Profile of Disability in Elderly Ecuadorian People

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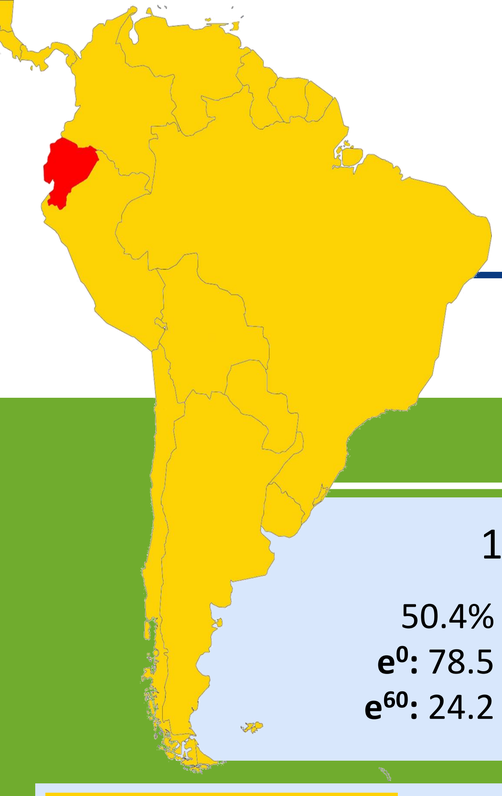


Ecuador

14,483,499

50.4% e^0: 78.5 e^{60}: 24.2

49.6% e^0: 72.6 e^{60}: 21.8

Mean age: 28 years
Median age: 25 years
Total fertility rate: 2.5 children per women
Stage of the first demographic transition: full (Cepal-Celade, 2005-2010)
Urban area: 62.8%

Objective

The aim of this poster is to analyze comprehensively the occurrence of various disabilities among the elderly in Ecuador in 2010 by means of a demographic profile and multivariate techniques.

Target Population

Persons who are aged 60 years and more. Among them, we look at subpopulations such as the ones that claimed that they are "affected by at least one permanent disability" and those who are not, respectively.

Data Source

National Census Ecuador,2010

Non-response

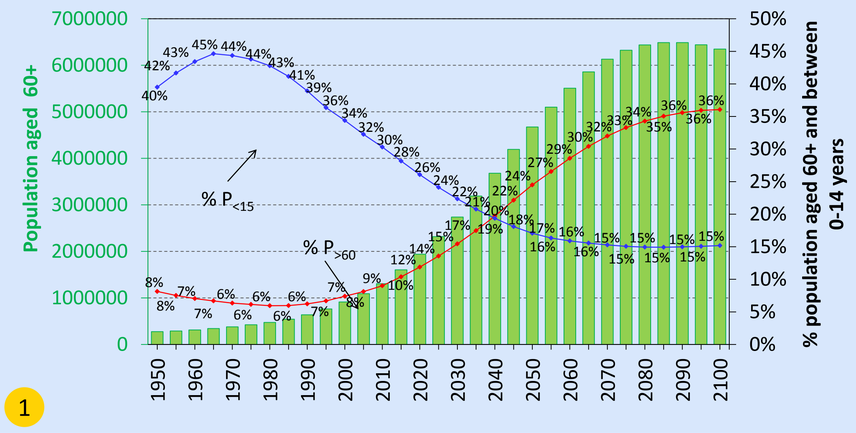
8.7% of the population aged 60 years and more did not answer the question about the presence of a disability, the majority of them were females (52.7%). About 5.2% of those who declared a disability, did not specify the type of disabilities that they had.

Methods

-Demographic statistical indicators including standardized rates of disabilities
-Logistic regression model

For all statistical calculations the whole target population is considered, except for the construction of the Logistic Regression Model. For the latter, a random stratified sample is taken. The size of the sample is n = 15.000 persons, the stratification variable is "being affected by a disability". The confidence and the design error of the sample are 95% and 0.08, respectively. The domain of study is "province".

