COUNTRY CONNECTIONS VIA NETFLIX
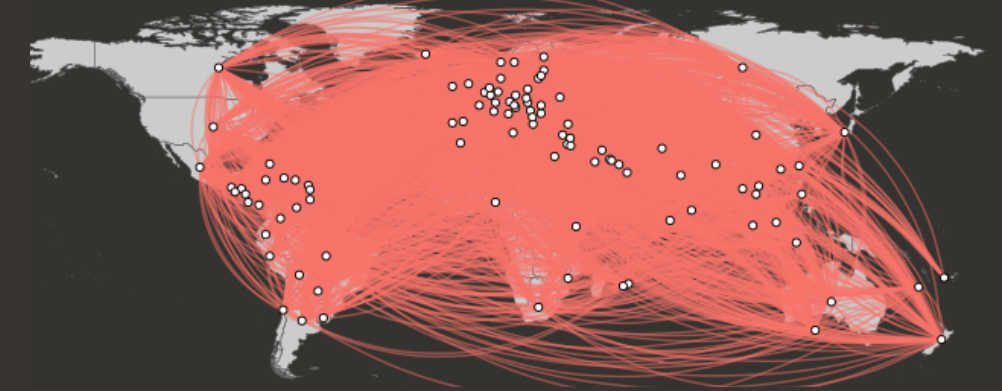
Author

Alina Benz

Master of Business Administration, M.Sc.
Supplementary Study Program Data Literacy

Seminar Social Network Analysis
Professorship for Data Modelling & Interdisciplinary Knowledge Generation

This Social Network analysis shows how Netflix is connecting the world.
Analyzing a dataset with the production countries connected to the countries entertained by the top 10 ranked movies per week.

Fig.1: The Global Netflix system (04.07.2021-09.01.2022)

1 INTRODUCTION & RESEARCH GOAL

During COVID-19 lockdown or quarantine time, there is not much to do.
Subscription streaming services have a wide offer of movies and series on their platform. Netflix is a U.S. company and the most successful portal, with users worldwide. With movies and series, there is also the culture of each country reported within.

So, is there an Americanization visible in the global Netflix system?

The first guess thinking about the whole range of Hollywood movies is yes.
Figure 1 shows all connections from production countries and consumers.
No trend is visible from the raw Netflix dataset in the time between 04.07.2021 and 09.01.2022.
To find central nodes in the network, the different centrality possibilities are measured in different sub-graphs.

2 DATASET & PREPROCESSING

Dataset:
- Combining the Netflix Dataset [1] with information about the production countries [2], [3]

Preprocessing:
- Selecting country information, like the continent, latitude and longitude, and the geographical regions.
- Resulting in a set of 101 different connected countries, in 18 connected regions, within the 5 continents, and 73.258 entries.

3 RESEARCH METHOD

Social Network Analysis

- Analyzing a directed graph connecting the production countries and the countries viewing this media on Netflix (producer → consumer).
- Measuring the degree centrality within the network, because a node is important if it is connected to many different countries. [4]

