



# *LITERACY, AGE AND RECENTNESS OF EDUCATION*

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# Age group differences in literacy proficiency in the Nordic countries

- Large differences in average literacy proficiency among age groups
- The most proficient age group comprised adults aged 25–34 years, and older adults (particularly 55–65-year-olds) showed a relatively low level of literacy
- Differences between the youngest and oldest adults were far greater in Finland than in the other Nordic countries
  - Finnish adults outperformed their peers in other Nordic countries in every age group except among 55–65 years
- When educational attainment, gender, type of occupation and socioeconomic, language and immigrant backgrounds are accounted for, PIAAC literacy scores have a linear negative relationship with age (DK, FI, SE)



# Age in cross-sectional studies

- Birth cohort effects
  - Different environments for growing up, learning and living
  
- Ageing effects
  - Cognitive decline due to ageing
  
- Individual ageing and birth cohort effects are combined (Green & Riddell, 2003, 2012)
  - Literacy seems to be acquired mainly through schooling and supported by parental education and non-migrant status
  - However, after initial formal education, literacy levels do not develop further and start to decline
  - Note: two cross-sectional studies



# Contextual factors related to literacy

- The main determinant of literacy performance across age groups is **educational attainment**
- **Quantity and quality of education** among the factors affecting the cognitive achievement of different age cohorts, along with mass media, demographic factors, nutrition and health care (Gustafsson 2015)
  - Educational reforms in the Nordic countries in 1949–1997 have extended the length of basic education and changed the structure of education systems (Mellander & Anderssen 2015)
- Highest level of education, length of education / content and quality of education?



- **Field of education** has been shown to have differing effects on cognitive abilities (Cliffordson & Gustafsson, 2008).
- Literacy proficiency has a quadratic negative association with age, even in the **occupational group** comprising higher-level professions (Albaek, Fridberg & Rosdal 2014)
- In a longitudinal study, positive long-term effects among persons engaged in jobs that required a high degree of cognitive complexity (e.g. Schooler, 2001)



- To summarize
  - Level and length of education is the main determinant of literacy proficiency across age-groups
  - Education level alone does not explain differences between age-groups
  - There have been changes in educational provisions and their quality
- More recent education may provide different and, from the perspective of current literacy demands, more relevant, learning outcomes than the earlier qualifications
- Hence the year of graduation might be a relevant education-related factor behind literacy performance controlling the **changes within education level**



# Present study

- Present study examined the relationship between reading literacy and age in an adult population, aged from 25 to 65, in the Nordic countries:
  1. To what extent can the variation in adults' literacy proficiency be explained by **age and recency of qualifications** when education level, the field of education, the occupation, skill use at work, ICT use, gender and language background are controlled?
  2. What do the factors explaining variation in literacy proficiency demonstrate about the reasons behind the gap in literacy proficiency between age groups?



# Hypotheses

- As a result of changes in the quality of education, recentness of education is reflected in the differences between age groups:
  - within age groups, adults with recent education show higher level of performance than their peers of the same age
  - adults with a recent degree show higher performance than younger adults with older degree





# Methods

- Method of analysis: regression analysis
  - 16–24-year-olds ( $n = 3,898$ ) were excluded from the study since 66% of them were still in their initial cycle of studies
- Dependent variable: literacy proficiency
- Explanatory variables:
  - Age
  - Year of finishing the highest qualification, education level, field of study
  - Occupation type by skill demand, use of reading skills at work
  - Gender, language background
  - ICT use at home



## Dichotomous variables combining age and year of completing highest degree

Weighted numbers of persons in the four Nordic countries according to age and decade during which the highest qualification was completed

Age at the time of data collection	Decade during which the highest qualification was completed					Total
	Degree 1960–1969	Degree 1970–1979	Degree 1980–1989	Degree 1990–1999	Degree 2000–2012	
25–34-year-olds				685	3,456	4,140
35–44-year-olds			901	2,287	1,351	4,539
45–54-year-olds		994	2,094	862	668	4,619
55–65-year-olds	1,540	2,010	654	400	242	4,846
Total 17 November 2016	1,540	3,004	3,649	4,234	5,716	18,143

