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Study of Insurance Economics

Études et Dossiers

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Longevity – a Medical and Actuarial Challenge**

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Layout & Distribution: Pascal Clerc

Socio-Economic Factors and Life Expectancy

Axel Börsch-Supan

Outline

- 1 Motivation
- 2 Pathways of causality
- 3 Socio-economic factors and mortality
- 4 Socio-economic factors and morbidity
- 5 Conclusions

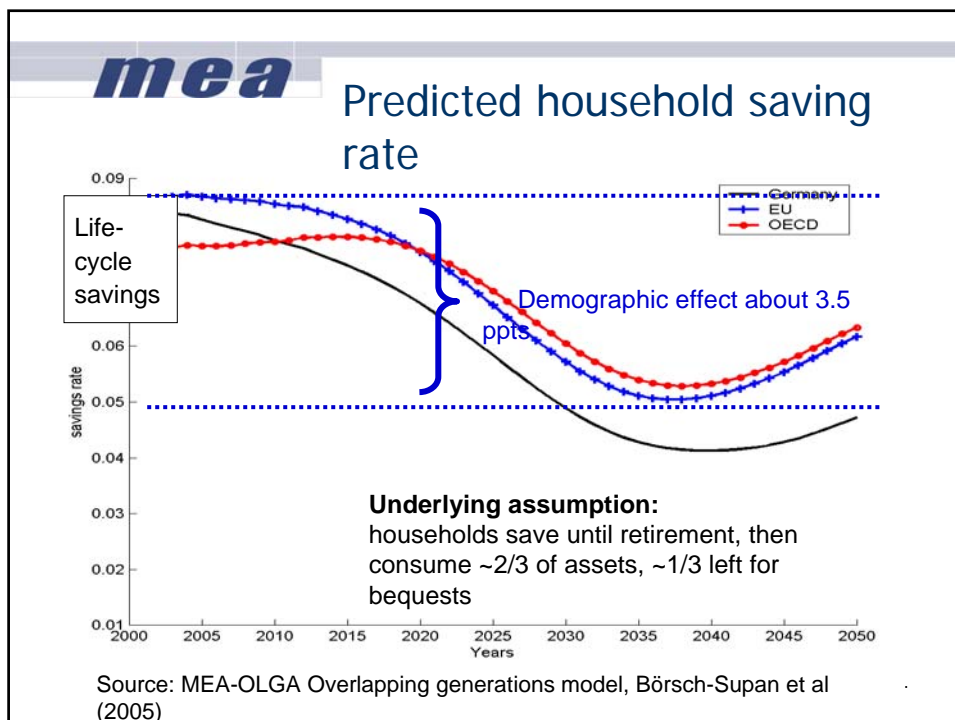
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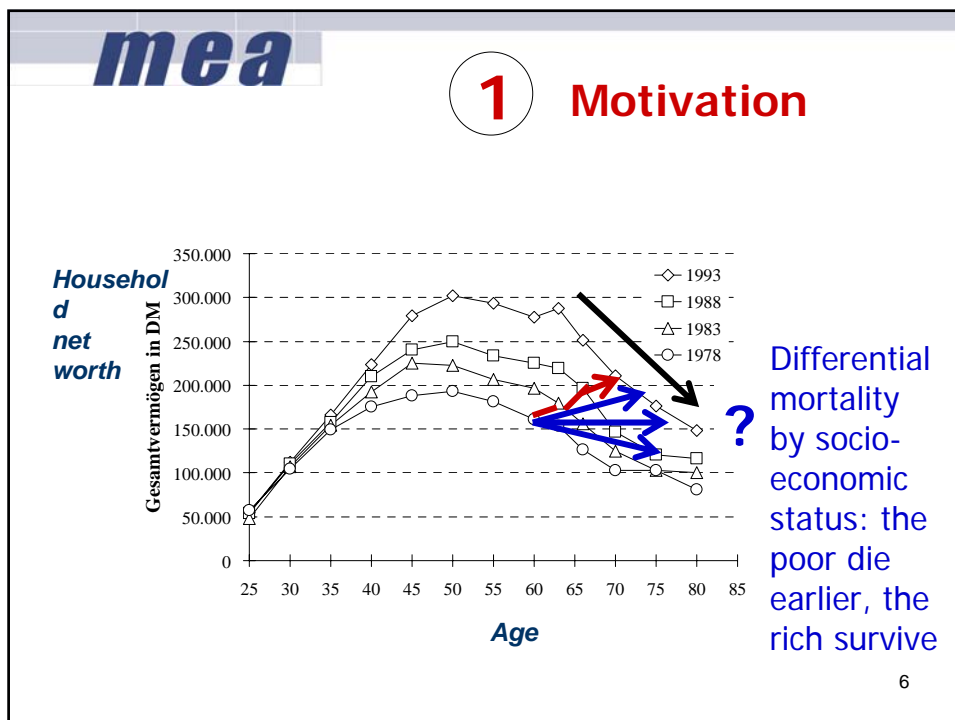
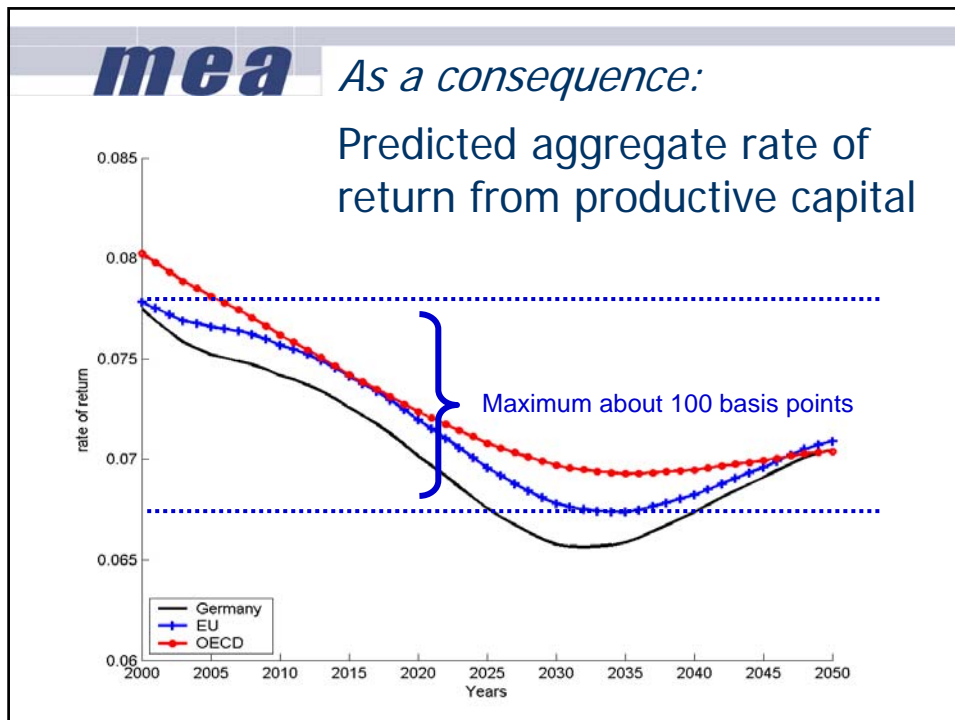
1 Motivation

