

# SOCIOECONOMIC AND GEOGRAPHICAL DIFFERENCES IN DISABILITY PENSION: A MULTILEVEL ANALYSIS IN ANDALUSIA, SPAIN (2001)

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# 1.- Introduction

❖ A person who is incapable of work has the right to receive a **disability pension** to cover the loss of income.

❖ **Non-contributory** disability pensions for individuals who do not work.

❖ In Spain, in 2001, almost **1.000.000 INDIVIDUALS** had some kind of disability pension and the total cost ascended to more than **7.000.000.000 EUROS**.





- ❖ There is a positive relationship between **INDIVIDUAL SOCIOECONOMIC POSITION AND HEALTH**.
- ❖ Poorer individuals are sicker and are therefore more likely to need a disability pension.
- ❖ The **CONTEXT** in which individuals live and its **SOCIOECONOMIC CHARACTERISTICS** are also associated with the probability of receiving a disability pension.

- ❖ Most studies have been carried out at an **INDIVIDUAL LEVEL** without considering the context.
- ❖ **MULTILEVEL MODELS** permit analysis of the influence on a dependent variable of several variables of **DIFFERENT LEVELS** and estimation of the **IMPORTANCE** of the context.
- ❖ The **EVIDENCE** on the influence of individual and contextual variables in the propensity of disability pension using multilevel analysis is **SPARSE** (Johnell et al., 2006; Beckman et al., 2006; Laine et al., 2009).

## 2.- Population and methods

- ❖ **ANDALUSIA** is located in the south of Spain and is the most populous region with 7,403,968 inhabitants in 2001.
- ❖ It has one of the **lowest per capita incomes** and one of the **highest numbers** of disability pensions per capita in the nation.



- ❖ We use the **Longitudinal Database of the Andalusian Population**



- ❖ We use a **10%** random sample of all the Andalusian dwellings in the **2001** census.

## 2.- Population and methods

- ❖ From the original 715,628 individuals, **467,013** of the individuals were aged **18 to 65** years.
- ❖ We apply **multilevel regression analyses**.  
Levels:
  - ❖ **Individuals**
  - ❖ **Households 200,560**
  - ❖ **Census tracts 5,380**
  - ❖ **Municipalities 769**
- ❖ We investigate the **probability of disability pension** on this representative sample of the Andalusian population.

## 2.- Population and methods

❖ Outcome: **Individual disability pension.**

❖ Individual variables:

❖ Age (18-24 ... 60-65)

⇒ MODEL 2

❖ Gender

❖ Educational achievement (very low, low, medium, high)

⇒ MODEL 3

❖ Household's **socioeconomic position:**

❖ Whether the households owned a **second dwelling** beyond the principal one

⇒ MODEL 4

❖ Whether the households owned at least one **motor vehicle**

❖ Census tracts' **deprivation index**

⇒ MODEL 5

## 2.- Population and methods

- ❖ We implement two different analytical approaches:
  - ❖ **General contextual effects** give information on how the areas under investigation condition individual differences in the outcome:
    - ❖ Variance Partition Coefficient
    - ❖ Median Odds Ratio
  - ❖ **Specific contextual effects** provide information about the association between a concrete contextual variable and the individual outcome.



## 3.~ Results

- ❖ **Men** had a higher probability of disability pension (**OR=2.80**, CI=2.67~2.95).
- ❖ The probability increased with **age**: a five year increase incremented the probability by approximately 35% (**OR=1.35**, CI=1.34~1.37).
- ❖ The lower the **educational level**, the higher the probability of disability pension (**OR=10.68**, 2.91 and 1.75, respectively for very low, low and medium education).

