist, Joseph Sternberg came out with the book called "The Theft of a Decade: How the Baby Boomers Stole the Millennials' Economic Future". The title such Baby Boomers vs. Millennials are a popular topic on media such as TheEllenshow and major news networks even before Covid-19 pandemic started (TheEllen DeGeneres Show, [2016, 2017 2018, 2019, 2020]; PBS NewsHour, 2021).

Methodology

Data visualization

With the emergence of Web 2.0 in the early 21st century, we need a new way of visualizing the crowds, communities and it's interactions that more often take place in social media. Traditionally, when we go to an event or gathering such as a protest or a concert, you can see the crowds of people and you are able to observe how those groups or people interact with each other. Some form tight connections with close interactions and others might be all isolated individuals without any interaction. In addition to observing these interactions in person,

in the late 19th century, with the emergence of technologies such as TV, video recording, cameras and advanced transportation, we are able to observe what is happening in the other parts of the world. We are able to capture and save that information to share with others or use it for later. In order to do so, you need to learn how to use a camera or video and you need a means to travel to the location of your interest. However what once were reserved only for journalists are open to the public and for a wider variety of views. Until recently, only people with programming skill were able to visualize the group, community and its interaction on social media. For example, "OK, Boomer" went viral when New Zealand MP Chloe Swarbrick responded to one of her co-worker by saying "OK, boomer" in the parliament regarding discussion over an environmental bill (Ellion, 2019; "OK, boomer," 2022). What does going viral on social media exactly mean? How can we visualize that? As social media becomes the dominant form of the media, the demand from people who do not have programming skill to analyze social media data has increased. NodeXL allows you to visualize the crowds, groups, communities, their relation and their interaction on social media without the programming skill. It is like learning to use a DSLR camera. Although not everybody has an interest in learning to use it nor everybody successfully acquires the skill, it is available for the general public if you seek it. Some of the study indicated that the ageist attitude during Covid has worsened pointing out the hashtag such as #boomer remover (Meisner 2020). So using this keyword as the example, the network analysis without programming skill with NodeXL is demonstrated and explained. Then using node XL built-in function, the content and sentiment analysis on the words associated with ageism related keywords is conducted.

The network graph theory

In the network analysis, we have vertices which are also called nodes and edges that represent the connections and relationship. In our network the vertices are people in the Twitter analysis and videos in YouTube analysis. In the analysis of relationships, edges are directed meaning it matters which direction the relation is formed such as who is replying to who in twitter. In the sentiment analysis, the graph is undirected meaning two paired words are used together but it does not have direction in their relationship. You can also represent data in a matrix where each individual is represented in one row to represent the relationship.

There are mainly 6 types of relation in network theory. First one is that two groups of vertices do not interact and connect with each other. Next one is a fragmented graph. There are groups or clusters of vertices but they do not interact with each other. The other is the unified type with all the cluster of vertices being tightly crowded in one big group. The clustered type is common in community clusters. There are many clusters with different sizes and some have more connections than others. The last one is in-hub and out-has types. In inHub there is one person in the center and connections originate in one central vertex to many other vertices in one direction also called broadcast network. In-hub is also called a support network where many vertices are directed to one vertex in the center. We also use centrality measures to determine most influential vertices which are in the center of the network and density of the network (Hansen et al., 2010). With network analysis, it is the main focus to identify these central nodes which tend to be small in number but very influential in the network.

Procedure

As mentioned above, data is collected using five different keywords related to ageism, baby boomers, ageing, seniors, elderly and old age pensioners. Sentiment analysis of the generational group such as boomer remover, Millennial, generation X and Z is also included in order to examine the generational aspects. Then data is preprocessed and cleaned by removing or merging duplicates edges and missing data. User's tweets related to the keywords are collected for twitter and the video title of a YouTube video related to the keyword is collected for the YouTube. Then graph metrics on words and word pairs are analyzed to get sentiments of users. Once you get a list of word pairs, you can copy those words into the new NodeXL template as new vertices. Words are clustered using the Clauset-Newman-Moore algorithm. The result is visualized putting each group in a separate grid cell and vertices are labeled with the words.

Using the keyword boomer remover, the general strategies of visualizing data with Node XL is introduced and then we will use an appropriate filter for the #boomer remover case. All the data with keyword boomer remover is collected and visualized using the show graph function as shown in Figure 1 (Appendix). This graph is very busy and it is very hard to understand any relationship. In figure 2, data is clustered into each grid using the Clauset-Newman-Moore algorithm. This helps to visualize individual relationships of vertices separately and it's weight represented as the size of a circle. Figure 3 shows different types of edge properties such as who tweets, retweets and replies to tweets. You can also filter the edge using the dynamic filter function as shown in Figure 4. You can use many different functions and dynamic filters to visualize your data in your own ways.

In order to analyze the key factors in the #boomer remover case, Figure 4 shows it's time line and the volume of the tweet. Despite making the trend in March of 2021 and caught attention, the Boomer remover hashtag is not very active after March (Whalen, 2020). When you focus on the number of in-degree and out-degree, there are only four major players in this community. Only three people have indgree of over 10 and only one person has an outdegree of over 10. Figure 6 and 7 isolate and visualize those three people who have high in-degree meaning multiple people are replying to those people's tweets. When it comes to out-degree, there is only one person who is tweeting out to many different people as shown in Figure 8 and 9 and not many people are tweeting back to this central individual who is spreading and broadcasting in this network. Figure 10 shows the top word pairs from this individual's tweets. Examining centrality and matrix, this community is not closely connected and one person is broadcasting to many other people in one direction. Figure 12 shows the top hashtag and top words pair associated with the #boomer remover. There are some words related to covid and also some words related to generational divide. After understanding the basics of the nodeXL and it's visualization feature, we will focus on the sentiment and content analysis of our keywords and it's comparison.

Result

Most words from content analysis (over 90 %) are categorized as neutral which means that it has neither positive or negative sentiment. Therefore the results are shown in the comparison of the number of positive and negative words. For example if the number of positive

words are 20 and the number of negative words are 10 out of 30 words, it is shown as + 2.0 indicating it had positive words twice as much as the negative word. Likewise, if there are 10 positive words and 20 negative words, it is represented as - 2.0.

Age related keywords

	Baby boomer	Aging	Seniors	Elderly	Old age pensioner
Twitter	+ 1.14	+ 1.41	+ 1.89	- 1.77	+2.4
YouTube	-1.21	+1.17	+1.79	-1.2	+1.99

Generational cohorts

	Boomer remover	OK, boomer	Baby boomer	Generation X	Millenial/ Generation Y	Generation Z
Twitter	-1.9	1.65	+ 1.14	+2.34	+ 1.35	-1.16
YouTube	-1.55	-1.41	-1.21	+ 1.2	- 1.01	-1.07

All the results with more negative sentiment from the age related keyword had the covid as the common word in the word pair lists. The keyword baby boomer has split results between Twitter and YouTube which was a common trend among the generational cohorts and it was more negative on YouTube. The keyword “ageing” had relatively similar results over two platforms. The term is widely used internationally and some of the top word pairs include some forighn words. Seniors was a term which is also used to describe groups other than older adults. If you use the term senior, the result will be more likely to include seniors in schools, activities or roles. Even though the term, seniors is somewhat more accurate compared to the term, senior, the results are still not limited to older adults with this keyword. Elderly is another word used globally, it consistently has negative sentiment and results also include some forighn words. The elderly had a high correlation with the term, covid. The old age pensioner which is more dominantly used in the U.K. had the most positive sentiment among all the keywords to describe the older adult. The result indicates that there are differences among regions and culture toward old age.

As it was the case for the age related lists, the results from generational cohorts list also has a trend of Twitter being more positive than YouTube. Generation X has positive sentiment on both platforms and Generation Z has negative for both. Baby boomers and Millennial had similar results which can be explained by the Boomer VS Millennial conflict between those two generations. For the problematic hashtags, boomer remover had the most negative sentiment which is consistent with general public opinion that the term is not acceptable (Whalen, 2020). Where OK, boomers had mixed sentiment as some people ask and wonder if it is OK to use the term to describe the generational gap.

The result shows that sentiment toward older people is not necessarily negative. It shows some cultural or regional differences and YouTube was consistently more negative compared to Twitter. For both generational cohort terms, baby boomer and millennial, the sentiment in Twitter and YouTube were not consistent and it was both more negative in YouTube. When you use more generationally dividing words such as baby boomer or millennium, it will bring the associated words such as “vs” and the name of the other cohort.

Cohort related words tend to reflect the pre-existing cohort conflict especially between the baby boomers and the millennials.

Discussion

In 2019, Millennials outnumber baby boomers shortly before the last U.S election of 2020. If the majority of Millennials and generation X think older politicians and business leaders are not up to date with their interests such as the environment and technologies but instead using their power to fulfill their own interest, Joe Biden should not be the current president. The most conflict between Millennials and Baby boomers resides on boomer's resilience for technological change and climate change. When you hear something like Universities are removing all analog clocks because the Millennials cannot read them. The reaction and opinion could lie on the fine line. However there are some older adults who made the smooth transition and adapted well to modern society and others who are not willing to adapt and want to hold onto their existing values. Instead of judging the millennials who cannot read analog clocks, you can use it to understand why all the analog clocks in school' campus are wrong and nobody seems to care to adjust them for a prolonged period of time.

The divide is not on the actual age of the individual but on their attitude toward adapting to change and respecting others on the spectrum. Everybody has the right to take your stand and find the common ground in your own way to adapt to the changing society within their limit, but everybody else on the spectrum is not your enemy and you need to respect others.

Additional finding

Initially this study was focused on analyzing community formation of older individuals on Facebook. However you can only access your own data such as your friends' in your facebook page. Most of others' interactions are private and third party tools cannot access these data. Access to public pages such as fan pages was permitted and data from public pages such as "baby boomers" used to be available for research (Hansen et al, 2010). However facebook underwent a couple of changes regarding it's API. With the first change, publics are no longer able to collect the information on users or individuals. There was a lot of conflicting information on the internet regarding this change since there were many individuals who successfully acquired data from facebook previously. Then there was another change in the facebook API regarding access to the public group page in September of 2021. You need to have a role in the community in order to get data from the public pages. Another way to gain access to the facebook API is to request permissions through the app review. However due to covid the facebook developers were not accepting the submission and after it started to accept submission again, it was experiencing longer wait time to get permission due to the backup (Meta, 2022) . Author was not able to gain access to the facebook community pages within the time frame of this study. The learning experience from this was that when there are multiple changes to an existing system, the spread of misinformation can get complex and affect others even when there is no deliberate ill intention. Some of the newest material on the internet was tutoring people how to obtain facebook public page information using community id. Once people have their own experience and documentation, they do not necessarily publish it right

away. By the time they publish it, there are changes to the system and the misinformation can continue to spread. Once some information gets out, it is extremely hard to correct the existing information on mass media especially on social media platforms. The network analysis is useful and often used to study this type of spread of misinformation.

