Technequality

Understanding the relation between technological innovations and social inequality

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The Technequality Project

Outline of talk

- Brief presentation of the Technequality project
- Presentation of results from WP 2
  - Automation risks
  - Cognitive and non-cognitive skills
- Discussion with audience

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The Technequality Project

Project examines links between technological innovation and …

- The number of jobs
- The nature of our tasks
- Skill needs and education
- Social inequalities

Website: https://technequality-project.eu/

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Six work packages focused on research

- WP 1: The future of work in Europe
- WP 2: Technology, skills and inequality
- WP 3: Educating today for tomorrow's labor market
- WP 4: Reinventing social welfare
- WP 5: Automation, taxation, and public finances
- WP 6: Is this time really different?

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WP2: Technology, skills & inequality

- Task 2.1: Assessing the role of skills, social class, credentials and employment on tech driven labor markets
- Task 2.2: Examining insiders and outsiders on skill-biased labor markets
- Task 2.3: Assessing different consequences for different social classes

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T2.1: Automation, skills, and class

Task 2.1 – Description of task

- Focus on automation risk, skills, social class
- Deliverable consisting of
  - Parallel analyses in DE, FI, NL, and SE
    - School-to-work transitions and wages in the short- and long-run (1 yr. vs 10 yr.)
    - Unique individual career perspective on automation risk
  - Three in-depth studies of specific issues
  - Contributions from the EUI, MU, SU, and WZB

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T2.1: Automation, skills, and class

Task 2.1 – Automation risk

- Technical change may make jobs obsolete
- How is the risk of obsoleteness measured?
  - Expert assessment vs job tasks
- How do they differ?
  - Marked difference in risks; expert assessment yields dramatically higher risks
- What have we done?
  - Apply risks based on task approach

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T2.1: Automation, skills, and class

Task 2.1 – Automation risk

- Our results
  - Short-term
    - Automation risk may both increase, decrease and be unrelated to earnings
  - Long-term
    - Very similar results

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T2.1: Automation, skills, and class

Task 2.1 – Automation risk ex. NL and SE

Fig. 1. Automation risk of educational programs in SE, by years of educ.

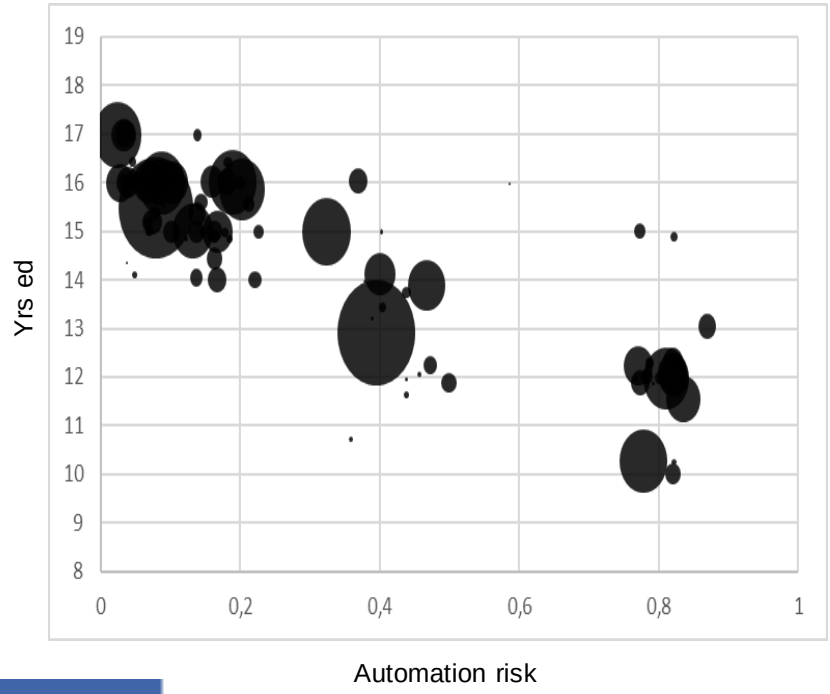
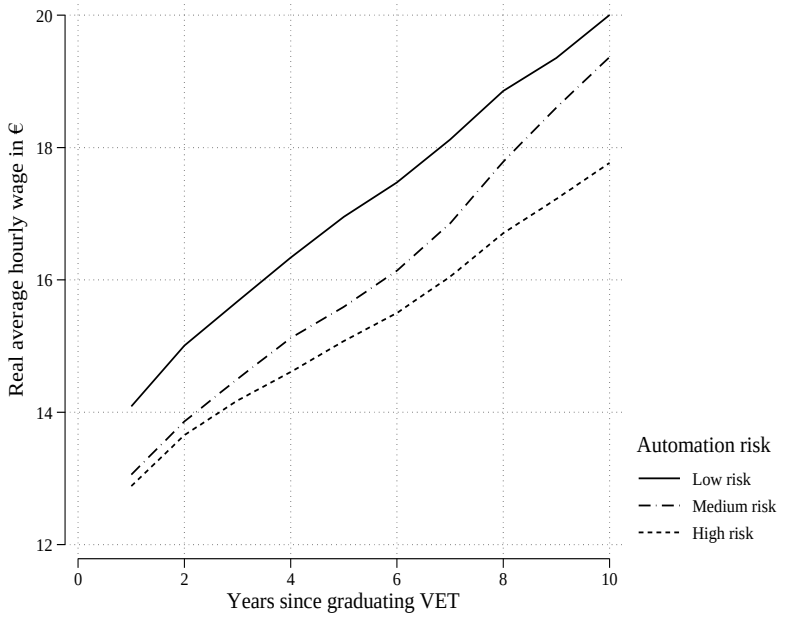