Socio-economic factors and longevity

- Market segmentation and actuarially correct annuities
- Redistribution in the public retirement system
- Asset meltdown and the demographic impact of aging on capital markets
- Understanding life cycle savings behavior

3





mea 2 Pathways of causality

Socio-economic factors: wealth, [life-time] income, education, social status,....

Health care systems, education policy, income redistribution policies, health behavior
Earnings ability

Morbidity

Gender, North-South, Ethnicity, ...
Mortality

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mea 2 Pathways of causality

Lessons:


- Socio-economic "*determinants*" misleading
- Do not draw *simplistic* redistributonal policy conclusions
- Need to understand true *causal effects* of differential mortality to understand life cycle *savings behavior* and potential size of demographic *impacts of aging on capital markets*

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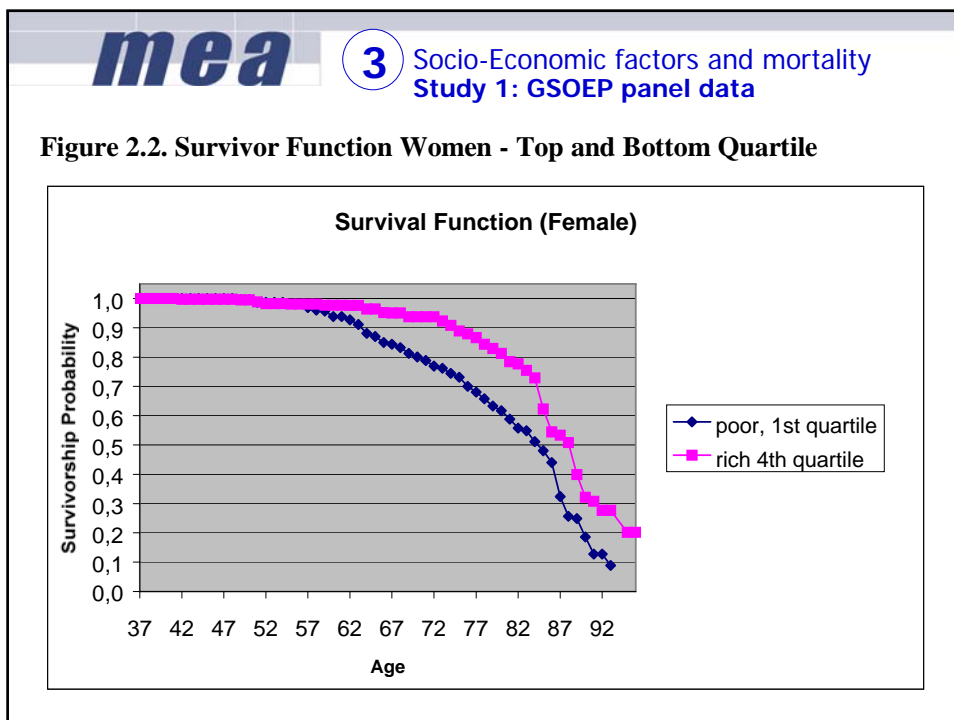
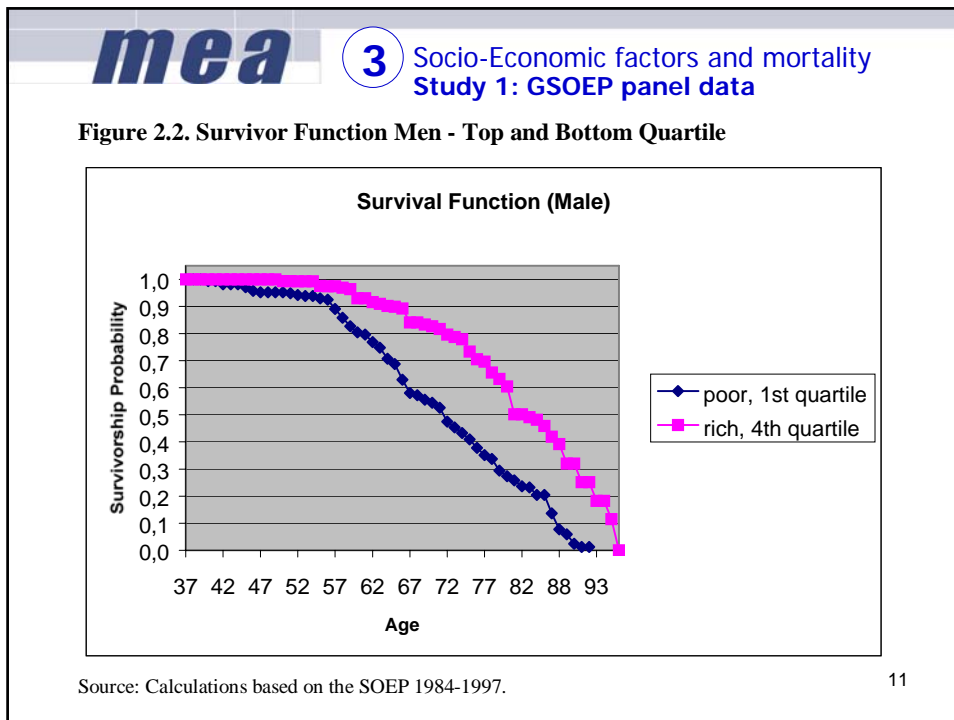
Outline