Evaluation

The nodeXL is similar to the new advanced camera. Even though we do not fully understand how the camera works, we use it to take pictures. If somebody programmed a camera to take pictures with a built-in secret filter, we might not be able to notice that. We might unconsciously like the slightly better version of our picture. In the same way, there is a danger of using a program like NodeXL when you do not understand programming and you rely on the existing algorithm without knowing the detail. However it is a necessary risk we need to take. Individuals who have graduated 15 years ago with a computer science degree do not know what VS code is nor Jupyter. It was not easy for them to use a program like NodeXL even with a programming background. Considering the way technology is advancing and society is changing, it is more important to develop programs such as NodeXL for non-programmer and the general public to give them a chance to analyze social networks on social media from their perspective.

The other concern is that when it comes to scraping data from social media, there are limitations that come with privacy issues and the volume of data you are allowed to collect. Both Twitter and YouTube allow you to collect a certain amount of the data per set period. So again using metaphor from taking pictures with camera, if you make a mistake or if your picture turns out fuzzy and you try to take another picture, you might need to wait to do so. This might be the obstacle to analyze many different interactions happening in social media everyday in large volume to be collected in a timely manner. Some individuals found it difficult to collect the data you want in a short amount of time and it was too time consuming to learn and use it.

The last thing that is pointed out in the evaluation was that YouTube's social networks are not well studied compared to Twitter and Facebook. Most of the study on YouTube is conducted on a higher level such as structure or category but not on individual users and videos. Further studies are needed to understand the network between users and videos on YouTube.

Conclusion

As you age, there are inevitable changes that come with aging. Your hormone changes and it affects people with muscular loss and change of mood. Despite your personality being the best predictor for how well you will age, life can be more difficult when you lose your significant other, your friends or family when you need to deal with your own health concerns and problems. It would be even worse when you are being isolated from your support network. With Covid-19 pandemic, older adults have been put in more difficult situations by social isolation and government policy with ageism since the Covid put older adults at higher risk. In addition, the pre-existing generational conflict between Baby Boomers and Millennials became more evident in a negative way for some individuals during Covid-19. Imagine if we have a pandemic

targeting the younger generation such as school age children, the influence of losing your peers or siblings, being strictly isolated and living with parents who are afraid of losing their children will challenge you, even if you have good coping skills. The combination of such multiple layers of challenges will put any generation under more difficult circumstances and it will bring out not the best side of you. However the extremely negative messages are broadcasted by very few individuals over the social media and although there are some audiences, it does not form a community. Overall perception and sentiment towards aging related keywords in social media seems fairly neutral with some variance. Further study regarding cultural and regional differences is needed to understand ageism.

Appendix

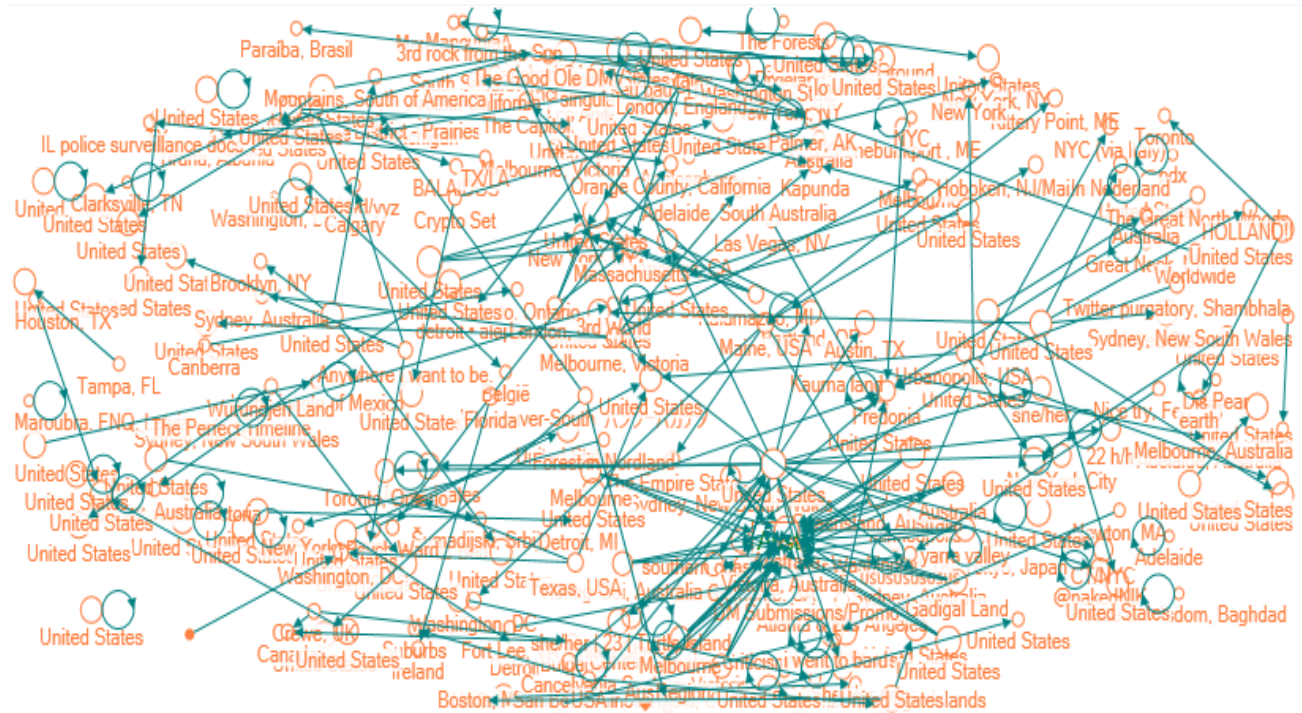


Figure1: Original graph that is very busy and hard to understand any relationship

