

# Causal relationships among global indicators

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# Outline

- Introduction
- Data description
- Problem description
- Methodology
- Results
- Discussion

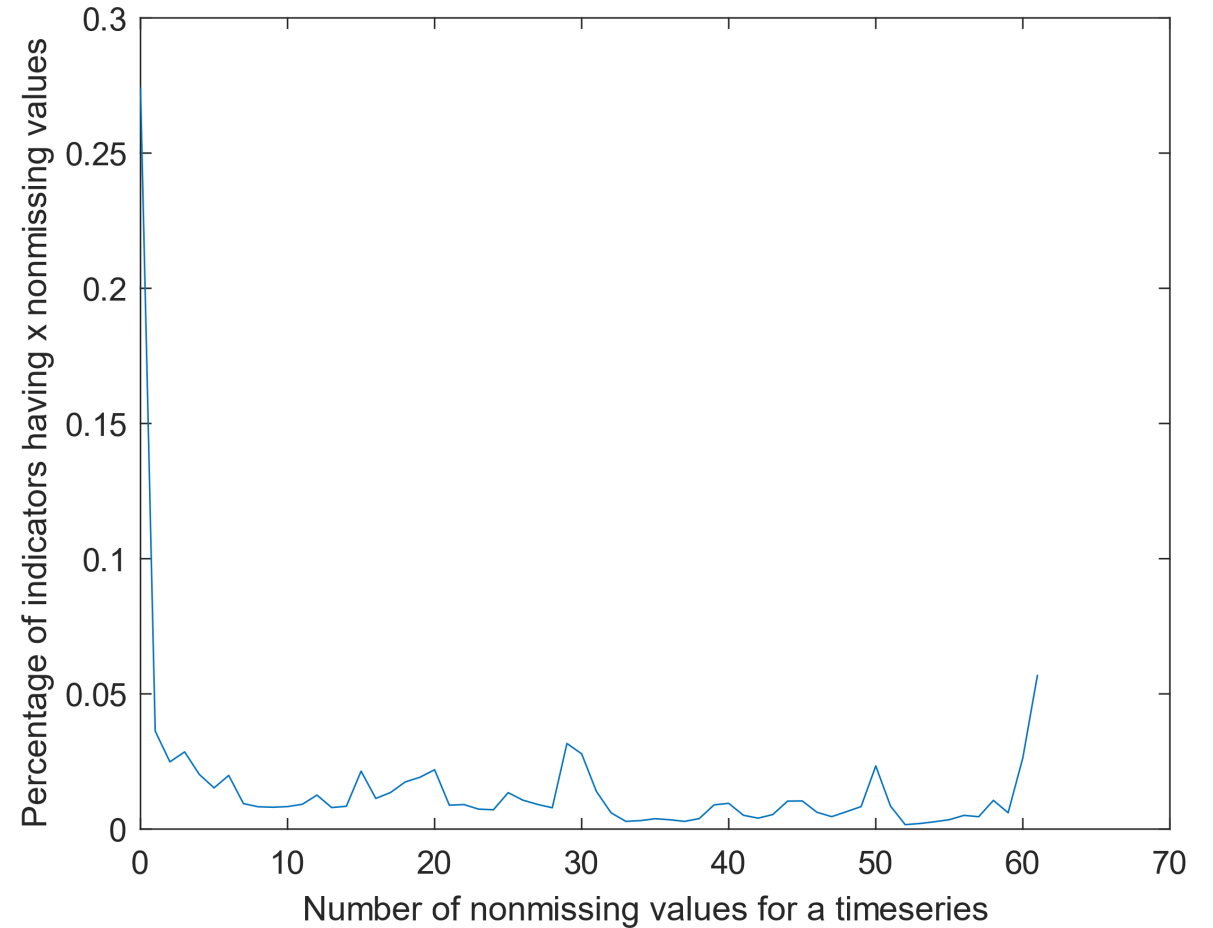
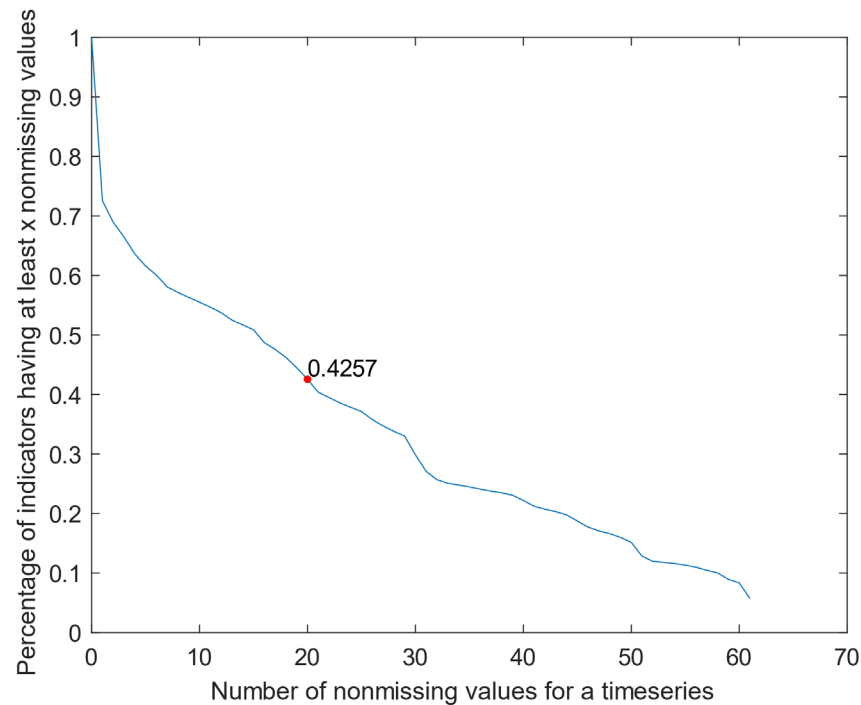
# Introduction

