

# COHORT DIFFERENCES IN FUNCTIONAL LIMITATION TRAJECTORIES AFTER AGE 50 IN INDONESIA: FINDINGS FROM A 21-YEAR LONGITUDINAL STUDY

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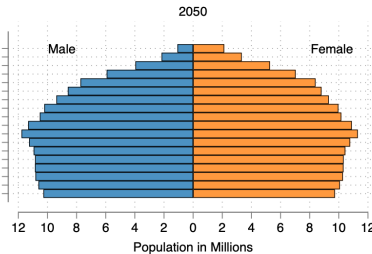
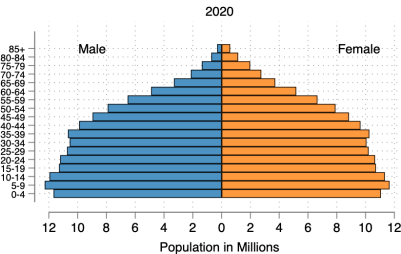
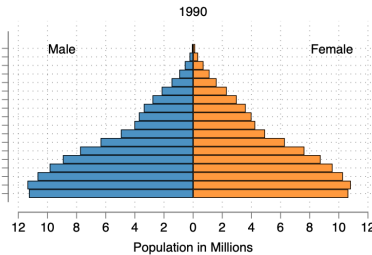
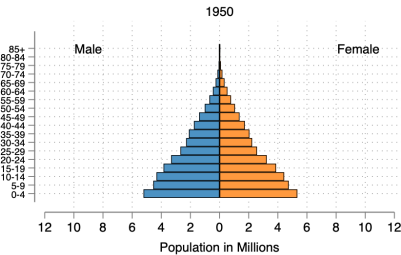


Image: ARIS, 2016.

# Introduction

- Rapid population ageing in Indonesia.
- Population ageing and the increasing prevalence of disability.
- Research questions.
- Significance of the study.

# Population ageing in Indonesia: 1950 - 2050

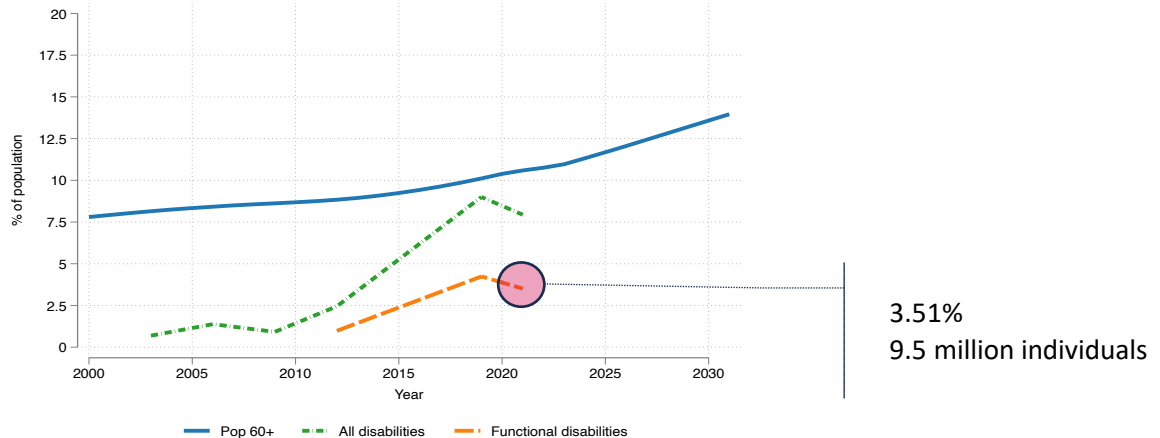


## Pop 60+

- 2020: 10.6% (28 million)
- 2050: 20.3% (64 million)

# Population ageing and the increasing prevalence of disability

Population 60+ and prevalence of disability (%)



# Objective and questions

To investigate the development of functional health outcomes in later life and their dynamics among successive Indonesian birth cohorts.

1. How have the trajectories of functional limitations in older Indonesians evolved?
2. How have functional limitation trajectories shifted between successive birth cohorts in Indonesia?
3. How have the trajectories of functional limitations differed between males and females for specific birth cohorts?



# Significance of the study

- Examines cohort disparities in functional limitation trajectories among older adults in LMIC settings.
- Separate functional limitation trajectories by cohort and gender.



