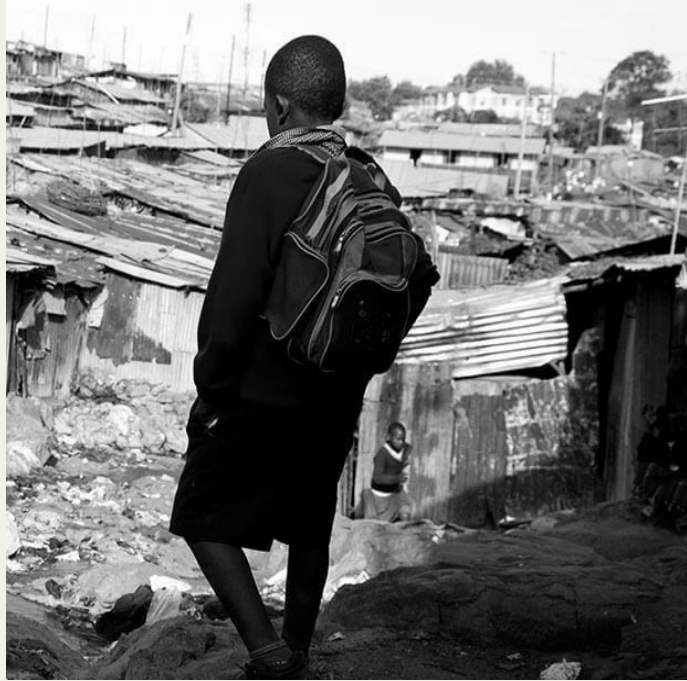


Multi- Dimensional Poverty Index Analysis Report



01

Multidimensional Poverty Index

■ Basic Infrastructure

- *Access to electricity*
- *Access to clean fuels and tech for cooking*
- *Basic sanitation services*

These indicators represent the foundation of a healthy and safe society.

Proper electricity and clean fuels can help prevent against pollutants, lowering the risk of cancers and lung diseases. While proper sanitation protects against transmitted disease.

■ Education and Economics

- *Years of compulsory education*
- *Wage & Salary Workers*
- *Income per Capita*

Education is key to human capital development while economic factors provide insight into the financial well-being of a population

Education and financial stability is key to poverty reduction. Education brings greater employment opportunities, lower fertility rates, and more.

■ Demographics

- *Age Dependency Ratio*
- *Adolescent Fertility*

Balanced social and demographics are crucial to a stable society.

High dependency ratios can signal potential social support requirements, while adolescent fertility can lead to increased infant mortality and lesser employment and education opportunities for young women.

Index Weighting

Basic Foundations: 45.24%

- *Basic Sanitation: 15.71%*
- *Access to Electricity: 15.19%*
- *Access to Clean Fuels: 14.34%*

Demographics: 21.41%

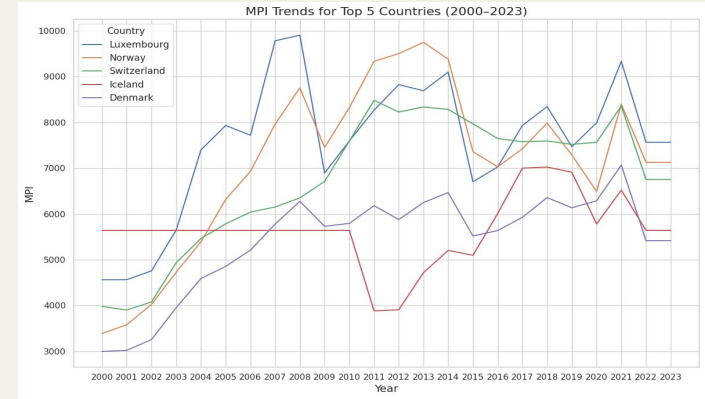
- *Age Dependency: 12.69%*
- *Adolescent Fertility: 8.72%*

Education & Economics: 33.35%

- *Wage & Salary Workers: 13.13%*
- *Income per Capita: 11.94%*
- *Compulsory Education: 8.28%*

