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Non_Conspiracy_Graphs.

Statistics for the following metrics

- Number of nodes and edges: 92 134
- Average degree: 1.457
- Graph density: 0.016
- Average clustering coefficient: 0.184
- Modularity (Q) and number of communities: 0.491
- Connected components 36

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5G_Conspiracy_Graphs

Run **Statistics** for the following metrics on **graphs**:

- Number of nodes and edges: 92 99
- Average degree: 1.076
- Graph density:0.012
- Average clustering coefficient:0.065
- Modularity (Q) and number of communities:0.434
- Connected components: 32

Report — Comparative SNA: 5G_Conspiracy vs Non_Conspiracy (WICO)

- Both subgraphs have 92 nodes.
- Non-conspiracy: 134 edges. 5G-conspiracy: 99 edges.
- Non-conspiracy is denser and more clustered.
- Conspiracy graph is sparser with lower clustering and slightly lower modularity.
- Both are fragmented into many small connected components.

Recorded outputs

Non_Conspiracy_Graphs

- Nodes: 92
- Edges: 134
- Average degree: 1.457
- Density: 0.016
- Avg clustering coefficient: 0.184

- Modularity Q: 0.491 (number of communities reported)
- Connected components: 36.

5G_Conspiracy_Graphs

- Nodes: 92
- Edges: 99
- Average degree: 1.076
- Density: 0.012
- Avg clustering coefficient: 0.065
- Modularity Q: 0.434
- Connected components: 32.

What each metric means and how to read these values

- **Nodes**: individual Twitter accounts in the subgraph. Both graphs sample 92 accounts.
- **Edges**: interactions (retweets, mentions, replies). More edges mean more interaction. Non-conspiracy has 35 more edges than conspiracy. That signals more overall interaction.
- **Average degree**: average number of edges per node.
    - Non-conspiracy 1.457 means each user links to ~1.46 others on average.
    - Conspiracy 1.076 means fewer ties per user.
    - Lower average degree implies weaker overall connectivity.
- **Density**: ratio of existing edges to possible edges. Range 0 to 1.
    - Non-conspiracy 0.016 vs conspiracy 0.012.
    - Both are sparse. Non-conspiracy is ~33% denser relative to conspiracy.
- **Average clustering coefficient**: tendency for a node's neighbors to be connected (triangles).
    - Non-conspiracy 0.184 indicates modest local clustering.
    - Conspiracy 0.065 indicates very low local clustering.
    - Low clustering in conspiracy subgraph suggests fewer closed interaction triads.
- **Modularity (Q)**: strength of division into communities. Higher Q means clearer community structure.

- Non-conspiracy Q=0.491 shows moderately strong community partitioning.
- Conspiracy Q=0.434 shows weaker community separation.
- Both values indicate community structure exists, but normal graph communities are more distinct.

- **Connected components**: number of isolated groups.
  - Non-conspiracy: 36 components.
  - Conspiracy: 32 components.
  - Many small components rather than one giant component. This shows fragmentation in both samples.

Interpretation and comparison — what this implies about misinformation networks

- **Interaction volume**
  - Normal cluster shows more interactions (134 vs 99).
  - Misinformation cluster has lower interaction density.
  - Interpretation: in this sample, benign community has broader conversational links.
- **Local cohesion**
  - Non-conspiracy has higher clustering.
  - Users in normal cluster form more closed triads.
  - In the conspiracy cluster, interactions are more star-like or dyadic, not triangle-rich.
- **Community structure**
  - Both have modular structure.
  - Normal cluster communities are tighter and more separable (higher Q).
  - Misinformation cluster shows weaker separation; communities may be less internally connected and more reliant on a few bridging nodes.
- **Fragmentation**
  - High number of components in both graphs.
  - Neither graph forms a large, highly connected network.
  - Misinformation network in this sample is not a single echo chamber. It fragments into many small groups.
- **Possible topology for conspiracy graph**

- Lower clustering and degree suggest a topology with:
    - Small clusters or isolated users
    - A few hubs connecting many leaves
    - Less mutual interaction among followers
- That topology fits coordinated spread by a few active accounts pushing content to many passive accounts.

