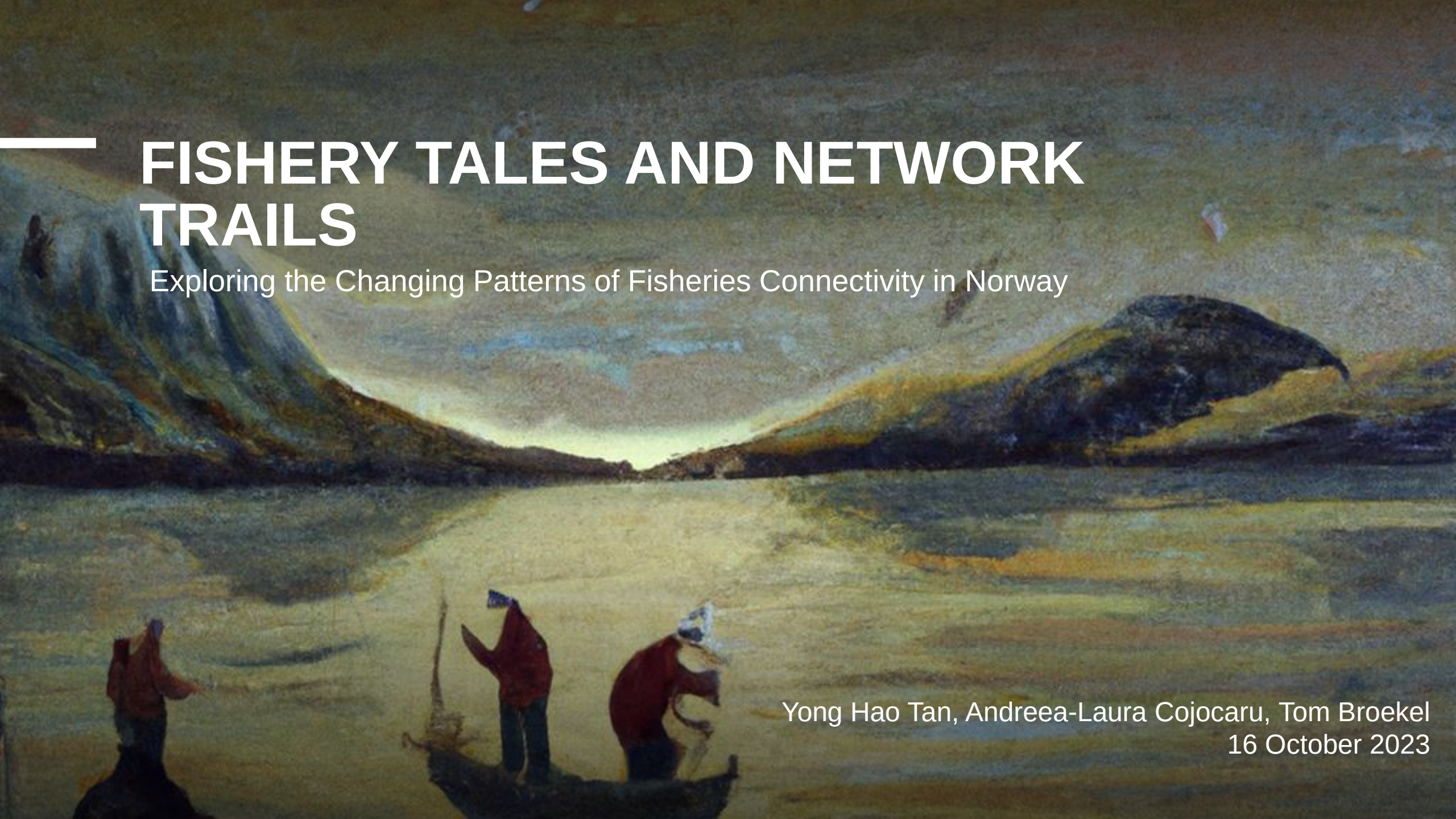

FISHERY TALES AND NETWORK TRAILS

Exploring the Changing Patterns of Fisheries Connectivity in Norway

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- Currently doing my PhD at University of Stavanger
- Educational Background:
  - Lund University - Msc in Human Geography
  - National University of Singapore - Bachelor of Social Science (Honours) in Geography
- Research Interests:
  - Ocean Space
  - Economic geography
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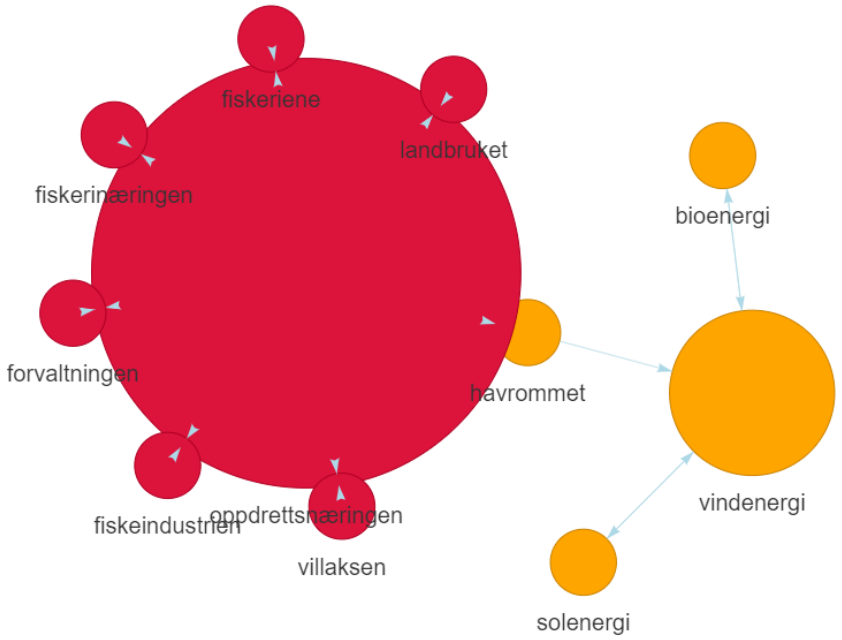
Motivation for research: Ocean Space

- Importance of fisheries in ocean space imaginaries
- What is a fishery?
  - Harvest assemblage in the fishing activity (Gear and Species combination)
  - What are fisheries adapting to?
  - How are fisheries adapting?



What are fisheries adapting to?

