A network approach to rank countries chasing sustainable development

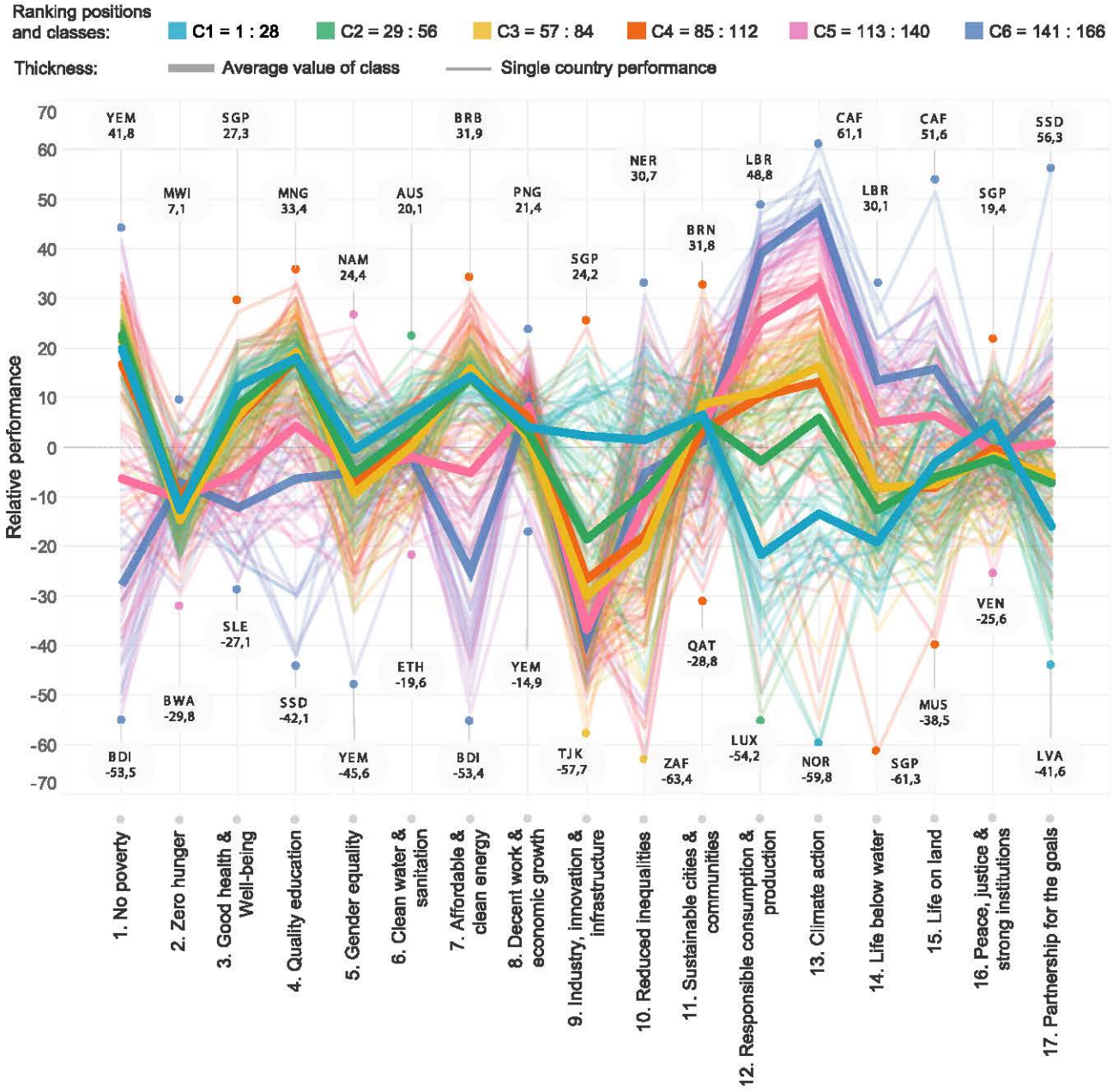

Figure 2. The spectra of countries' relative performances, obtained as $P_{cg} - (k_c/17)$. Countries are first ranked and then clustered according to their average performance (i.e., the SDG Index or, equivalently, their degree). Based on the ranking positions, we define six classes of performance: light blue (countries in positions $1 - 28$), green ($29 - 56$), yellow ($57 - 84$), magenta ($85 - 112$), pink ($113 - 140$) and violet ($141 - 166$). The classes' average spectra of relative performances are shown in thicker lines. The top and bottom relative performers in each Goal are pointed out, and their performance value is color-coded as their corresponding class. The figure has been generated using Tableau 2020.3, [https://www.tableau.com/].

are obtained by subtracting the average performance of the countries, $k_c/17$ (i.e., their SDG Index), from the Goal-specific performance, P_{cg}. This allows one to compare relative Goals' performances of all countries according to their efforts in sustainable development, thus identifying areas where countries are investing more/fewer efforts and disclosing differences in their strategies. At the same time, if compared with the spectra in absolute performance values P_{cg} (see Figure S2), relative spectra help prevent the perception that countries with high average performance values (i.e., degree) have high-performance values across all development sectors. At a glance, the heterogeneity of the spectra stands out. Countries exhibit very contrasting behaviours among them and across the Goals, witnessing that the world is not moving as a unique ensemble toward the achievement of sustainable development. As mentioned, this is possibly due to the heterogeneity of countries contexts and challenges, as well as the differences in national strategies that possibly enhance such heterogeneity across SDGs. To group countries according to their degree k_c can help understand these differences. In fact, Fig. 2 shows the existence