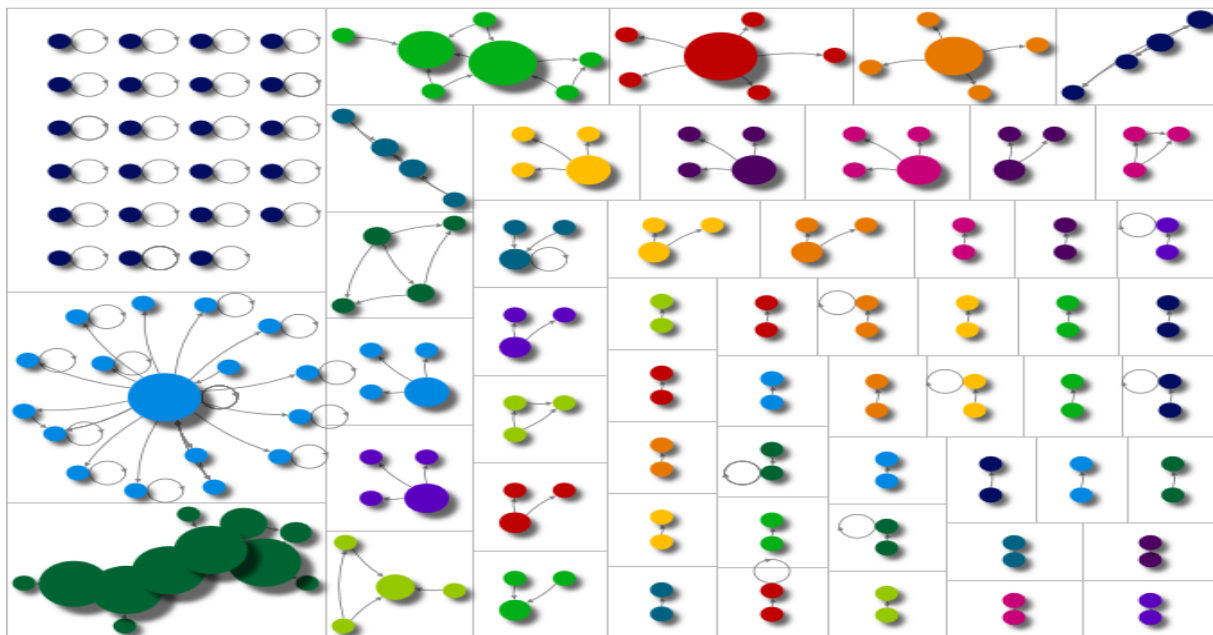


Figure 2: Clustered into each grid

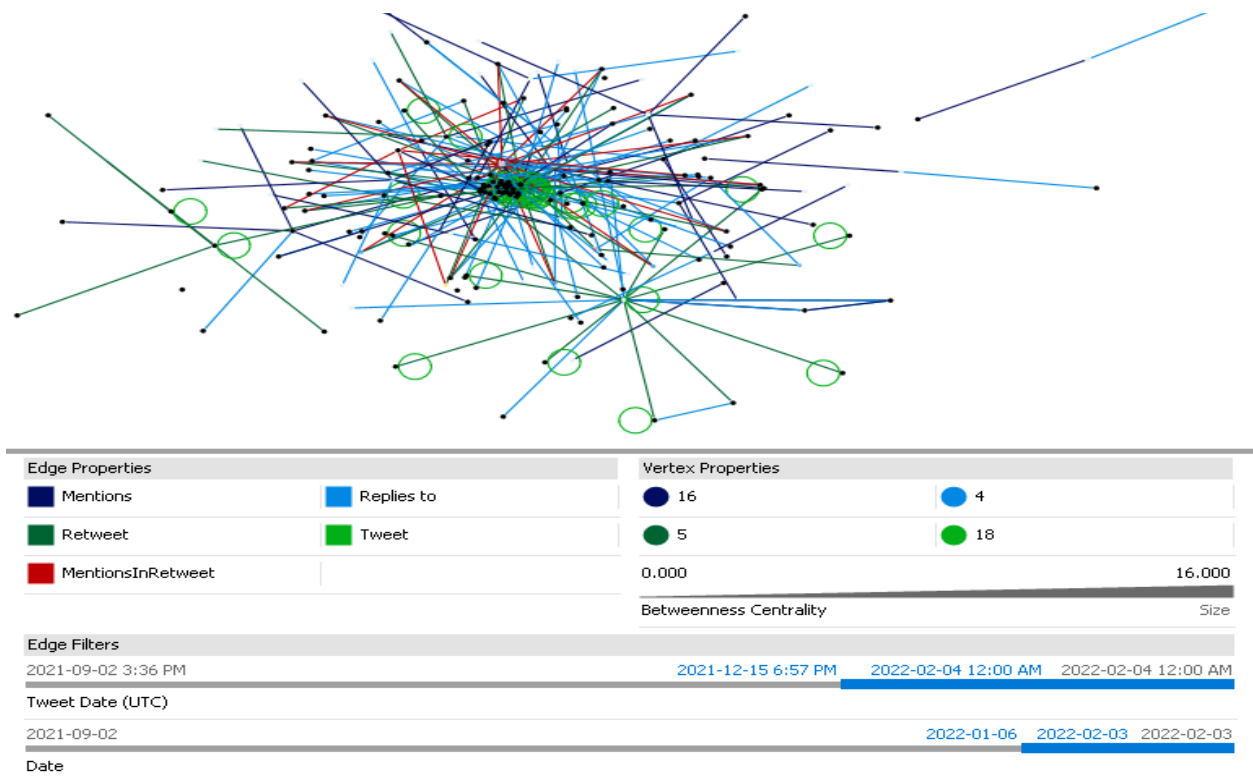


Figure3: Graph filtered by edge properties

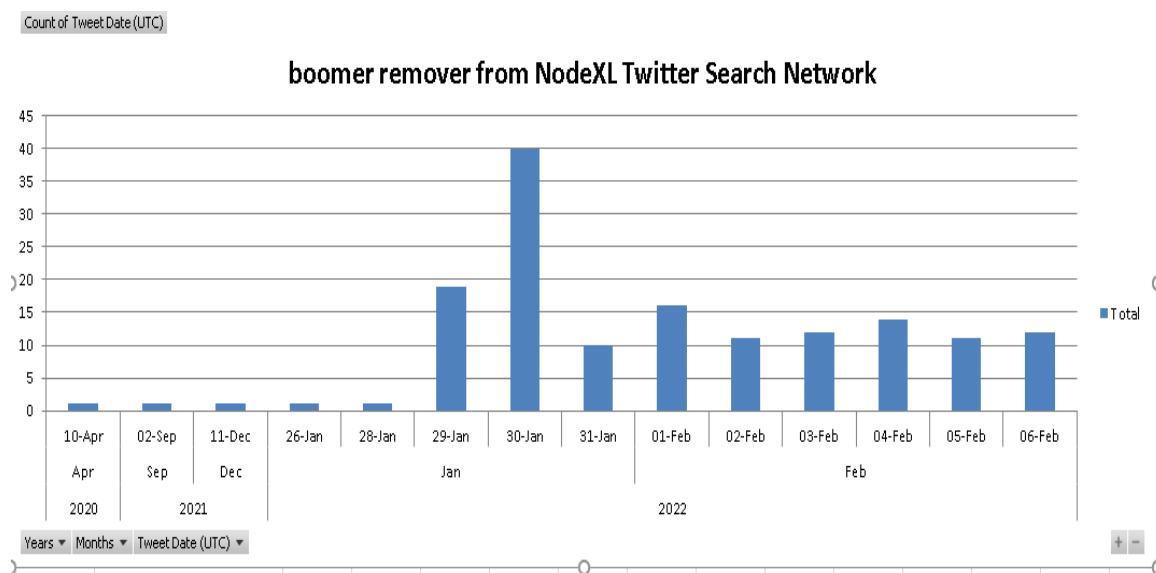


Figure 4: Dynamic filter function using timeline

Label	Degree	In-Degree	Out-Degree	Betweenness Centrality	Closeness Centrality	Eigenvector Centrality	Clustering Coefficient	Reciprocal Pair Ratio	Followers	Follower	Tweet	Favorite	Joined Twitter Date (UTC)
Aust	16	15	2	30.333	0.066	0.438	0.242	0.063	4122	14509	6E+05	53669	2013-07-31 4:08
Australia	16	16	0	30.333	0.066	0.438	0.242	0.000	6737	14631	54073	13444	2013-11-07 21:17
Victoria, Australia	16	15	2	30.333	0.066	0.438	0.242	0.063	89	24	936	4938	2021-12-17 11:20

Figure 5:

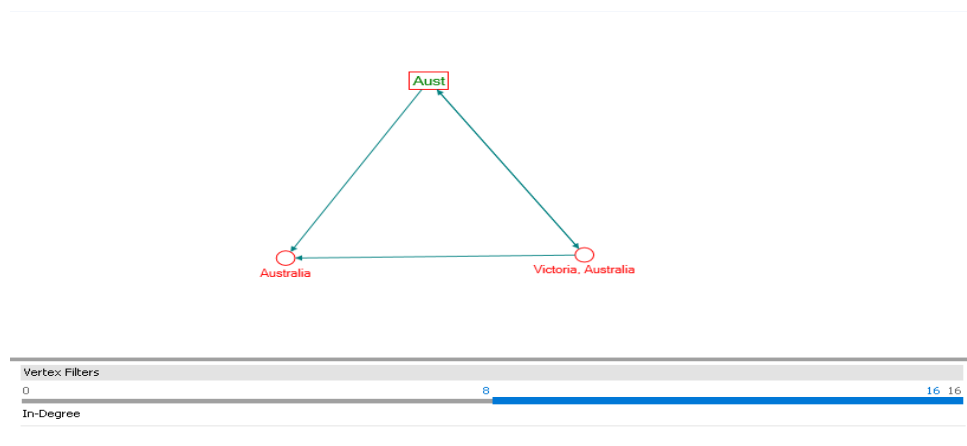


Figure 6:

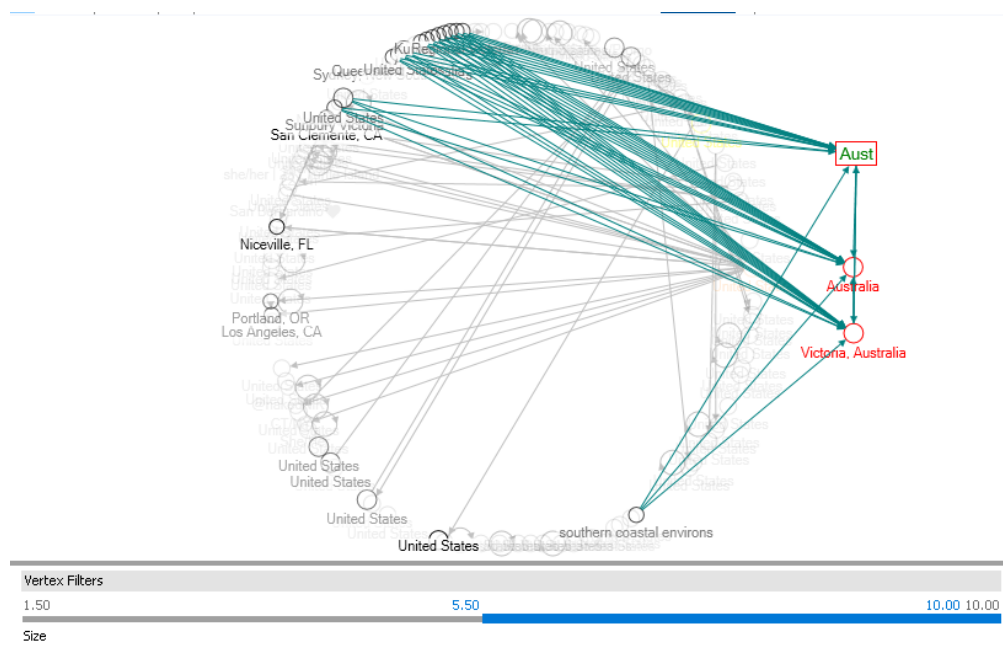


Figure 7: In-degree visualization

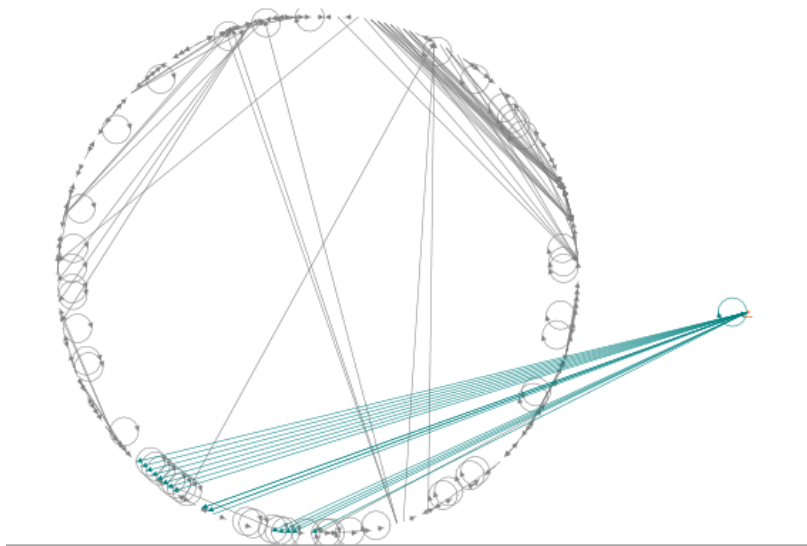


Figure 8: Out-degree

Label	Degree	In-Degree	Out-Degree	Betweenness Centrality	Closeness Centrality	Eigenvector Centrality	Clustering Coefficient	Reciprocal Vertex Pair Ratio	Followers	Follower	Tweet	Favorite	Joined Twitter Date (UTC)
United States	18	4	16	118.000	0.066	0.000	0.017	0.125	291	342	56023	24165	2013-05-30

Figure 9:Detail of central out-degree individual

Top Word Pairs in Tweet by Saliency	
elbobadillaalex,homeplumusc homeplumusc,bro bro,didn didn,wanna wanna,reply reply,ass ass,lmaooo re,being being,honest honest,bigger	
17	marctennant,slsandpet slsandpet,victorian victorian,institute institute,forensic forensic,pathology pathology,using using,refrigeration refrigeration,containers containers,site site,
21	
157	marctennant,slsandpet slsandpet,victorian victorian,institute institute,forensic forensic,pathology pathology,using using,refrigeration refrigeration,containers containers,site site,

