# Hollywood Movies Actor Network

Group 7

# NETWORK OVERVIEW:

- One-mode, undirected, weighted network (number of collaborations with same actor)

- Nodes are actors/actresses

- Edges are actors/actresses collaboration

- Graph demonstrated many dense clusters indicating the existence of communities

- Collaborative relationship (mutual trust and reputation built over the years)

# CLIQUES

Many nodes exhibited a high clustering coefficient (=1).

These correspond to cliques, which are indicated by red clusters
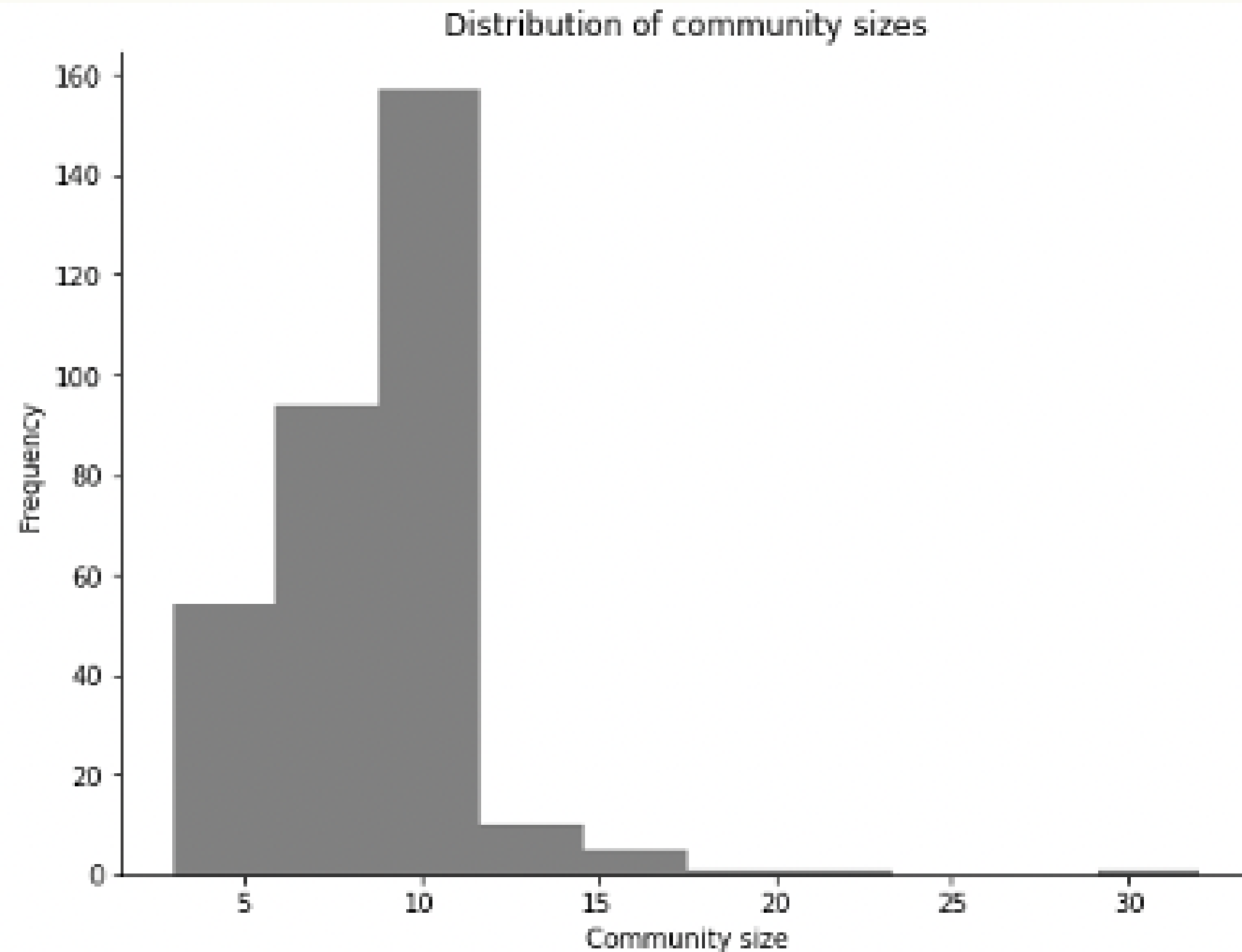
Distribution of community sizes
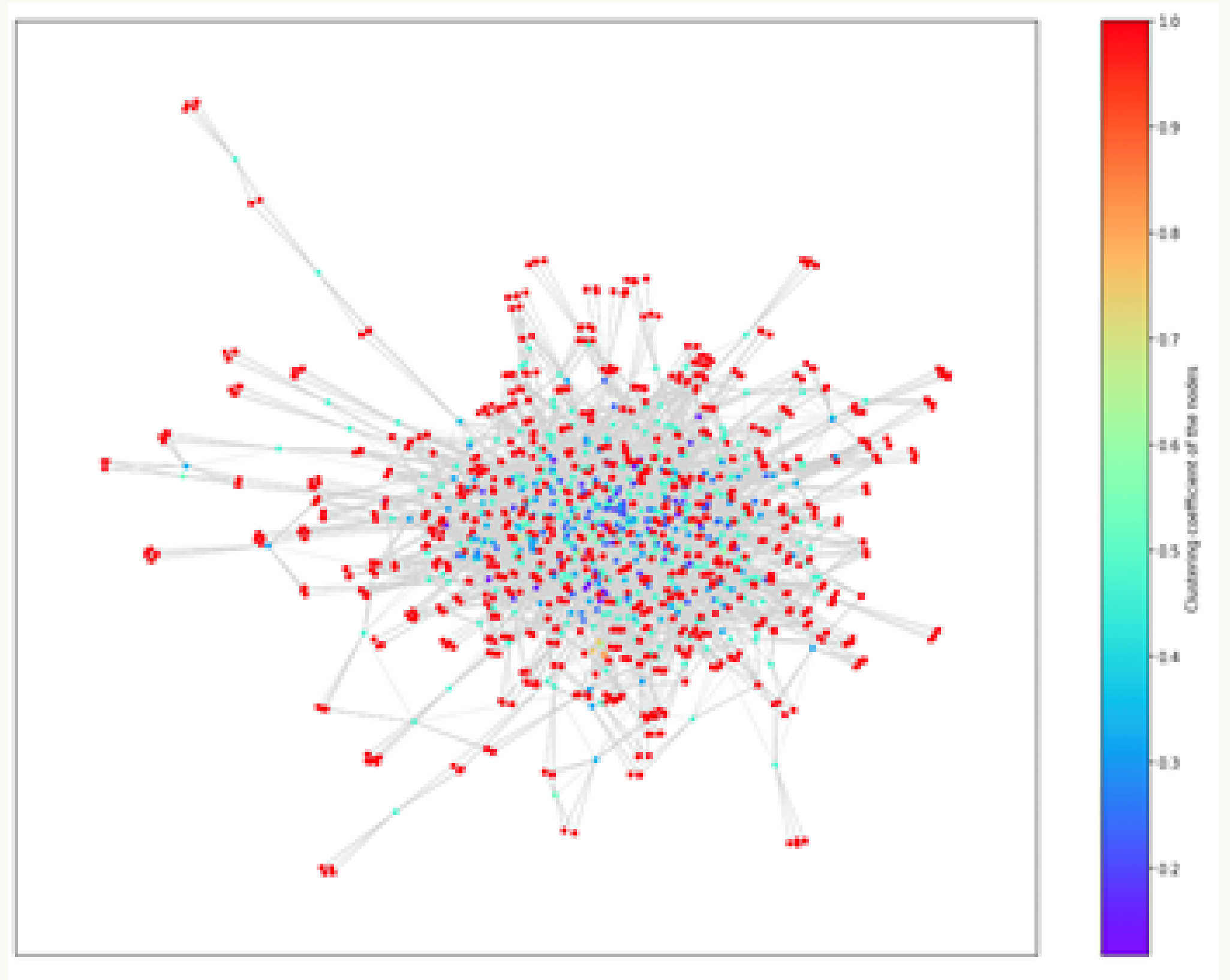
# COMMUNITY DETECTION
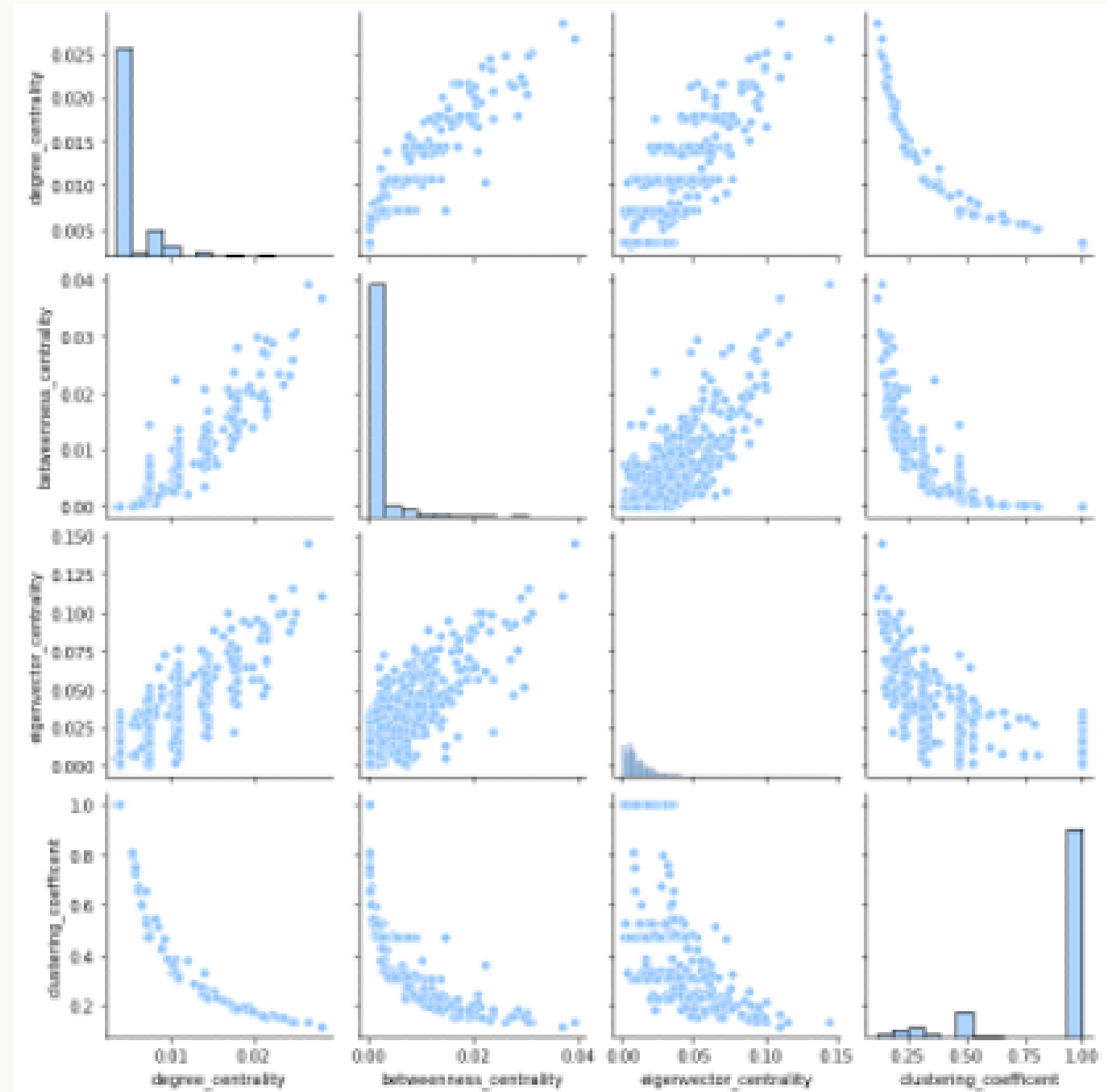
Using Kojaku-Masuda algorithm