- Motivation
- Background on SDGs
- Granger causality
- Previous work



# Data Description

- Data source: UNSD, WB, OWID
- Problems and limitations
- Common indicators



SDG	Buzzwords
Zero Hunger	nourishment, food, stun, <u>anemia</u> , agriculture
Clean Water and Sanitation	water, sanitation, drinking, drink, hygiene, freshwater
Affordable and Clean Energy	energy, electricity, fuel
Climate Action	disaster, disasters, climate, natural, risk, Sendai, environment, environmental, green, developed, pollution
Good Health and Well-Being	mortality, birth, infection, tuberculosis, malaria, hepatitis, disease, cancer, diabetes, treatment, Alcohol, death, birth, health, pollution, medicine

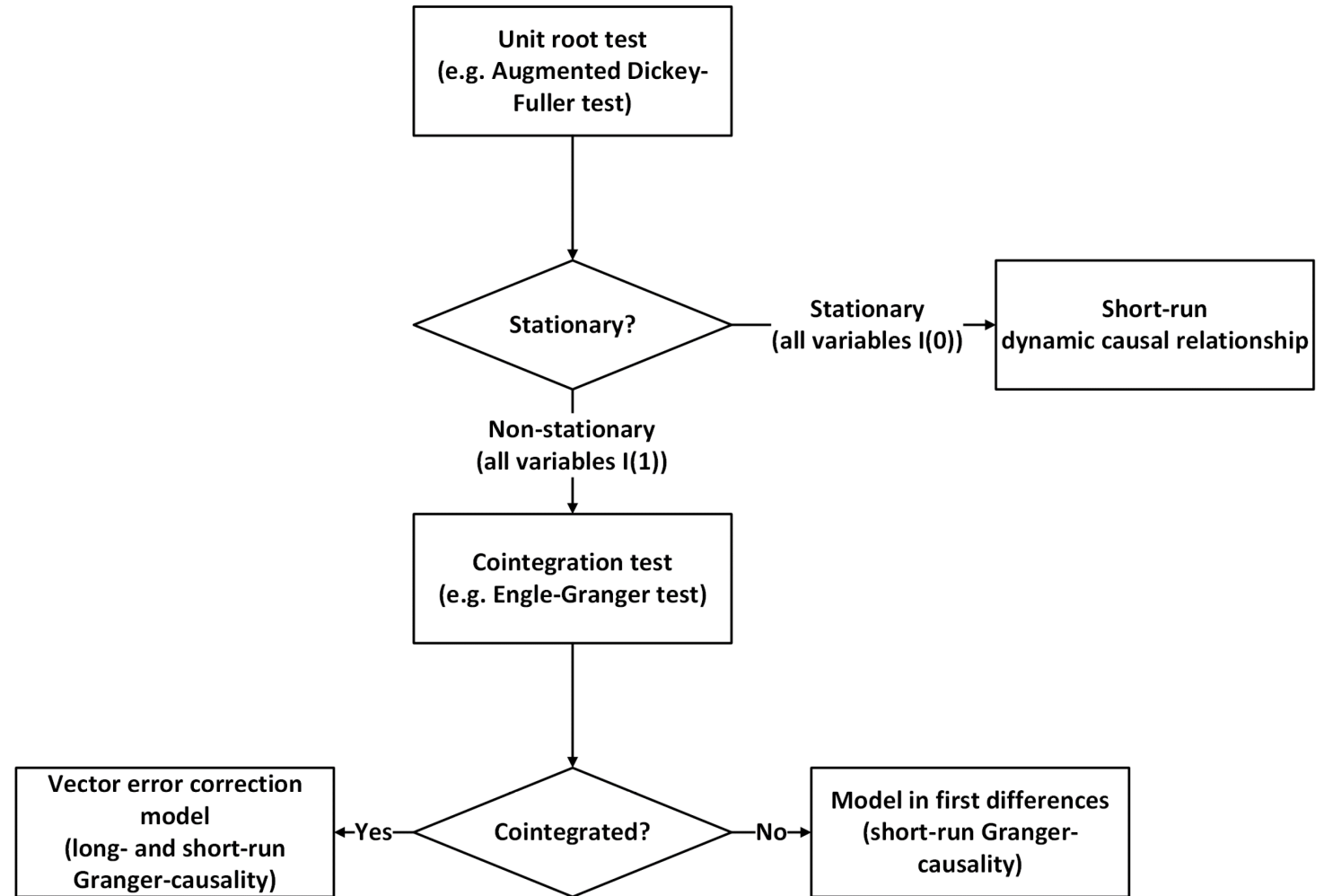
Indicator name	Frequency
Renewable electricity output (% of total electricity output)	265
Population, total	265
Population growth (annual %)	265
Nitrous oxide emissions in energy sector (thousand metric tons of CO2 equivalent)	265
Methane emissions in energy sector (thousand metric tons of CO2 equivalent)	265
Agricultural nitrous oxide emissions (thousand metric tons of CO2 equivalent)	265
Agricultural methane emissions (thousand metric tons of CO2 equivalent)	265
Urban population growth (annual %)	263
Urban population (% of total population)	263
Urban population	263

