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Spillover Effects of Africa's Sustainable Goals

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Since the launch of the SDG initiatives in 2015 by the United Nations, are increasing concerns about the implications of spillovers – Meaning that advancing one specific SDG indicator can come at the cost of another (trade-off) or a benefit (synergy).

Introduction

Researchers have not adequately consider the spillover effects and the multidimensionality of SDG.

Research Aim

- to identify spillover effects that may hinder and strengthen SDGs progress in sub-Saharan African countries between 2011 and 2018.

Result

PCA showed that…
·3.3, 7.3, 8.1, 8.2, and 17.1 are related showing negative (trade-offs)
·3.1, 3.2, 3.4, 7.1, 7,4, and 9.1 are related showing positive (synergies)

Conclusion

Progress of one SDG may hinder or strengthen another, e.g. SDG 7 (access to electricity) progress strengthen SDG 9 (internet usage)

Implication

Results may imply that different sustainable energy sources correlate on SDG progress differently. No correlations between SDGs investments and CO2 emissions indicators on others.

Objective

- understanding spillover mechanisms help policymakers target resources as underlying impediments of sustainable development.

Result

The main finding is that renewable energy correlates negatively with the access to electricity, internet usage & unemployment rate, while clean energy technology gave the opposite.

Recommendation

PCA effectively measures SDGs using lesser data and saving investments; PCA should be conducted yearly; missing data for SDGs 12 & 13 should be addressed.

Analysis

I address the problem using multivariate quantitative research, namely, Principal Component Analysis in 44 sub-Saharan countries using five SDGs Fig 1. The selected SDGs are based on the UN priorities.

