

What is the condition of social vulnerability of elder adults in Colombia?

David Patarroyo, Moisés Herrera, Andrés Leyva, Edgar Monsalve, Jenny Rivera, Diana Aribel Guzmán

Background

Specifically in old age, many conditions appear that generate disadvantages or weaknesses to face unfavorable situations, such as: decrease in work capacity, motor capacity and in the perception of their income, among other factors.

This leads us to think about the need to create an index that, based on the socioeconomic characteristics and other factors of everyone, can help determine their condition of social vulnerability



Data

For this analysis we use the 2018, 2019, 2020 and 2021 data and, considering our focus in elderly population, we only use data for people 60 years or older. Thus, our final sample size is 37,928, which factors out to approximately 6 or 7 million of elder adults each year. After an information depuration process, which consisted of:



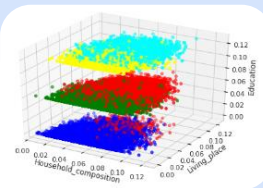
Methodology:

The calculation of the Social Vulnerability Index (IVS) requires the definition of: (i) Dimensions and variables for its calculation, (ii) weightings of the variables to be calculated and (iii) the delimitation of a threshold, which determines if a person, in this case, an older adult, is in some level of social vulnerability and (iv) a weighted sum is made for each person over 60 years of age, and it is determined if they are vulnerable according to the established threshold

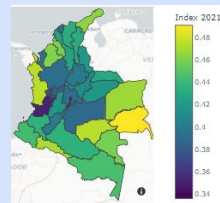


Results

Clustering: Kmeans-based Model for clustering Elder people according to social vulnerability index dimensions



Geoheatmap: for located departments with the most vulnerable elder people

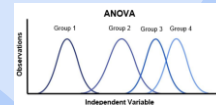
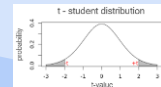


Radial chart: for identify the behaviour of each dimension in the Social Vulnerable Index



Model:

To understand the real behavior of our data and the significance differences between values of the variables, we did t-tests and ANOVAs considering the Expansion factor (How many people in the total population are represented by the respondent in the sample?)



Social Impact

- contribute to the monitoring of public policy since the definition of the chosen variables determines who is, at the governmental level, the entity responsible for compliance.
- Become this Social Vulnerability Index in an instrument that allows policy to focus on the population group of older adults with multiple deficiencies, exalting its usefulness to the extent that it makes it possible to highlight the gaps faced by the most vulnerable people.



Conclusions

- Vulnerability is multidimensional, it is not limited only to economic conditions but also by social, emotional, physical, and technological implications, among others.
- There is a greater vulnerability in women than in men.
- This vulnerability increases if the person identifies themselves with an ethnic minority, especially as indigenous or Afro-Colombian.
- Likewise, people located in rural areas tend to be much more vulnerable than those located in municipal heads.
- Old people geographically located in regions such as the Pacific, Orinoco and Caribbean, have the highest vulnerability index.
- Elder people who did not have access to any education or acquired very low levels of education, have the highest vulnerability indices.
- One of the dimensions in which older adults are more vulnerable is the use of ICTs.
- These factors should be the focus of government social programs to reduce the existing gap with respect to social vulnerability in our elderly people.