# Methodology

- Granger causality
- Statistical significance and p value
- Problems and limitations

# Experiments

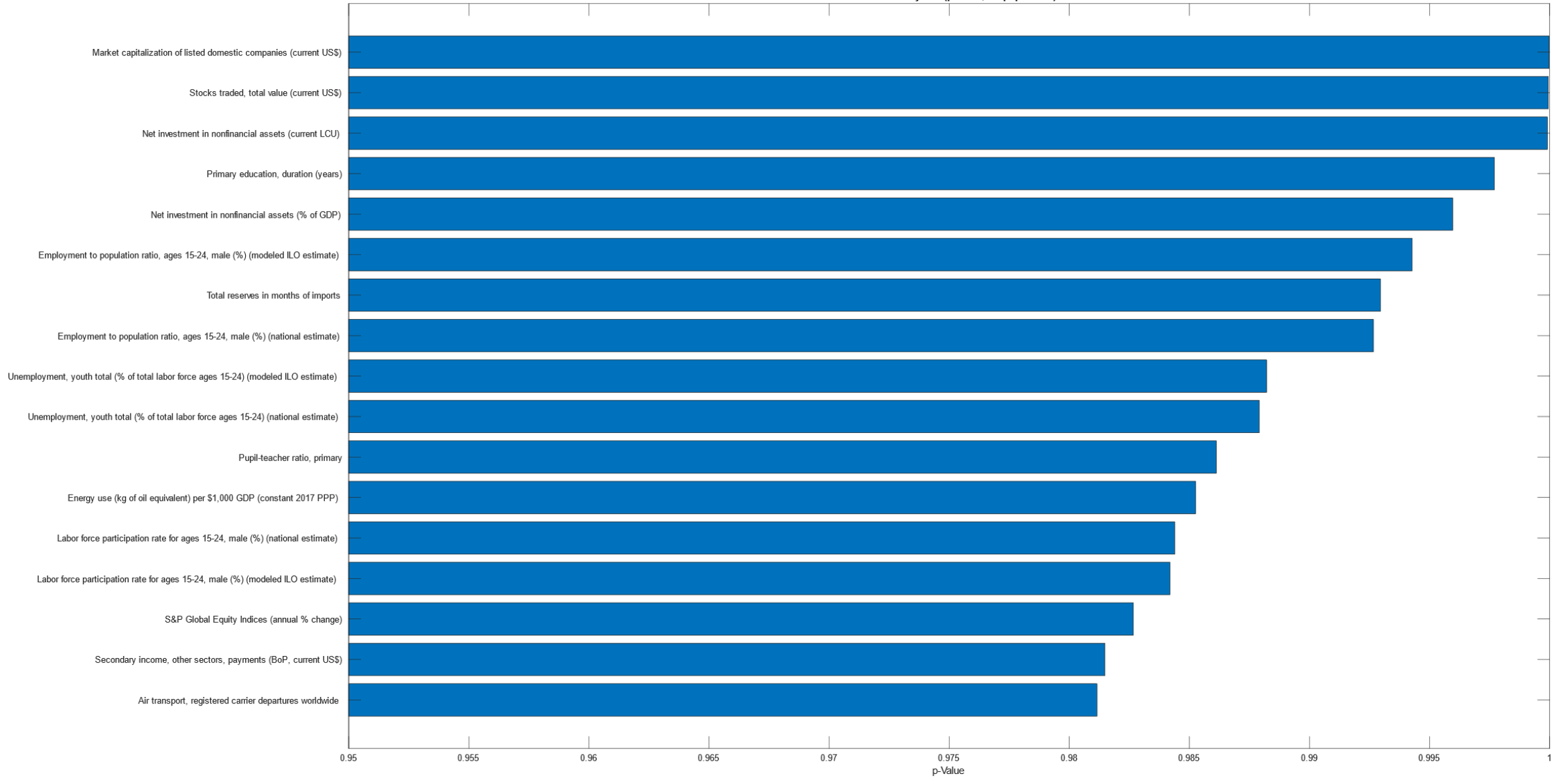
- Setup
- Modeling
- Parameters
- Determining causality





