



Investigating the Impact
of the **Innovation Union**

«Strengthening the knowledge base»

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Theme of WP1

- WP1 has analyzed five IU commitments that related to the general theme of human capital and public research
- These five commitments are supposed to work through different mechanisms, but they all intend to foster the creation of advanced human capital in public scientific organization

IU commitments on human capital and public research

- 1.1: Training of researchers
- 1.2: Research careers and employment conditions in public research institutions
- 2.1: University Rankings
- 2.2: Knowledge alliances and partnerships between business and higher education
- 3: E-skills
- 4.1: International research collaborations
- 4.2: Mobility of researchers
- 30: Attracting and retaining foreign talent

Organization of work in WP1

Objectives

For each of the five IU commitments on human capital:

- Identify the commitment rationale
- Evaluate the state of achievement
- Perform a direct impact assessment
- Identify whether and how to integrate them into the NEMESIS model
- Study their broader effects in the European Innovation System (EIS)

Tasks

- Identification of direct and indirect effects (literature review) and data collection
- Develop an approach/econometric model to assess/estimate the impact of the commitments
- Delivering inputs to integrate them into NEMESIS to estimate effects on growth and employment
- Describe how the commitments affect EIS

Team

- TIK, University of Oslo (WP leader)
- WIIW

Overview and summary of results in WP1

Two questions of interest:

1. **Theoretical mechanisms:** How do these IU commitments relate to EU innovation systems?
2. **Empirical impacts:** Have these IU commitments the expected effects?

1. How do these IU commitments relate to EU innovation systems?

- **Actors:** Which actors in the innovation system does the policy target?
- **Where the policy works:** Does the policy intend to foster actors' capabilities, interactions, and/or conditions and obstacles in the system?
- **Direct effects:** What is the main direct economic impact of the policy?
- **Indirect effects:** Are there any important indirect (second-order) effects?
- **Country differences :** What do our results say about strengths and weaknesses of innovation systems in different EU countries?

1. Summary of results

- The five commitments in WP1 all focus on the **actors** HEIs and research institutes (C3 and C30 also target private companies)
- The policies act upon **distinct mechanisms**: they foster actors' capabilities (C1.1, C2.1, C3), improve system's conditions (C1.2, C4.2, C30), and strengthen agents' interactions (C2.2, C4.1).
- Most common **direct effect** is on scientific performance. Most common **indirect effect** is on innovation activities of science-based firms.
- Nearly all five commitments lead to **cumulative effects** that may exacerbate differences between strongly developed and lagging behind innovation systems

2. Have these IU commitments the expected effects?

- **An impact assessment analysis**
- Econometric analysis of the *direct impacts* of each of the five commitments
- For each commitment: A combination of two data sources and approaches:
 - A cross-country comparative analysis of all European economies (country-level)
 - A more disaggregated analysis at different levels (individual researcher; HEI; sector; region)

2. Summary of results

- Econometric findings provide support for some of the empirical relationships that give the foundations and rationale for these IU commitments
- But it is important to interpret these results with caution. Further data and analyses are required to corroborate these results in the future.
- We also find some noticeable differences across countries in Europe.
- It is therefore important that the concrete implementation of IU commitments in each EU country will also take into account the country-specific conditions, strengths and weaknesses, that characterize each innovation system.

Highlight of selected results of WP1

- **Two papers submitted for publication:**

1. Castellacci and Viñas-Bardolet (2018): «Permanent contracts and job satisfaction in academia: Evidence from European countries».

TIK Working Papers in Innovation Studies, in press. Under submission to a journal.

2. Castellacci, Consoli and Santoalha (2018): «Technological Diversification in European Regions: The Role of E-skills».

TIK Working Papers in Innovation Studies, in press. Under submission to a journal.

1. Castellacci and Viñas-Bardolet (2018): «Permanent contracts and job satisfaction in academia: Evidence from European countries»

- **IU commitment:** 1.2 (working conditions for public researchers)
- **Question:** Does academic tenure foster job satisfaction of public researchers?
- **Data:** MORE2 survey. Researcher-level data. All EU countries. Cross-section.
- **Dependent variable:** Job satisfaction.
- **Main explanatory variable:** Academic tenure (permanent contract dummy).
- **Method:** Instrumental variable estimations.
- **Result:** Academic tenure does foster job satisfaction, and particularly so for middle-aged researchers.

2. Castellacci, Consoli and Santoalha (2018): «Technological Diversification in European Regions: The Role of E-skills»

- **IU commitment:** 3 (e-skills)
- **Question:** Do e-skills of the working population affect European regions' ability to create new technological specializations?
- **Data:** Labour Force Survey (Eurostat); Patent data (OECD). NUTS2 regions. All EU countries. Panel 1998-2012.
- **Dependent variable:** Technological diversification index.
- **Main explanatory variables:** New indicators of e-skills in different occupational categories.
- **Method:** Fixed effects and GMM panel estimations.
- **Result:** E-skill development fosters EU regions' ability to diversify. This effect is stronger for less developed regions.

All results and deliverables
are available upon request.
Thank you.

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