Estimations and projections related to older adults from 1950 to 2050



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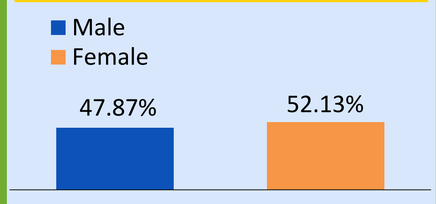
Sex



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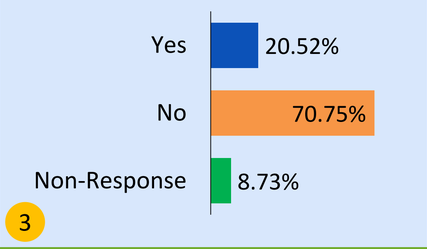
Disability for over a year



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Population aged 60 and over	Population aged 60 and over with disabilities	Population aged 60 and over without disabilities
1,341,664 ***(9.26%)***	275,263 ***(22.48%)***	948,328 ***(77.52%)***
70 years Mean Age	**74 years** Mean Age	**69 years** Mean Age
69 years Median Age	**73 years** Median Age	**68 years** Median Age

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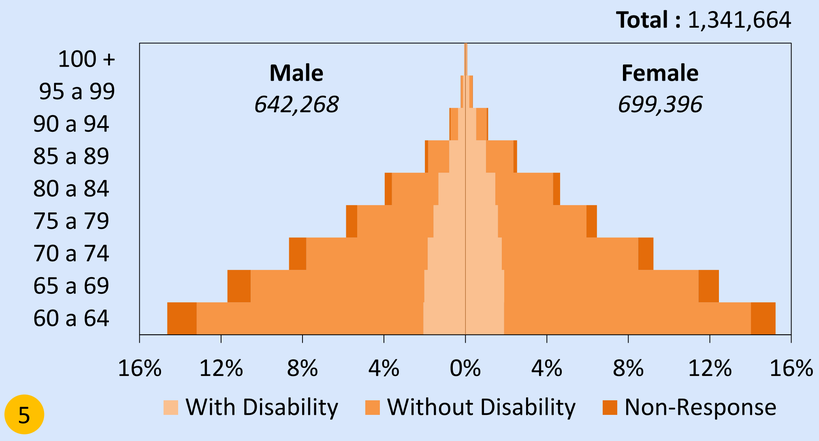
Older adults population pyramid who claim permanent disability for over a year



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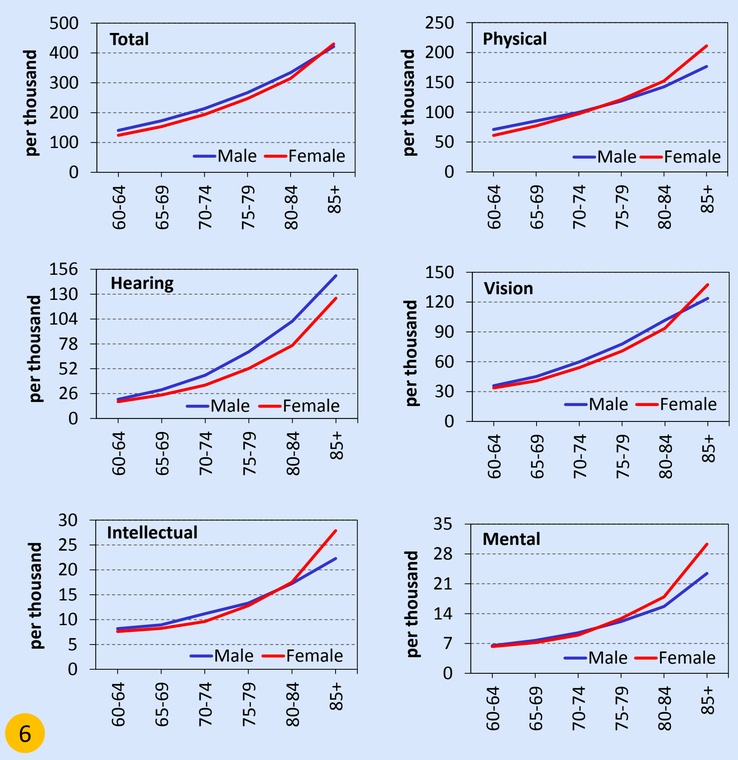
Results