Figure 10: Top word pair of central out-degree individual

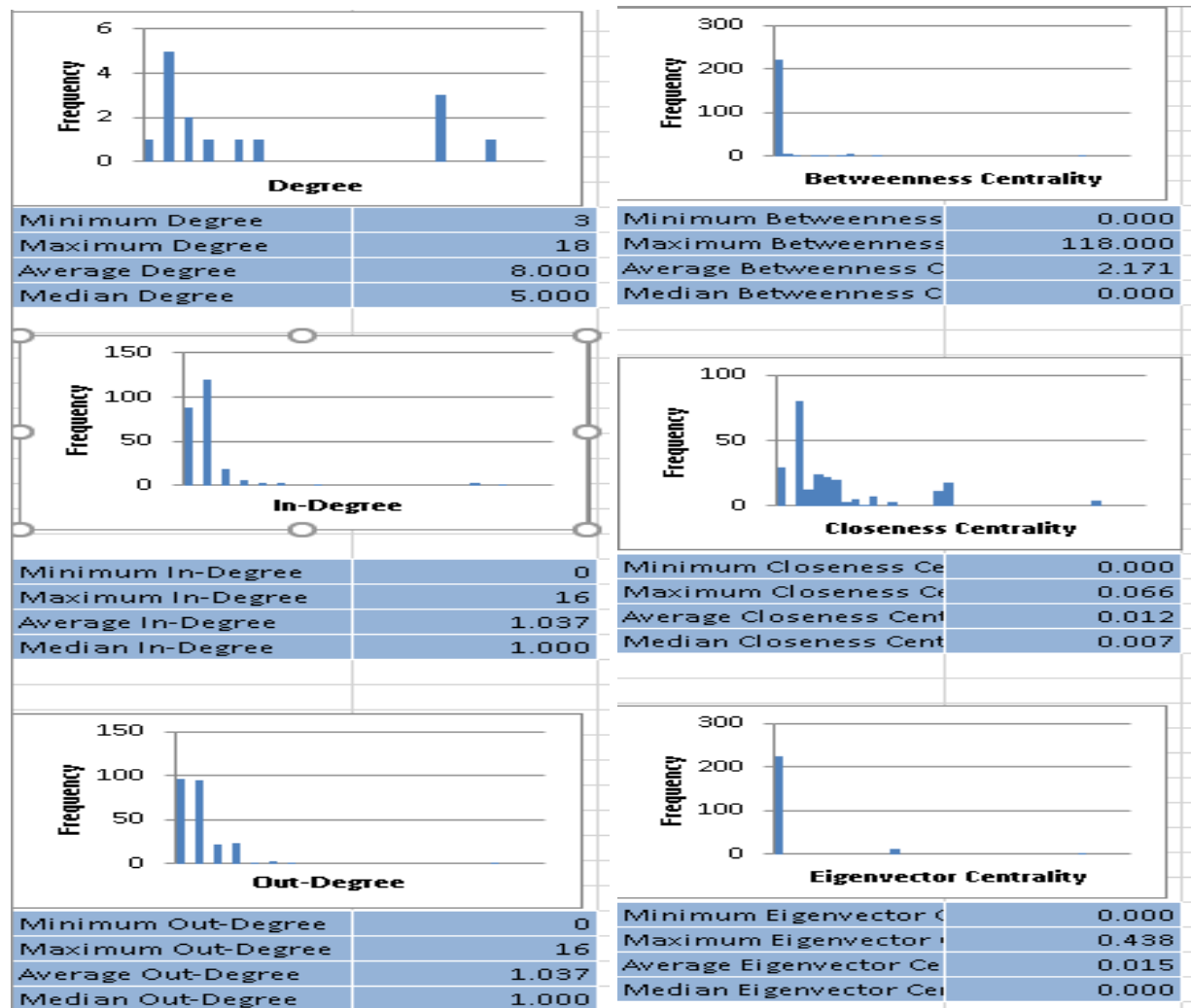


Figure11:

Top Hashtags in	El	Top Word Pairs in	El
artificialintelligence	3	boomer,remover	133
millennials	2	joe,rogan	19
covid19	2	covid,boomer	19
joerogan	2	marctennant,slsandpet	16
swedenwasright	1	slsandpet,victorian	16
lawtech	1	victorian,institute	16
judgetech	1	institute,forensic	16
boomers	1	forensic,pathology	16
boomer	1	pathology,using	16
thankyouspotify	1	using,refrigeration	16

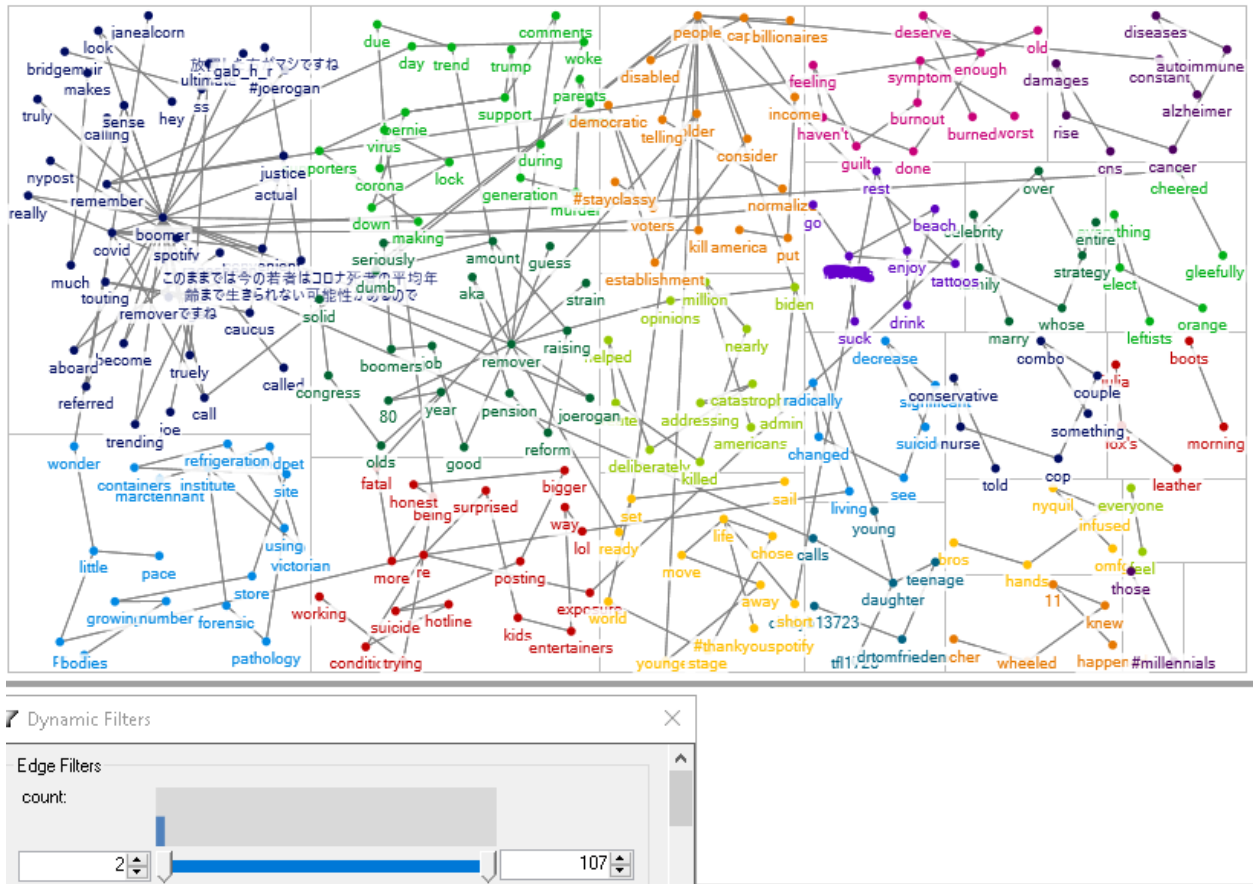
Figure 12:

Word 1	Word 2	Count	Saliency	Mutual
boomer	remover	107	0.012	1.016
joe	rogan	16	0.011	1.784
covid	boomer	10	0.009	0.604
rogan	boomer	7	0.007	0.596
bridgemuir	ss	3	0.004	2.483
ss	boomer	3	0.004	1.052
called	boomer	3	0.004	0.830
calling	boomer	3	0.004	0.927
really	boomer	3	0.004	0.927
truly	boomer	3	0.004	1.052

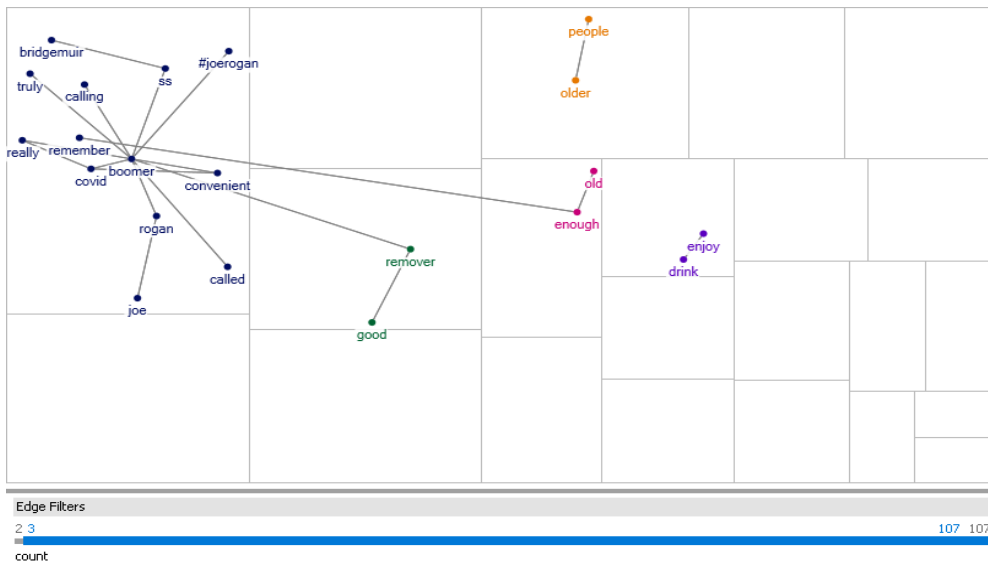
Figure13:

Word	Count	Saliency
Sentiment List#1	Positive	
Sentiment List#2	Negative	
Sentiment List#3	Your Keywords	
Words in Sentiment List#1	59	0.026
Words in Sentiment List#2	86	0.037
Words in Sentiment List#3	0	0.000
Non-categorized Words	2150	0.937
Total Words	2295	1.000

