

Do Europeans Perceive Their Health Differently? A Cross-national Analysis

*Martina Bodo*¹, *Ognjen Obućina*², *Angela Paparusso*³, *Elena Ambrosetti*⁴

^{1,4}Sapienza Università di Roma; ²Institut National d'Études Démographiques (INED); ³Institute for Research on Population and Social Policies (IRPPS-CNR)

1 Introduction

Self-rated health (SRH) is a key indicator of population health. Derived from a simple single-item question, it has proven remarkably powerful in capturing how individuals perceive their own health and in predicting important health outcomes such as morbidity, mortality, and healthcare utilisation (DeSalvo et al., 2006; Idler & Benyamini, 1997; Jylhä, 2009; Palladino et al., 2016). However, when compared to life expectancy (LE) at birth, an objective indicator of population health, SRH does not always align consistently. Across European countries, notable mismatches between LE and SRH suggest that populations with similar longevity may differ substantially in how individuals perceive and rate their health (Delpierre et al., 2009; Sadana et al., 2002). For instance, Spain ranks among the countries with the highest life expectancy, yet only 11.4% of Spaniards report excellent health compared with 46.7% of Danes (Jürges, 2007). Similarly, Desesquelles et al. (2009) found that Italians tend to systematically report worse SRH than the French.

People hold different understandings of what constitutes *bad* and *good* health (Bullinger et al., 1998). Selection by mortality — with individuals in poorer health being less likely to survive —, individual frames of reference, and social desirability all contribute to the distinct patterns that have emerged in SRH reporting (Stone et al., 2019). Indeed, despite its apparent simplicity, SRH is a complex construct shaped by a wide range of factors. This complexity was made evident in the systematic review carried out by Mantzavinis et al. (2005), who identified 133 potential determinants across 56 multivariate studies published within a single year (2002). Yet, despite this abundance of candidate factors, the median number of determinants included per study was only seven. Therefore, it is no surprise that most investigations fail to capture the full range of demographic, educational, financial, social, geographical, behavioural, and health-related dimensions influencing SRH, resulting in a fragmented understanding of the mechanisms underlying this multifaceted measure (Mantzavinis et al., 2005).

The aim of this study is to adopt a broad, pan-European perspective to examine how populations differ in the way they evaluate their health and which factors may account for the distinct SRH distributions observed across countries. By addressing these questions from a comparative perspective, this study advances the understanding of how subjective health measures operate

across diverse cultural and institutional contexts. This approach not only enhances the interpretability of SRH as a cross-national indicator but also contributes to improving the validity of international health comparisons.

2 Data, Measures and Methods

2.1 Data

The analysis combines data from Rounds 7 (2014/15) and 11 (2023/24) of the European Social Survey (ESS), pooling responses from two waves that include the same rotating module *Social Inequalities in Health*. After data cleaning, the final combined sample consists of 69,568 respondents aged 14 years and over from 26 countries¹.

2.2 Measures

Self-rated health is assessed with the question “*How is your health in general?*” using a five-point symmetrical Likert scale (*very bad* to *very good*). For our analysis, we include individual-level demographic and socioeconomic characteristics typically associated with variation in SRH: age, gender, immigrant status, educational attainment, and household income. Objective health is captured through health behaviours — smoking, alcohol consumption, and physical activity — and health conditions including the number of chronic diseases, body mass index, a past cancer diagnosis, and depressive symptoms. Finally, following Jürges (2007), we include three indicators of response styles (RSs) — acquiescence, midpoint, and extreme — which were computed from twelve attitudinal items measured on eleven-point Likert scales in the ESSs.

