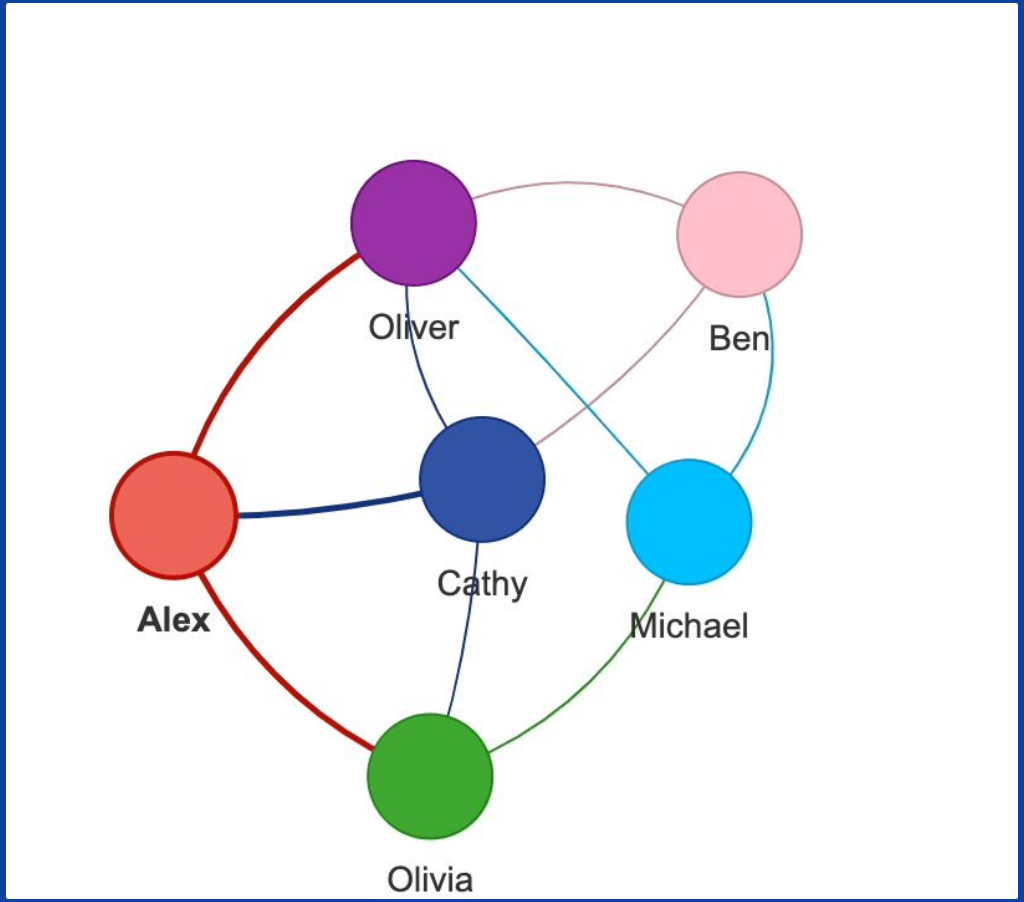
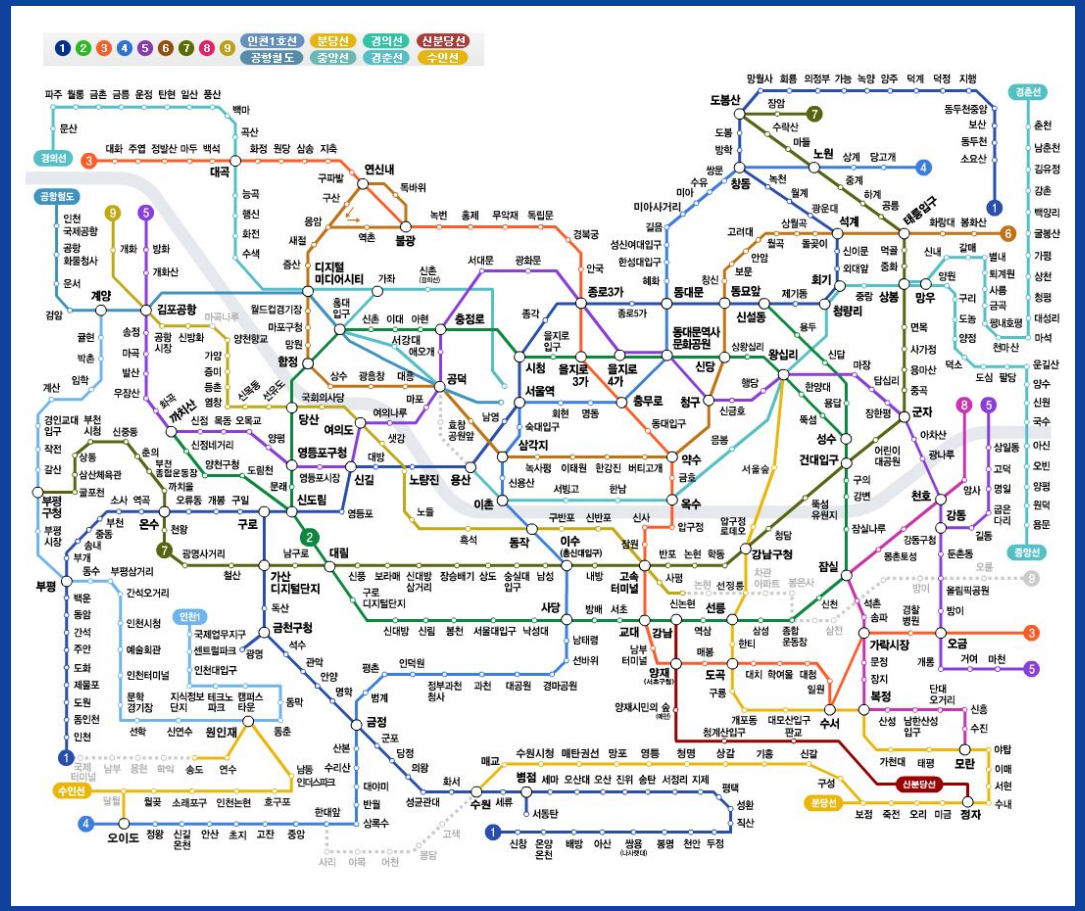