Figure 14: Sentiment or boomer remover



Filtered by 2 counts



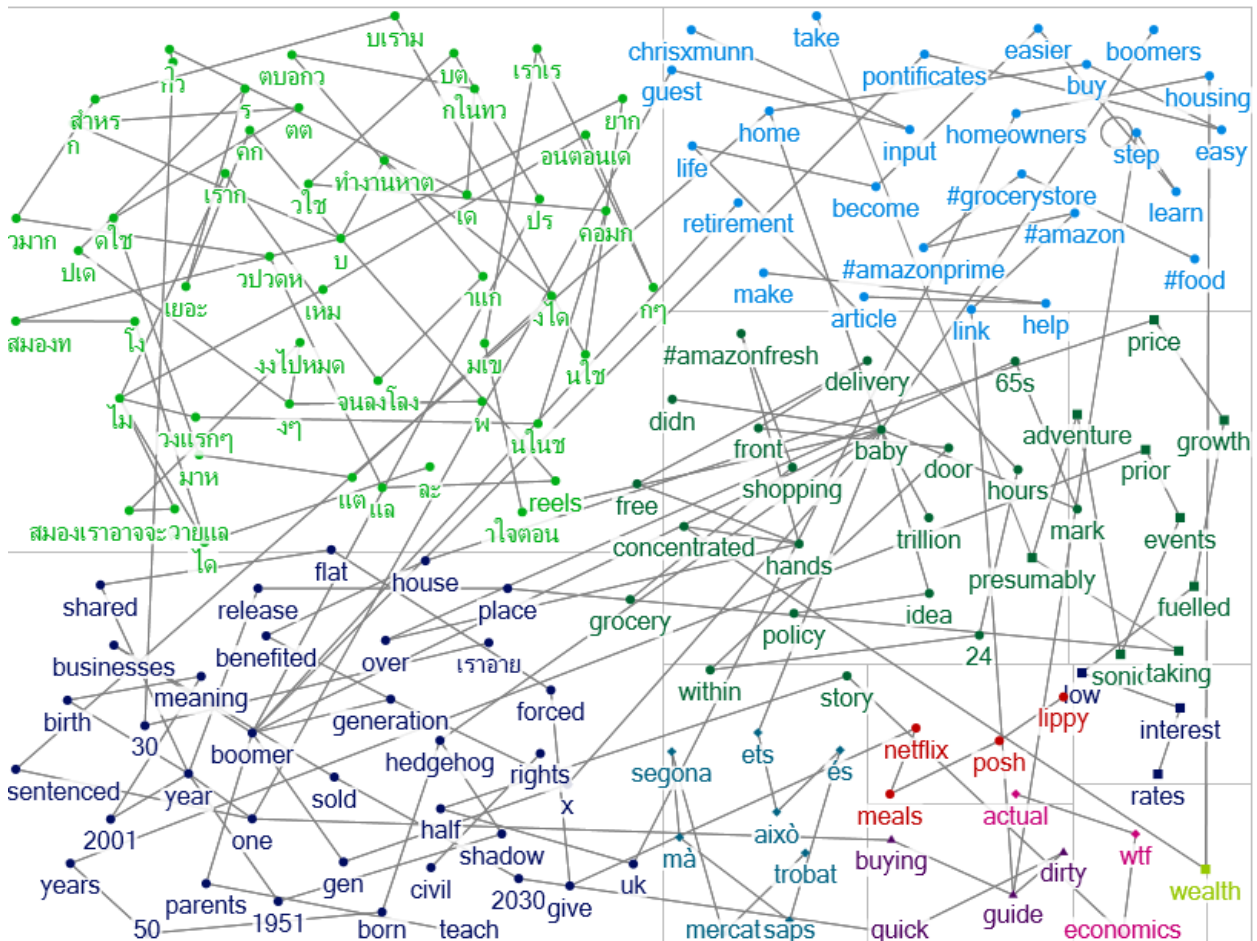
Filtered by 3 counts

Figure:16 word graph for boomer recover screen by with dynamic filter counts of 2 and 3

Twitter - Baby Boomer

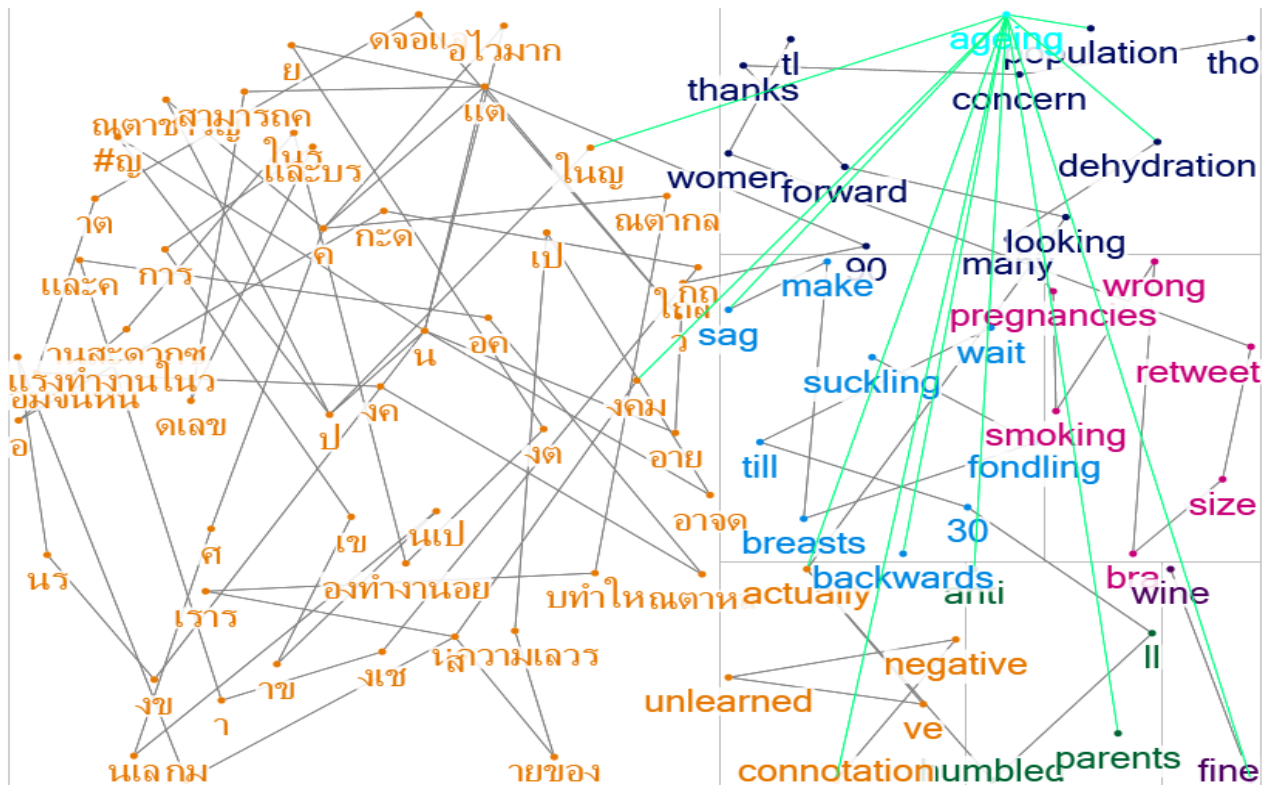
Word	Count
Sentiment List#1	Positive
Sentiment List#2	Negative
Words in Sentiment List#1	1531
Words in Sentiment List#2	1344
Non-categorized Words	92497
Total Words	95372
baby	3126
boomer	3114
ไม	1166
บ	1161
ไค	777
งๆ	772
parents	436
30	399
แล	395
ก	394
า	393
ว	391
แด	389
กว	387
ร	387
พ	387
เราอายุ	386
เด	386
กในทว	386
คนอกว	386
าแก	386

Word	Count
Words in Sentiment List#1	1531
Words in Sentiment List#2	1344
Non-categorized Words	92497
Total Words	95372
baby	3126
boomer	3114
parents	436
30	399
reels	386
generation	377
teach	346
one	269
guide	209
trillion	174
2030	170
link	168
sold	165
buying	165
businesses	165
guest	164
quick	163
dirty	162
input	162
gen	148
year	146
over	146
retirement	146



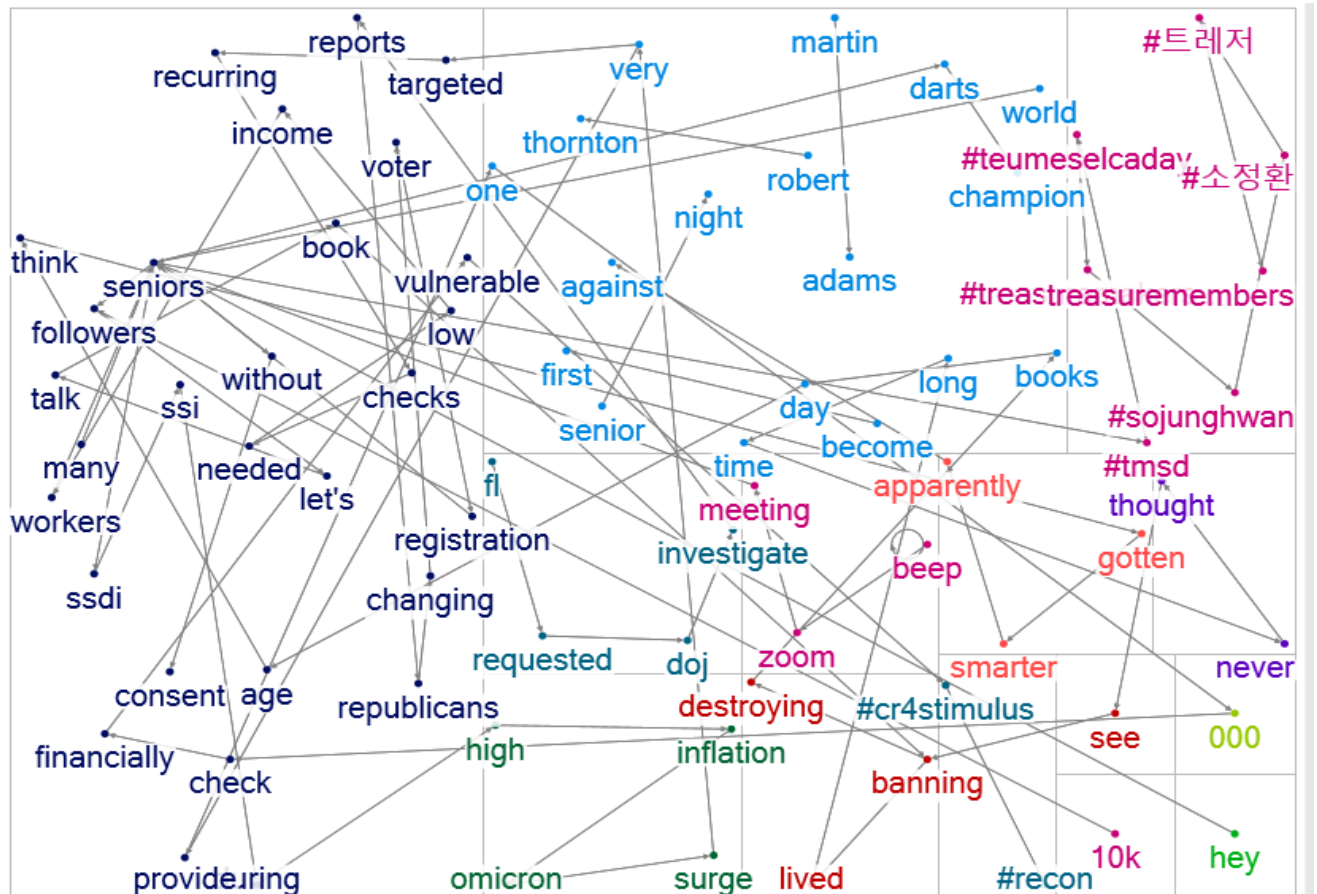
Twitter - Ageing

Word	Count	Saliency
Sentiment List#1	Positive	
Sentiment List#2	Negative	
Sentiment List#3	Your Keywords	
Words in Sentiment List#1	5548	0.035
Words in Sentiment List#2	3948	0.025
Words in Sentiment List#3	0	0.000
Non-categorized Words	148365	0.940
Total Words	157861	1.000
ageing	4671	0.003
น	1305	0.017
ค	783	0.010
ป	783	0.010
แด	783	0.010
more	583	0.006
ส	522	0.007
one	420	0.005
actually	373	0.005
looking	342	0.004
population	304	0.004
research	303	0.004
time	301	0.004
people	286	0.004
90	268	0.003
many	266	0.003
ธนาคาร	261	0.003
อายุ	261	0.003
ไทย	261	0.003
ย	261	0.003
จด	261	0.003