Fig. 2. Wage growth among VET graduates in NL by automation risk



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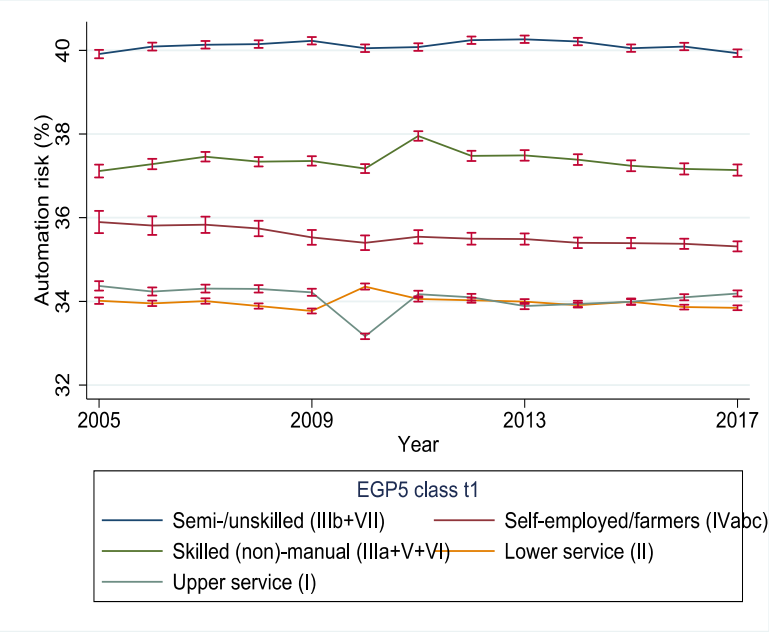
T2.1: Automation, skills, and class

Task 2.1 – Automation risk ex. FI

Fig. 3. Automation risk by class in FI



- Higher automation risk increases career class mobility
  - Particularly in the unskilled, skilled and lower service classes
- Also in relation to parental class

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T2.1: Automation, skills, and class

Task 2.1 – Automation risk

- Conclusions
  - Automation risk strongly related to education, and maybe dominated by it
  - Automation risk not related to wage growth
    - But related to class mobility (potentially both up- & downward)
  - The consequences of automation likely context dependent, e.g. dependent on
    - Education and training system (youth and adult)
    - Work organization

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T2.1: Automation, skills, and class

Task 2.1 – Automation risk

- Questions to audience
  - Is automation risk a useful concept for policy?
  - How should risk be conceived; at the level of industries, occupations, jobs or tasks?