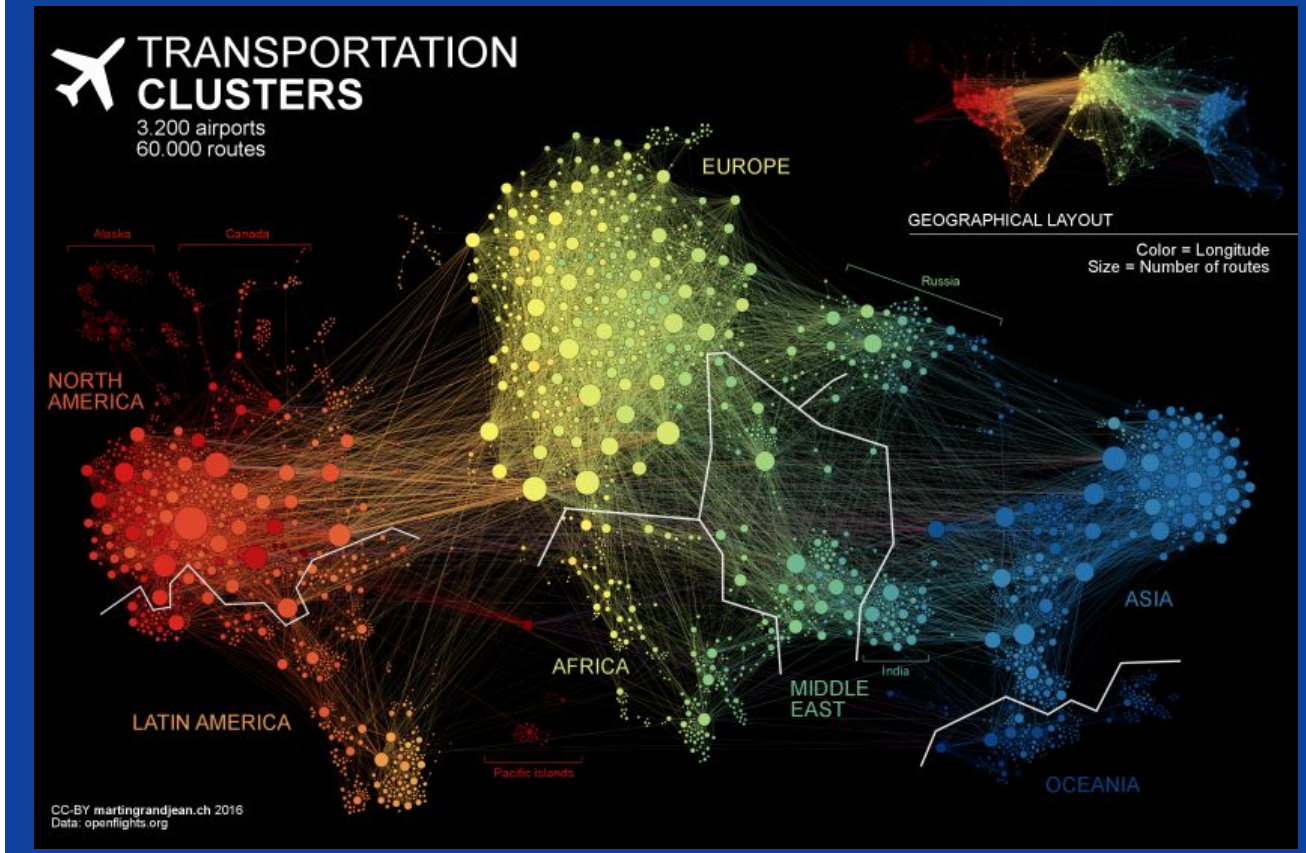


