

What's the attitude of Spanish workers toward automation and what are they doing about it?

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Labour 2030

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Introduction

Robotics, automation and artificial intelligence (RAIA) are changing whole industries and, with them, the kind of tasks that workers are expected to perform and the abilities they need to perform such tasks.

Are workers worried? Are they improving their employability?

Joint project between the Open University of Catalonia and the Future for Work Institute, an independent observatory of the future of work.

Research questions:

1. What are the perceptions of Spanish workers on the impact of RAIA on their industry and their work? Are these perception different for shorter (now), medium (5 years) and long (10 years) time horizons?
2. What are the characteristics of those workers more and less worried by the potential impact of RAIA?
3. Are Spanish workers updating their skills in order to improve their employability?
4. What is the role, if any, of work complexity in the workers' perceptions about RAIA and their effort of skill updating?

Methods

Measures (1):

- Perceptions on the impact of RAIA:
 - Worry: Brougham & Haar's (2018) scale on employees awareness of smart technology, artificial intelligence, robotics, and algorithms
 - used term “machines or software”
 - Referred to today (C-alpha 0,887), in 5 years (C-alpha 0,893) and in 10 years (0,894)
 - 3 time horizons highly correlated: averaged for an overall worry scale
 - Optimism: one additional question, referred to today in 5 years and in 10 years
 - 3 time horizons highly correlated: averaged for an overall optimism scale

Measures (2):

- Professional update effort: “adaptation and optimization” dimension taken from Van Der Heijde & Van Der Heijden (2006) employability scale, adapted to 5-point scale.

“preparing for future work changes in a personal and creative manner in order to strive for the best possible job and career outcomes”

Cronbach alpha: 0,850

- Work complexity: Zacher, H., & Frese, M. (2011) scale
Handles difficult tasks; makes difficult, complex decisions; uses all their knowledge and skills; learns new things at work

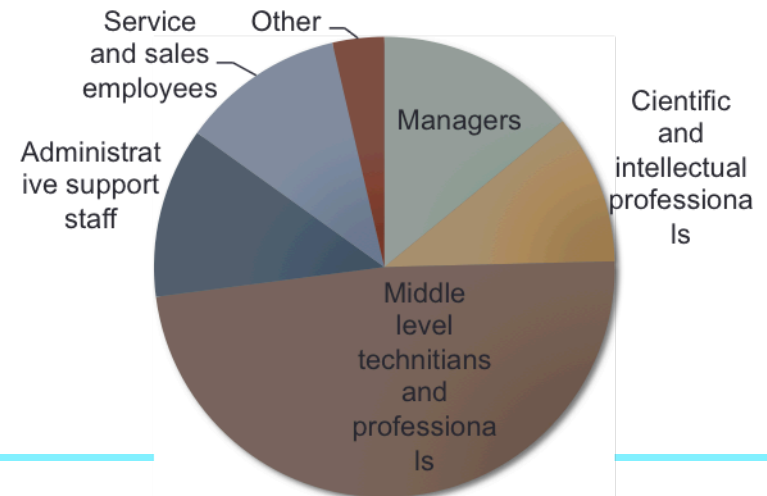
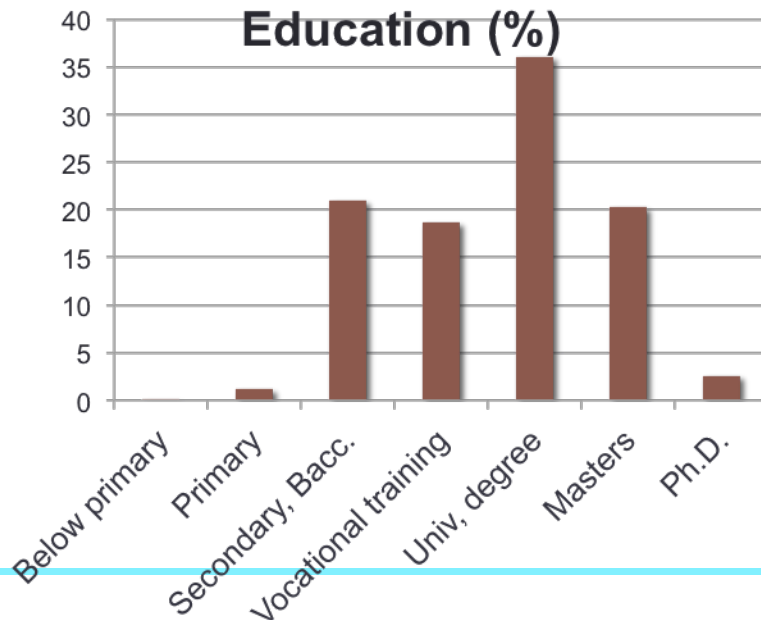
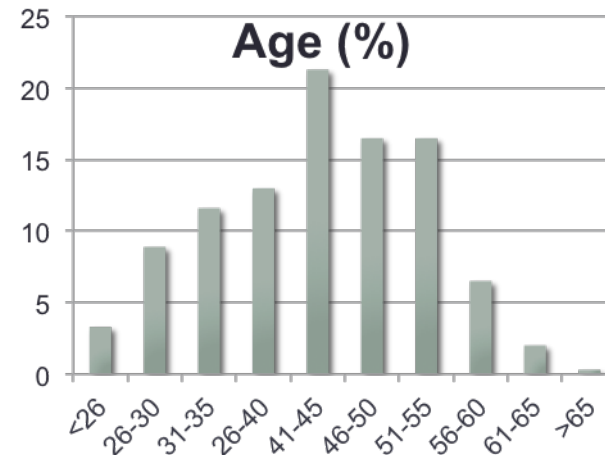
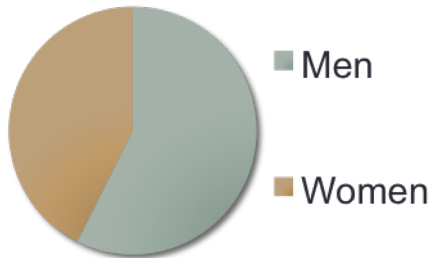
Cronbach alpha: 0,775