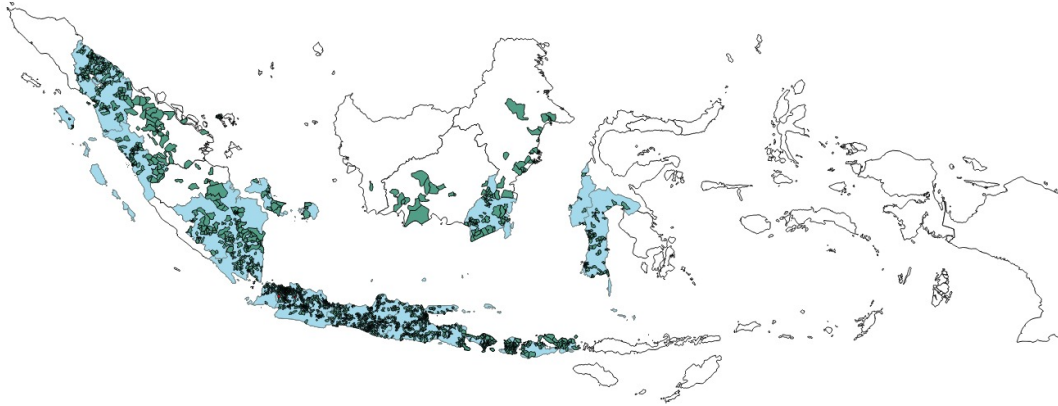


Image: IFLS

# Methods

- Data: IFLS, National Socio-economic Survey
- Measures
- Statistical analysis

# Data

- Five waves of Indonesian Family Life Survey (IFLS) 1993 – 2014.
  - It is a longitudinal study that gathered socioeconomic and health data on household and individual levels.
  - Representing 80% of the Indonesian population, covered 13 out of 27 provinces in Indonesia
  - 7,224 households with members aged 50+ participated in the first IFLS survey (1993).
- National socio-economic survey (Susenas).

## Participants

- The analysis included 4,945 distinct individuals aged 50+ with at least one follow-up survey.
- People aged 50+ were followed for 7 to 21 years.





# Measures

**Outcome:** Scores of six physical functional limitations.

1. Carrying a heavy load for 20 meters.
2. Drawing a pail of water from a well.
3. Walking for 5 kilometres.
4. Bow, squat, kneel.
5. Stand up from sitting on the floor without help.
6. Stand up from sitting position in a chair without help.

## Predictors

- Age (centred at 50), squared age; sex; 10-year birth cohort groups.

## Control:

- Demographic characteristics (education, marital status, religious affiliation, urban-rural status) smoking history, coresidence and SES.



# Statistical Analysis

## 2-Level negative binomial growth-curve models

- Were utilised to estimate the functional limitation trajectories of people aged 50 and older..
- Multi-level framework
  - To account for the hierarchical structure of repeated measurements of the outcome.
  - To consider the heterogeneity of individuals in functional limitation trajectories.
- Negative binomial
  - Count data distribution.
  - Overdispersion.