Crude disability rates (per thousand) by sex, age and type of disability



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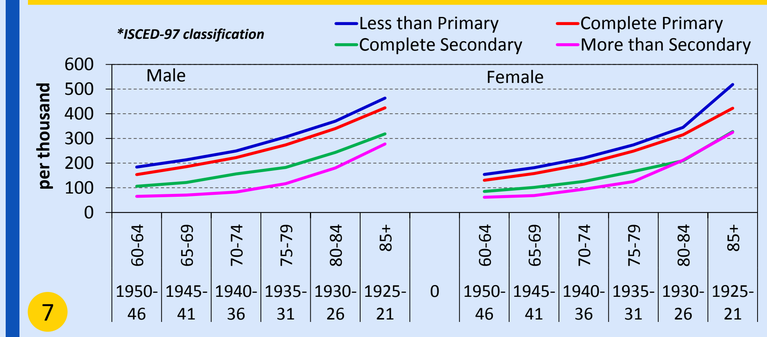
Crude disability rates (per thousand) by sex, age and education level*



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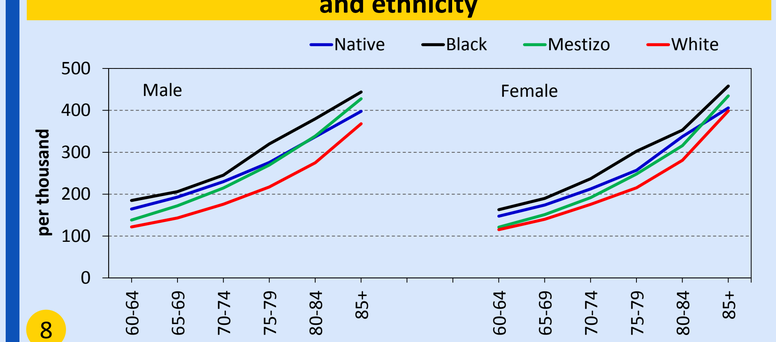
Crude disability rates (per thousand) by sex, age and ethnicity