### SPECIFIC CONTEXTUAL EFFECTS

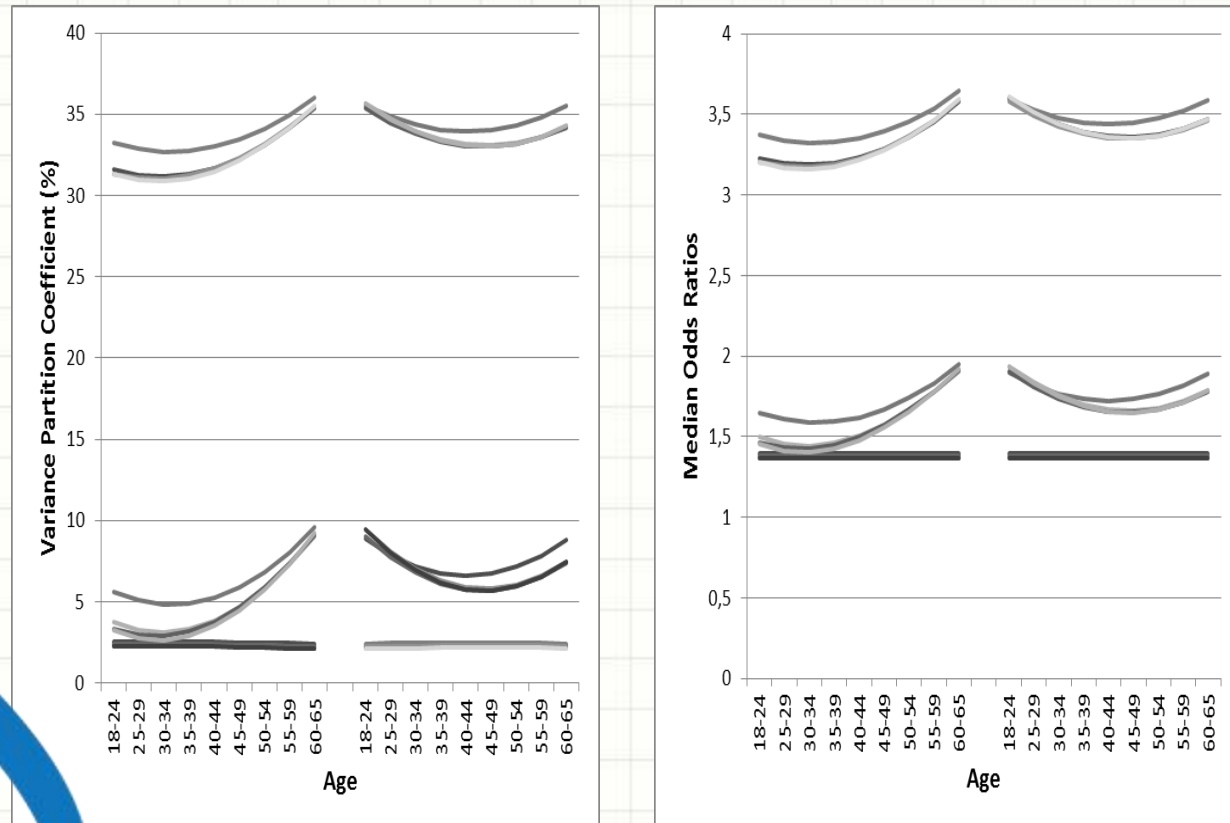
- ❖ Household's socioeconomic position was associated with lower probability of disability pension. Having a **second dwelling (OR=0.90, CI=0.84~0.96)**, Not having a motor **vehicle (OR=2.04, CI=1.95~2.14)**.
- ❖ **Census tract deprivation index** variable was associated with higher probability of disability pension. A person who lives in one of the most deprived census tracts had 31% higher probability of disability pension that a person in one of the least deprived ones (OR=1.31, CI=1.21~1.42).

### GENERAL CONTEXTUAL EFFECTS

- ❖ **Municipalities level: 2.8%** ( $VPC_M = 0.028$  and  $MOR = 1.42$ )
  - ❖ **Census tracts level: 6.2%** ( $VPC_C = 0.062$  and  $MOR = 1.68$ )
  - ❖ **Household level: 30.5%** ( $VPC_H = 0.305$  and  $MOR = 3.14$ )
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- ❖ A considerable proportion of the total individual-level variance was at the **household** level, VPC more than 35% and the MOR more than 3,5 for some age groups.
  - ❖ The VPC reached almost 10%, and the MOR almost 2, at **census tract** level in some age groups.

# 3.~ Results

Figure 1. Variance Partition Coefficients and Median Odds Ratios at Municipality, Census tracts and Household levels, by gender and five year age groups.





## 4.~ Discussion and conclusions

- ❖ **Men** have a higher probability of disability pension.
- ❖ **Age** is a risk factor, with each five year increase, the probability rise almost three times.
- ❖ Our results clearly show the negative relation between higher **educational achievement** and the probability of disability pension.
- ❖ These results are **in agreement** with the vast majority of previous studies.

## 4.- Discussion and conclusions

- ❖ The **household's socioeconomic position** is a protective factor.
- ❖ We detected a conclusive association between **deprivation at the census tract level** and the probability of having a disability pension.
- ❖ We have found **no previous study** using neither variables that measure a households' socioeconomic level nor deprivation variables at census tract level in Spain.

## 4.- Discussion and conclusions

- ❖ A considerable proportion of the **total individual-level variance** in the probability of having a disability pension is at the **household level (30.5%)**.
- ❖ The proportion was smaller at census tract and municipality levels, although the VPC reached almost **10% at census tract level** for both men and women in some age groups.
- ❖ **No previous studies** have been found which investigate the **general contextual effects of disability pension in Spain**.

# *Thank you for your attention!*

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