

Joint EGTI/EGH Session on the IDI Segment 6

• Normalization

19 September | 15:00-15:10 (CET)





Statistical steps applied



Thresholds & goal posts will be established at 100%, 95% or the 95th percentile, as reasonable.

This also serves to correct for outliers.



Normalization

Indicators measured at different scale should be rescaled to 0-100.

Where reasonable, the minmax approach is used (thresholds and goalposts, and outliers treated)

Normalisation (with thresholds and goal posts)

 Mostly a min-max approach → rescales indicators onto a common sale of 0 to 100 by subtracting the minimum value for the given indicator across all economies from each value and dividing by the range of the indicator values.

$$score_{i,c} = \frac{value_{i,c} - threshold_i}{goalpost_i - threshold_i} \times 100$$

$$score_{i,c} = \frac{goalpost_i - value_{i,c}}{threshold_i - goalpost_i} \times 100$$

- For universality indicators (Internet use, households with Internet, mobile phone ownership) it is
 neither expected nor desirable that all children use the Internet. Furthermore, some individuals
 do not want to use the Internet, even if they have access to it and can afford it → goalpost to be
 set at 95%.
- For the two traffic indicators, values will be log-transformed and goalposts will be defined based on the projected values considering the double-digit annual growth of global median traffic.
- For the affordability indicators, goal posts will reflect the reverse directionality. In the case of the affordability indicators, where a higher cost corresponds to a worse outcome, the same min-max formula applies, but the minimum value is the goal post, and the maximum value is the threshold.

Indicative goal posts, thresholds and outlier treatment

Indicator	Indicative threshold	Indicative goalpost	Additional outlier treatment
Proportion of individuals who used the Internet	0%	95%	Not needed
Proportion of households with Internet access at home	0%	95%	Not needed
Active mobile-broadband subscriptions per 100 inhabitants	0%	95 th percentile	Not needed
% of the population covered by at least a 3G mobile network	0%	100%	Not needed if the two coverage indicators are combined
% of the population covered by at least an LTE/WiMAX mobile network.	0%	100%	
Mobile broadband Internet traffic per mobile broadband subscriptions (GB)	Min. value	95 th percentile, projected	apply log transformation
Fixed broadband Internet traffic per fixed broadband subscriptions (GB)	Min. value	95 th percentile, projected	apply log transformation
Mobile data and voice high-consumption basket price (as % of GNI per capita)*	95 th percentile	1%	Not needed
Fixed-broadband Internet basket price (as % of GNI per capita)*	95 th percentile	1%	Not needed
Percentage of individuals owning a mobile phone	0%	95%	Not needed

* The direction of the affordability indicators is reversed, hence score of 100 will be assigned to values *below* the goal post. Scores of 0 will be assigned to values *above* the threshold.

As per Table 7 of Version 3 Document

Some examples



Mobile broadband subscriptions per 100 pop



Thank You!