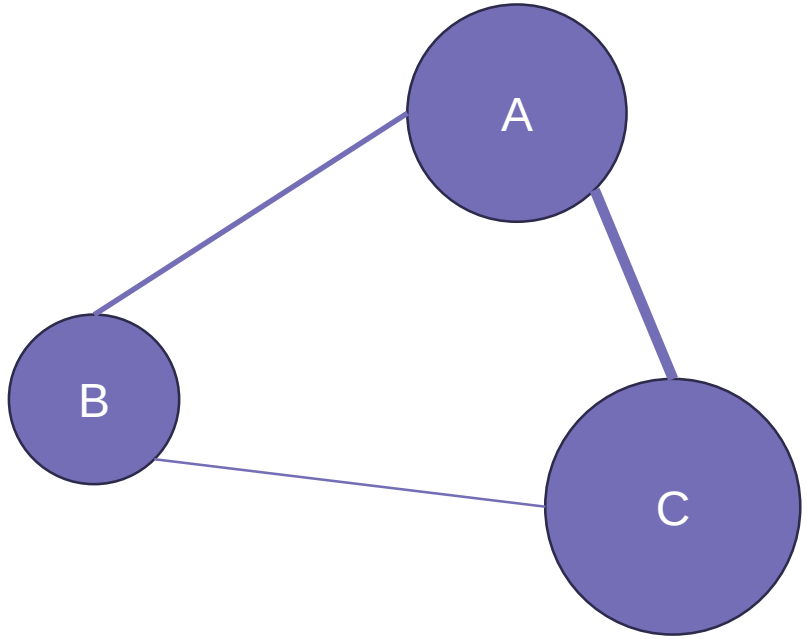
- Economic (e.g., change in value of fish, cost of operation, other opportunities)
- Social (e.g., shrinking fishing community)
- Governance (regulation change, change in quotas)
- **Climate change and variability**

Fishery connectivity networks

- How fishermen/fishing vessels participate in different fisheries (i.e., fisheries connectivity) and,
- How fishers can adapt to change (e.g., ecosystem, environmental, management, governance)
- Studies on fisheries connectivity is relatively new with only a small number of studies limited to few spatial contexts (Fuller et al., 2017; Addicott et al., 2019; Luczkovich et al., 2021).
- Most of these studies have found that geographic proximity, fishing gear, and target species are important factors that influence fisheries participation and spillover potential (diversification).