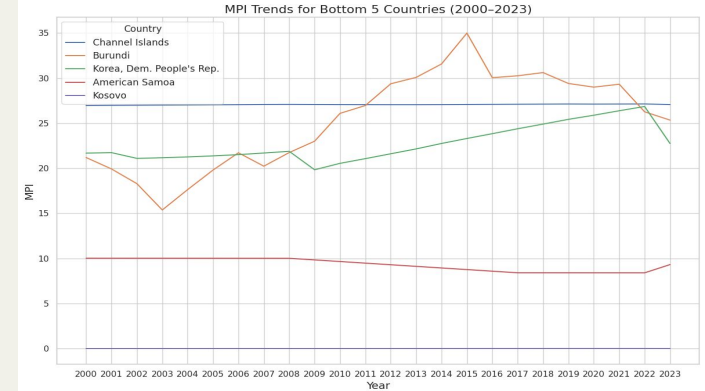
■ Top 5 Least Impoverished Countries

As of 2023, the least impoverished countries are Luxembourg, Norway, Switzerland, Iceland, and Denmark. Notice that these countries are mostly European/Scandinavian and have near perfect scores on foundational indicators with most variation due to Income per Capita



■ Top 5 Most Impoverished Countries

As of 2023, the most impoverished countries are the Channel Islands, Burundi, North Korea, American Samoa, and Kosovo. One common trend among these countries is that they fail to report key foundational data.



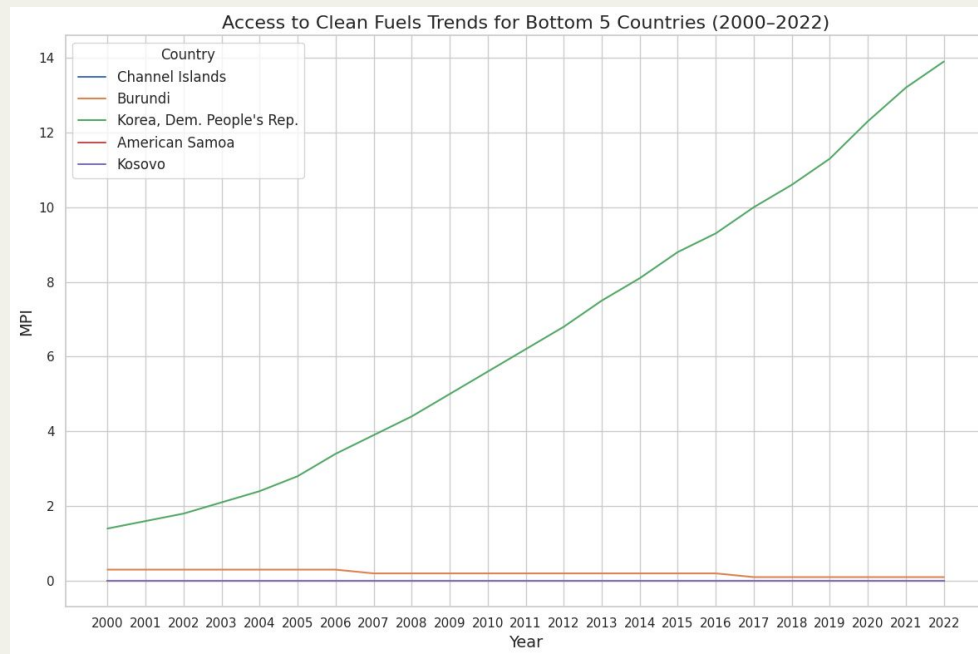
Sustainability & Poverty

■ Access to Clean Fuels and Heating

One notable difference between the most and least impoverished countries is ease of access to energy. Countries like Norway and Iceland produce their electricity through hydro and geothermal which are stable and reliable.

Bottom ranked countries like Burundi and Kosovo have low access to electricity, meaning that many rely on biomass such as burning wood or coal for the majority of energy needs.

These forms of energy are unreliable and exposes many to price shocks, causing more time and income to be spent on energy and heating.