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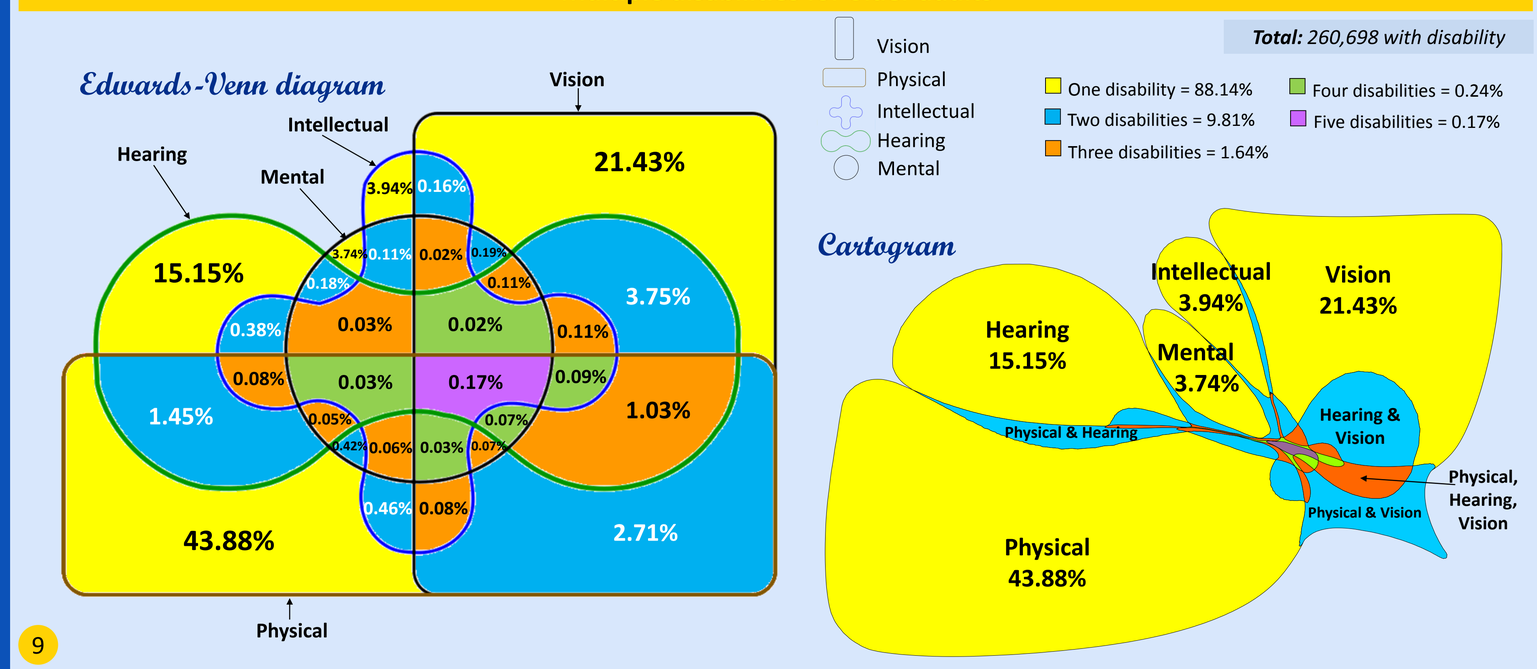
Multiple disabilities for older adults



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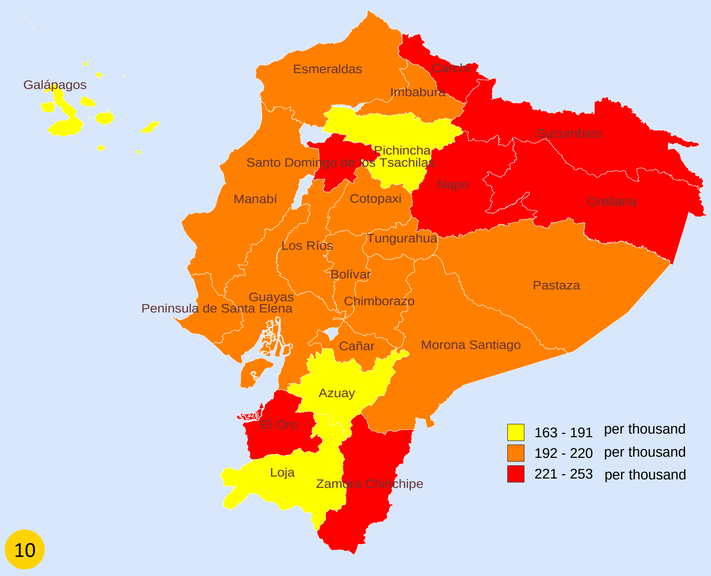
Standardized disability rates for older adults by province of residence



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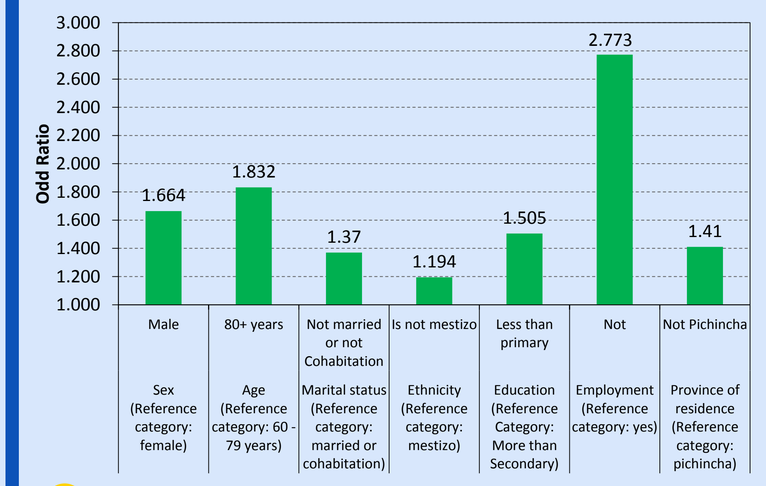
Logistic regression