Example

	Fishery A	Fishery B	Fishery C
Fishery A	5	2	4
Fishery B	2	3	1
Fishery C	4	1	6



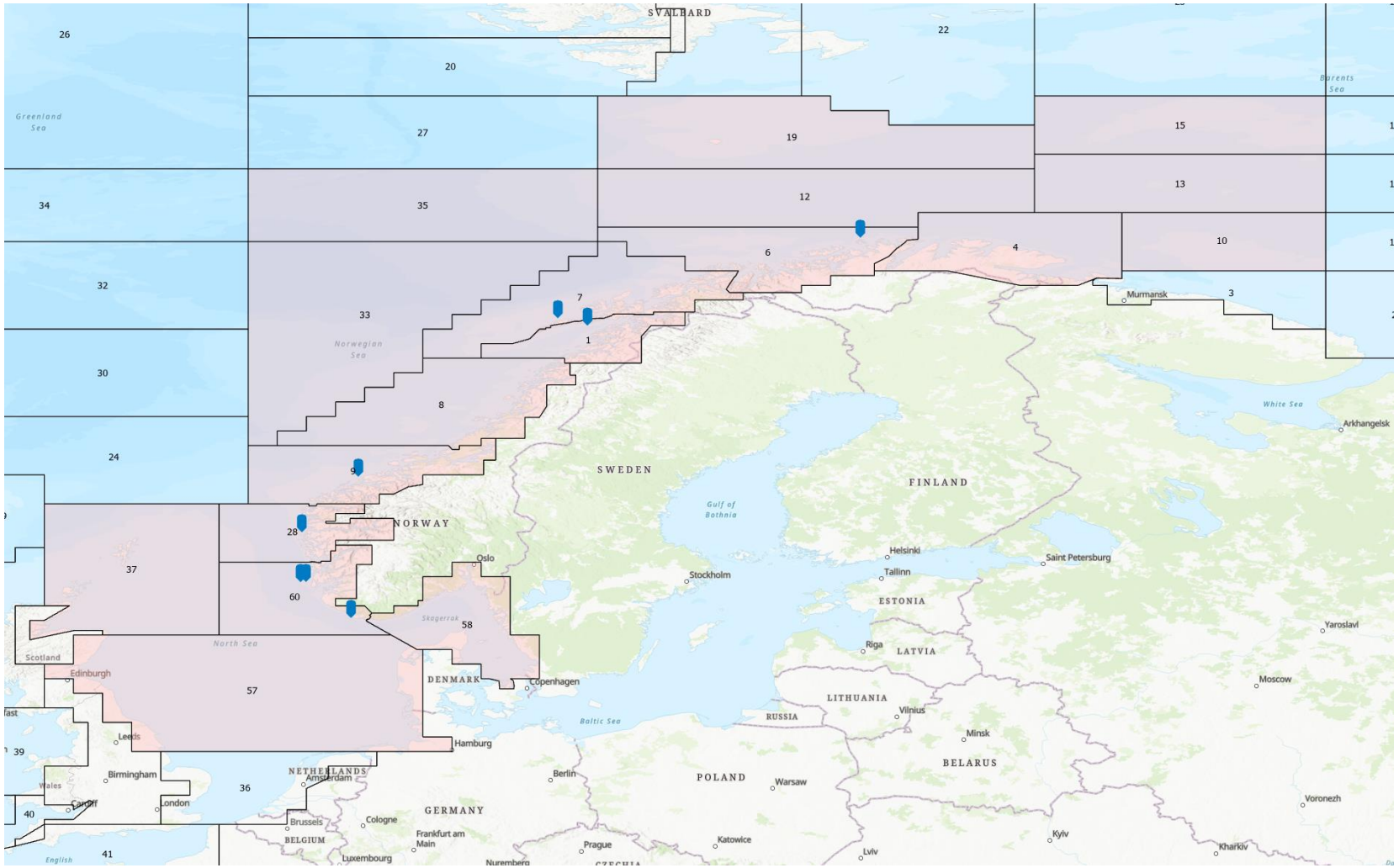
From FCN to EEG

- Fisheries connectivity network as knowledge/activity spaces (E.g., technologies (Boschma, Balland, & Kogler, 2015); industries (Neffke, Henning, & Boschma, 2011); products (Hidalgo et al., 2007)
- Degree of relatedness between fisheries (activities) in matrix form (fisheries-fisheries matrix)
- Relatedness density (fisheries-regions matrix)