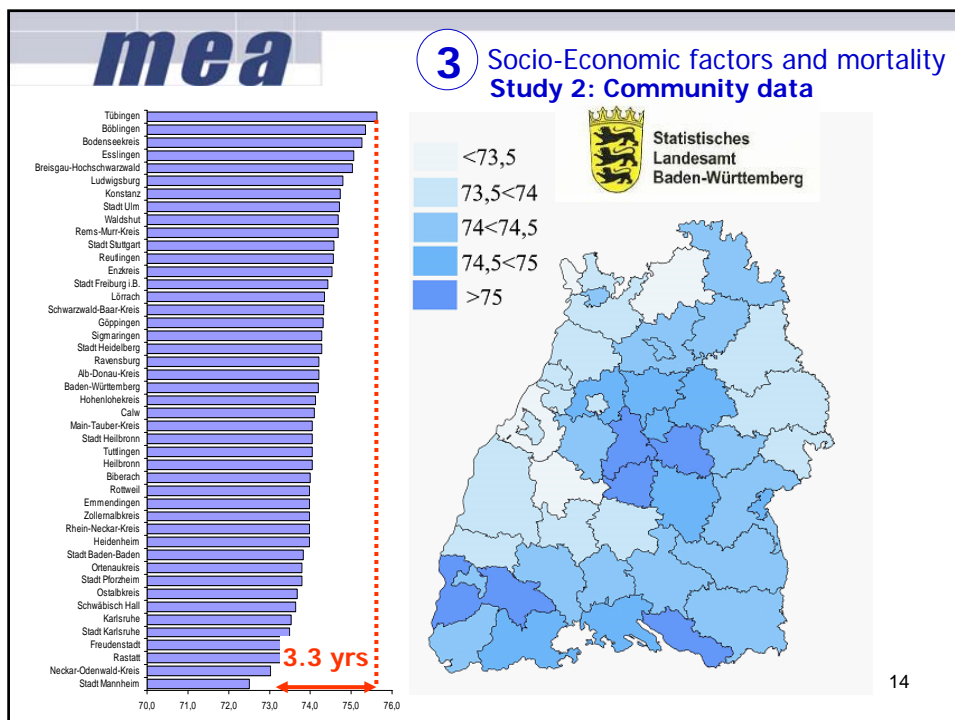
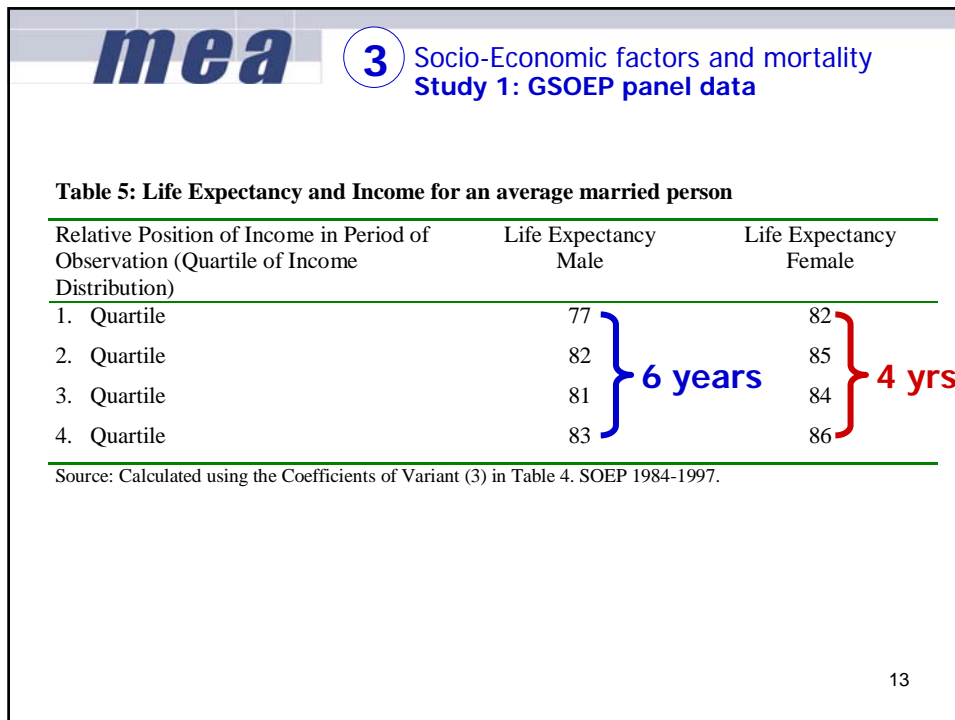
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Outline