4 RESULTS

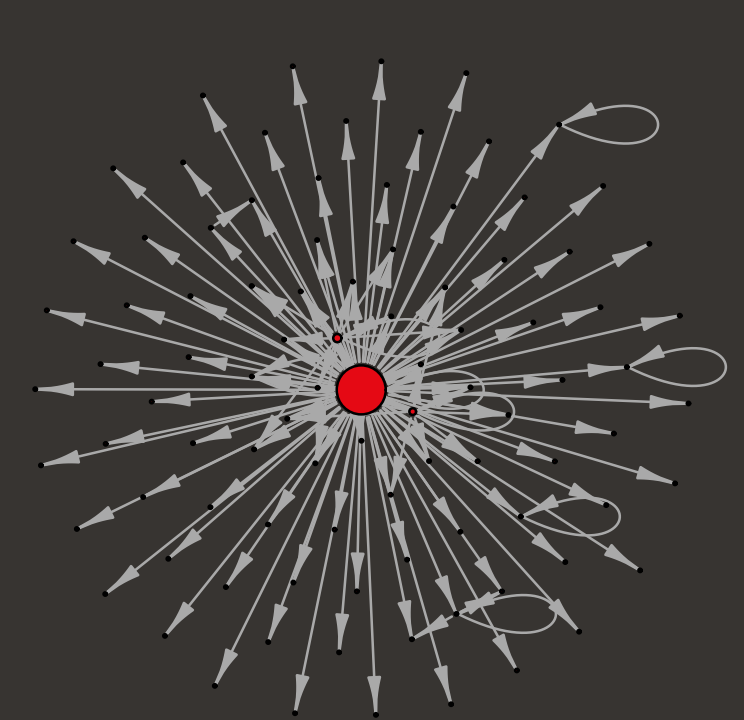|	Continental Level	Regional Level	Country Level	Country Level; edge weight >100
Normalized Degree Centrality	0.000	0.199	0.609	0.996
Max Outbound Degree	All continents (5)	11 regions (18)	16 countries (94)	United States (94)
Max Inbound Degree	All continents (5)	5 regions (16)	Argentina & Brazil (46)	Japan (3)
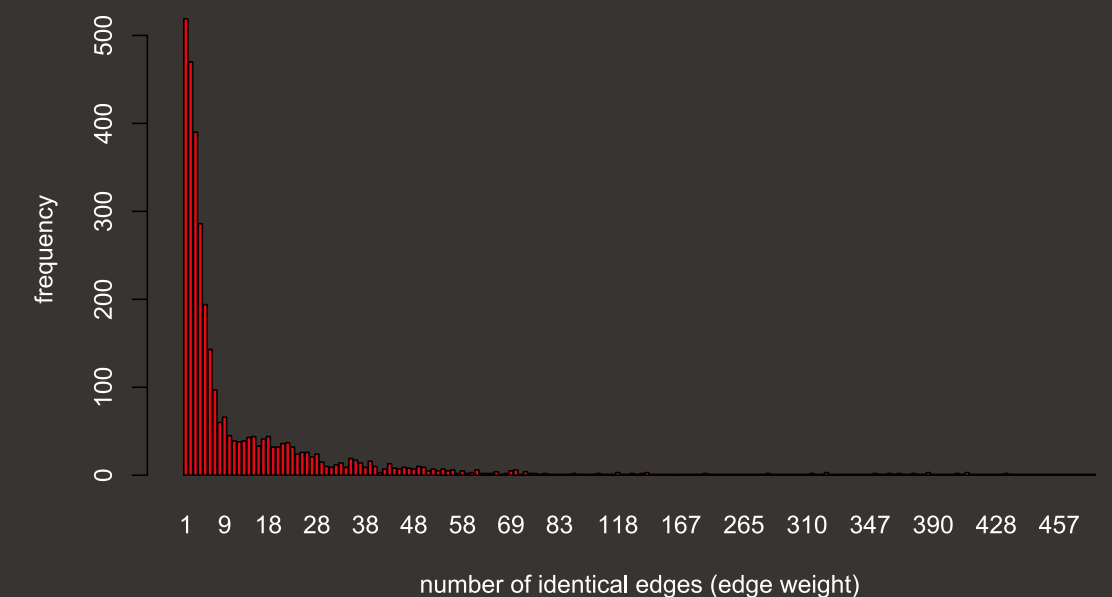
5 ANALYSIS
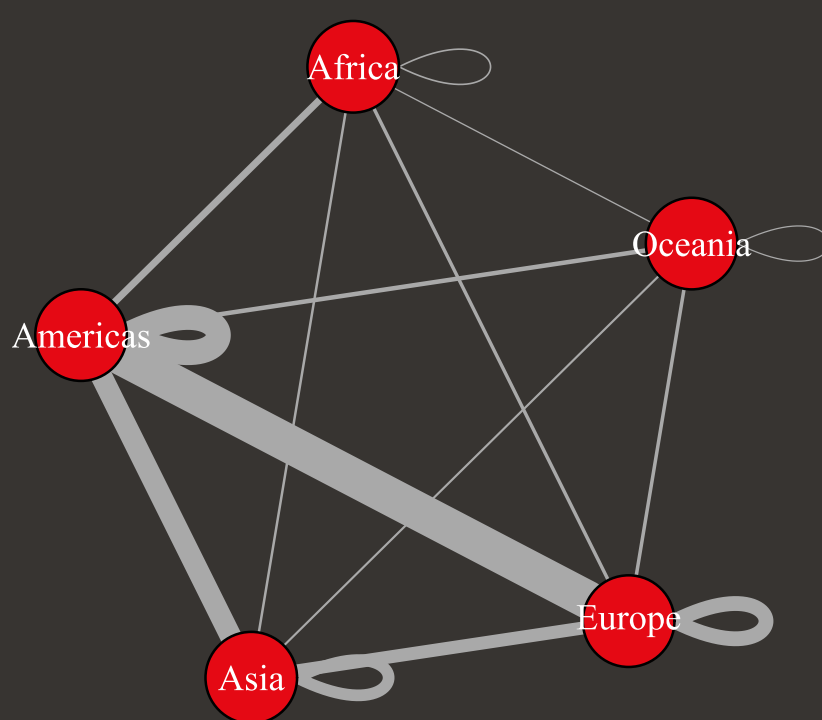
Undirected Graph on continent level is a connected graph

Directed Graph on regional level; more successful producer countries get visible

Directed Graph on country level; USA is clearly visible (edge weight > 100)

6 CONCLUSION

- Continental-level:
  - Full connected graph, higher edge weight between America, Asia, and Europe
  - Strongest Inbound Degrees: Hong Kong; Ireland, Malta, United Kingdom
  - Strongest Outbound Degree: China, Israel, Japan; France, Germany, UK, Spain (and 6 others)
- Regional-level:
  - No clear centralization visible because 11 regions have maximum degree.
  - Within Asia, a higher edge weight is measurable.
- Country-level:
  - The USA is visible as the node with the highest outbound degree by weight >100.
  - 15 other countries have the same outbound degree (Americas 4, Europe 9, Asia 3).
  - 56 countries have loop connection; highest edge weight: USA (481), followed by South Korea and Japan (especially in Asia connected).
- Edge weights:
  - 519 connections with weight 1, and 2,270 (3.1%) with weights between 1 and 10.
  - 125 edges with weight >100; the USA(94) as producer, have only weights above 100; Colombia (13), India (3), Japan (1), Mexico (1), Nigeria (1), South Korea (10), Turkey and the United Kingdom

The USA is the country with outbound connections to all other countries and the strongest edge weights.

7 LIMITATIONS AND FUTURE WORK

Limitations to this research:
- The available language selection on Netflix
- Streaming rights in the individual countries
- Advertising and suggestions
- The role of Netflix productions

Future Work can differentiate between different genres and a longer period.
Also, an analysis within more successful global streaming portals would show the whole picture.
A comparison with the actors or régisseurs could also show differences.

[1] https://top10.netflix.com/, [2] https://www.kaggle.com/shivamb/netflix-shows, [3] https://www.imdb.com/, [4] Freeman, L. C. (1978). Centrality in social networks conceptual clarification. Social networks, 1(3), 215-239.