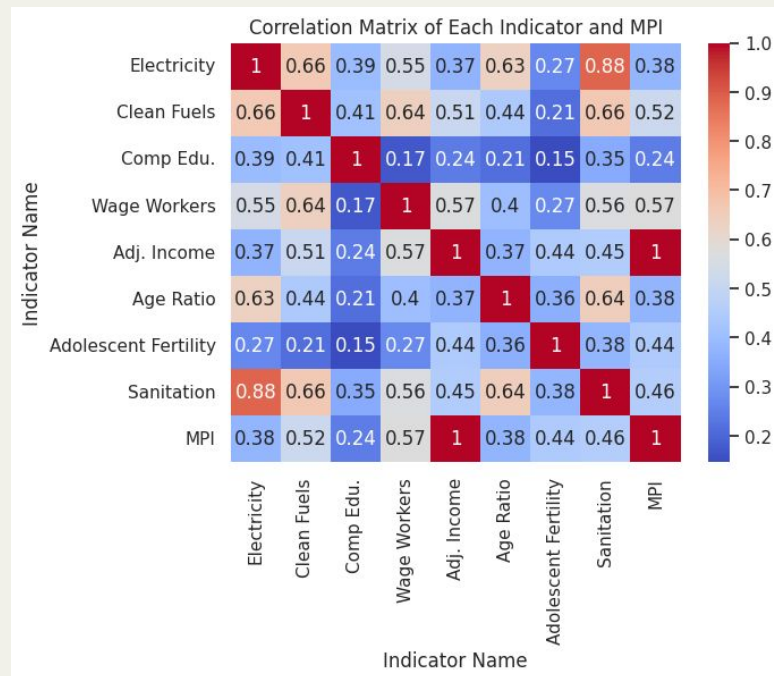
02

Correlation Analysis

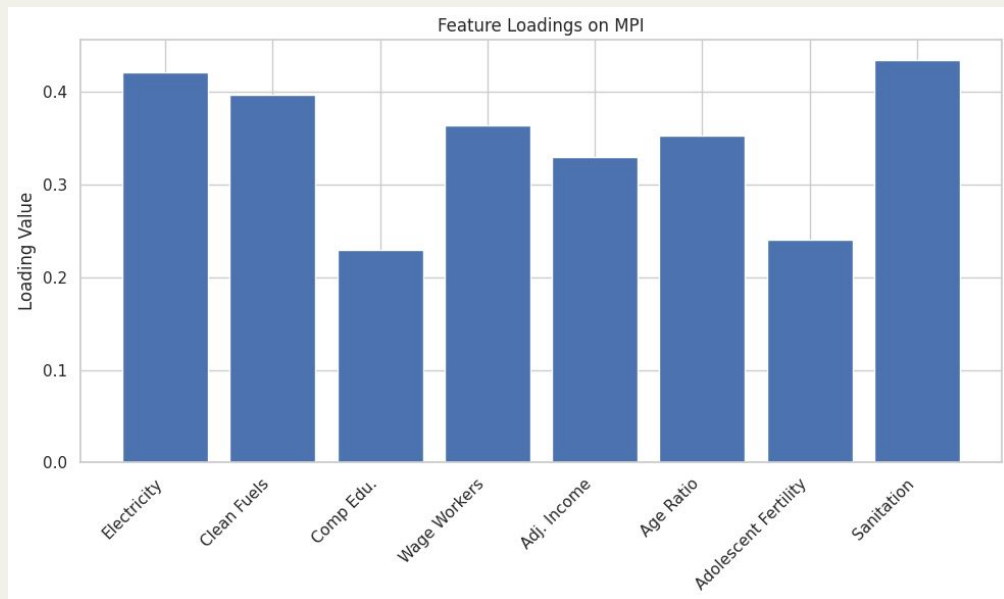
When comparing each of the chosen indicators to the overall MPI, mostly have a moderate to strong correlation.

Noticeably, Income per Capita is perfectly correlated to MPI, while compulsory Education in years is the least correlated.

Further, the lowest correlation is between Education and Adolescent Fertility and Wage Workers. Given the expected links and relationships between these indicators, we would expect a greater correlation.



PCA Analysis



When analyzing the loadings for the MPI, most indicators are moderately influential with values of >0.3 . The most influential indicator being Basic Sanitation followed by Access to Electricity and Clean Fuels.

Notably, we find that both Compulsory Education and Adolescent Fertility rates are the least influential indicators, similar to the findings in the previous Correlation Matrix.

Policy Recommendations

03

Climate Resilience

A large portion of the most impoverished countries by MPI are islands which are **particularly susceptible to climate change**.

Natural climate disasters such as **floods, hurricanes, and earthquakes** can cut off access to Electricity and Fuels, two of the most influential poverty indicators.

The majority of climate resilience can come in the form of **planning and preparedness**. Tools like early warning systems and shelters can help protect people, while stronger infrastructure and flood defenses can protect critical infrastructure.



Climate Resilience

SAP offers numerous technologies to help support governments and management.

Tools like **Public Sector Management** can help track funding and analyze expenses for governments, supporting the development of infrastructure.

SAP Customer Experience can also help modernize services by collecting and analyzing data on citizens to help improve valuable government services that are crucial to the economy and especially useful in disaster situations.



Sustainable Tourism

Considering that **Waged Workers and Income are key influential poverty indicators**, we want to encourage economic activity and business in these areas.

Many of the most impoverished countries possess existing wildlife and locations suitable for tourism. **Sustainable tourism** initiatives aim to promote tourism while protecting the surrounding land and resources. Tourism also does not require extensive education or training.

Tools like **SAP Concur Travel and Expense** can help improve accessibility and implementation of sustainable practices for these small countries.

