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Homework 1

**Topic:** Abortion

**Side:** Prochoice

**Collect a small data set from a social media site of your choosing (1K+ posts)**

* Twitter
* About 1100 tweets collected
* Used the streaming service to search for tweets with #prochoice or #abortion
* Python code used to collect tweets is called tweet\_collector.py

**Identify the top 10 nodes based on degree, betweenness, closeness, and eigenvector centralities.**

Degree Centrality

* goodoldcatchy with score 0.137075718016
* POLITICSandFUN with score 0.0254569190601
* JordanUhl with score 0.023498694517
* LiveAction with score 0.0195822454308
* realDonaldTrump with score 0.016318537859
* GeorgiaDirtRoad with score 0.0150130548303
* Kragar\_LGF with score 0.0124020887728
* LawlessRoisin with score 0.0117493472585
* trainspeedhump with score 0.0110966057441
* LiveActionNews with score 0.0097911227154

Betweenness Centrality

* goodoldcatchy with score 0.0190689202948
* POLITICSandFUN with score 0.0121687229158
* WolfeTone15 with score 0.0111081837948
* LiveAction with score 0.00827285946456
* LawlessRoisin with score 0.00630804930875
* BrendaNord5 with score 0.00515712694821
* marypatriott with score 0.00503945440871
* GeorgiaDirtRoad with score 0.00454915216083
* Gabriel4Justice with score 0.00450225368494
* Declan1497 with score 0.00417599191152

Closeness Centrality

* goodoldcatchy with score 0.137087918792
* ShanBarnsley with score 0.0696836451815
* zaynloverone with score 0.0690277991092
* yikes\_mia with score 0.0690277991092
* yaboyjewy with score 0.0690277991092
* whosCOCO\_ with score 0.0690277991092
* vibinwithj with score 0.0690277991092
* vappardo with score 0.0690277991092
* uziflurt with score 0.0690277991092
* tyler3doyle6 with score 0.0690277991092

Eigenvector Centrality

* goodoldcatchy with score 0.707090439265
* ShanBarnsley with score 0.0492618984193
* MariaPerezTW with score 0.0487927589618
* jay\_mounea with score 0.0487927589618
* chikacarlile with score 0.0487927589618
* Princessrican97 with score 0.0487927589618
* PookieBlatt with score 0.0487927589618
* Mariisconfused with score 0.0487927589618
* okaymiran with score 0.0487927589618
* megnasty with score 0.0487927589618