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T2.1: Automation, skills, and class

Task 2.1 – Generic skills

- Skills of two kinds: cognitive and non-cognitive (personality)
- Cognitive clearly important for labor market attainment, and non-cognitive most likely as well
- Potentially more important with tech change; cognitive skills to learn new tasks and non-cognitive as personality traits may become more relevant in new jobs
- What have we done?
  - Apply available measures of generic skills (incl. some of the well-know “Big 5” personality traits)

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T2.1: Automation, skills, and class

Task 2.1 – Generic skills

- Our results
  - Short-term
    - Both cognitive and non-cognitive skills display varied results
  - Long-term
    - Cognitive skills increase earnings
    - Non-cognitive skills more mixed, but tendency to increase here as well

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T2.1: Automation, skills, and class

Task 2.1 – Generic skills ex. DE and SE

Table 1. OLS regression of skills on earnings among grad.
w/ upper secondary vocational degree 1 alt. 10 yrs after grad.

	DE (1 yr.)		SE (10 yrs.)
Cognitive skills	0.050***		0.029***
	(0.012)		(0.009)
Non-cognitive skills			
Extraversion	-0.006		0.035***
	(0.013)		(0.011)
Conscientiousness	0.010		0.010
	(0.012)		(0.010)
Emotional stability	0.038**		-0.017*
	(0.012)		(0.010)

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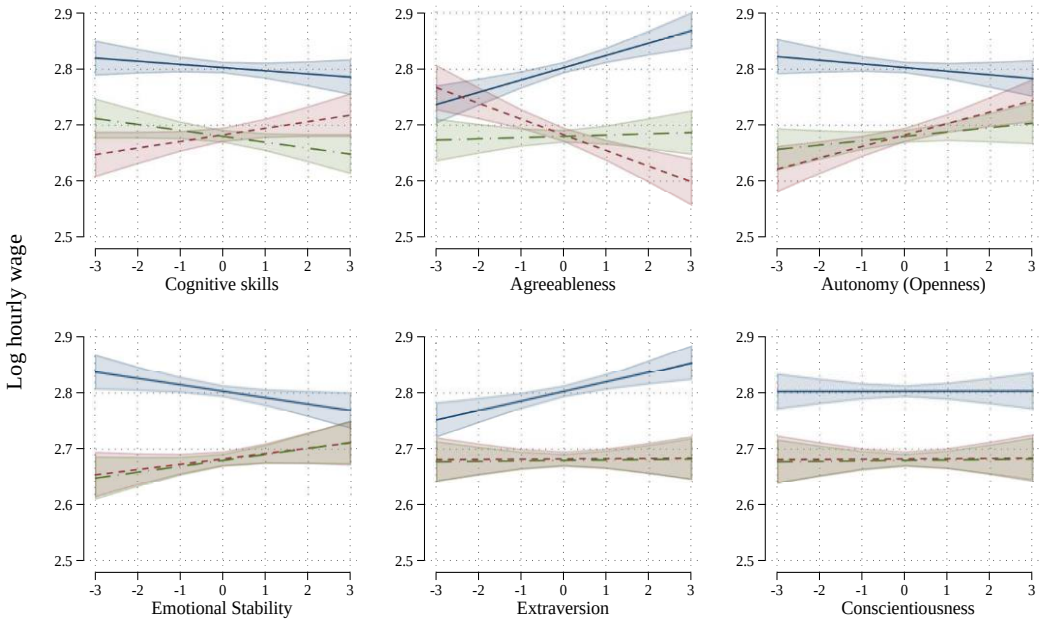
T2.1: Automation, skills, and class

Task 2.1 – Generic skills ex. NL

Fig. 4. Automation risk, cognitive and non-cognitive skills and wages in the NL



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T2.1: Automation, skills, and class

Task 2.1 – Generic skills

- Conclusions
  - Both cognitive and non-cognitive skills important
  - Unclear which non-cognitive skill most beneficial
  - Relationship between skills and automation risks varied
    - In particular with regard to non-cognitive skills

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T2.1: Automation, skills, and class

Task 2.1 – Generic skills

- Questions to audience
  - Should policy focus on generic skills, or on specific?
  - If non-cognitive skills are important, what can policy do and which skills should be in focus?

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Thank you for your attention!

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Task 2.1 – Questions to audience

- Automation risk
  - Is automation risk a useful concept for policy?
  - How should risk be conceived; at the level of industries, occupations, jobs or tasks?
- Generic skills
  - Should policy focus on generic skills, or on specific?
  - If non-cognitive skills are important, what can policy do and which skills should be in focus?

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