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Y: Disability (0 = Not; 1 = Yes)

	Covariable	Coefficient	p- value	95% C.I.	
Sex *(Reference category: Female)*	Male	0.509	0.000***	1.514	1.828
Age *(Reference category: 60 - 79 years)*	80+ years	0.606	0.000***	1.651	2.034
Marital status *(Reference category: married or cohabitation)*	Not married or not cohabitation	0.315	0.000***	1.253	1.498
Ethnicity *(Reference category: mestizo)*	Is not mestizo	0.177	0.001**	1.071	1.331
Education *(Reference category: more than secondary)*	Less than primary	0.409	0.000***	1.373	1.649
Employment *(Reference category: yes)*	Not	1.020	0.000***	2.492	3.086
Province of residence *(Reference category: Pichincha)*	Not Pichincha	0.344	0.000***	1.240	1.604
Constant		-2.948	0.000***		

p-value codes: 0.000 = '***' 0.001 = '**' 0.01 = '*' 0.05 = '.'

Resulting model

$$P(Y=1)=\frac{1}{1+e^{-(-2.948+0.509\,Sex+0.606\,Age+0.315\,Marital\ Status+0.177\,Ethnicity+0.409\,Education+1.020\,Employment+0.344\,\mathrm{Province})}}$$

Probability (disability = 1) when all the covariates are = 1

$$P(Y=1)=\frac{1}{1+e^{-(-2.948+0.509+0.606+0.315+0.177+0.409+1.020+0.344)}}=0.606$$

Probability (disability= 1) when all the covariates are = 0

$$P(Y=1)=\frac{1}{1+e^{-(-2.948)}}=0.049$$

Conclusions

(1) By 2010, about 10% of the Ecuadorian population is 60 years and older. Population growth patterns indicate that this number will continue to grow. The number of women in this group will exceed the one of men. The average age for adults aged 60+ years is 70 years. **(2)** The proportion of the elderly affected by one or more disabilities is over 20%. They have an average age of 74 years. **(3)** From those aged 60+ years who declare to have at least one disability, 88% have only one type of disability, but a considerable 10% share two disabilities. **(4)** Physical disabilities cover the 43.88% of total disabilities, followed by visual (21.4%) and hearing disabilities (15.2%). It is notable that 2.71% of the elderly have visual and physical disabilities and 1.45 % have hearing and physical disabilities. **(5)** Disability rate increases with age for both sexes. A remarkable change occurs in the highest age group (85+ years) where the rate of women exceeds the one of men. **(6)** Looking at physical disabilities it is found that until the age of 75 years disability rates of males exceed the one for females, afterwards it changes. **(7)** Intellectual and mental disabilities have relatively low presence, as absolute values do not exceed 5% in each of them, but obviously, their effects could be much more decisive for a person than the others disabilities. **(8)** There is a notable difference in the level of disabilities when education is considered. **(9)** The level of incidence of disabilities at the provincial level is comparatively high in the provinces in the Amazon region and also in provinces that are located at the border of neighboring countries. **(10)** Those who classify themselves as Blacks, both men and women exhibit higher rates of disability than others in the same age groups; Whites are the least affected. **(11)** From the logistic model it is found that the following socio-demographic variables are statistically significant in terms of the presence of disabilities: sex, age, marital status, ethnicity, education, employment and province of residence.