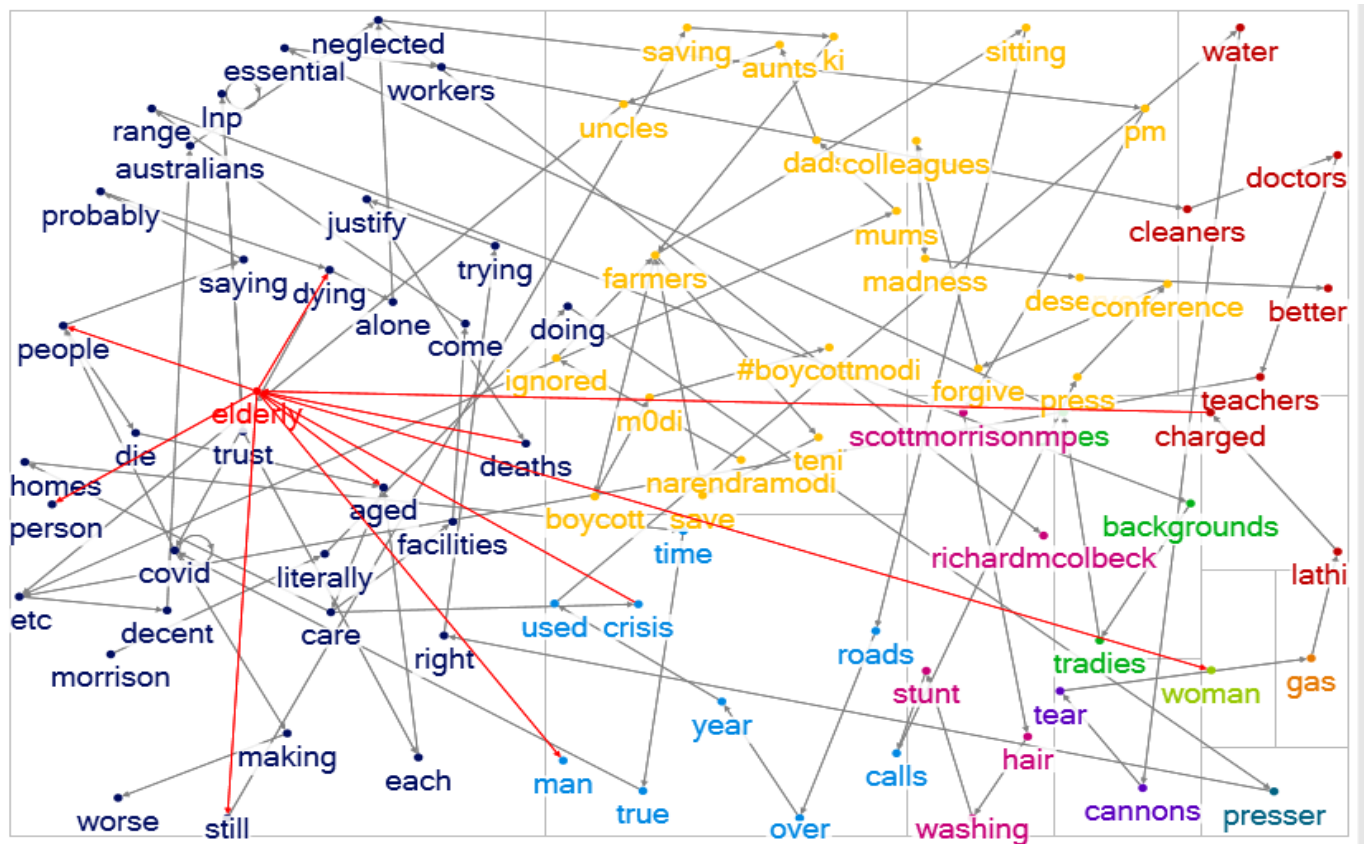
Twitter Seniors

Word	Count
Sentiment List#1	Positive
Sentiment List#2	Negative
Sentiment List#3	Your Keywords
Words in Sentiment List#1	6873
Words in Sentiment List#2	3639
Words in Sentiment List#3	0
Non-categorized Words	156486
Total Words	166998
seniors	5426
world	583
senior	516
very	498
one	471
day	457
champion	408
night	402
time	395
see	384
high	354
000	317
more	316
thank	312
followers	305
great	290
banning	282
darts	280
2022	279
vulnerable	273
people	272



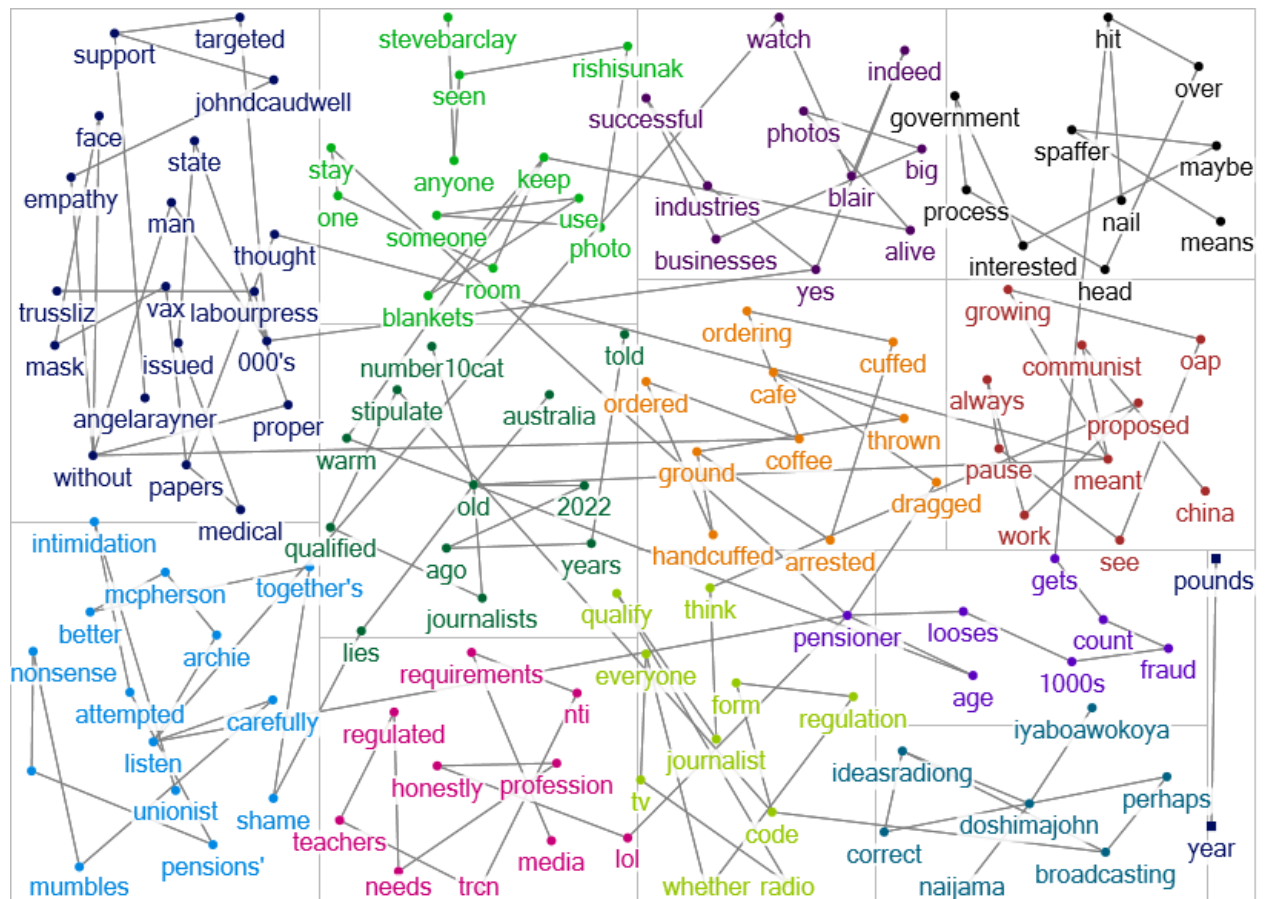
Twitter Elderly

Word	Count
Sentiment List#1	Positive
Sentiment List#2	Negative
Sentiment List#3	Your Keywords
Words in Sentiment List#1	5108
Words in Sentiment List#2	9059
Words in Sentiment List#3	0
Non-categorized Words	180943
Total Words	195110
elderly	5411
people	1319
covid	1099
care	954
aged	686
over	468
dying	430
homes	391
more	383
etc	373
time	369
children	368
farmers	334
right	330
man	328
deaths	325
year	323
old	317
doing	293
die	293
neglected	287



