

# Income-related health inequalities: some microeconomic evidences using the SHARE survey

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# Framework

- ▶ Nature : Relationship between income inequalities and health.
- ▶ Does income influence the individual health ?
- ▶ Policy implications.

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- ▶ Theoretical Framework :
  - ▶ **Absolute income hypothesis** : Income has a positive and concave effect on health.
  - ▶ **Strong income inequality hypothesis** : Income inequalities may affect the health of both the poor and the well off in a society.
  - ▶ **Weak version of income inequality hypothesis** : Income inequalities may hurt the health of only the least well off in a society.

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# Absolute Income Hypothesis

- ▶ People with higher incomes have better health outcomes.

$$health_i = \beta_0 + inc_i\beta_1 + inc_i^2\beta_2 + Z_i\gamma + \epsilon_i \quad (1)$$

- ▶ Concave relationship :  $\beta_1$  is significantly positive and  $\beta_2$  significantly negative.

## Income Inequality Hypothesis

- **Strong version** : inequalities affect all members in a society equivalently.

$$health_{ij} = \beta_0 + inc_i \beta_1 + inc_i^2 \beta_2 + Inc.Ineq_j \delta + Z_i \gamma + \epsilon_{ij} \quad (2)$$

- **Weak version** : income inequality may harm the health of only the least well off in a society.

$$health_{ij} = \beta_0 + inc_i \beta_1 + inc_i^2 \beta_2 + Inc.Ineq_j \delta + Rank_{ij} \theta + (Rank_{ij} * Inc.Ineq_j) \eta + Z_i \gamma + \epsilon_{ij} \quad (3)$$



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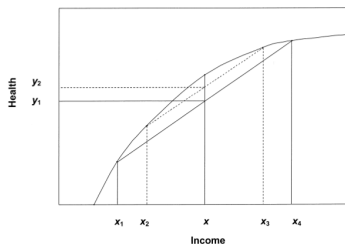
Results that are not consistent with the literature

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## Concavity Effect

- ▶ Income Inequality and Health : What Have We Learned So Far ? - S. V. Subramanian and I. Kawachi, 2004.
- ▶ Relation between individual income and health status is concave :
  - ▶ Each additional dollar of income raises individual health by a decreasing amount.
  - ▶ Transfers.



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## Redistribution of incomes

- ▶ What is important in determining the health status is how income is distributed.
- ▶ Improve health : use the redistribution as a lever.
- ▶ It will help the governments to achieve better population health.
- ▶ Deaton (2001) : health is a component of well-being.

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# Absolute Income Hypothesis

Variables	Coefficients and Significance level
Income	1.85e-06 ***
Income <sup>2</sup>	-2.07e-13 ***
Age	-0.0251 ***
Years of education	0.0344 ***
Gender = 1 if women	0.0002
Marital Status (ref. : Married, living with spouse)	⊖ ***
Job Situation (ref. : Retired)	⊕ *** (Employment) ⊖ *** (Unemployed, Permanently Sick, Homemaker, Other)
Dummies for countries (ref. : France)	⊕ *** (Austria, Sweden, Netherlands, Denmark, Switzerland, Belgium, Israël) ⊖ *** (Germany, Czech Republic, Estonia)

\*\*\* : 1% significant ; \*\* : 5% significant ; \* : 10% significant.

## Strong version of Income Inequality Hypothesis

Variables	Coefficients and Significance level	
Income	2.90e-06 ***	2.94e-06 ***
Income <sup>2</sup>	-3.13e-13 ***	-3.19e-13 ***
Theil per country	-0.7765 ***	
Gini per country		-2.8214 ***
GDP	8.28e-06 ***	8.68e-06 ***
Age	-0.023 ***	-0.0234 ***
Years of education	0.0286 ***	0.0288 ***
Gender = 1 if women	0.0024	-0.0054
Marital Status	⊖ *** (Widowed, Married not living with spouse)	
Job Situation	⊕ *** (Employment)	
	⊖ *** (Unemployed, Permanently Sick, Homemaker, Other)	

\*\*\* : 1% significant ; \*\* : 5% significant ; \* : 10% significant.

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## Weak Version of Income Inequality Hypothesis

Variables	Coefficients and Significance level	
Income	-7.24e-07 ***	-6.39e-07 ***
Income <sup>2</sup>	5.32e-14 ***	4.51e-14 **
Rank	0.00002 ***	0.00004 ***
Theil per country	-0.8874 ***	
Interaction Theil and Rank	0.00001 ***	
Gini per country		-1.9877 ***
Interaction Gini and Rank		-0.0003 ***
GDP	1.57e-06 ***	2.13e-06 ***
Age	-0.0223 ***	-0.0229 ***
Years of education	0.0231 ***	0.0237 ***
Gender = 1 if women	0.0061	-0.0022
Marital Status	⊕ *** (Widowed, Never Married, Divorced)	
Job Situation	⊕ *** (Employment)	
	⊖ *** (Unemployed, Permanently Sick, Homemaker, Other)	

\*\*\* : 1% significant ; \*\* : 5% significant ; \* : 10% significant.

## Mechanisms of the Strong Version of the IIH

- ▶ Kawachi and Kennedy (*Income Inequality and Health : pathways and mechanisms, 1999*) summarize three plausible mechanisms :
  - ▶ **Disinvestment in human capital** : High income inequalities implies a smaller social spending.
  - ▶ **Erosion of social capital** : Features of social organization that facilitate cooperation for mutual benefit.
  - ▶ **Stressful social comparisons** : Psychosocial effects in the shared cultural model of the acceptable standard of living.

## Mechanisms of the Strong Version of the IIH

Variables	Coefficients and Significance level
Income	1.90e-06 ***
Income <sup>2</sup>	-2.10e-13 ***
Theil per country	-0.4084 ***
Health spending (Percentage of the GDP)	0.0764 ***
Received help (rhfo)	-0.1802 ***
Life satisfaction (lifesat)	0.2154 ***
Age	-0.0243 ***
Years of education	0.0278 ***
Gender = 1 if women	0.0072
Marital Status	⊕ ***
Job Situation	⊕ *** (Employment)
	⊖ *** (Unemployed, Permanently Sick, Homemaker, Other)

\*\*\* : 1% significant ; \*\* : 5% significant ; \* : 10% significant.

## Conclusion

- ▶ Evidences supporting the absolute income hypothesis and the strong version of the IIH.
- ▶ **Political implication** : measures to redistribute incomes.
  - ▶ J. Lynch, G. D. Smith, S. Harper, M. Hillemeier, N. Ross, G. A. Kaplan and M. Wolfson - Is Income Inequality a Determinant of Population Health ? - 2004.
  - ▶ A. S. Deaton - Health Inequality and Economic Development. 2001.
- ▶ Weak version of the IIH : we did not investigate further on the idea of using the rank and the interaction term as explanatory variables.

- ▶ **Limitation** : Utilisation of cross-sectional data so we cannot measure causalities as there would be issues of endogeneity.
- ▶ **Next step** : Establish a causal link with models exploiting the panel dimension of this database.