Data and Methods

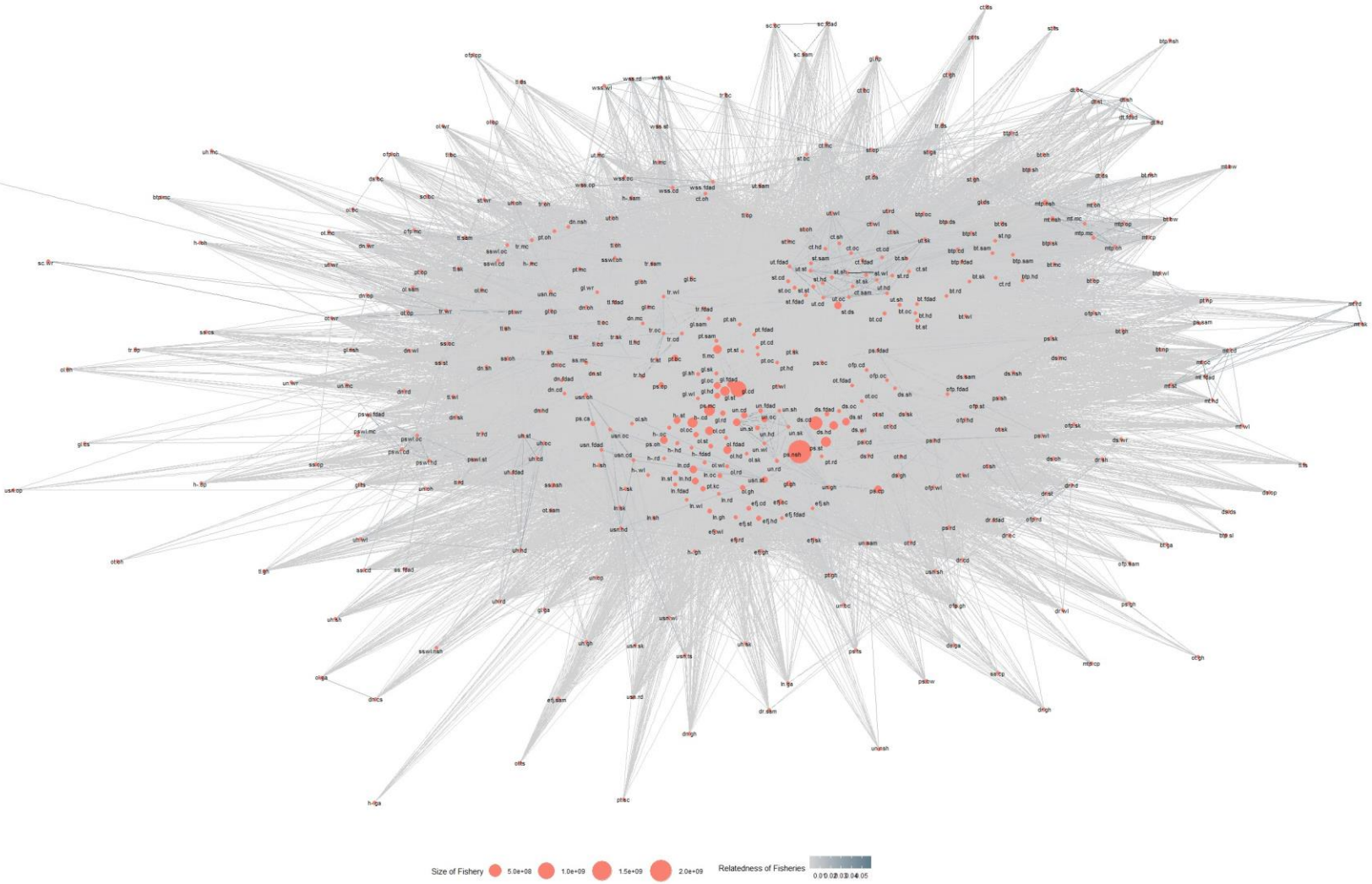
- Norwegian vessel landing tickets (Fangstdata) from 2001 to 2020
- Coastal vessels (up to 28m/Vessel length group 1-4)
- Network analysis to map the knowledge space
- Panel regression to understand diversification into new fisheries

Main catch areas



FISHERIES RELATEDNESS SPACE OF NORWAY (2001 TO 2020)

- 405 Fisheries
- 29,825 links
- Coastal vessels (up to 28m/ Vessel length group 1-4)



