Supplementary Material

**Supplementary Table 1** Calculation of hierarchy synthesis

|  |  |  |  |
| --- | --- | --- | --- |
| **Country** | **Ratio to the maximum, points 1-63** | **Weighted sums** | **Hierarchy synthesis** |
| **Developed countries** | **ict3** | **ict4** | **ict3** **(weight: 0.90)** | **ict4****(weight: 0.10)** | **-** |
| USA | 7.00 | 7.00 | 6.30 | 0.70 | 7.00 |
| Singapore | 6.30 | 5.73 | 5.67 | 0.57 | 6.24 |
| Denmark | 5.25 | 63.00 | 4.73 | 6.30 | 11.03 |
| Sweden | 9.00 | 10.50 | 8.10 | 1.05 | 9.15 |
| Netherlands | 3.15 | 6.30 | 2.84 | 0.63 | 3.47 |
| South Korea | 4.20 | 31.50 | 3.78 | 3.15 | 6.93 |
| Norway | 10.50 | 4.85 | 9.45 | 0.48 | 9.93 |
| Canada | 15.75 | 2.42 | 14.18 | 0.24 | 14.42 |
| **Developing countries** | **ict2** | **ict4** | **ict2****(weight: 0.10)** | **ict4****(weight: 0.90)** | **-** |
| UAE | 1.19 | 3.00 | 0.12 | 2.70 | 2.82 |
| China | 63.00 | 1.58 | 6.30 | 1.42 | 7.72 |
| Saudi Arabia | 1.21 | 1.66 | 0.12 | 1.49 | 1.61 |
| Chile | 1.31 | 2.03 | 0.13 | 1.83 | 1.96 |
| Russia | 1.97 | 1.91 | 0.20 | 1.72 | 1.92 |
| Mexico | 6.30 | 1.26 | 0.63 | 1.13 | 1.76 |
| India | 5.25 | 1.07 | 0.53 | 0.96 | 1.49 |
| Brazil | 3.71 | 1.34 | 0.37 | 1.21 | 1.58 |