2.3 Methods

To explore cross-national similarities and differences in SRH reporting patterns, a cluster analysis was first conducted based on the distribution of SRH responses in each country. For every country, the relative frequencies of the five SRH categories were calculated and used as input variables in a hierarchical clustering procedure using Ward’s minimum variance method and squared Euclidean distances. The optimal number of clusters ($k = 3$) was identified through visual inspection of the dendrogram, the Elbow and Silhouette criteria, and substantive interpretability of the results. In the second stage, the analysis examines which individual-level factors account for the contrasts observed between clusters by modelling SRH as the dependent variable. Although uneven Likert scales are designed to be symmetrical, respondents often do not perceive the response categories as equidistant or balanced (Mazurek et al., 2021). The Brant test confirmed violation of the proportional odds assumption, justifying the use of multinomial rather than ordered logistic regression. Moreover, multinomial models enable the assessment of symmetry between negative and positive ratings. Accordingly, separate models were estimated for each of the three country clusters, treating SRH as a nominal outcome with

¹Austria, Belgium, Switzerland, Cyprus, Germany, Denmark, Spain, Finland, France, United Kingdom, Greece, Croatia, Hungary, Ireland, Israel, Iceland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Serbia, Sweden, Slovenia and Slovakia.

fair health selected as the reference category. Country fixed effects were included within each cluster to control for unobserved contextual variation, and standard errors were clustered at the country level. Results are reported as relative risk ratios (RRRs) with 95% confidence intervals.

3 Results

3.1 Exploratory Analysis

Figure 1 plots the share of individuals reporting *very good* or *good* health, against national life expectancy at birth, revealing considerable cross-country variations. Some countries have very different LE at birth yet similar SRH shares, while others have nearly identical LE but large differences in these SRH measures. For example, Portugal records the lowest share reporting *very good* or *good* health, that is 55%, similar to Lithuania’s 58%, yet their LE at birth differs by about 7.8 years (82.4 in Portugal versus 74.6 in Lithuania). By contrast, Portugal and Ireland have the same LE at birth, but Ireland reports the highest share in the sample, with 85% of its population reporting to be in *very good* or *good* health.

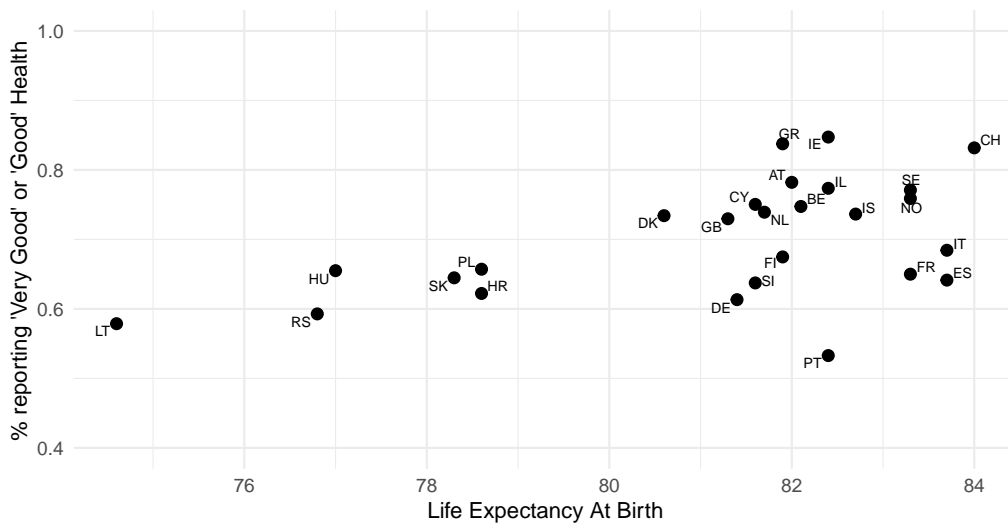


Figure 1: Weighted share of individuals reporting *very good* or *good* SRH versus LE at birth, by country. *Source: Rounds 7 and 11 of the ESS and the UN WPP 2024.*

3.2 Cluster Analysis

As shown in Figure 2, the cluster analysis identified three groups² of countries whose populations display similar patterns in SRH and, thus, likely share comparable perceptions of health. Cluster 1 stands out for its distinctly positive profile, characterised by a high concentration of *good* and *very good* responses (almost 80%) and very few negative evaluations (less than 5%). Clusters 2 and 3 share a broadly similar profile: in both, the share of respondents reporting *very good* health is lower than those reporting *good* health, suggesting relatively moderate health assessments. Nevertheless, cluster 2 appears somewhat more optimistic, with a larger

²Cluster 1 ($n = 7,461$): CY, DK, GR, HR, IL and IS; Cluster 2 ($n = 28,700$): AT, BE, CH, FI, IE, IT, NL, NO and SE; Cluster 3 ($n = 33,407$): DE, ES, FR, GB, HU, LT, PL, PT, RS, SI and SK.

proportion of *good* health evaluations. By contrast, cluster 3 is characterised by a more critical pattern, showing a higher prevalence of *bad* and *fair* health responses.

