Twitter Network Analysis: Misinformation vs. Normal Communities

This report compares the structural characteristics of a **Misinformation (5G Conspiracy)** Twitter network with a **Normal (Non-Conspiracy)** network, based on key metrics derived from Gephi analysis. The comparison reveals how network design supports the spread of different types of information.

Key Findings Summary

Metric	Misinformation Graph (5G Conspiracy)	Normal Graph (Non-Conspiracy)
Nodes / Edges	16 / 20	90 / 209
Modularity (Q)	0.209	0.302
Avg. Clustering Coeff.	0.249	0.146
Avg. Path Length	1.622	2.829
Connected Components	5	30

Humanized Interpretation

It looks like these two networks approach social interaction in very different ways!

1. The Misinformation Graph: Small, Focused, and Fast

This network is much **smaller** (16 nodes) but extremely **dense and focused** (Avg. Path Length of 1.622). It's built for speed and tight relationships:

- **Tightly Knit:** The high **Average Clustering Coefficient (0.249)** means users are highly interlinked—it's a tight circle where everyone knows everyone. This makes the group very cliquish and effective at quickly spreading the core message internally.
- **Small Circles:** While its overall **Modularity (0.209)** is relatively low, its low number of **Connected Components (5)** suggests the few users who are active are grouped around a small, central hub of information.

2. The Normal Graph: Larger, Dispersed, and Fragmented

This network is **larger** (90 nodes) but much **less cohesive** and has a more complex structure:

- **More Communities:** The higher **Modularity (0.302)** shows that the community is more

heavily segregated into distinct groups. It has a significantly higher number of **Connected Components (30)**, meaning there are many small, isolated conversations or pieces that aren't linked to the main discussion. This is typical of organic social media chatter.

- **Less Cliquish:** The low **Average Clustering Coefficient (0.146)** confirms it's not a tight echo chamber; users' neighbors are less likely to know each other. Information takes longer to travel (Avg. Path Length of 2.829).

Conclusion

The structural analysis shows that the **Misinformation network** is characterized by being **smaller and more highly cliquish**, ensuring that shared content is quickly reinforced within the immediate group. The **Normal network** is larger and more fragmented, typical of decentralized public discourse, but its high number of isolated components suggests many small conversations that are disconnected from the main flow.