- **Possible topology for normal graph**
    - Higher clustering and degree suggest:
        - More reciprocal interaction
        - Conversation loops and small communities with mutual ties
        - Organic discussion rather than broadcast

Average degree
This shows how many connections each user interacts with on average. A higher value means users talk to more accounts. A lower value means weaker interaction.
Ask yourself if the community looks active or quiet.

Density
This shows how full the graph is relative to the maximum possible number of ties. A higher value means users connect more often. A lower value means a sparse network.
You can use it to judge how tightly the community communicates.

Clustering coefficient
This shows how often a user's contacts interact with each other. A higher value means many small conversation groups. A lower value means isolated pairs or star-shaped interactions.
You can use it to check if the community behaves like an organic group or a broadcast network.

Modularity
This shows how strongly the network splits into separate communities. A higher value means clear groups. A lower value means blended communities.
You can use it to understand how information flows between clusters.

Connected components
This shows how many isolated subgraphs appear in the network. More components mean heavy fragmentation. Fewer components mean stronger global connectivity.
You can use it to judge whether information stays trapped inside small groups.

Degree distribution
This shows how degrees spread across users. A long tail with a few high values means a small group dominates interaction. A short tail means balanced activity.
You can use it to detect hub accounts.

Betweenness centrality
This shows how often a user sits on the shortest paths between other users. A higher value means the user acts as a bridge.

A lower value means limited influence.
You can use it to identify gatekeepers.

Eigenvector centrality
This shows influence based on both the user's connections and the importance of those connections. A higher value means the user connects to influential accounts. A lower value means peripheral position.
You can use it to detect key spreaders.

Average path length
This shows how many steps information needs to travel between users. A higher value means slower diffusion. A lower value means fast spread.
You can use it to check how quickly content moves.

Diameter
This shows the longest shortest path between any two users. A larger value means the graph has scattered extremes. A smaller value means tighter shape.
You can use it to understand the outer limits of communication.

Reciprocity
This shows how many ties are mutual. A higher value means balanced conversations. A lower value means one-way broadcasts.
You can use it to see if the community is conversational or dominated by push accounts.

Assortativity
This shows whether high-degree users connect to other high-degree users. A positive value means similar nodes link. A negative value means hubs link to small accounts.
You can use it to check whether influence clusters together or spreads outward.

Degree
You see a small set of users with many ties and a long tail of users with one tie. This means a few accounts pull most attention. You also see many low-degree nodes that sit on the edge of the graph.
Ask yourself who benefits when a handful of users dominate interaction.

Betweenness
You see a clear gap between top nodes and the rest. A few accounts act as bridges across components. Most nodes show near-zero values.
This pattern tells you information crosses the graph through limited choke points.

Eigenvector
You see rankings where one cluster lifts each other's scores. Nodes tied to influential accounts show higher values even when their degree is low.
This reveals influence chains instead of pure volume of ties.

PageRank
You see a small group at the top that repeatedly appears across metrics. They receive incoming attention. Mid-rank nodes show modest values. Low-rank nodes show minimal visibility.
You can use this to confirm which accounts drive reach.

Visual layout
You see central hubs pulling many peripheral nodes toward them. You see small islands far from the core. You see short

chains leading into the graph but not branching.
This signals broadcast behavior and weak conversation loops.

Comparison
In the non-conspiracy graph you see more top nodes with medium centrality and more clusters where influence spreads across several members.
In the conspiracy graph you see sharper peaks where two or three nodes dominate all centrality measures and large parts of the graph sit disconnected or lightly tied.
This difference helps you identify where misinformation depends on a few amplifiers rather than a broad community