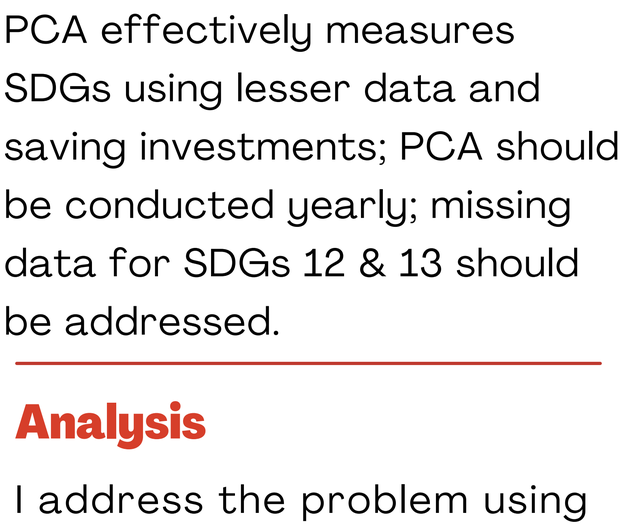


Fig 1. Five selected SDGS

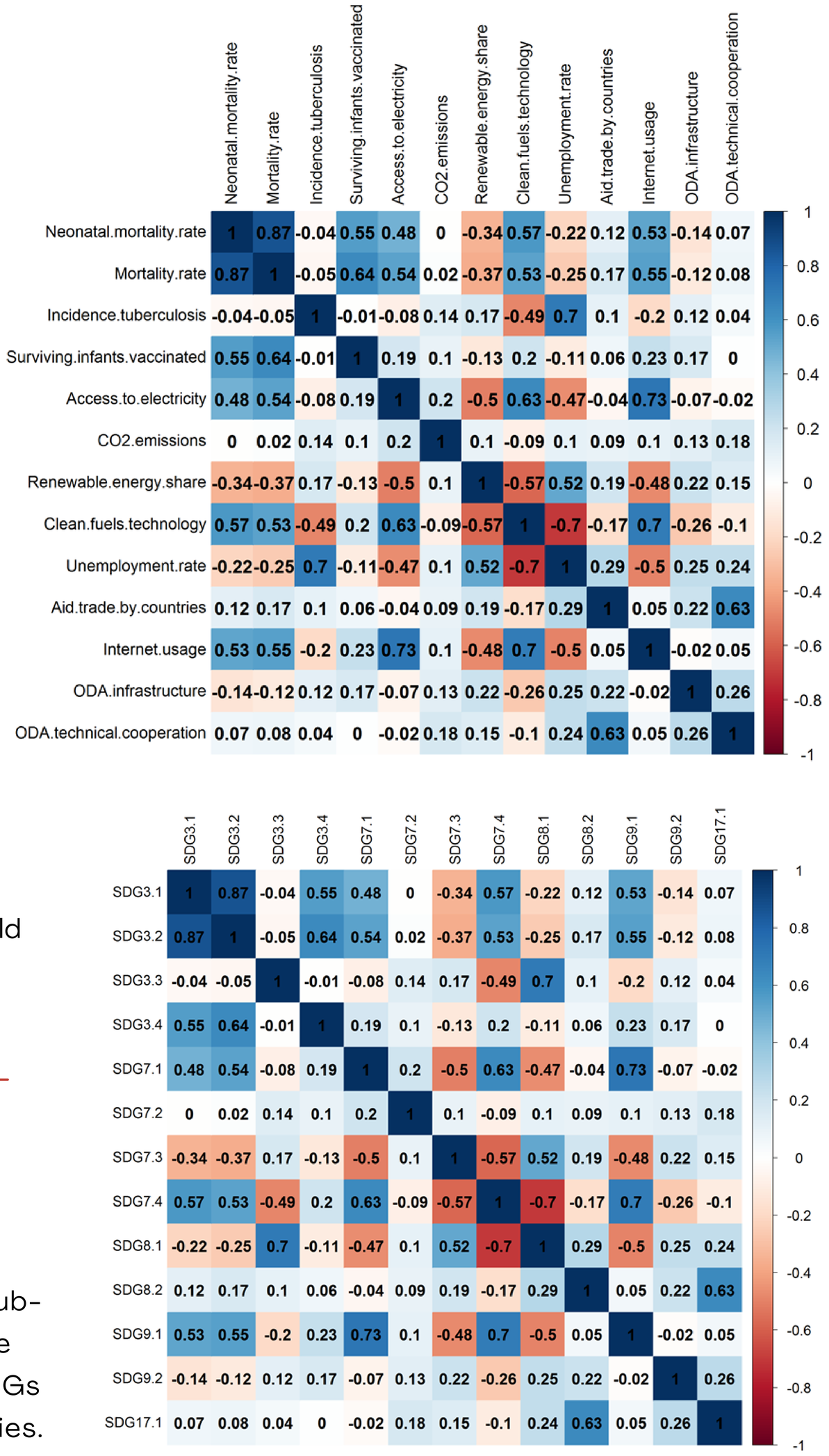
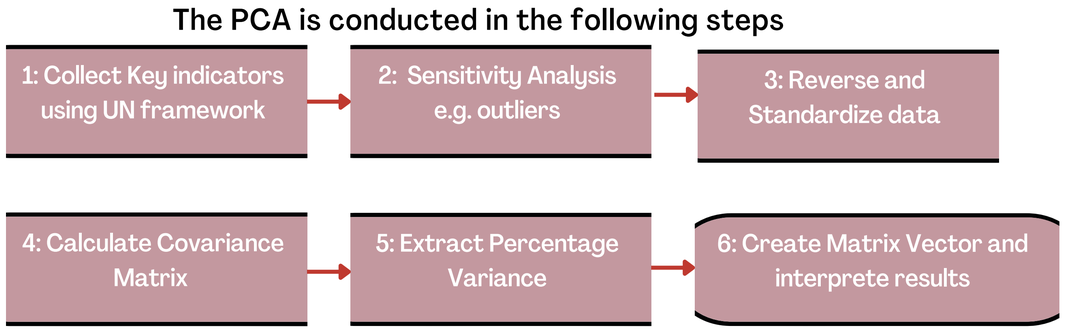


Fig 2. The PCA is accompanied by a correlation matrix showing how 13 x13 correlate with one another. Red means negative correlation and blue means positive. The darker the colour the stronger the results

The PCA is conducted in the following steps



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