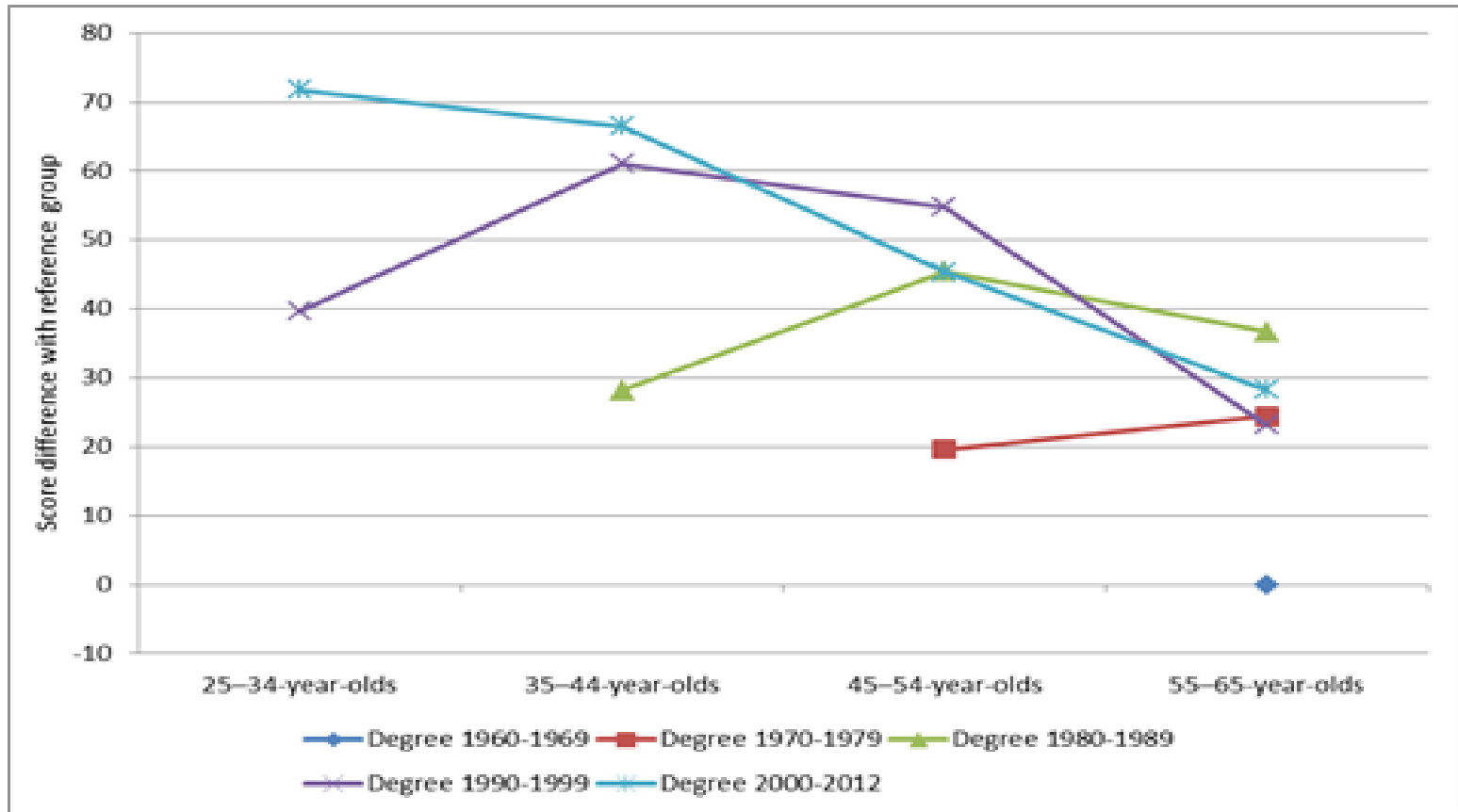


# Results

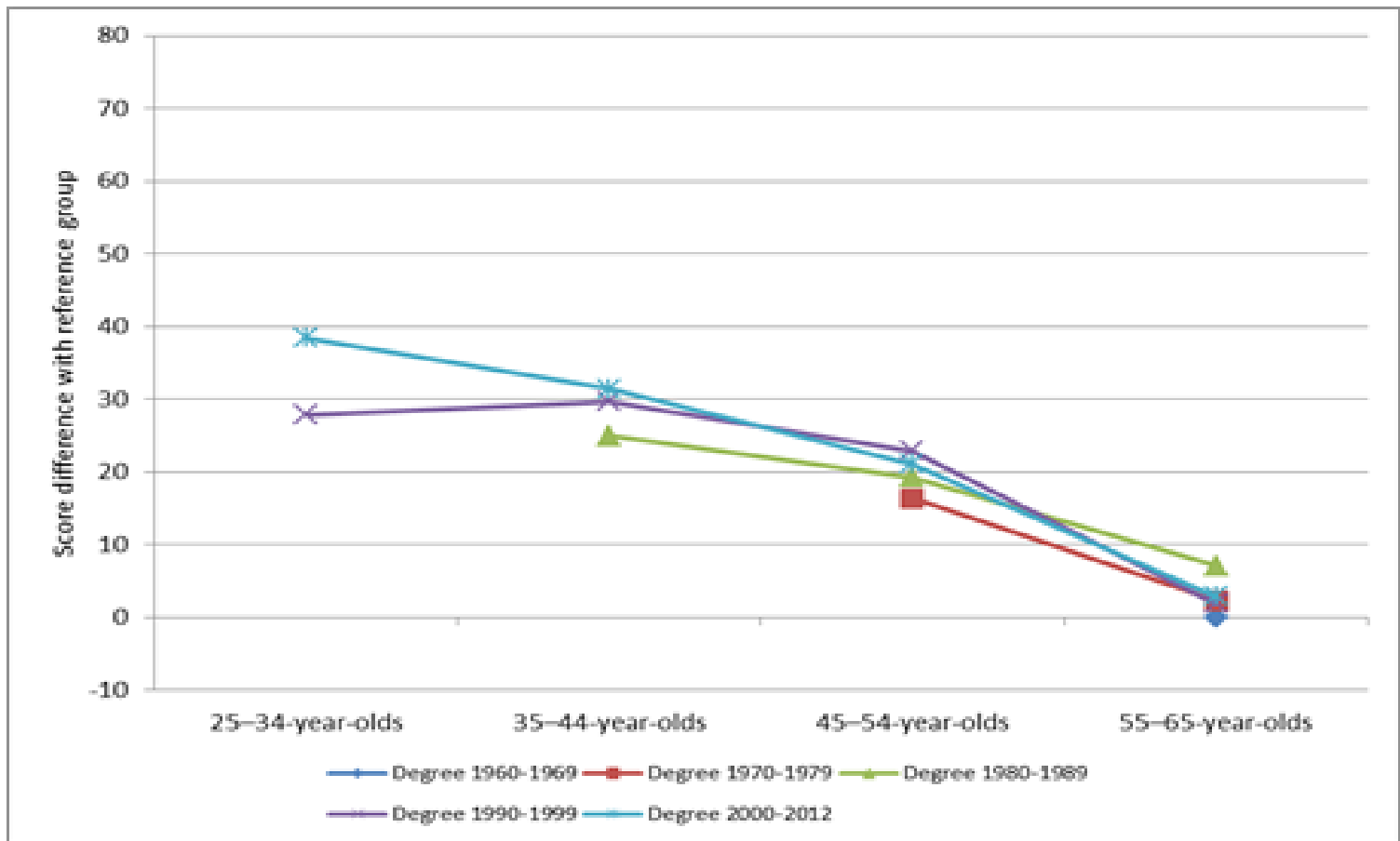
- Strongest factors explaining the variation in the literacy proficiency of adults in every Nordic country are education level, the combination of age group and completion time of the highest degree and the occupation type by skill demand
  - the model explains about one third of the variance in reading literacy
- A significant number, but not all, of the literacy proficiency differences between the age groups can be explained by the factors included in the model
- Still, age group has an independent association to literacy



# Unadjusted associations of the combination of the age and the recentness of education with reading-literacy proficiency: Finland



## Adjusted associations of the combination of the age and the recentness of education with reading-literacy proficiency: Finland



Adjusted associations are adjusted for education level, field of education, occupation, use of reading skills at work, use of ICT skills at home, gender and language background.