Survey respondents:

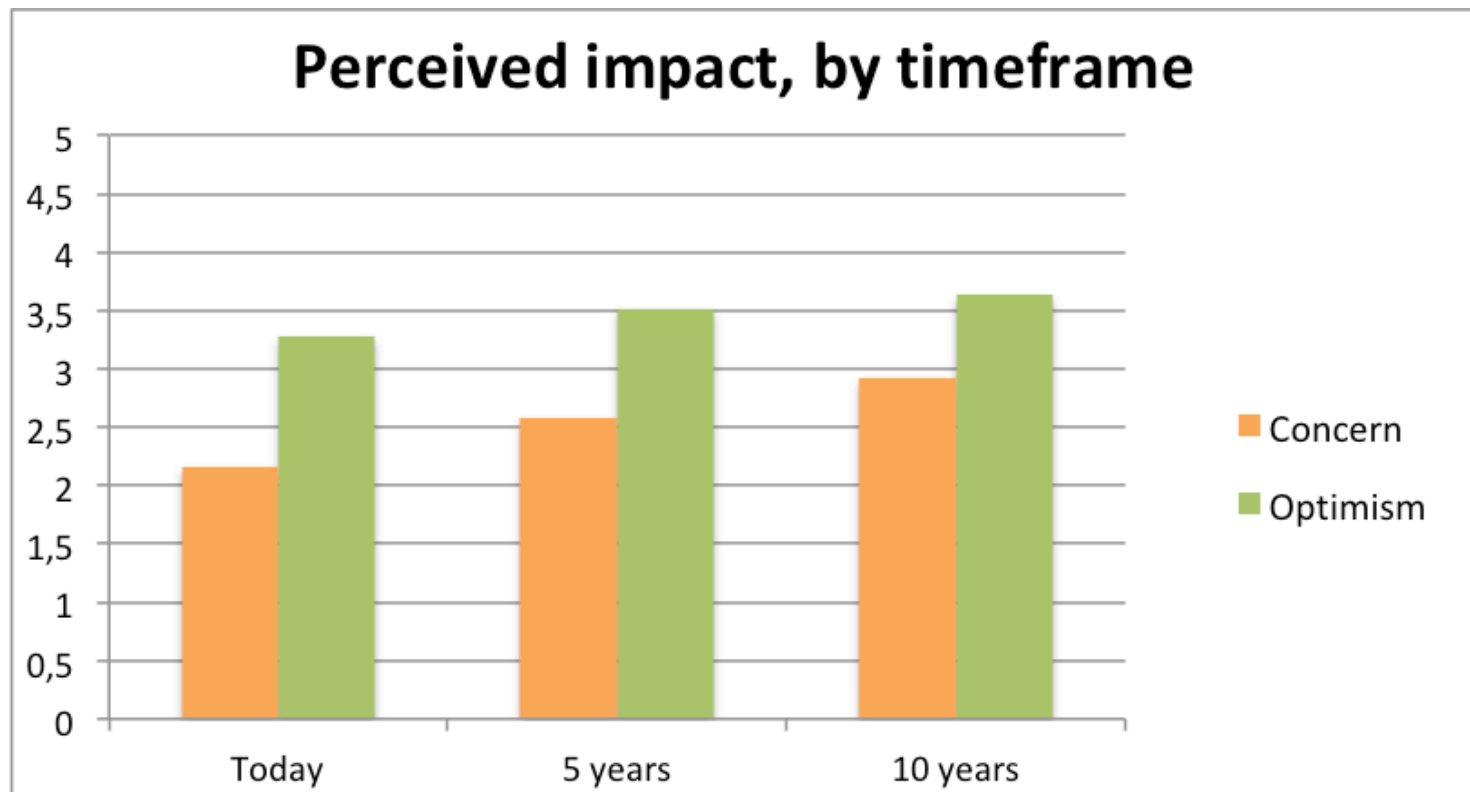
- Base of workers affiliated to UGT, one of the major trade unions in Spain
- Base of workers collaborating in Spain with Randstad, HR and employment services provider
- Base of associates to the Future for Work Institute
- Second semester of 2018