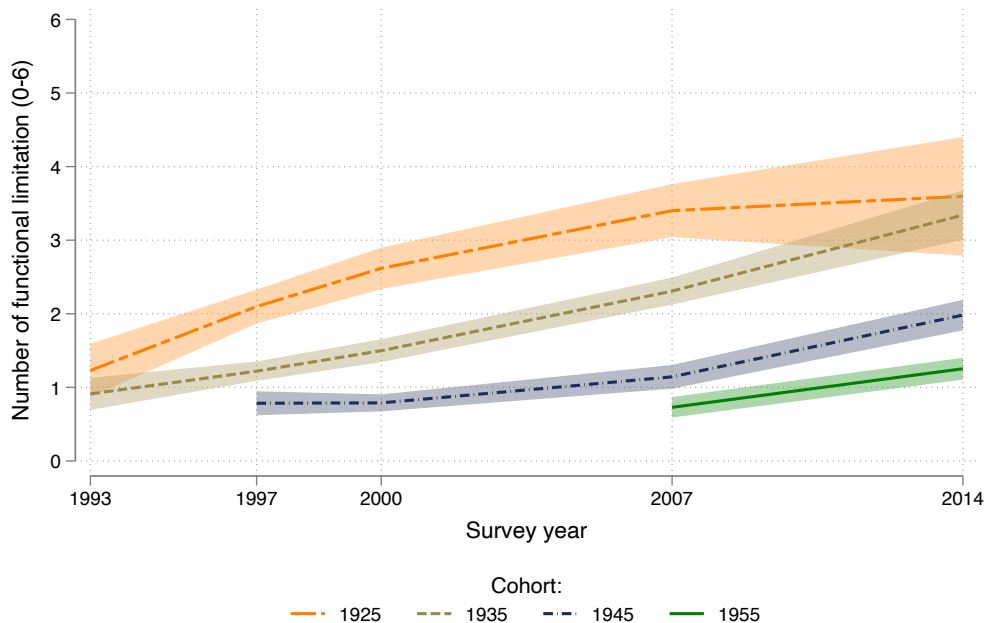


Image: theatlantic.com

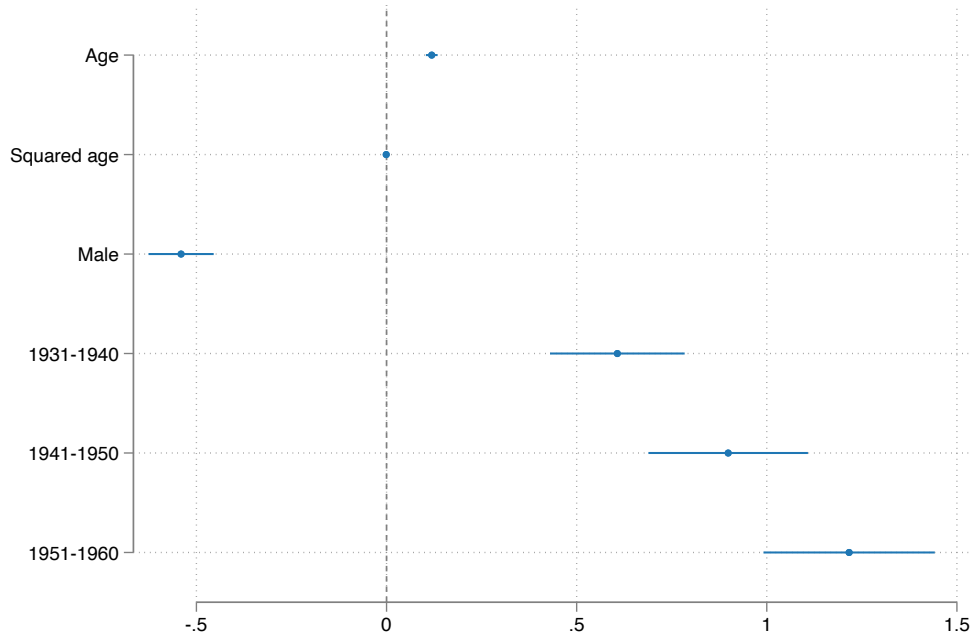
# Results

- Prevalence
- Growth model
- Functional limitation trajectories

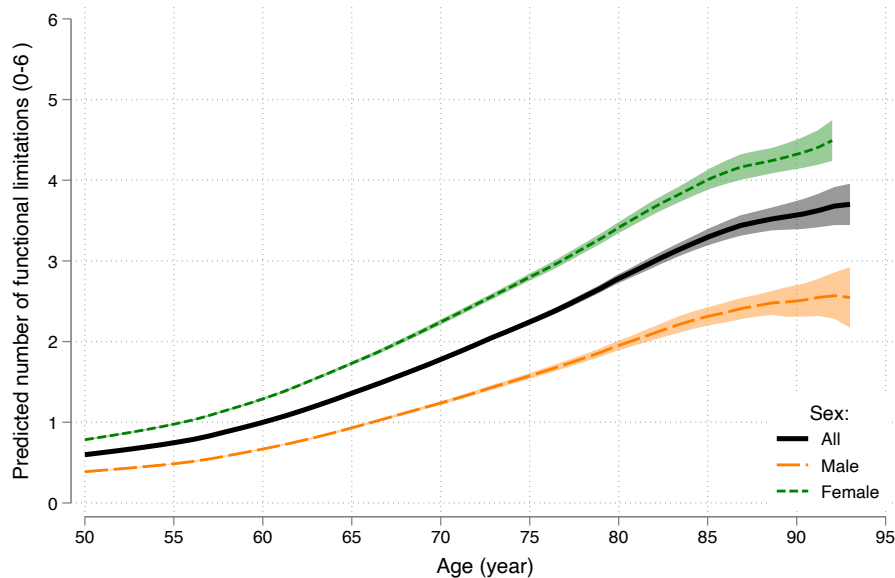
# Prevalence of functional limitations in birth cohorts 10 years apart