*Source*: author

**Supplementary Table 2** Automatically generated random numbers

|  |  |  |
| --- | --- | --- |
| **Numerical order of the random number** | **Developed countries** | **Developing countries** |
| **EE** | **PL** | **EE** | **PL** |
|  | 84.57 | 28.70 | 71.01 | 62.62 |
|  | 75.74 | 49.92 | 78.65 | 47.54 |
|  | 78.33 | -19.95 | 79.38 | 73.72 |
|  | 75.14 | 14.93 | 64.08 | 75.80 |
|  | 72.12 | 30.59 | 53.84 | 57.57 |
|  | 84.97 | 27.90 | 68.05 | 55.41 |
|  | 75.20 | 7.21 | 75.39 | 69.41 |
|  | 81.52 | 18.25 | 60.55 | 70.96 |
|  | 67.61 | 28.56 | 65.39 | 75.67 |
|  | 82.77 | 48.75 | 57.41 | 65.33 |
|  | 75.39 | 43.39 | 73.47 | 80.85 |
|  | 78.74 | 24.29 | 74.75 | 67.73 |
|  | 78.42 | 22.14 | 60.63 | 58.39 |
|  | 73.76 | 24.77 | 65.03 | 56.86 |
|  | 77.88 | 31.25 | 65.99 | 58.13 |
|  | 81.28 | 14.85 | 62.98 | 62.27 |
|  | 87.22 | 36.41 | 71.49 | 89.57 |
|  | 79.19 | 7.38 | 64.11 | 80.67 |
|  | 79.21 | 21.18 | 62.13 | 64.40 |
|  | 77.22 | 19.11 | 83.44 | 84.25 |
|  | 82.02 | 41.86 | 70.85 | 70.47 |
|  | 73.92 | 47.12 | 64.30 | 66.95 |
|  | 74.84 | 31.04 | 70.60 | 71.35 |
|  | 67.06 | 32.71 | 66.19 | 54.46 |
|  | 81.33 | 46.42 | 76.94 | 63.59 |
|  | 73.07 | 10.54 | 63.75 | 60.87 |
|  | 81.25 | 17.07 | 64.93 | 64.37 |
|  | 68.12 | 35.27 | 74.85 | 69.41 |
|  | 82.10 | 31.89 | 76.78 | 82.59 |
|  | 79.44 | 19.64 | 61.27 | 50.31 |
|  | 75.54 | 44.27 | 62.19 | 86.21 |
|  | 87.59 | 38.96 | 71.70 | 62.20 |
|  | 77.78 | 26.09 | 66.33 | 51.63 |
|  | 81.53 | 37.69 | 80.04 | 68.86 |
|  | 73.87 | 29.12 | 61.84 | 70.52 |
|  | 78.26 | 43.36 | 73.20 | 74.89 |
|  | 75.97 | 64.47 | 66.02 | 95.15 |
|  | 74.53 | 33.15 | 64.46 | 66.39 |
|  | 73.42 | 33.08 | 60.22 | 72.24 |
|  | 75.18 | 31.87 | 73.12 | 68.89 |
|  | 83.19 | 38.00 | 71.12 | 63.36 |
|  | 70.72 | 38.24 | 69.18 | 60.36 |
|  | 74.03 | 39.96 | 66.22 | 63.62 |
|  | 78.79 | 28.34 | 64.06 | 63.92 |
|  | 78.49 | 27.47 | 70.62 | 69.60 |
|  | 72.56 | 16.47 | 51.77 | 64.58 |
|  | 80.45 | 36.16 | 63.27 | 51.81 |
|  | 70.97 | 16.55 | 72.85 | 86.34 |
|  | 78.85 | 38.48 | 64.23 | 52.59 |
|  | 75.32 | 24.22 | 61.69 | 52.44 |
|  | 79.56 | 36.72 | 66.39 | 60.35 |
|  | 74.93 | 41.15 | 64.75 | 70.28 |
|  | 75.69 | 30.53 | 65.20 | 63.04 |
|  | 88.61 | 37.97 | 77.83 | 65.30 |
|  | 72.04 | 47.09 | 66.56 | 48.60 |
|  | 71.19 | 38.73 | 67.11 | 66.80 |
|  | 79.92 | 34.74 | 66.38 | 69.68 |
|  | 70.87 | 31.36 | 62.70 | 81.93 |
|  | 82.35 | 43.17 | 71.56 | 58.77 |
|  | 71.89 | 47.57 | 74.26 | 84.85 |
|  | 68.54 | 31.17 | 73.11 | 70.99 |
|  | 76.96 | 36.72 | 67.92 | 76.52 |
|  | 86.99 | 36.28 | 69.52 | 65.81 |
|  | 81.30 | 4.52 | 68.02 | 71.18 |
|  | 76.63 | 27.40 | 74.13 | 53.92 |
|  | 85.95 | 28.00 | 73.23 | 54.79 |
|  | 84.01 | 18.55 | 67.04 | 63.40 |
|  | 81.64 | 12.20 | 69.64 | 86.71 |
|  | 75.86 | 16.01 | 65.54 | 71.99 |
|  | 77.53 | 59.26 | 61.94 | 61.03 |
|  | 77.90 | 25.99 | 71.71 | 65.45 |
|  | 76.06 | 40.26 | 76.70 | 75.50 |
|  | 86.41 | 5.27 | 69.28 | 57.02 |
|  | 79.36 | 6.93 | 56.09 | 69.16 |
|  | 82.56 | 31.38 | 68.31 | 65.90 |
|  | 75.99 | 31.67 | 62.82 | 93.35 |
|  | 80.02 | 58.78 | 65.58 | 74.24 |
|  | 76.39 | 33.90 | 73.05 | 70.24 |
|  | 75.04 | 25.59 | 72.95 | 52.86 |
|  | 82.34 | 21.02 | 71.51 | 99.15 |
|  | 79.00 | 12.49 | 63.54 | 56.70 |
|  | 71.53 | 55.42 | 69.10 | 71.41 |
|  | 80.98 | 44.21 | 70.59 | 88.33 |
|  | 78.46 | 35.91 | 68.57 | 80.17 |
|  | 79.63 | 27.71 | 66.72 | 71.73 |
|  | 77.16 | 24.36 | 80.02 | 56.87 |
|  | 78.30 | 29.71 | 57.05 | 82.32 |
|  | 86.09 | -6.73 | 79.93 | 45.52 |
|  | 72.22 | 22.54 | 62.81 | 80.21 |
|  | 90.41 | 14.86 | 59.03 | 64.82 |
|  | 76.64 | 80.23 | 78.33 | 73.43 |
|  | 73.47 | 11.82 | 65.74 | 81.04 |
|  | 85.01 | 33.75 | 62.07 | 49.34 |
|  | 79.73 | 44.22 | 66.03 | 79.64 |
|  | 81.19 | 23.72 | 66.10 | 69.31 |
|  | 78.09 | 41.86 | 65.98 | 56.25 |
|  | 83.07 | 24.39 | 68.76 | 62.02 |
|  | 79.93 | 4.53 | 67.63 | 65.87 |
|  | 82.68 | 42.08 | 75.18 | 60.13 |
|  | 79.58 | 35.16 | 69.04 | 76.98 |

*Source*: author

**Supplementary Fig. 1** Histogram of normal distribution of the forecast of EE in developed countries

*Source*: author

**Supplementary Fig. 2** Histogram of normal distribution of the forecast of PL in developed countries

*Source*: author

 **Supplementary Fig. 3** Histogram of normal distribution of the forecast of EE in developing countries

*Source*: author

**Supplementary Fig. 4** Histogram of normal distribution of the forecast of PL in developing countries

*Source*: author