Sample

- 1.559 active workers in Spain
 - Not representative of Spanish workers
- More men, more 41-55 y.o, better educated,
more employees, more managers, more professionals

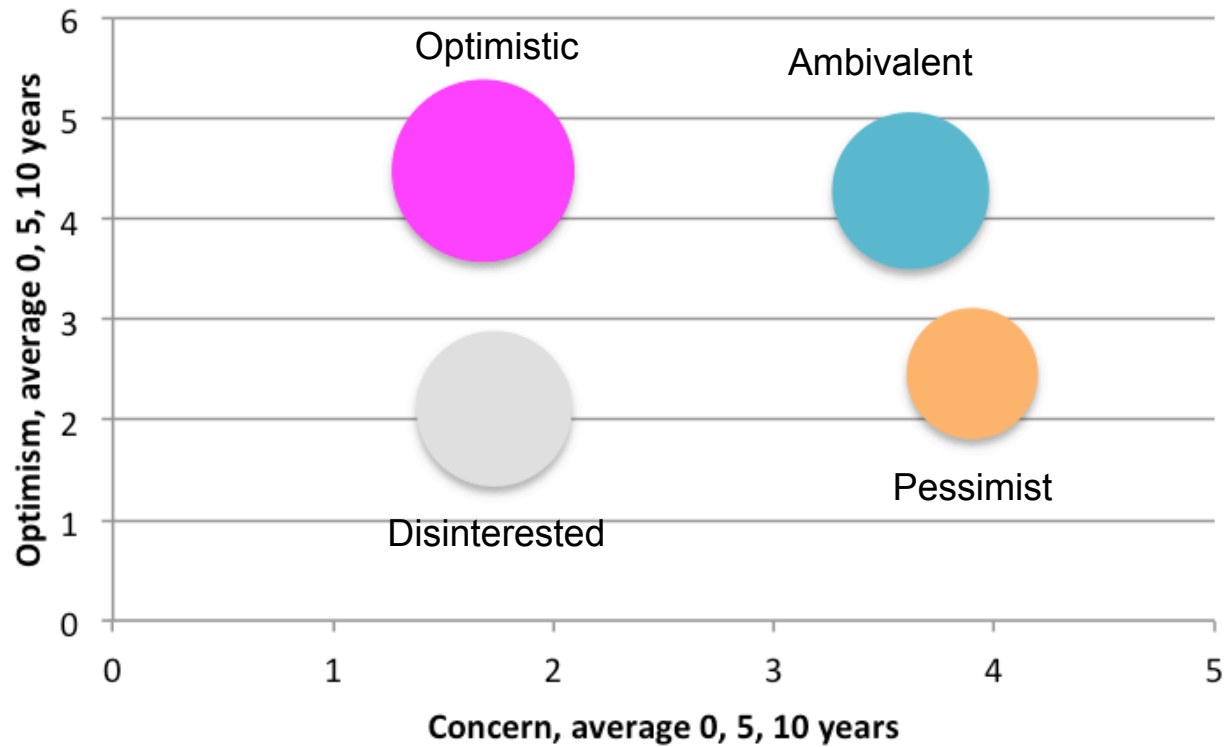


1. What are the perceptions of Spanish workers on the impact of RAIA on their industry and their work?



Profiles

Degree of concern and optimism

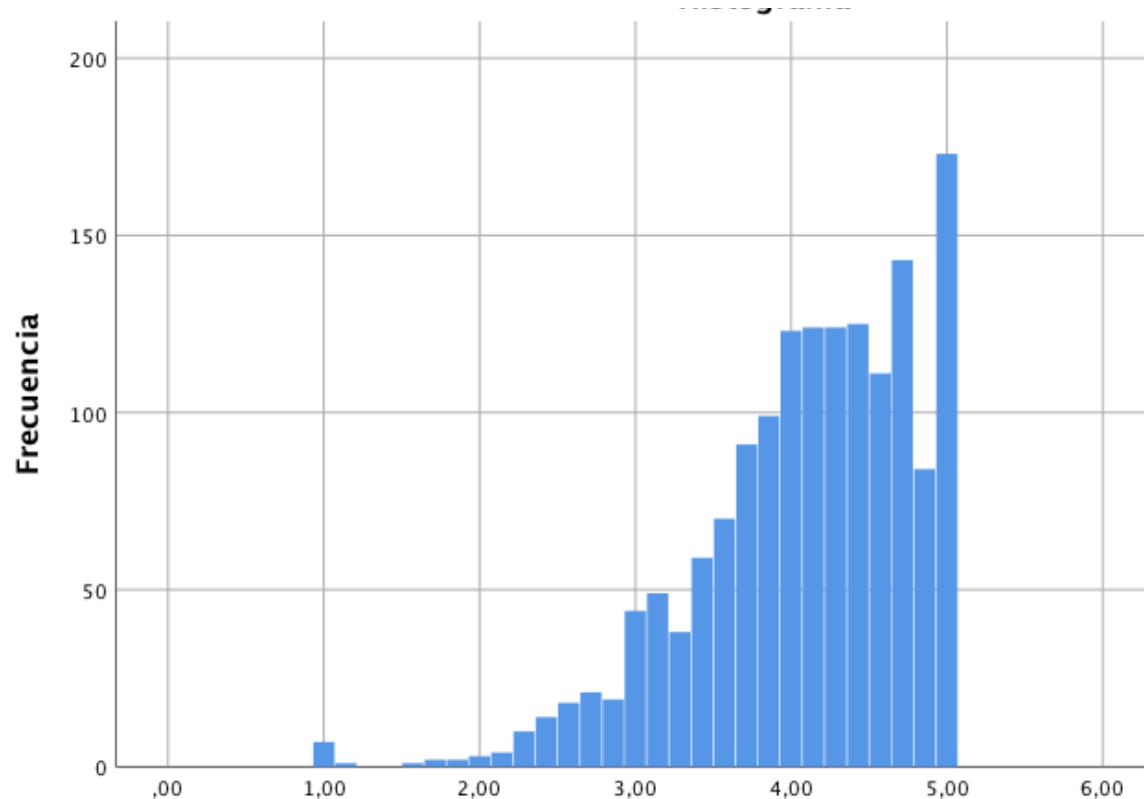


2. What are the characteristics of those workers more and less worried by the potential impact of RAIA?

	Disinterested	Pessimist	Optimistic	Ambivalent
Gender	Woman	Man	Man	Woman
Age	<26–40 y. o.	46–60+ y. o.	41–45	26–30 46–60
Education	Primary ed. Secondary ed. Vocational training	PhD Univ. degree	PhD Master Vocational training	Vocational training Secondary ed.
Seniority	Less 1 year	10 years or more		1 to 5 years
Work type		Cooperativist, civil servant	Independent worker, business owner	
Functional area	Sales Operations, purchases, logistics, manufacturing	Technology and information systems Other professional services	Management R&D Legal Marketing Human resources	Administration, accounting, finance Client service Marketing Other professional services