Coauthorship Network

>> Table of contents

>> Research Motivation and Objective

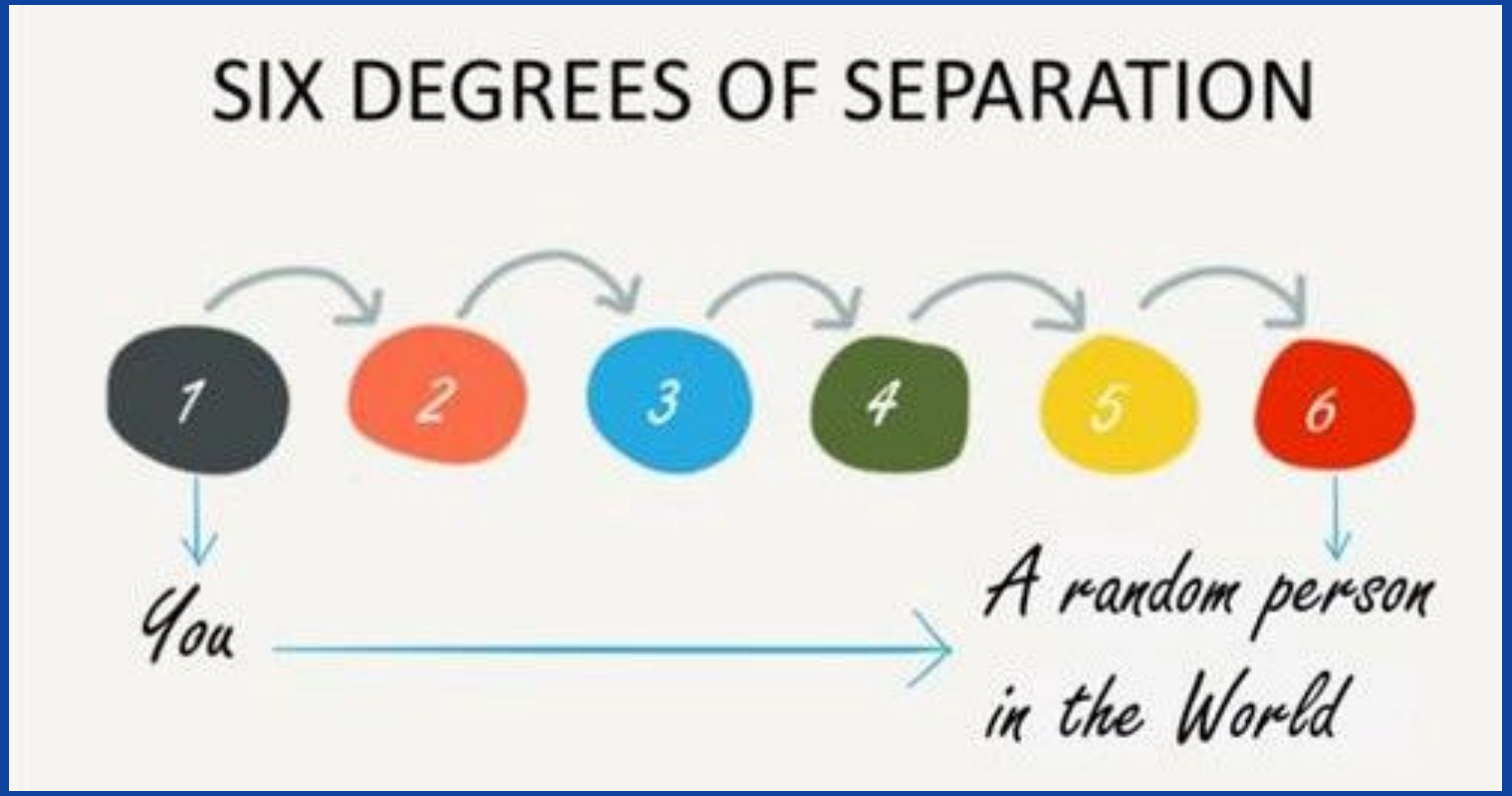