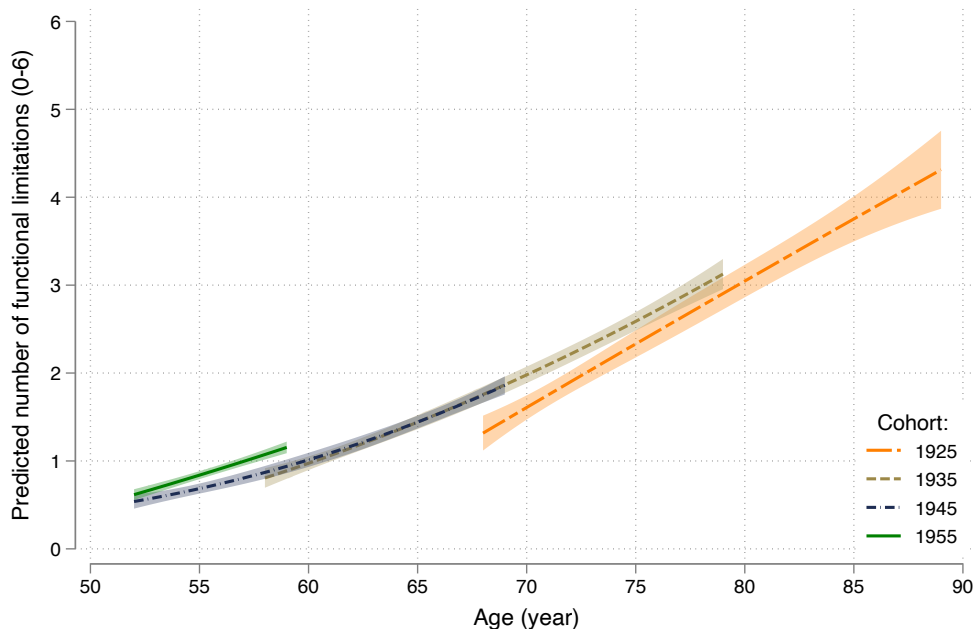
# Growth model



# Q1. Trajectory of functional limitations in old age among older Indonesians



# Q2. Trajectories of functional limitations among successive Indonesian birth cohorts



# Q3. Male and female functional limitation trajectories for specific birth cohorts

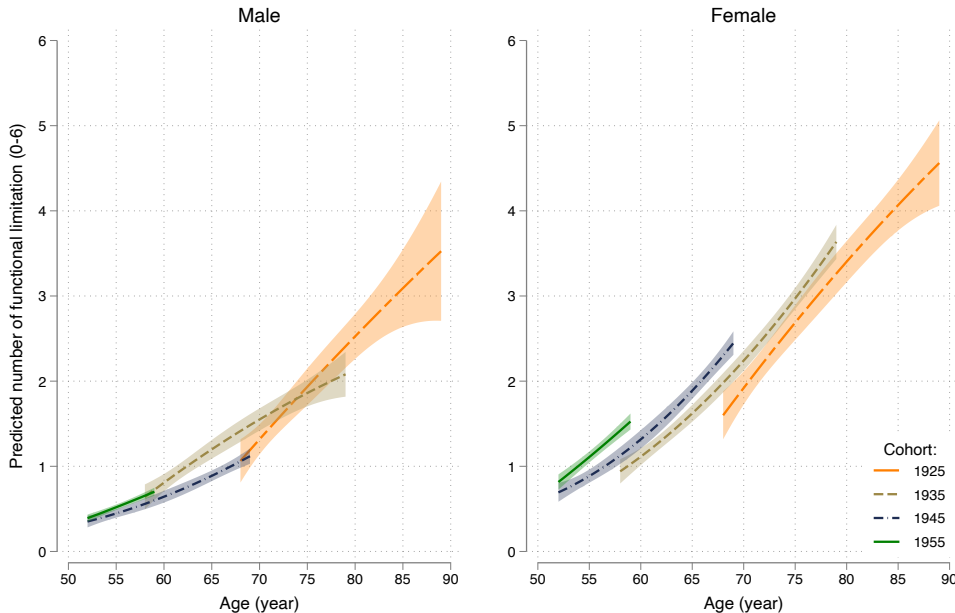






Image: ARIS, 2016.

# Discussion & Conclusion

- Key messages
- Future directions

# Key messages

- **This study examines cohort differences in late-life functional limitation trajectories among older adults in Indonesia, a rapidly ageing LMIC.**
  - This is the first LIMC study of cohort effects on functional trajectories.
- **A substantial proportion of older individuals in Indonesia face one functional limitation at age 60.**
- **More recent birth cohorts have a higher burden of functional limitations as they age.**
  - Consistent with findings from the US and some European countries (Chatterji et al., 2015; Fors et al., 2022; S. A. Haas et al., 2017; Lin et al., 2012; R. Yu et al., 2016).
- **Indonesian females birth cohorts:**
  - Have higher limitations across age.
  - Tend to experience functional limitations at a younger age than males.
  - **Experienced a larger inter-cohort shift.**
  - **Have more divergent trajectories than males.**



# Future directions

- It questions the underlying factors contributing to inter-cohort trends.
- Calls for more research into the social, environmental, and cultural factors affecting younger cohorts' functional outcomes.



# Thank you!

