

The Low Dimensionality of Development, Supporting Information

immediate

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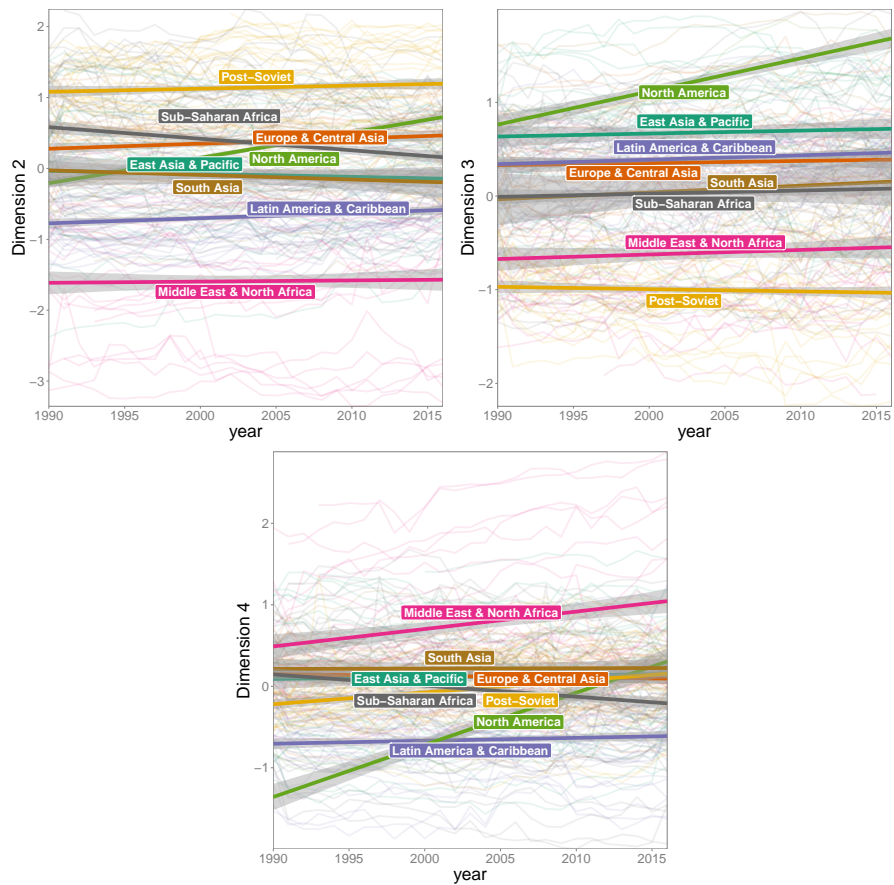


Figure 1: Trends over time for Isomap dimensions 3–5. Compared to the first e-Isomap component, there are no strong trends observable.

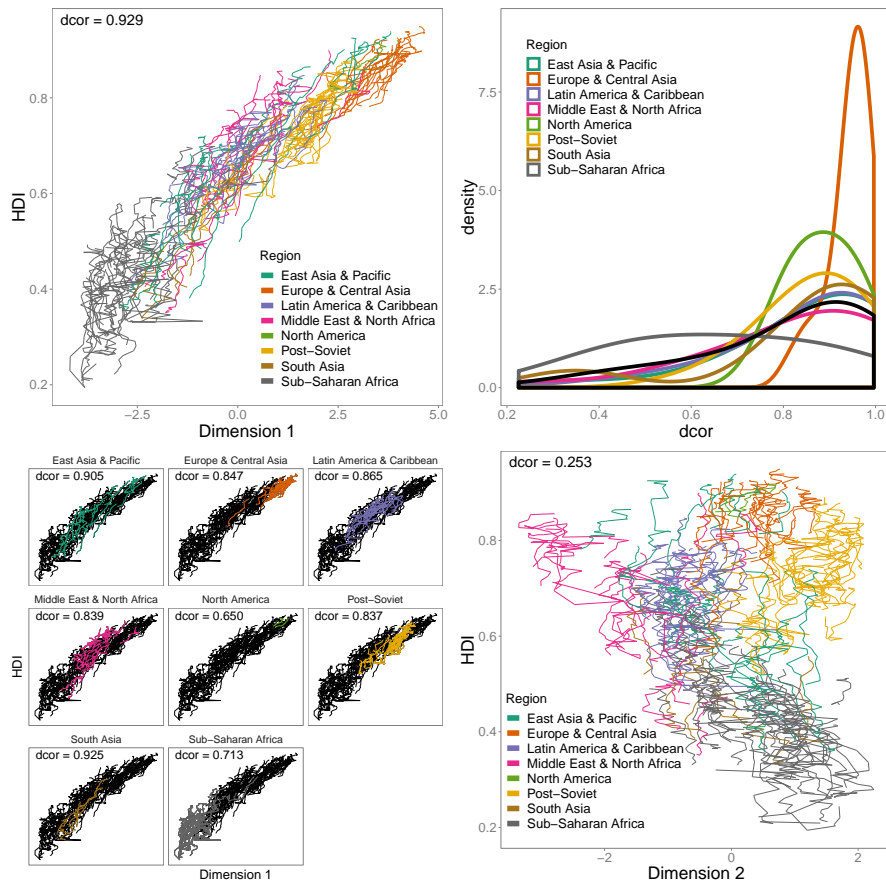


Figure 2: Correlation between HDI and the data driven indicators. Top left: The HDI is strongly related to the first dimension, dcor over all show data points. Top right: Distribution of distance correlations HDI and dimension 1 of single trajectories, separated by regions, “Sub-Saharan Africa” has lower correlations, black is the distribution over all regions jointly. Bottom left: Relationships between all trajectories per region dimension 1 and HDI, the correlation is lower for “Sub-Saharan Africa”, dcors over all colored data points of a region. Bottom right: Relationship between dimension 2 and the HDI, the correlation is much lower, dcor over all shown data points.