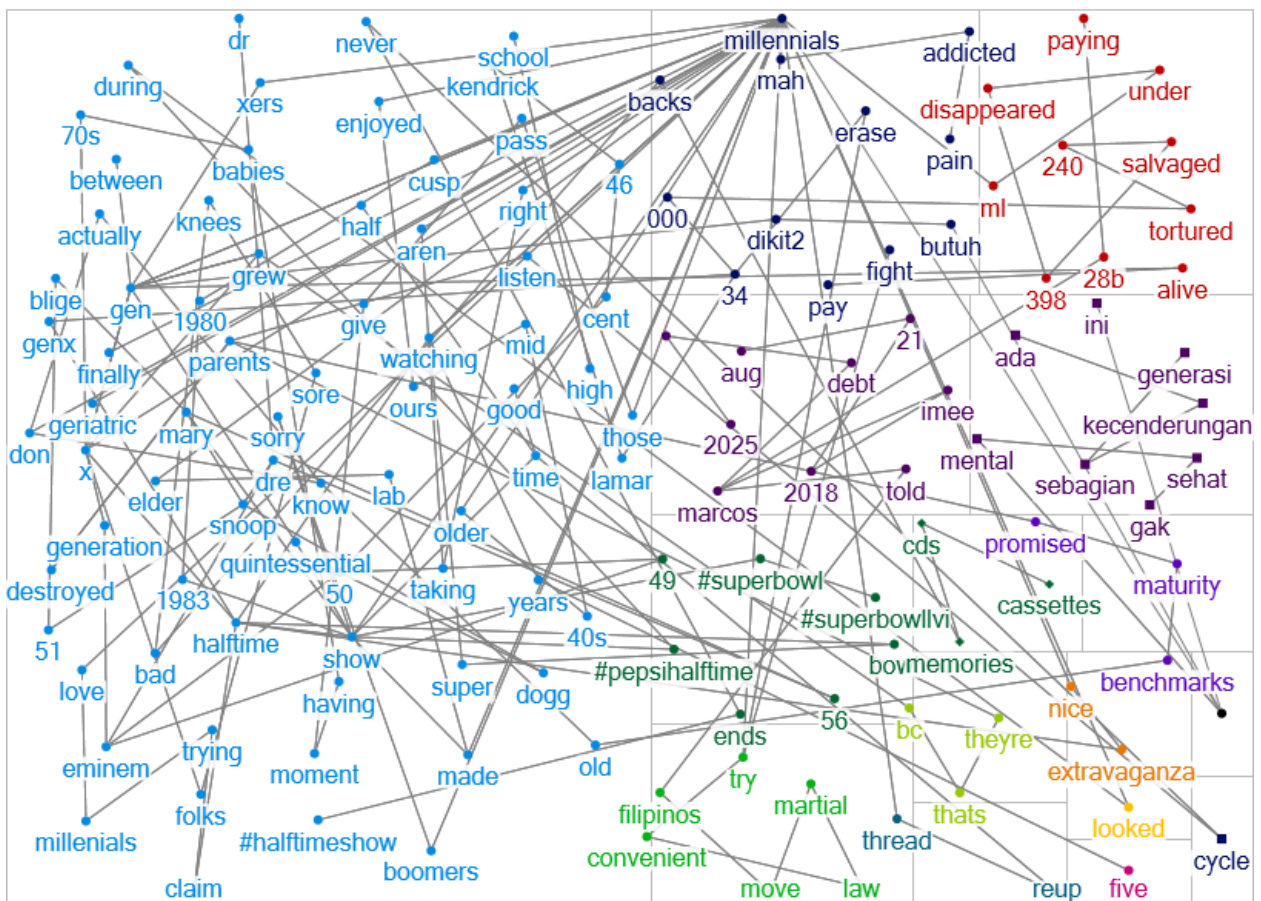
Twitter - Old age pensioner

Word	Count
Sentiment List#1	Positive
Sentiment List#2	Negative
Words in Sentiment List#1	120
Words in Sentiment List#2	50
Non-categorized Words	2781
Total Words	2951
old	70
age	70
pensioner	69
keep	48
yes	29
use	26
one	26
stay	25
anyone	24
seen	24
rishisunak	24
photo	24
someone	24
blankets	24
warm	24
room	24
alive	24
photos	24
big	24
businesses	24
successful	24
industries	24
000's	24
without	18



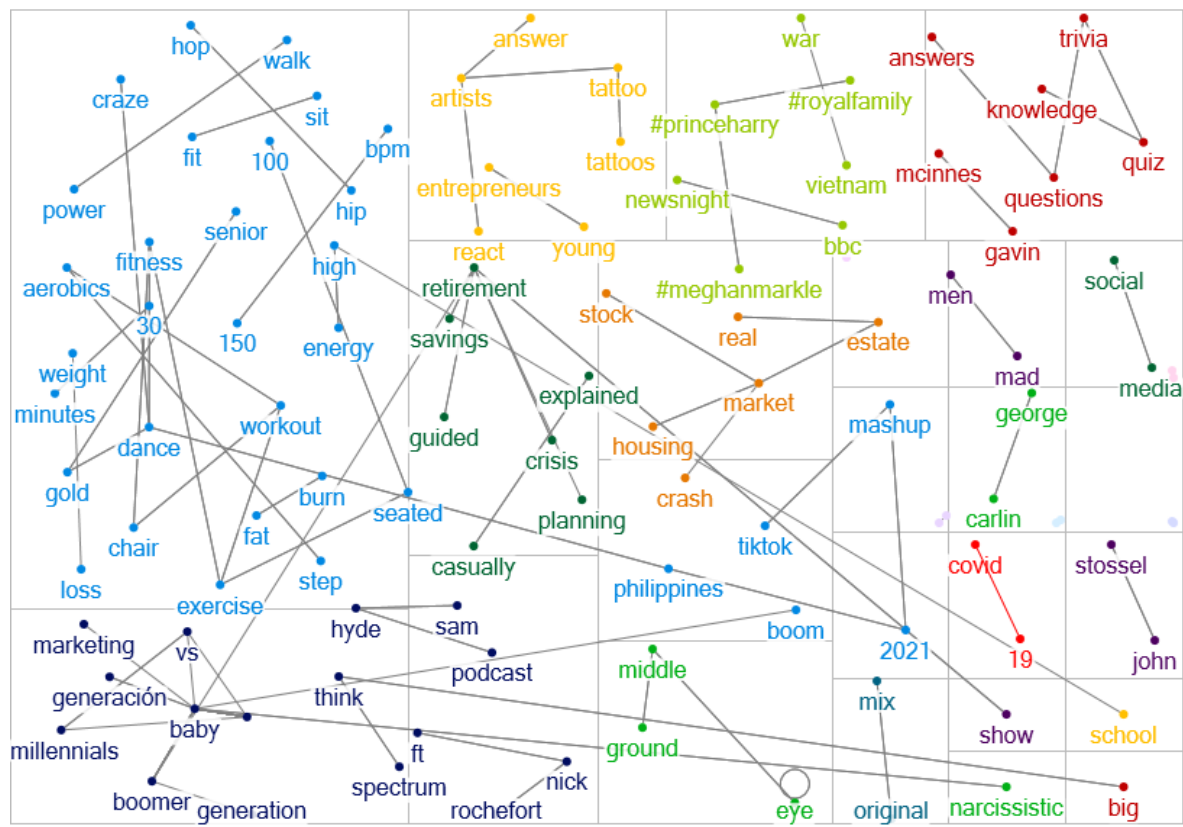
Twitter - Millennials

Word	Count
Sentiment List#1	Positive
Sentiment List#2	Negative
Words in Sentiment List#1	14815
Words in Sentiment List#2	10981
Non-categorized Words	401218
Total Words	427014
millennials	18422
gen	7700
show	6602
halftime	5978
x	4713
made	2172
love	2075
boomers	2070
elder	2036
50	1932
dre	1601
healing	1584
super	1534
parents	1532
bowl	1512
watching	1506
old	1450
lab	1446
pain	1421
snoop	1414
mah	1414
butuh	1412
addicted	1411



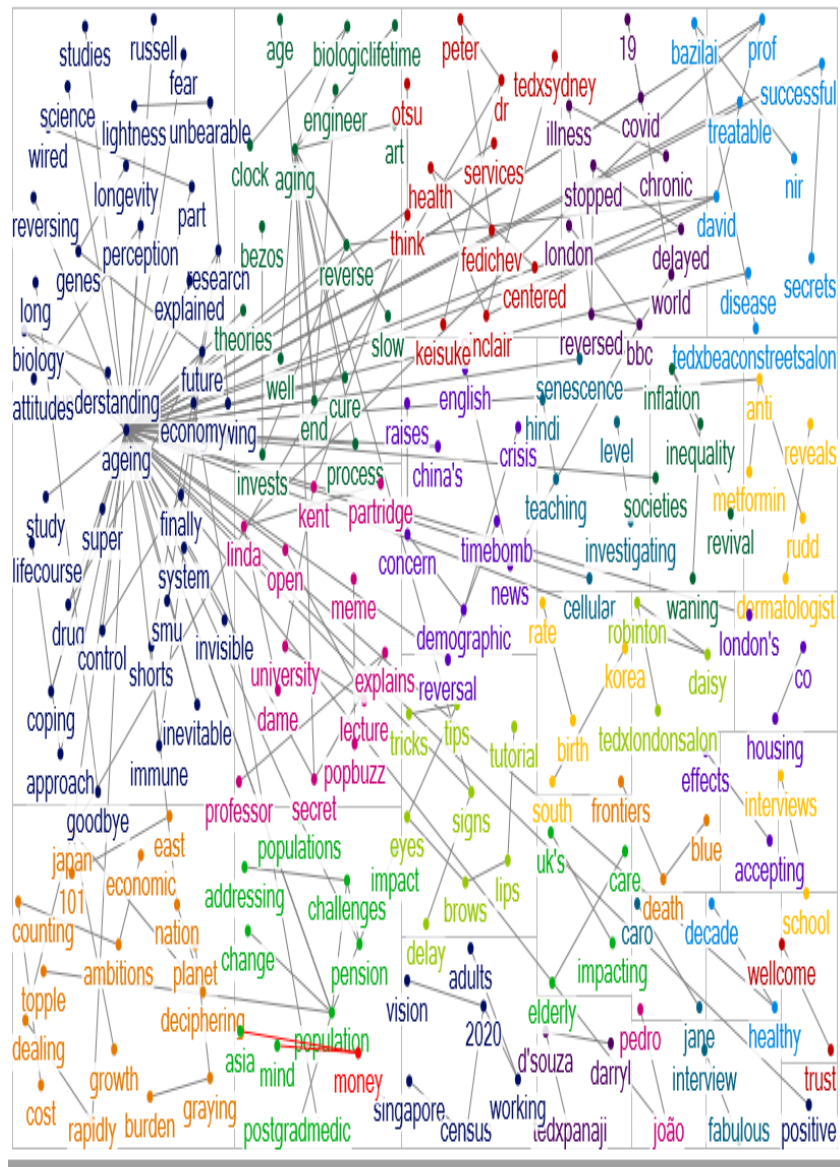
You Tube - Baby boomer

Word	Count
Sentiment List#1	Positive
Sentiment List#2	Negative
Words in Sentiment List#1	984
Words in Sentiment List#2	1194
Non-categorized Words	29599
Total Words	31777
boomers	487
baby	391
retirement	154
millennials	134
vs	113
generation	101
workout	78
people	74
explained	73
real	70
tattoo	69
10	68
dance	68
life	63
home	63
crisis	62
best	62
market	59
2021	59
minutes	58
sam	57
millennial	56
gen	54
quiz	54
fitness	53
aerobics	52



