

THE RELATIONSHIP OF THE HUMAN CAPITAL INDEX WITH THE LEVEL OF EDUCATION AND THE ADULT SURVIVAL RATE

Alexandra Marques¹, Ana Pinheiro¹, Maria Carolina Matos¹, Cristina Torres², Cristina Lopes², Isabel Vieira²

¹ ISCAP, Polytechnic of Porto

² CEOS.PP, ISCAP, Polytechnic of Porto, ctortes@iscap.ipp.pt

Introduction

This research uses the World Bank data to study the relation between the variables Human Capital Index (HCI), Education Level and Adult survival rate, due to their impact and interconnection with socio-economic development.

Human Capital Index calculates the contributions of health and education to worker productivity (measures the productivity as a future worker of a person born in the year in question in relation to the full health and complete education).

Adult Survival Rate calculated by subtracting the mortality rate for 5-60 year-olds from 1.

Expected Years of School calculated as the sum of age-specific enrollment rates between age 4 and 17.

Methodology

Aims: To relate the human capital index with the adult survival rate and the number of expected years of school

Data: 174 countries
Updated to September 2020
Retrieved from The World Bank database

Software: IBM SPSS v26

Methods: Cluster analysis: Hierarchical method

Variables: z-score standardization

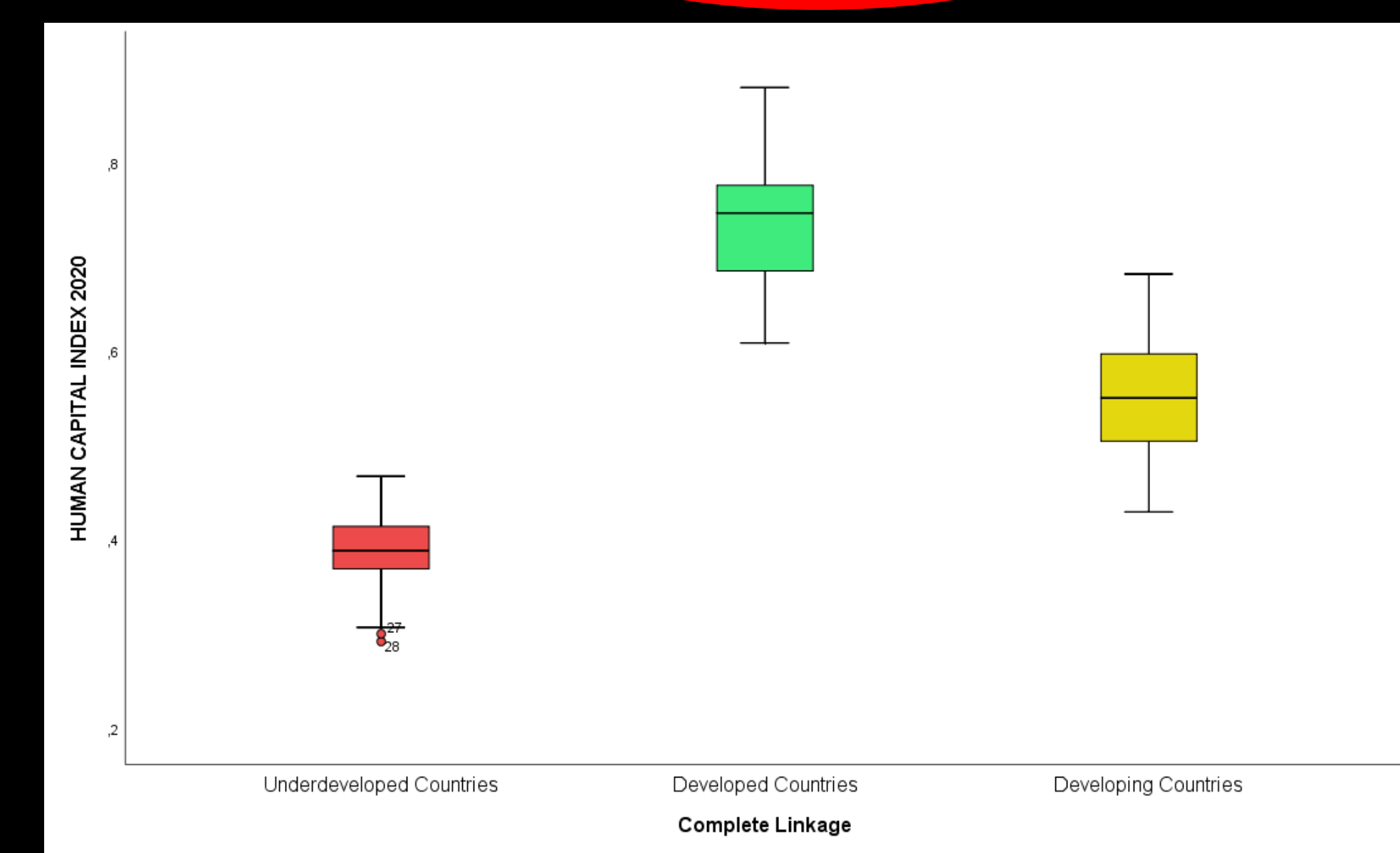
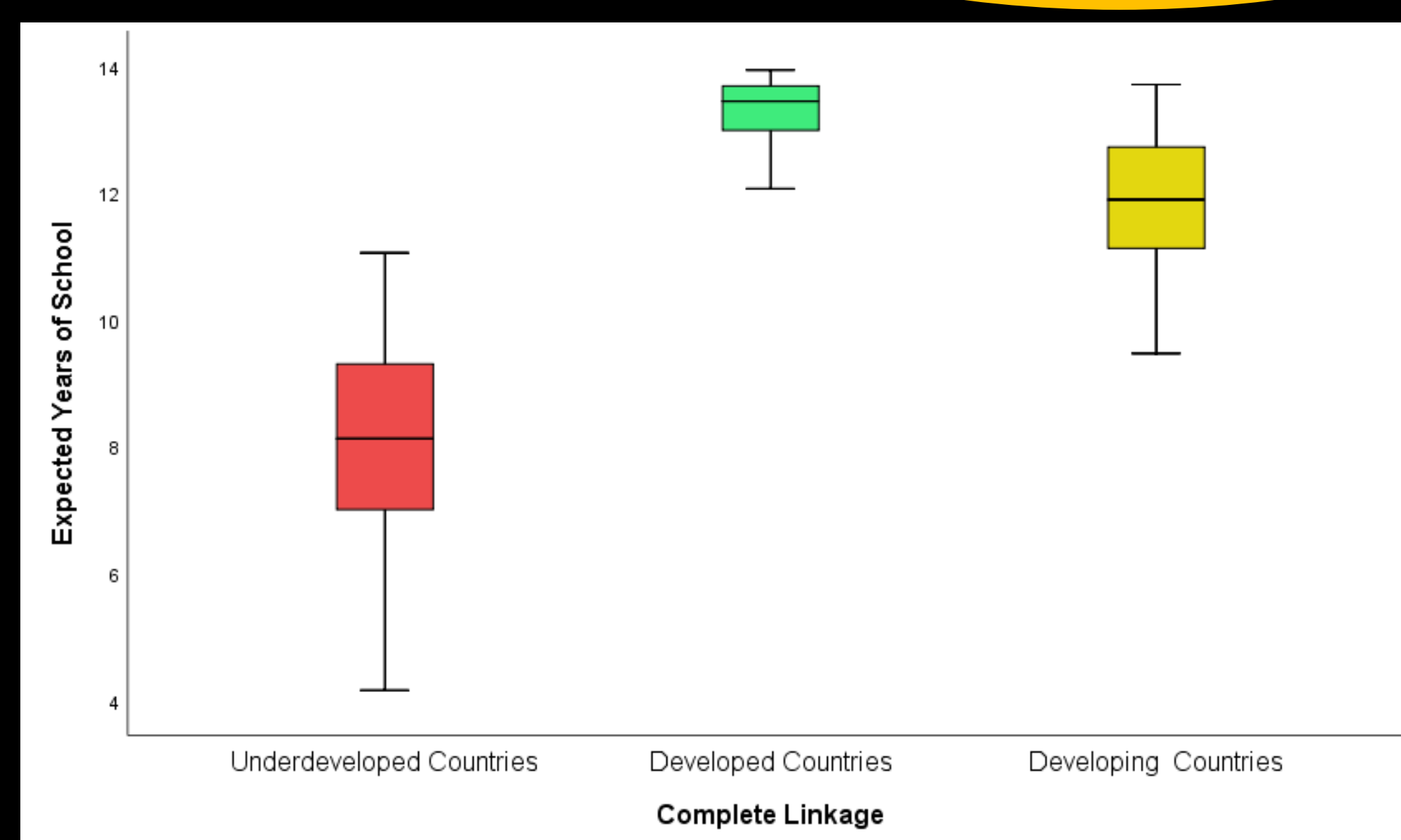
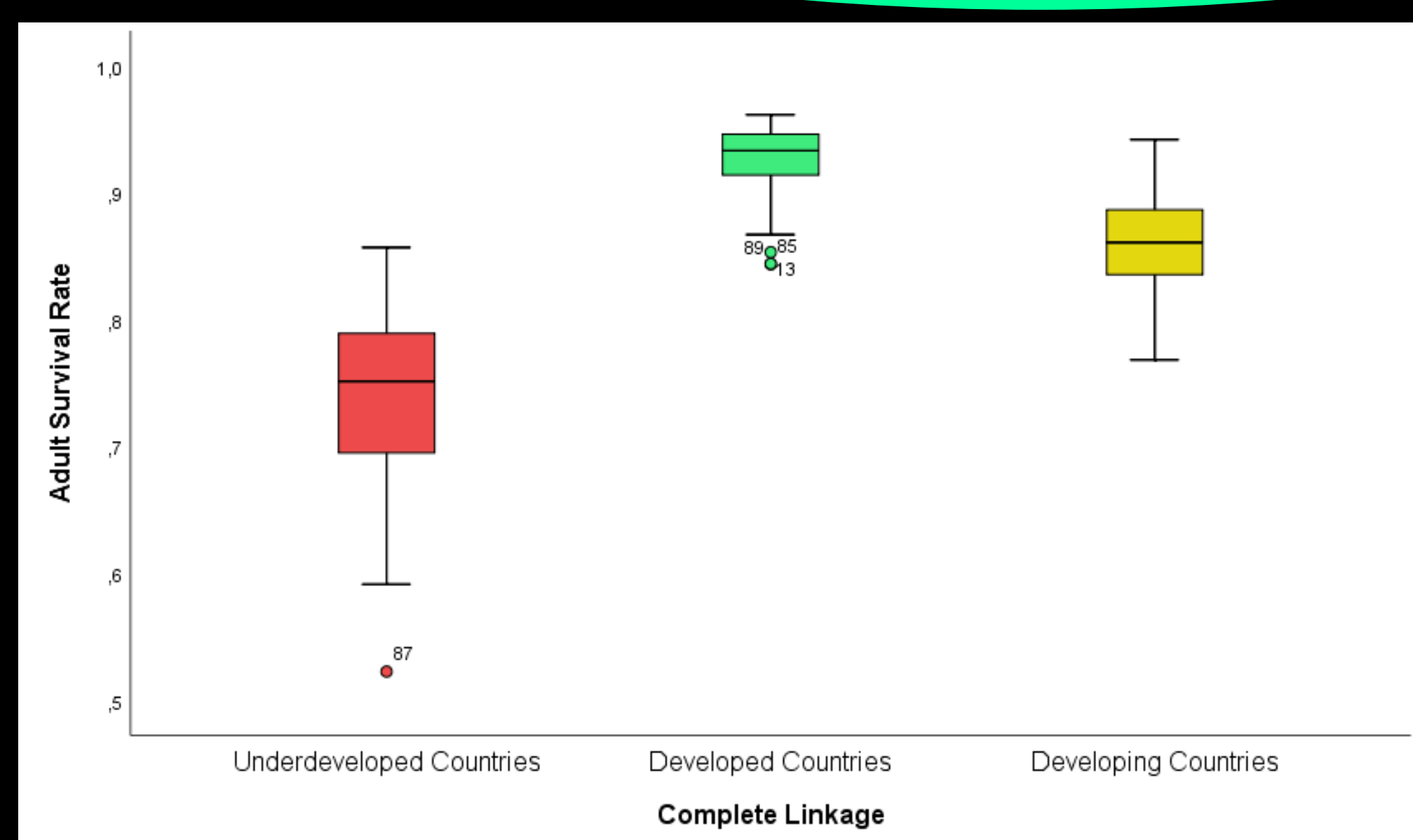
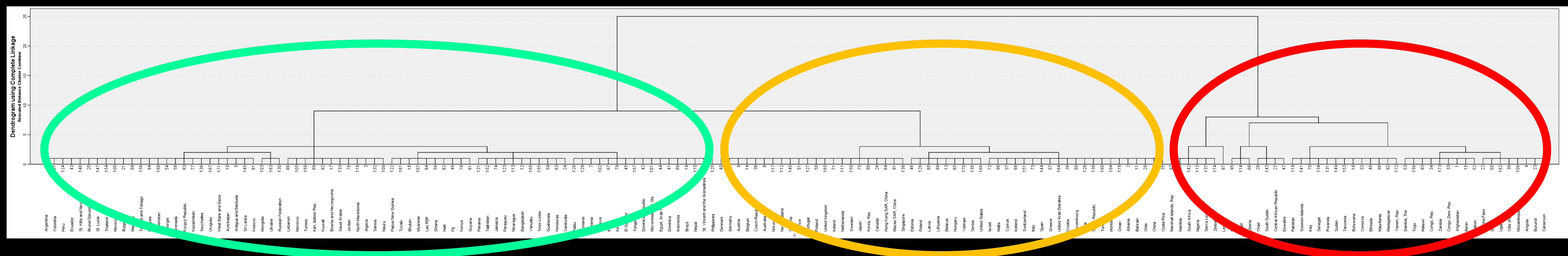
Proximity measure: Quadratic euclidean distance