- In the adjusted results, the only statistically significant differences between age groups are among those who completed their degrees in the 1990s and after 2000.
  - the oldest age group shows a lower level of proficiency in literacy
  - differences evened out among younger age groups
- Unlike hypothesized, adults with a recent degree do not show higher performance than younger adults with older degree.



- Within age groups, there are no differences based on the completion time of the highest degree
  - due to the small number of cases in some groups, the standard errors and hence the confidence intervals, are quite large, and the differences are not statistically significant



# Conclusions

- How recently a degree has been obtained is less important than age
- No significant changes in the quality or content of (literacy) education?
- Who are these adults who complete or return to formal education at later age?
  - Adults updating or making up lost educational opportunities
  - Also high-skilled adults
- Alternative explanation lies at least partly in the age-related cognitive decline
  - with one cross-sectional data this possibility remains unconfirmed





- Overall, the current study shows that the significance of the length and scope of the **initial education** in developing literacy proficiency overall is difficult to compensate
  - the role of basic education cannot be ignored even after completing secondary and tertiary degrees
- Still, the role of informal literacy learning should not be underestimated



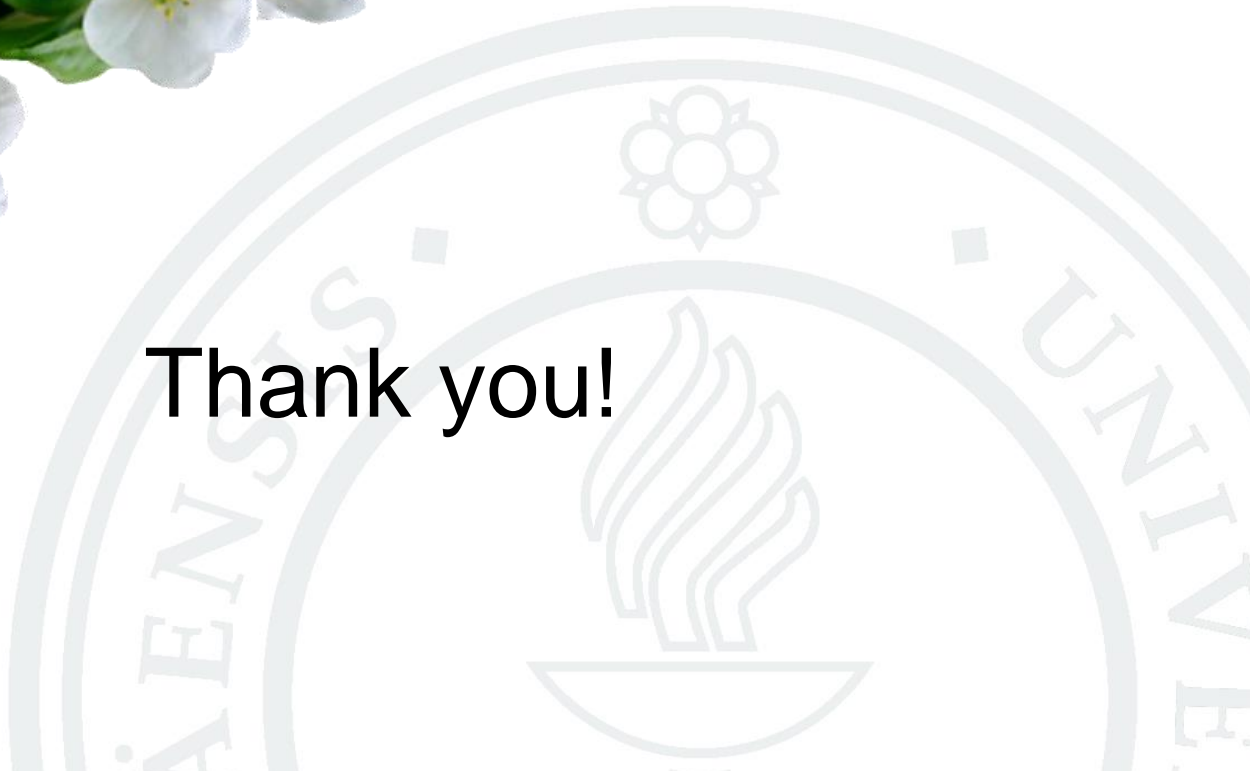
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