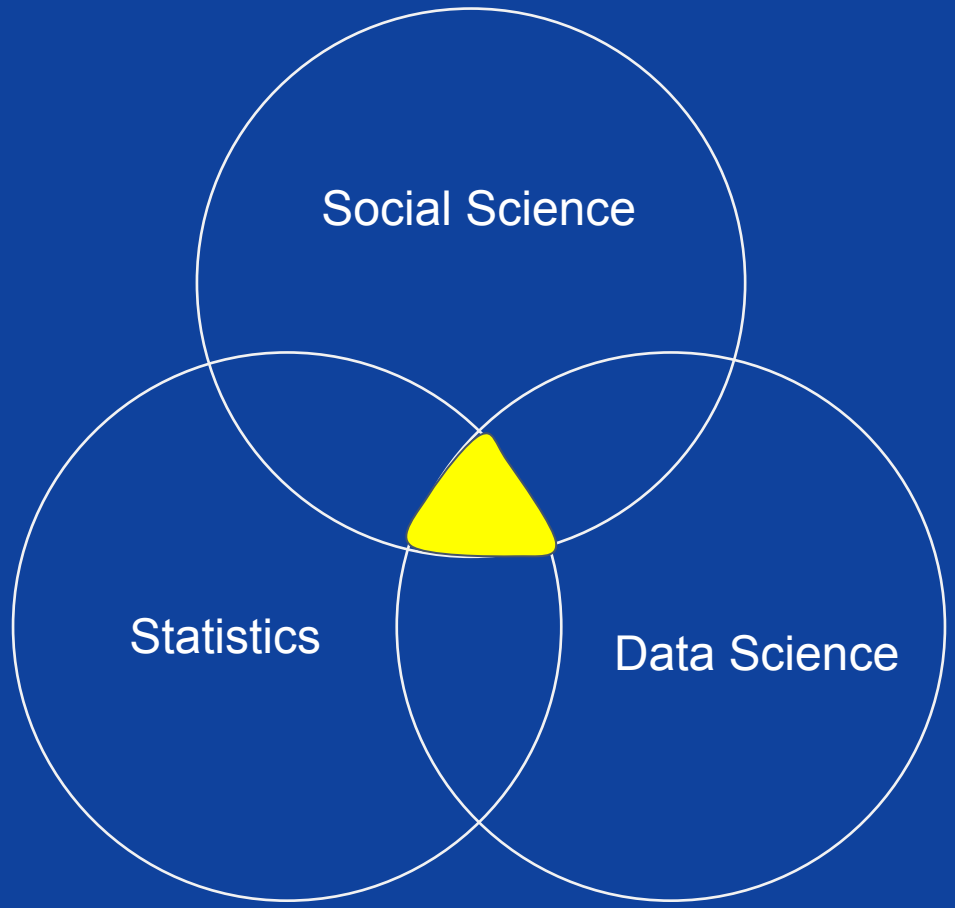
>> Research Motivation and Objective

Stanley Milgram's experiment:

Small-Word Theory

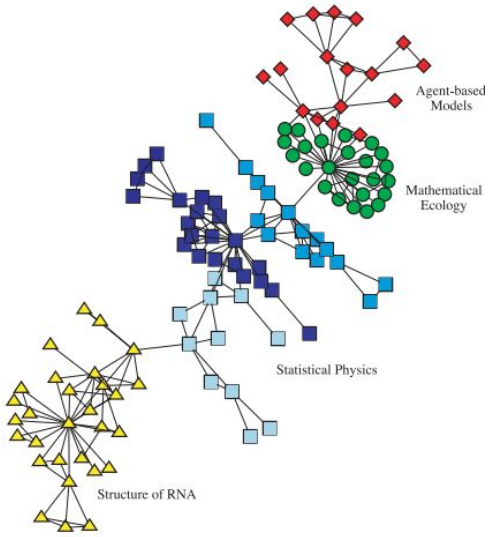


>> Research Motivation and Objective

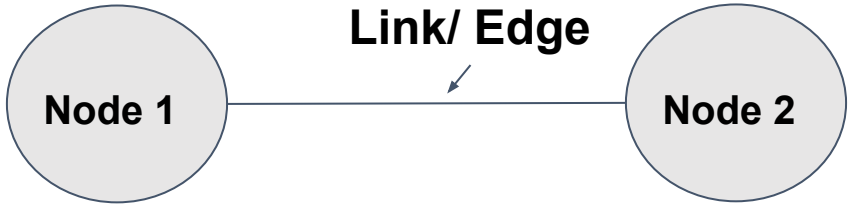


>> Research Motivation and Objective

1 Coauthorship Network



Newman, M. E. (2004)



Node = Researchers

Link/ Edge = Coauthorship

>> Measurement – Variables

1. Number of Authors
2. Number of Papers
3. Mean Papers Per Authors
4. Mean Authors Per Papers
5. Number of collaborators within the subject and outside the subjects
6. Clustering Coefficient
7. Betweenness Centrality
8. Average node degree

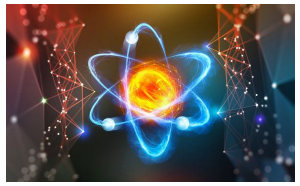
>> Measurement – level of analysis

1 HSS(Humanities and Social Science)

Arts and Humanities

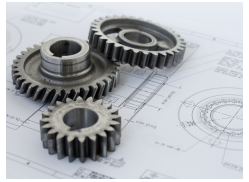
Social Science

2 STEM(Science, Technology, Engineering, and Mathematics)

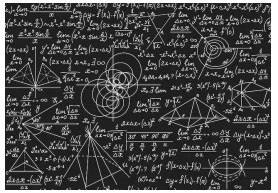


Physics

Computer Science



Engineering



Mathematics

>> Measurement – Research Questions

#1 Is researchers' coauthorship frequency higher (authors per paper) and is its network's giant component bigger (network is strong) in STEM fields than HSS fields?

#2 Is research network centrality or betweenness centrality higher in STEM than HSS?

#3 Are there any demographic differences such as gender ratio and nationality in researchers' networks between STEM and HSS?

#4 Is there any difference in clustering coefficient between STEM and HSS and what would be the clustering coefficient when researchers are coauthor of the publication of an interdisciplinary subject?

>> Measurement - Hypotheses

H1. Researchers in the STEM field would collaborate more for the publication. (due to their research environment since they often need to research together in the laboratories).