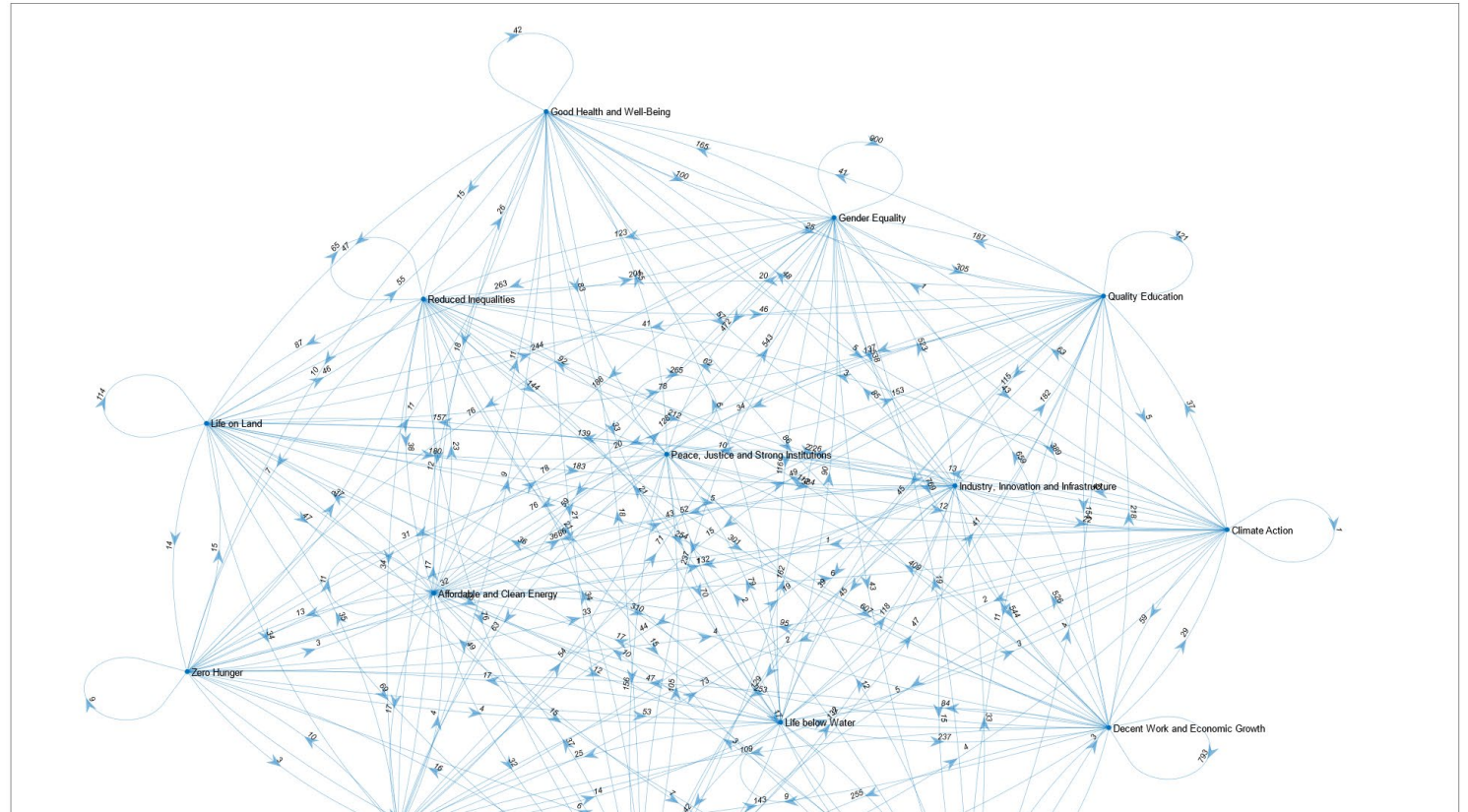


Suicide mortality rate (per 100,000 population)



# Discussion

- Conclusion
- Future work



Thank you for your attention