Agglomerative method: Furthest neighbour method / Complete linkage

Criteria: Choose the dendrogram that better distinguishes formed clusters

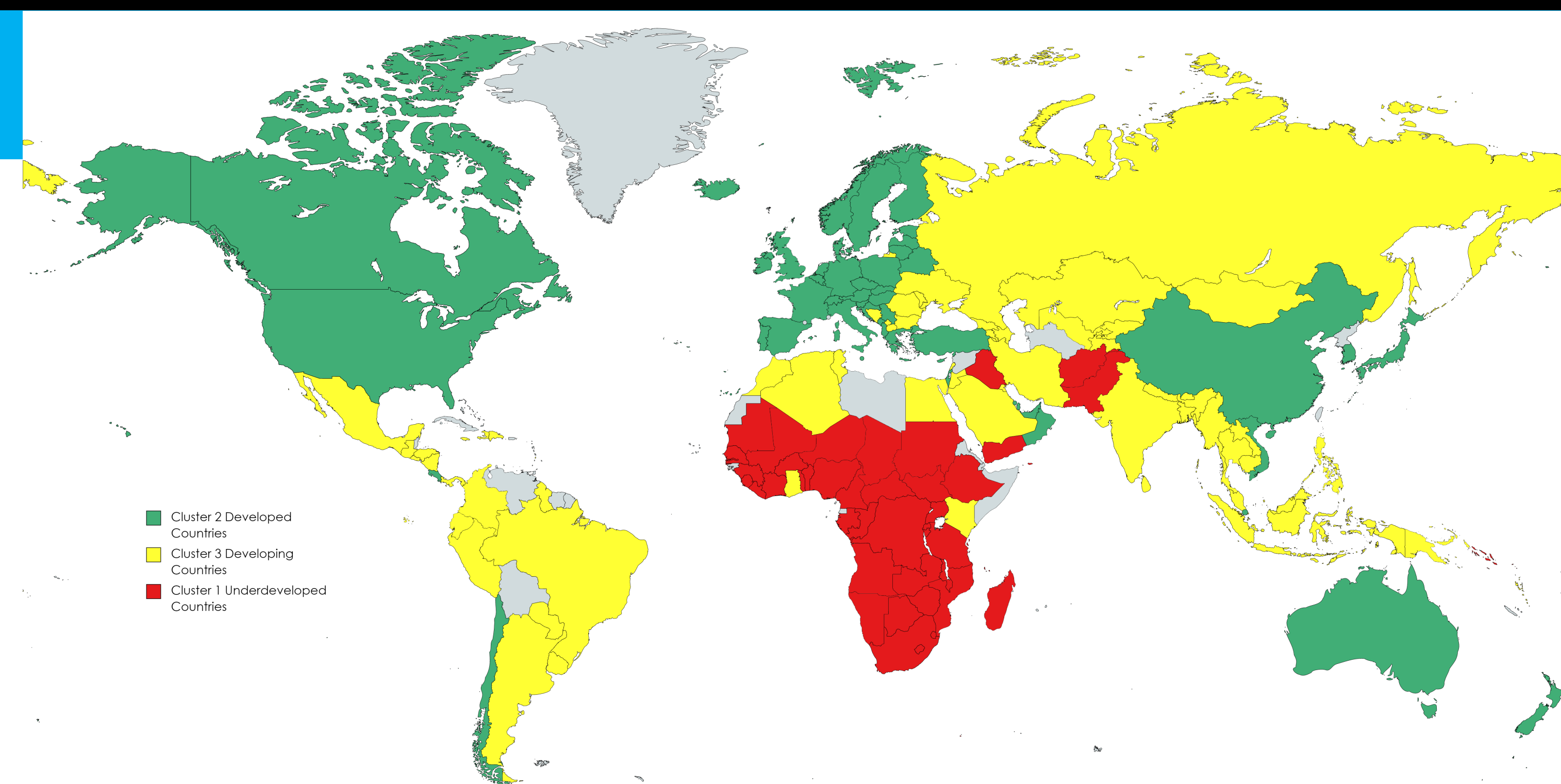
Results

The results show the socioeconomic dichotomies present in the world in 2020, where the division and mismatch in education and adult survival in the various regions are clearly perceptible. This dendrogram displays the groups formed relatively to their similarity levels, measured along the y-axis, with the different observations (countries) listed along the x-axis.



Conclusions

Cluster	Countries	Adult survival rate	Years on the education system	Human Capital Index
1	27 underdeveloped countries	Low	Few	Low
2	101 developed countries	High	More	High
3	46 developing countries	Medium	Moderate	Medium



References

Marôco, J. (2014). *Análise Estatística com o SPSS Statistics* (6ª ed.). ReportNumber.
 Pelinescu, H. (2015). The Impact of Human Capital on Economic Growth. *Procedia Economics and Finance*, 22, 184-190. doi.org/10.1016/S2212-5671(15)00258-0.
 Wang, Y. and Liu, S.S. (2016) Education, Human Capital and Economic Growth: Empirical Research on 55 Countries and Regions (1960-2009). *Theoretical Economics Letters*, 6, 347-355. http://dx.doi.org/10.4236/tel.2016.62039
 World Bank. (2020). *The Human Capital Index 2020 Update: Human Capital in the Time of COVID-19*. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/456901600111156873/the-human-capital-index-2020-update-human-capital-in-the-time-of-covid-19