298 communities
Size ranging between 3 - 33 nodes
High modularity of the network
denoted by dense clusters of nodes

# CORRELATION OF NODE MEASURES

High variance between the points denotes homophily mechanism at play

# Degree distribution

80% of nodes with degree = 9 or 9n because we specified the number of actors per movie to be 10

Some hubs in the network with higher degrees that represent actors that starred in many movies
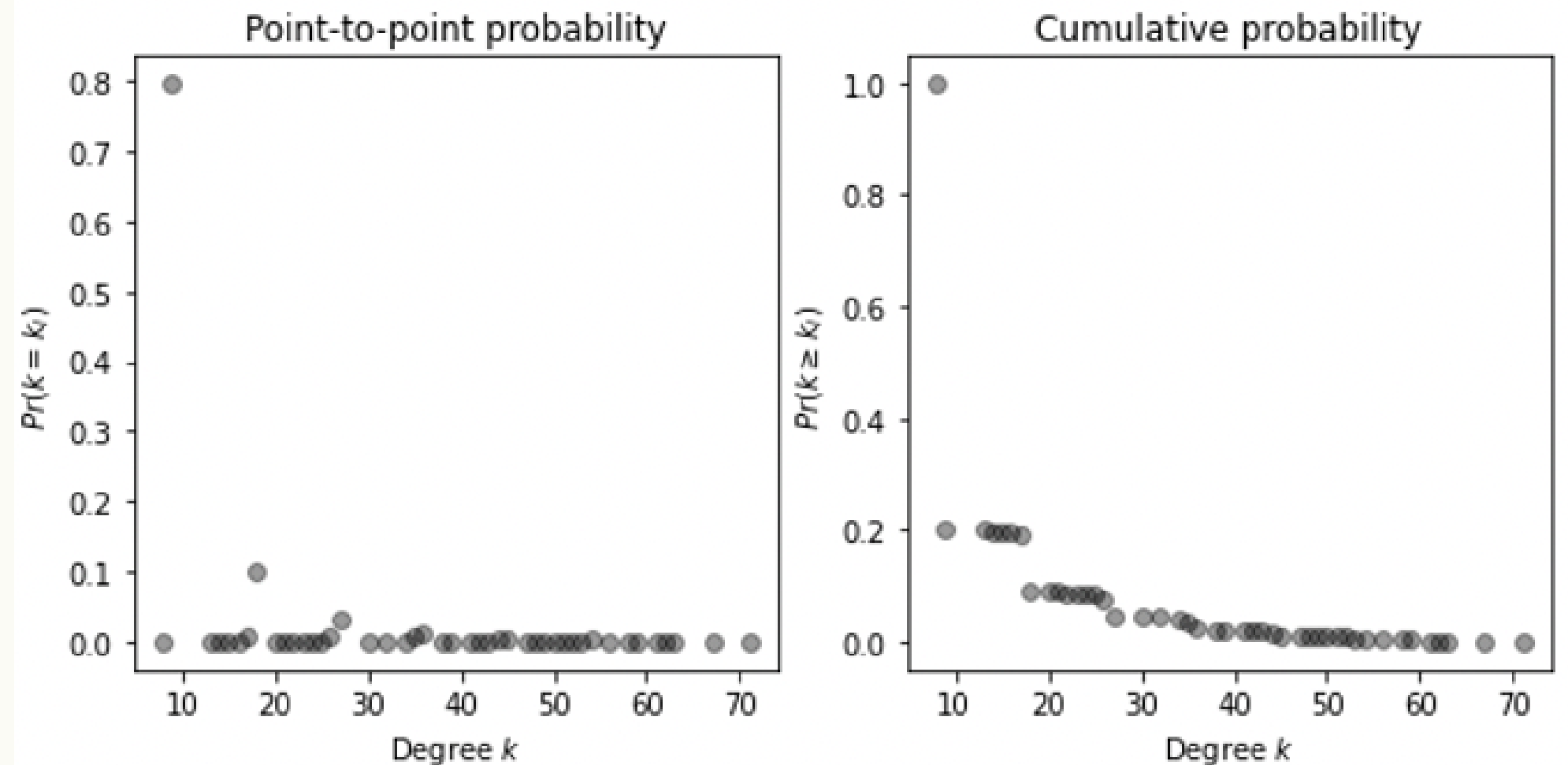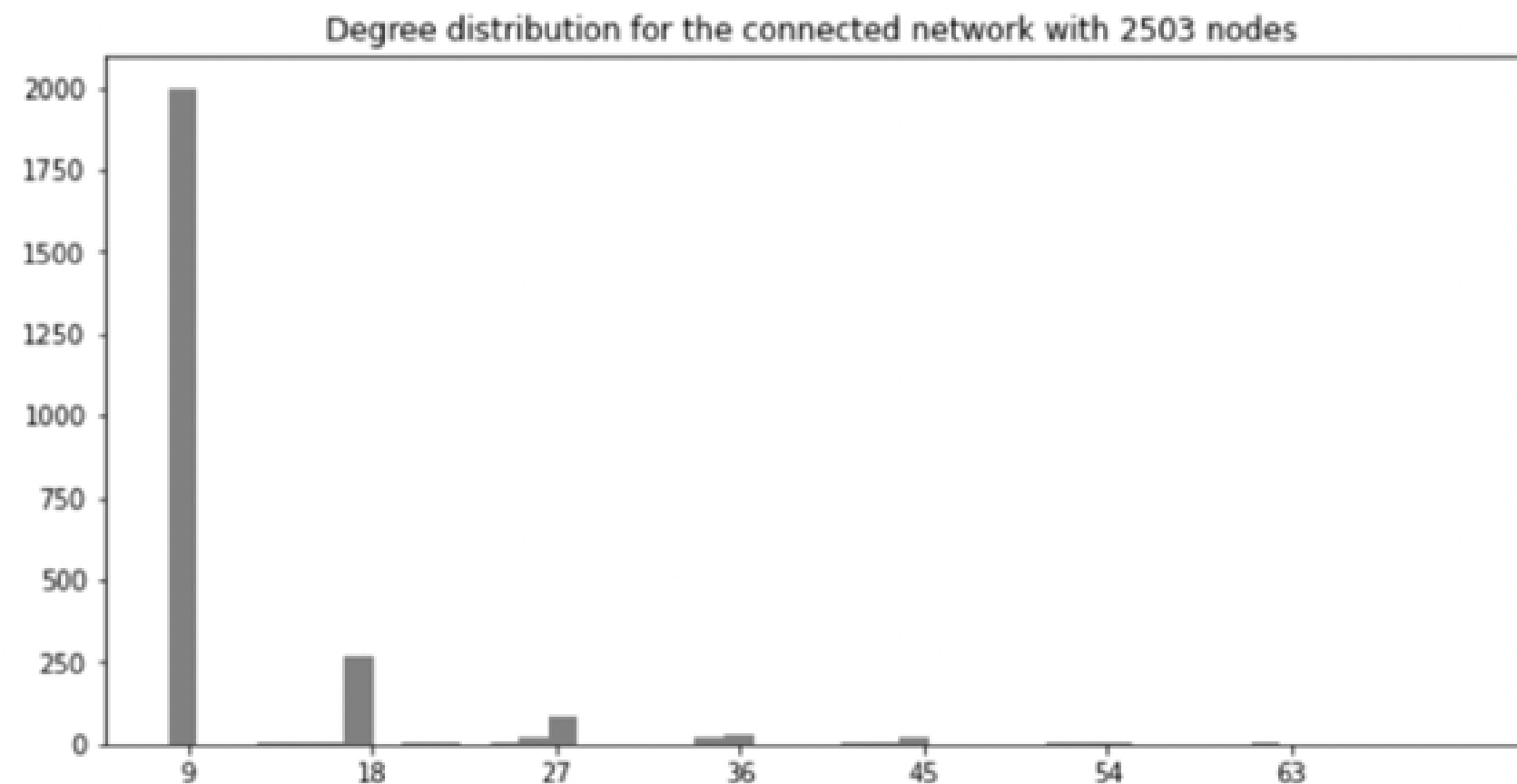


Figure 4: Degree distribution bar chart

## ACTORS WITH HIGHEST DEGREE CENTRALITY

- **John C. Reilly**
- **Joseph Gordon-Levitt**
- **Laura Linney**
- **Jim Broadbent**
- **Philip Seymour Hoffman**

## NODES WITH HIGHEST EIGENVECTOR CENTRALITY

- **Joseph Gordon-Levitt**
- **Philip Seymour Hoffman**
- **John C. Reilly**
- **Christian Bale**
- **Leonardo DiCaprio**

## - Small-world network

## - Majority of the nodes are separated by a small number of nodes as the network diameter = 9

## Homophily (most popular actors acting together)