Regression Model

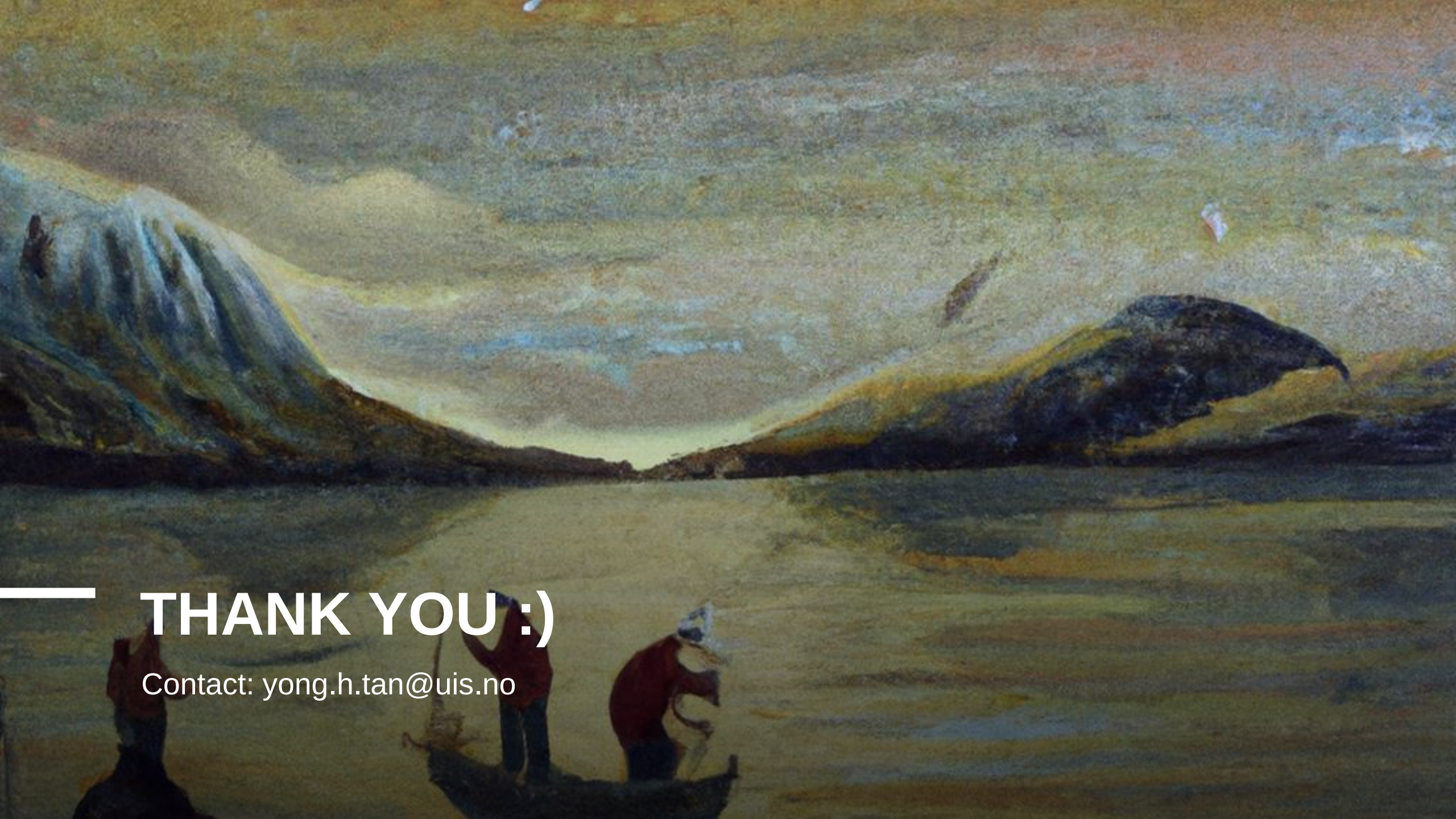
- $Entry_{k,r,t} = Density_{k,r,t-1} + Specialisation_{k,r,t-1} + X_{k,r,t-1} + \pi_r + \omega_t$
- $Entry$ - Entry of new vessels [log(number of new vessels + 1)]
- $Density$ - relatedness density
- $Specialisation$ – Share of catch of fishery in municipality (kommune) > county (flyke)
- X – number of vessels in previous year
- π_r - Region
- ω_t - Time

Results

- Positive and significant effect of relatedness on entry of new vessels and changes in volume of catch in fisheries
- Indicates that fisheries diversification occur along activities related to existing related fisheries.
- Currently working on adding ocean climate variables (temperature and salinity) on fisheries diversification
  - Initial results: change in mean surface temperature and salinity is not significant.
  - Limitation of mean surface temperature (Exploring other variables)

Work in Progress

- Effect of climate change (e.g., change in ocean temperature) And what that means for related diversification
  - What indicator to use? (What kind of temperature/heat measure?)
- Related product space to fisheries (e.g., aquaculture, marine tourism, other?)
  - Livelihood diversification outside of fisheries



THANK YOU :)

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