- 1 Motivation
- 2 Pathways of causality
- 3 Socio-economic factors and mortality
- 4 Socio-economic factors and morbidity
 - Anette Reil-Held (2002): GSOEP panel data [income]
 - Börsch-Supan and von Gaudecker (2004): Communities in Baden-Württemberg [income, education]
- 5 Conclusions
 - Von Gaudecker (2005): VDR administrative data on public pension recipients ("Rentenwegfallstatistik") [earnings points = life time income = human wealth]





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3 Socio-Economic factors and mortality
Study 2: Community data

Mortality is affected by ... in the following

Socio-economic factor	Male	Female
Income		
Higher education		
Vocational education		
Enrolled in public pension system		
Receipt of disability pension		
Receipt of unemployment benefits		
Receipt of social assistance		

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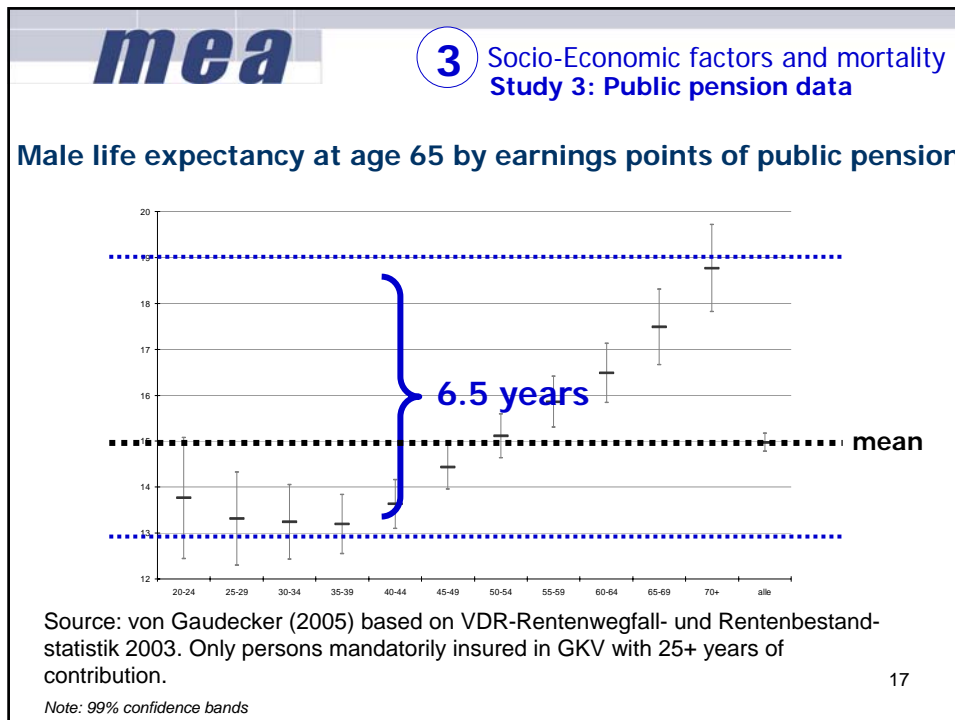
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3 Socio-Economic factors and mortality
Study 2: Community data