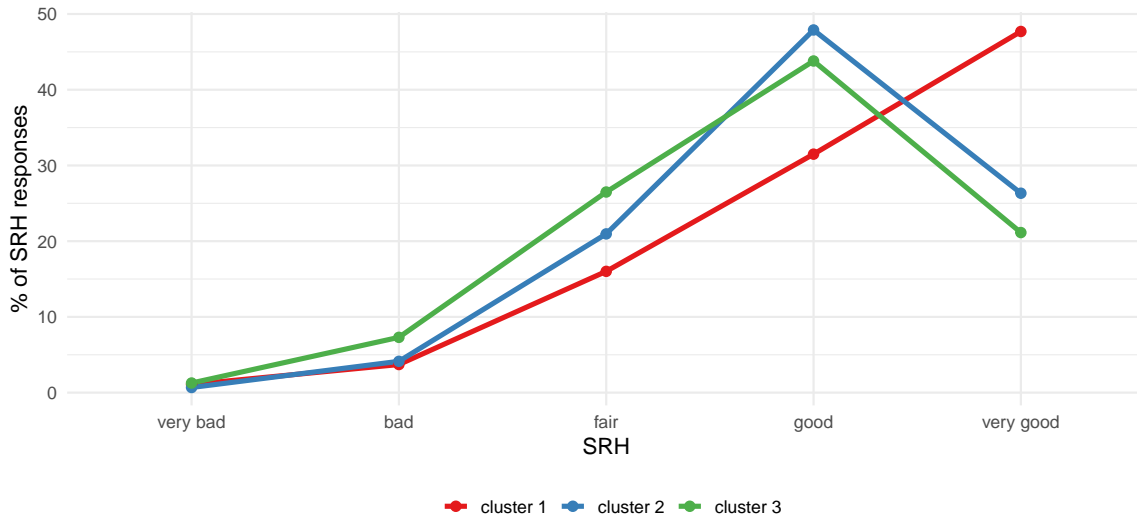


Figure 2: Weighted distributions of SRH across clusters. *Source: Rounds 7 and 11 of the ESS.*

To formally assess statistical significance, a series of tests were performed. The Kruskal–Wallis test indicated highly significant differences in SRH ranks between clusters ($\chi^2 = 2354.3$, $df = 2$, $p < 0.001$). Pairwise Wilcoxon rank-sum tests with Bonferroni adjustment confirmed that all clusters differ significantly from each other. For robustness, an ordinal logistic regression model was also estimated, yielding consistent results: respondents in clusters 2 and 3 were 40% and 65% less likely to report higher SRH than those in cluster 1.

3.3 Preliminary Multivariable Analysis

There are clear cross-cluster differences in the mechanisms shaping SRH. Older adults are consistently less likely to report *very good* health across clusters. In cluster 1, immigrants are more likely than natives to rate their health as *bad* and less likely to report *very good* health, while men show higher odds of negative ratings in clusters 2 and 3. The socioeconomic gradient in SRH is confirmed across all clusters, with higher education and income associated with more positive evaluations. This pattern is largely symmetrical, as lower education and income correspond to more negative assessments. Frequent smoking reduces the likelihood of reporting *good* or *very good* health only in clusters 2 and 3, whereas regular physical activity improves SRH in all contexts. Patterns for health conditions are less consistent. In cluster 1, individuals with multiple chronic diseases are more likely to report *very bad* health, while in cluster 3 moderate illness (one or two conditions) lower the likelihood of *very bad* health, but more severe morbidity increases it. Cancer and depressive symptoms uniformly reduce SRH across clusters. Finally, response styles matter. Higher extreme-responding scores increase the likelihood of choosing both ends of the SRH scale, and stronger acquiescence tendencies raise the probability of *good* and *very good* responses, particularly in clusters 2 and 3.

Full results and tables will be presented at the EPC 2026 Conference.

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