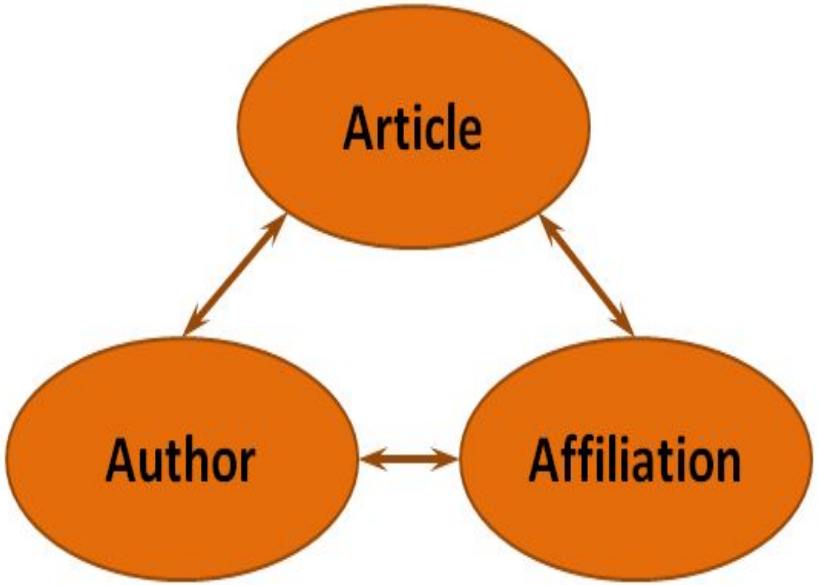
H2. Betweenness centrality would be higher in HSS than STEM area and it will be even higher for interdisciplinary coauthorship networks within both subjects.

H3. There will be more researchers of specific gender and from developed countries in both STEM and HSS fields.

H4. Clustering coefficient would be higher in HSS than STEM and it will be higher in interdisciplinary coauthorship networks.

>> Data and Method

Scopus



	authid	authname	dc:title	authkeywords	prism:publicationName
1	38362047800	Pham D.L.	Perspectives on label-free microscopy of heterogeneo...	artificial intelligence | cell dynamics | heterogeneity | ...	Journal of biomedical optics
2	57196217297	Gillette A.A.	Perspectives on label-free microscopy of heterogeneo...	artificial intelligence | cell dynamics | heterogeneity | ...	Journal of biomedical optics
3	57865691700	Riendeau J.	Perspectives on label-free microscopy of heterogeneo...	artificial intelligence | cell dynamics | heterogeneity | ...	Journal of biomedical optics
4	58924019800	Wiech K.	Perspectives on label-free microscopy of heterogeneo...	artificial intelligence | cell dynamics | heterogeneity | ...	Journal of biomedical optics
5	57222441187	Guzman E.C.	Perspectives on label-free microscopy of heterogeneo...	artificial intelligence | cell dynamics | heterogeneity | ...	Journal of biomedical optics
6	56459602000	Datta R.	Perspectives on label-free microscopy of heterogeneo...	artificial intelligence | cell dynamics | heterogeneity | ...	Journal of biomedical optics
7	6603487616	Skala M.C.	Perspectives on label-free microscopy of heterogeneo...	artificial intelligence | cell dynamics | heterogeneity | ...	Journal of biomedical optics
8	55338654100	Sixto-García J.	Transparency on YouTube for radon risk communicati...	Echo chambers | Public health | Radon | Risk | Risk co...	Revista Latina de Comunicacion Social
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11	58880293400	Pascual-Presa N.	Transparency on YouTube for radon risk communicati...	Echo chambers | Public health | Radon | Risk | Risk co...	Revista Latina de Comunicacion Social

>> Data and Method

Data Extraction (API)

Statistical Analysis

>

DataBase

>

Network Analysis

Producing Network Graphs

>> Expectations

Insight

While coauthorship networks have been extensively studied, there is still a need to investigate research collaboration in distinct disciplinary subjects network.

Expectation

My expectation is being able to delve into the research collaboration dynamics between STEM and HSS subjects, aiming to identify discernible patterns indicative of evolving research collaboration networks.

>> Possible Limitations

- Name of authors may be differently written for each publications.
- Data preparation can be hard.
- Using demographic information can be tough since sometimes it is not provided directly from the dataset.

Thank you

Q & A