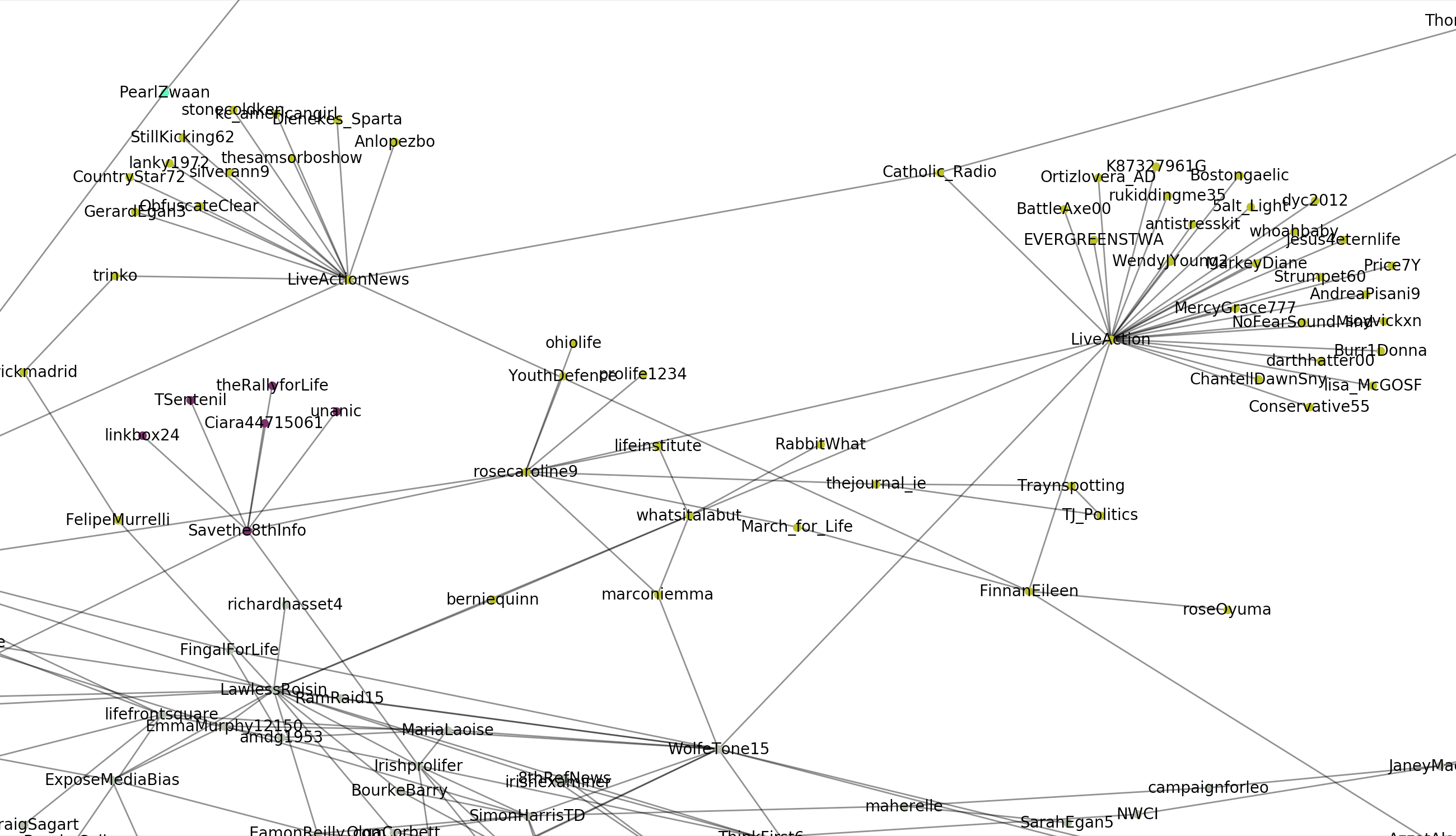
**Calculate the diameter of the largest network component.**

Diameter – 13

**Select one opinion leader from the top nodes and explore its neighbors.**

I choose *LiveAction* as my opinion leader because it was in the top 10 nodes in the degree centrality and betweenness centrality. Below is the subnetwork of LiveAction and its neighbors. Ego-network forces that may be acting upon the central node are:

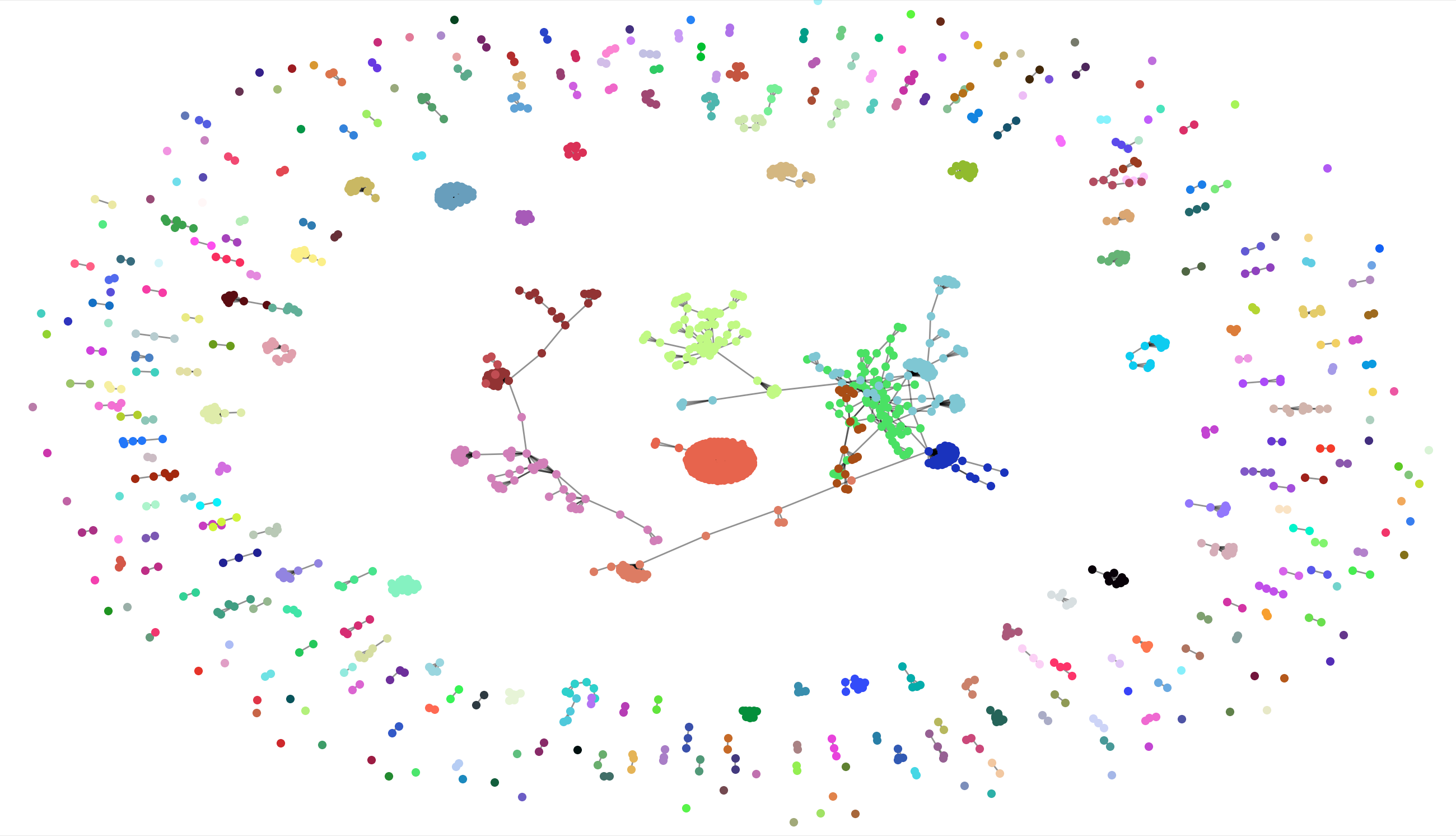
* Similian ties – LiveAction is very closely connected to LiveActionNews, which could be a specialize Twitter Account from the same company
* Perceived Use – LiveAction is surrounded by other users that share similar opinions, so it could be that from LiveAction’s point of view, the majority of the population have the same perspective.
* Indirect Exposure – Because LiveAction scored high on betweenness, it’s easy to assume that LiveAction is a gatekeeper node. One of the properties of being a gate keeper is that the network goes beyond the immediate neighbors. Opinions from one end of the network could flow right to LiveAction, without LiveAction even knowing it because it’s not necessarily connected to all those nodes.



**Display a diagram of your network where nodes are colored based on a cohesive network clustering algorithm.**

Clustering algorithm – Louvain method

I did not include the labels because it made the graph very messy.



**What recommendations would you provide to promote your opinion leader’s content on social media?**

To promote my opinion leader’s content on social media, I would attempt to modify network ties by quote Retweeting its content and tag other nodes with high betweenness scores as well as nodes with high eigenvector scores, especially since LiveAction was not in the top 10 for eigenvector. In addition for other opinion leaders to hear LiveAction’s message, I could also get other opinion leaders to deliver the same message.

**What recommendations would you provide to demote your opinion leader’s content on social media?**

One way to demote my opinion leader’s content on social media is to flood hashtags on #abortion #prochoice with the opposing content. Another way to demote LiveAction’s content is to tweet surround LiveAction’s popular tweets with more opposing users than supporting users. This way, if anyone comes across the tweets, they may see majority illusion that many perceive the opposite notion.