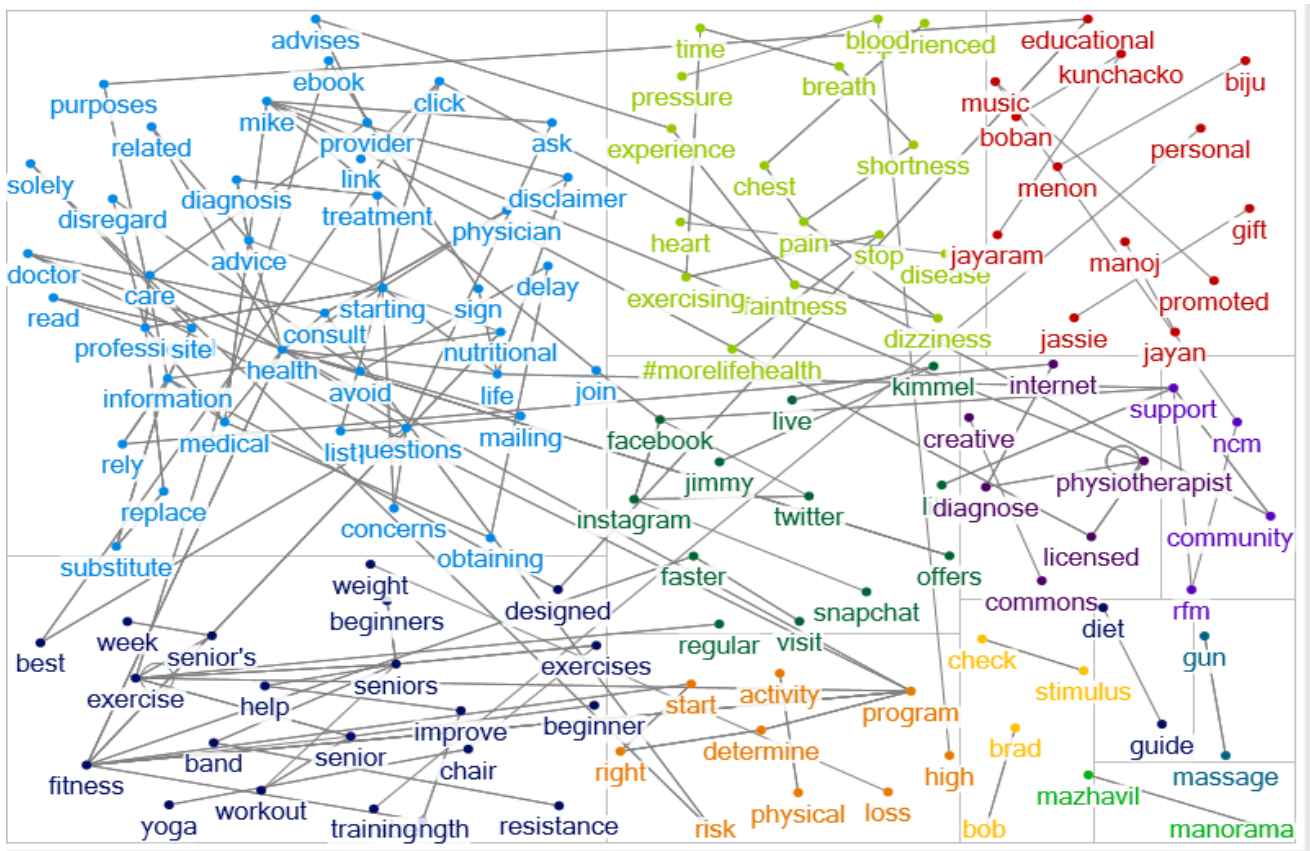
You Tube - Ageing

Word	Count
Sentiment List#1	Positive
Sentiment List#2	Negative
Words in Sentiment List#1	1169
Words in Sentiment List#2	992
Non-categorized Words	31952
Total Words	34113
aging	542
ageing	284
dr	175
population	173
health	144
age	141
life	128
anti	104
future	98
china	92
skin	88
covid	87
makeup	84
world	83
explained	81
science	80
live	76
david	76
healthy	73
care	72
19	72
news	69
documentary	69
longevity	64
interview	62
tips	61



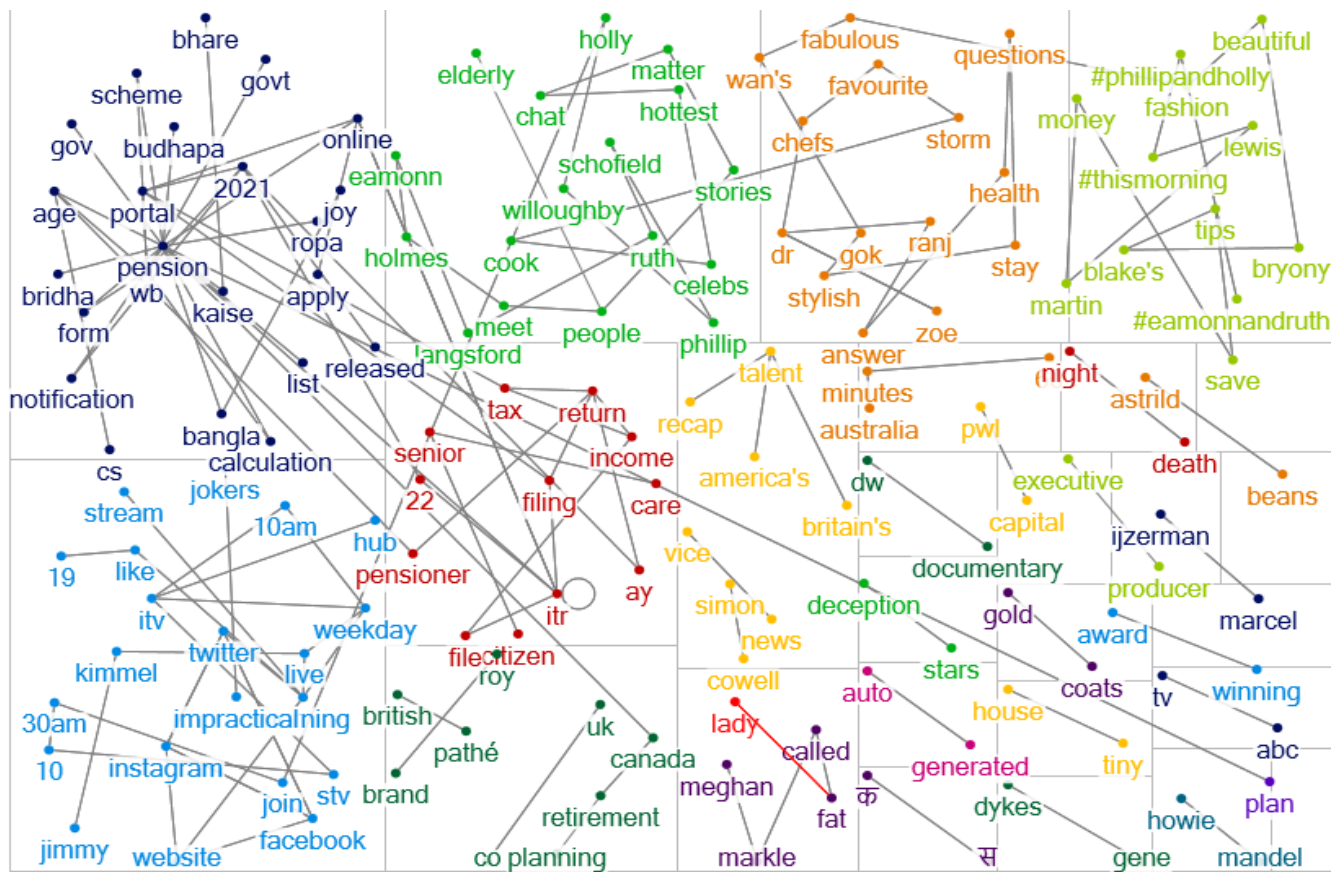
You Tube - Seniors

Word	Count
Sentiment List#1	Positive
Sentiment List#2	Negative
Words in Sentiment List#1	797
Words in Sentiment List#2	411
Non-categorized Words	18561
Total Words	19769
health	187
seniors	159
exercise	140
fitness	123
program	108
workout	99
exercises	88
information	84
professional	76
senior	76
care	71
advice	67
medical	67
facebook	63
yoga	63
life	58
join	49
consult	49
hasfit	49
like	48
music	48
support	45
pain	45
help	44
disclaimer	42
instagram	41



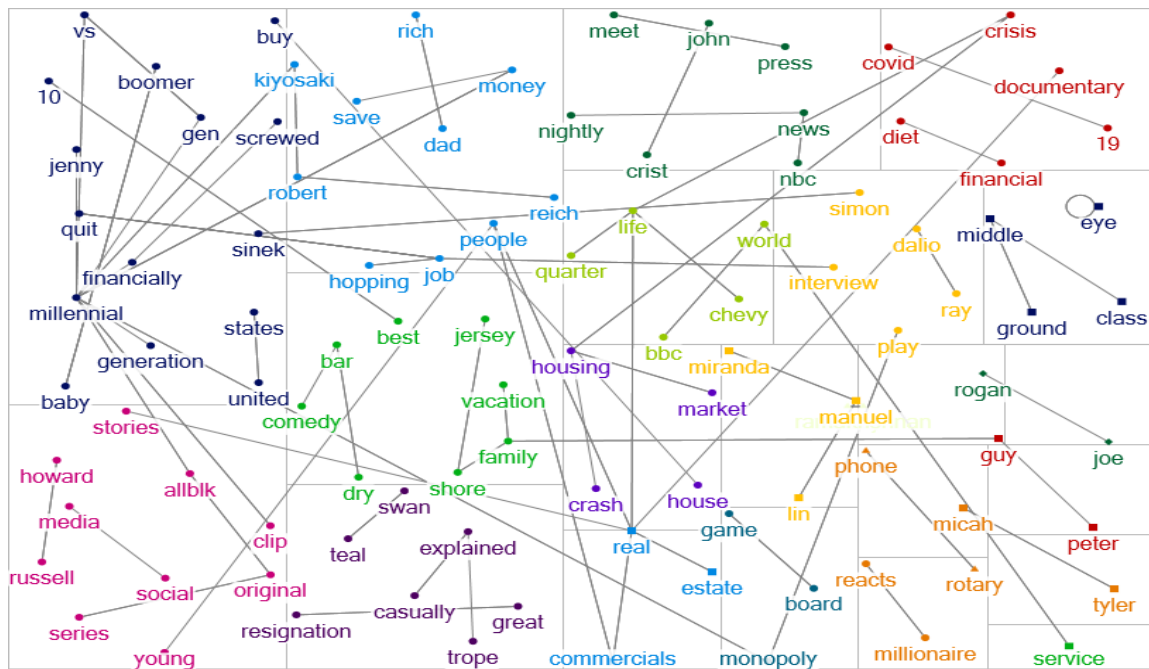
You Tube - Old age pensioner

Word	Count
Sentiment List#1	Positive
Sentiment List#2	Negative
Words in Sentiment List#1	363
Words in Sentiment List#2	182
Non-categorized Words	9680
Total Words	10225
pension	118
age	65
wb	54
pensioner	40
income	38
like	35
people	35
twitter	34
tax	33
2021	32
facebook	31
online	31
itr	30
talent	24
instagram	22
portal	22
filing	22
senior	21
life	21
website	20
news	19
elderly	19
return	19
live	18
america's	17
dykes	15



YouTube: Millennial

Word	Count
Sentiment List#1	Positive
Sentiment List#2	Negative
Words in Sentiment List#1	1185
Words in Sentiment List#2	1200
Non-categorized Words	30201
Total Words	32586
millennial	494
money	143
life	133
real	124
vs	123
gen	116
10	109
people	109
simon	91
family	89
generation	86
robert	81
sinek	81
best	77
crisis	75
explained	73
housing	71
2021	71
job	71
middle	68
great	66
special	65
boomer	64
documentary	63
world	59



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