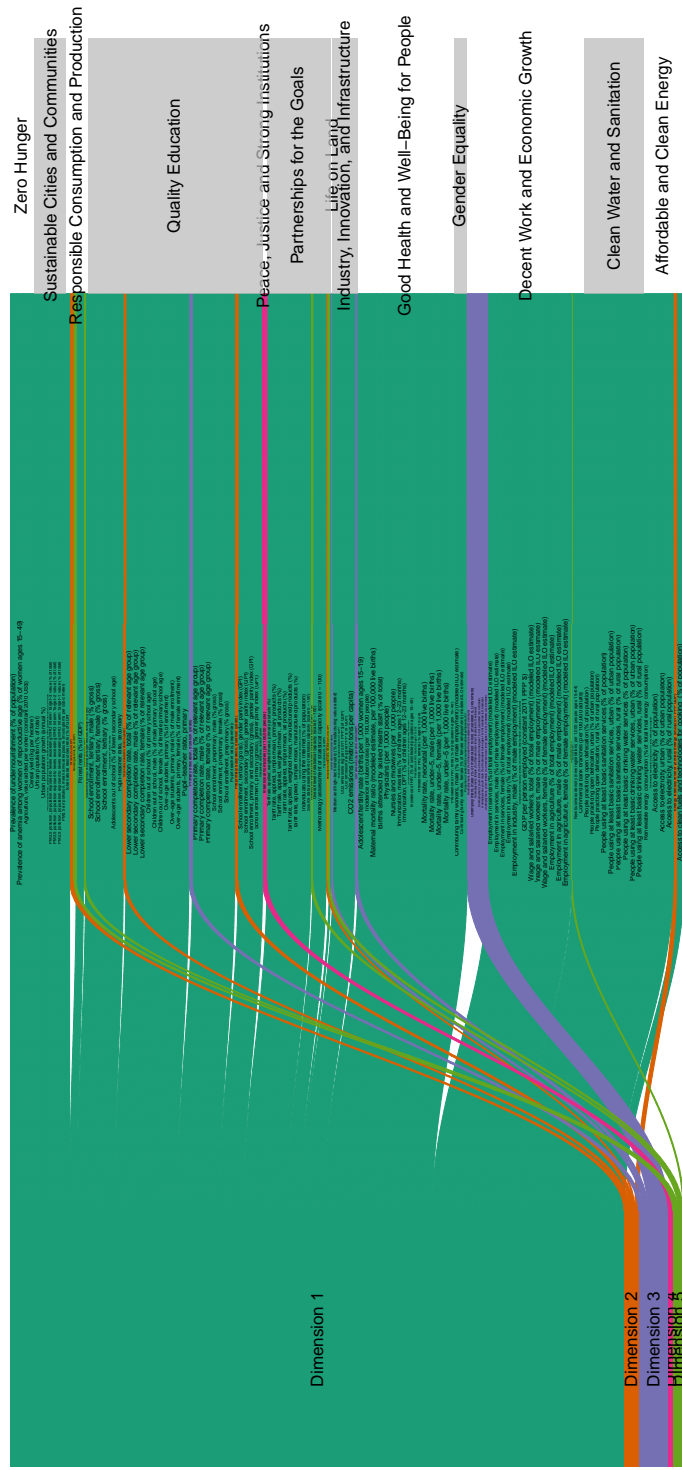


Figure 3: Showing the importance of the dimensions for the SDGs, color code by dimension (left), WDI (center) are connected to their corresponding SDG (right) and the dimension they have maximum distance correlation with (left). The thickness of the connection reflects the distance correlation strength with the dimension.

Table 1: The main difference between classical indicators and data driven indicators is that the classical indicators highlight a single aspect of the system, whereas the data driven indicators try to represent as much of the information content of the data as possible. This makes classical indicators easier to interpret and to communicate, but limits their ability to faithfully represent the system in its entirety.

	Classical Indicators	Data Driven Indicators
Interpretability	Easy interpretation but requires ad hoc assumptions	Aspects are generated from data
Rankings	Simple, risk of oversimplifying, rankings may not be meaningful	Rankings are complicated if more than one axis is involved, lower risk of oversimplification
Aspects	Based on variables chosen by the creator	Aspects emerge from data, multiple aspects may emerge
Method	Hand crafted, infinite degrees of freedom, arbitrary	Choose the right method, parameter tuning
Political appeal	High, depending of the topic	Probably more difficult
Faithfulness in representing the data	Low overall representativeness/single aspects may be represented more faithfully	High, especially if more than one dimension is used