Mortality is affected by ... in the following

Socio-economic factor	Male	Female
Immigration (all ages)		
Emigration (all ages)		
Immigration (age 65+)		
Emigration (age 65+)		
Health care facilities		
Environmental pollution		

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- Outline**
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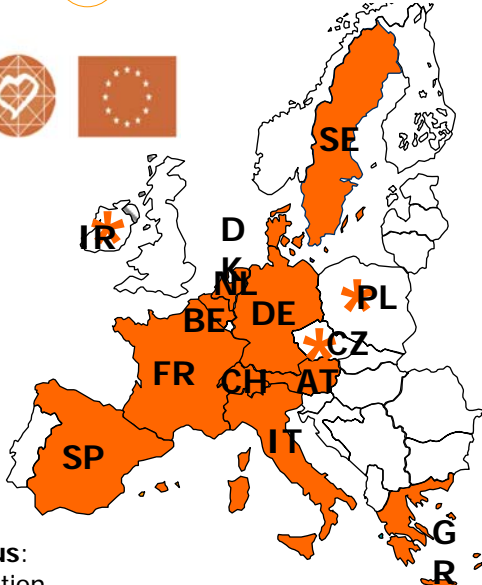


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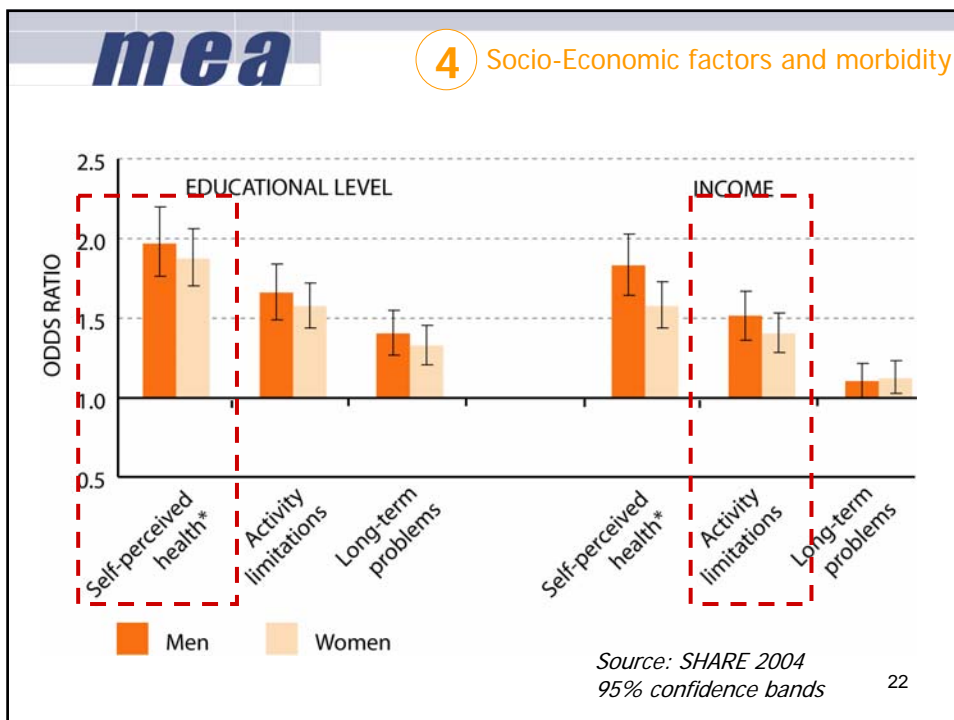
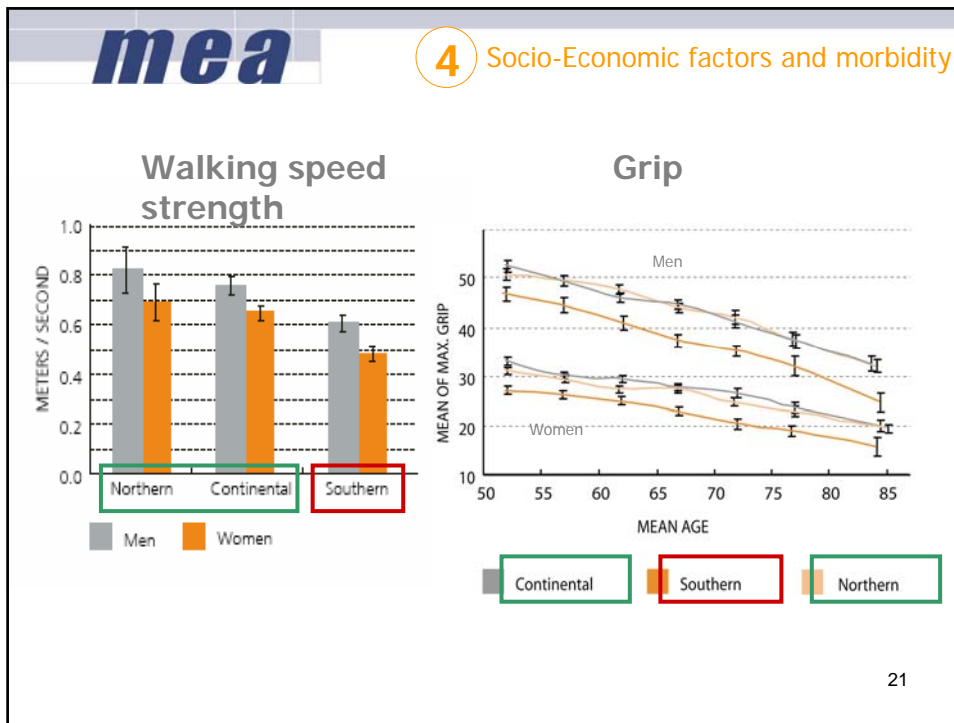