3. Are Spanish workers updating their skills in order to improve their employability?

- They say they are: average of 4,1 in a 1 to 5 scale

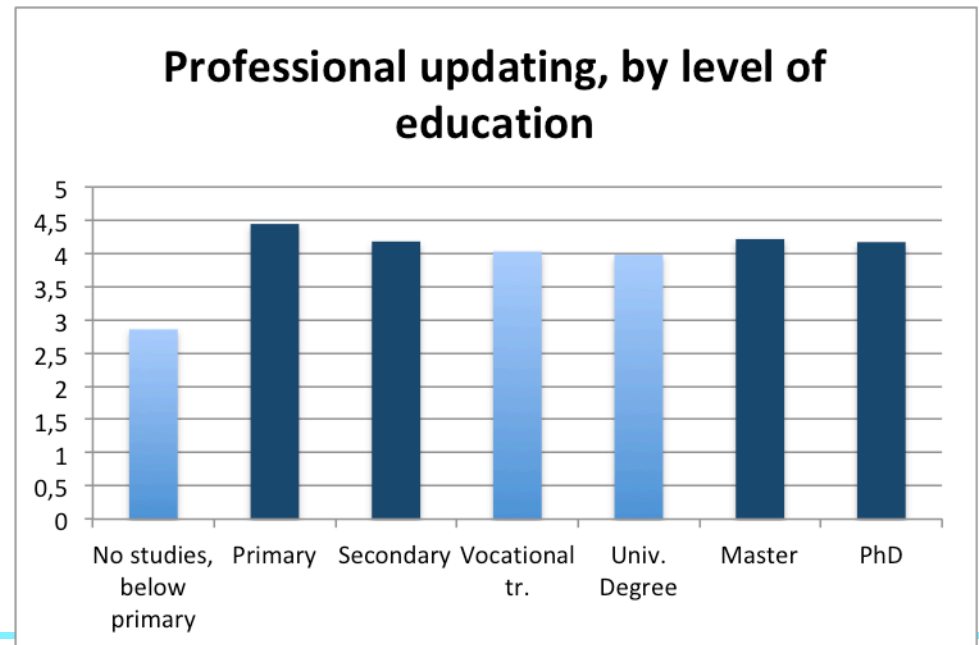


Who are updating their professional skills?

- Not those who are worried, but the optimistic (Spearman's rho correlation: 0,091, $p=0,000$)
- No gender differences
- Younger (up to 45 y.o.)
- Complex relation to education

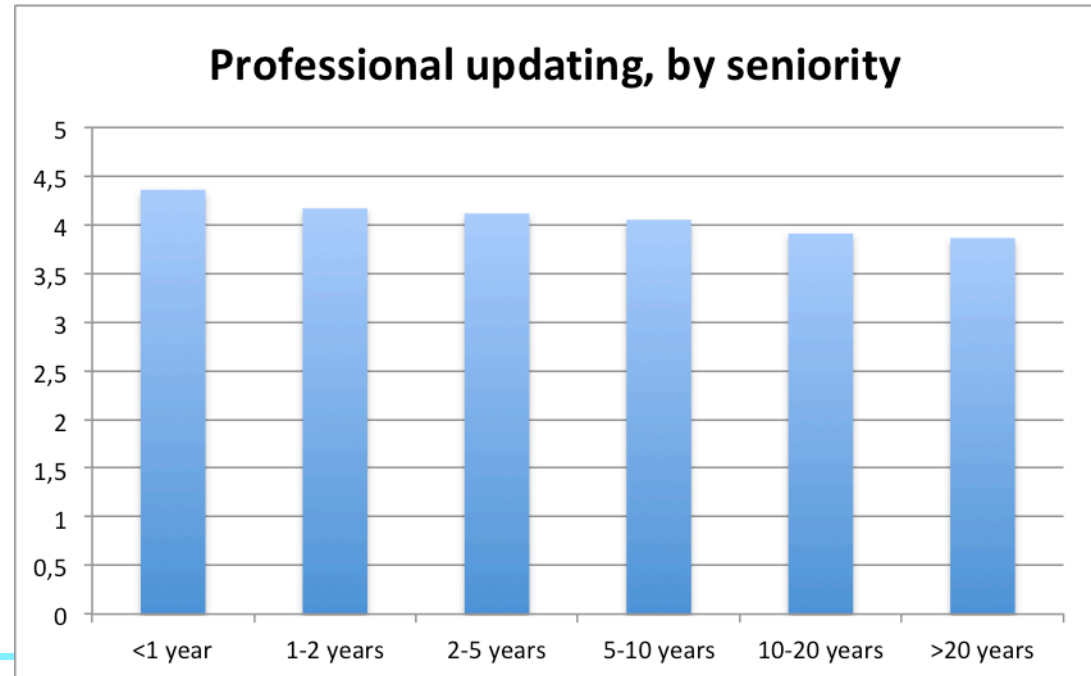
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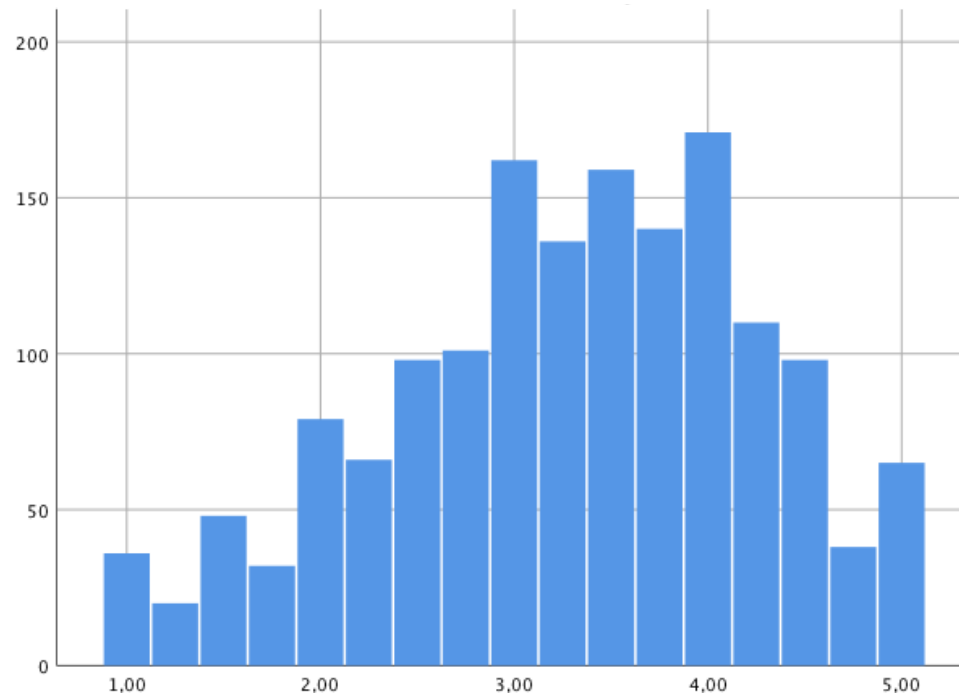


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- No gender differences
- Younger (up to 45 y.o.)
- Complex relation to education
- New to the company
- Self-employed, employed – not cooperativist or civil servant
- Not in largest companies (over 1250 employees)