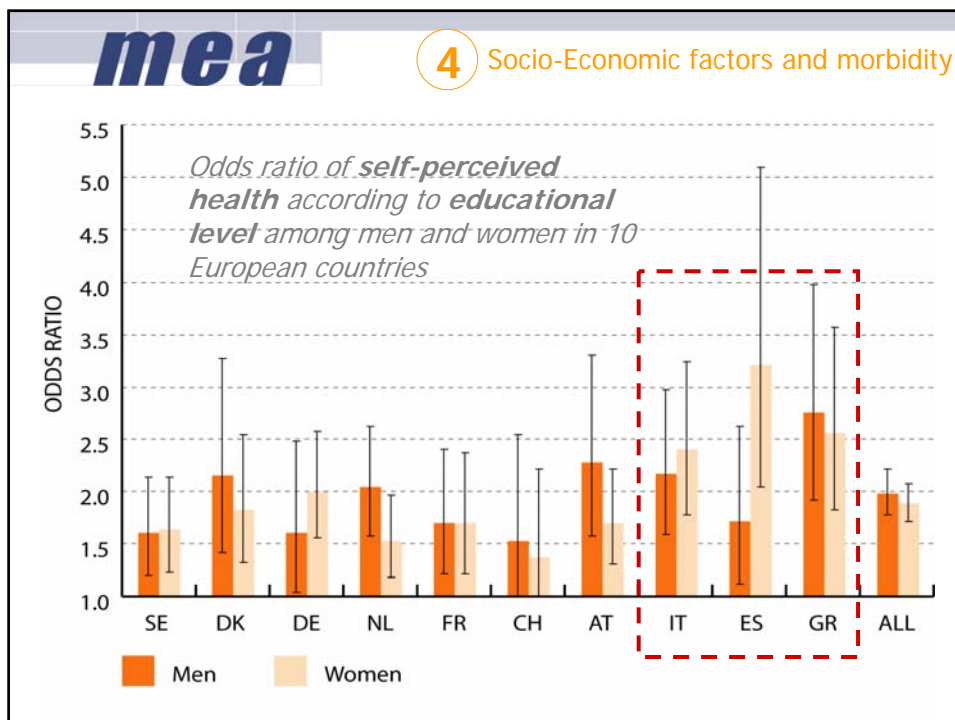
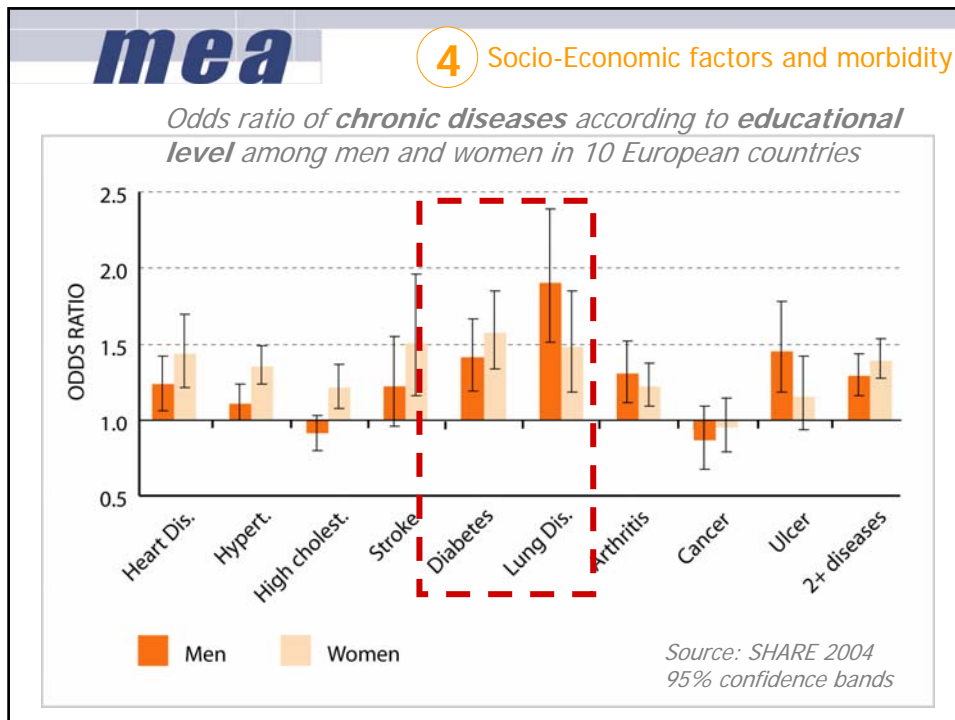
4 Socio-Economic factors and morbidity

- First wave **2004/05**: 27.000 individuals
- **Health**: self-reported, functioning, physical and mental tests
- **Mortality**: not yet
- **Socio-economic status**: Wealth, income, education

Israel





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Conclusions

- Clear evidence of **socio-economic gradient for morbidity and mortality**
- Direction of **causality** still unclear, some evidence for **moral hazard effects**
- Weight (**quantitative influence**) of various mechanisms still unclear
- Clear evidence of **north-south gradient in morbidity** at odds with mortality patterns
- No causal explanation so far: mixture of socio-economic and ethnic factors?
- Detecting causality requires long-run longitudinal data: **post hoc, ergo propter hoc**