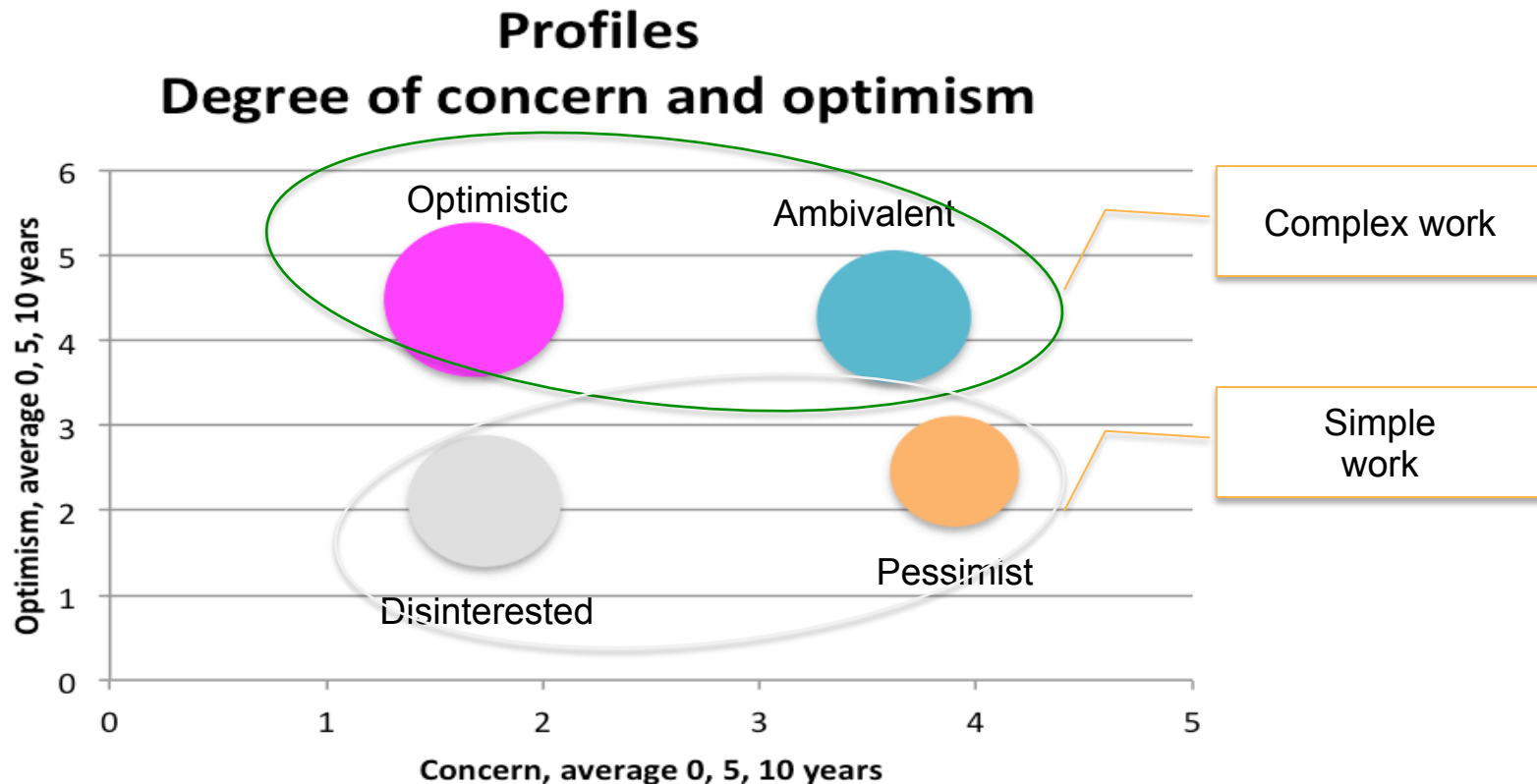
4. What is the role, if any, of work complexity in the workers' perceptions about RAIA and their effort of skill updating?

Work complexity: handles difficult tasks; makes difficult, complex decisions; uses all their knowledge and skills; learns new things at work



Complexity and perceptions

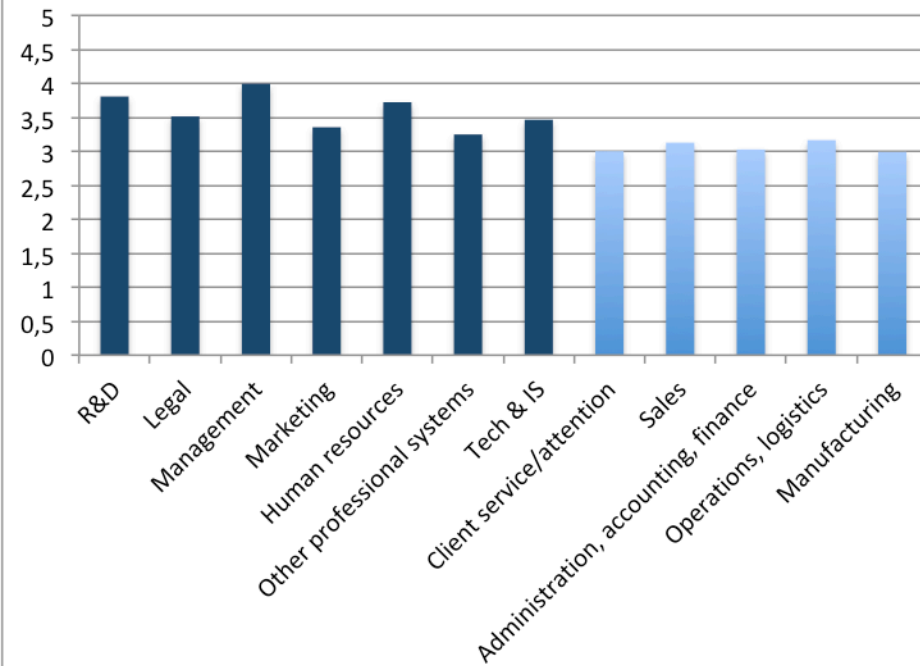
Optimistic profiles have more complex work (Spearman's rho correlation: 0,195; $p=0,000$); those who worry a less complex work (Spearman's rho correlation: -0,138; $p=0,000$)



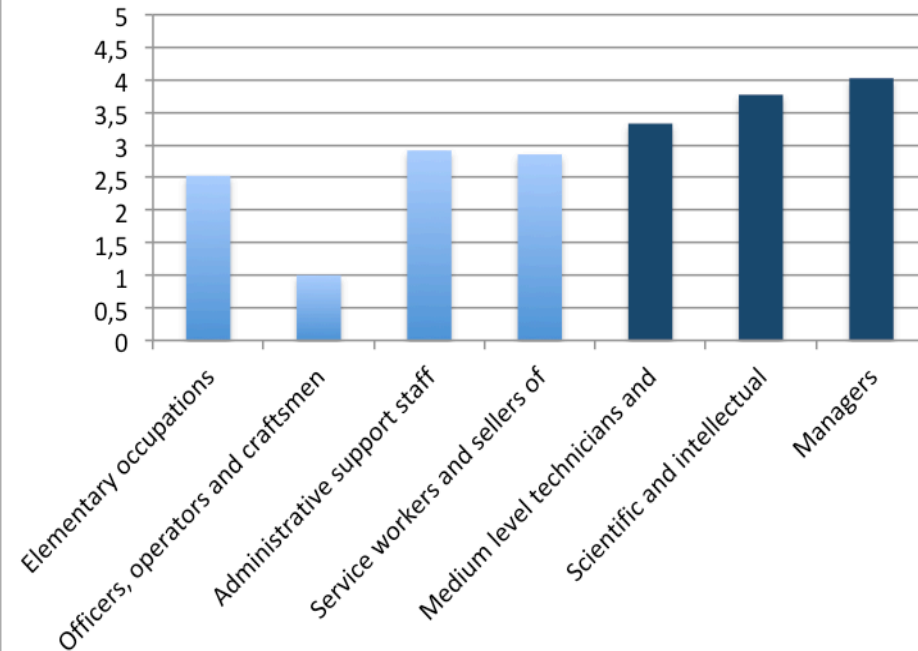
Complexity and professional updating

- People with more complex jobs tend to update their professional skills more (Spearman's rho correlation: 0,167; $p=0,000$)

Complexity, by functional area



Complexity, by occupation



Concluding remarks

- People can be optimistic and pessimist toward technology at the same time
- Optimism/worry correlates with professional updating - People who update are more optimistic, people who don't update are more pessimist. Causalty?
- Who doesn't update: pessimistic, older, long seniority, cooperativist /civil servant, largest company, non-complex work
 - Policy: focus on these groups
 - Companies:
 - Pay more attention in larger companies
 - Give optimistic message about RAIA?
 - Increase work complexity

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