

Survey of Junior Researchers 2023: a sneak peek into the world of junior researchers in Flanders

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(JUNIOR) RESEARCHERS AS CRUCIAL PLAYERS IN THE FLEMISH R&I ECOSYSTEM

The European Union measures its innovation performance using the EU Regional Innovation Scoreboard. This scoreboard provides a comparative assessment of the research and innovation performance of the EU member states, other European countries, and selected third countries. In the previous legislative period, Flanders rose from 46th to 23rd place on the scoreboard. In the current legislative period, the Flemish government aims to climb even further to the top 5 (Diependaele, 2024). This requires sustained investment impulses and further optimization of the R&D ecosystem. Within this ecosystem, researchers play a crucial role. Together, they form a diverse yet synergetic system of knowledge acquisition and dissemination. A significant part of these researchers in Flanders conduct research within Flemish universities. Typically they have one of the following three statuses: professor, postdoc, or junior researcher. Junior researchers are researchers without a doctorate. In 2024, Flemish universities counted a total of 17838 junior researchers.

For the past 17 years, the population of junior researchers at Flemish universities has been monitored by the *Survey of Junior Researchers*, administered by ECOOM HR in R&D on behalf of the Flemish government. The *Survey of Junior Researchers* was first conducted in 2008 among junior researchers from Hasselt University, VUB, Antwerp University, and Ghent University. Starting with the second *Survey of Junior Researchers* in 2013, junior researchers from KU Leuven also participated (ECOOM-brief 8). Subsequent surveys took place in 2018 (ECOOM-brief 17) and 2023. Since 2013, a part of the survey questions has been repeated, enabling accurate comparisons over time. Additionally, each survey includes its own set of unique questions addressing topics covering new Flemish policy needs or priorities.

In this ECOOM-brief, we delve into the methodology used in the *Survey of Junior Researchers 2023*. We also provide a first exploration of the profile of junior researchers who participated in the survey and raise the question as to whether they accurately reflect the total population

of junior researchers in Flanders. We then outline the topics the 2023 survey addressed.

SURVEY OF JUNIOR RESEARCHERS 2023: DATA COLLECTION AND RESPONDENTS

The *Survey of Junior Researchers 2023* is a cross-sectional survey aimed at all active junior researchers at Flemish universities at that given timepoint ($N_{\text{population}}=17838$). The survey consists of an online questionnaire, and the respondent can choose between a Dutch or an English version. Data collection took place between May and October 2023. The exact timing of the data collection varies across universities. In total, 4550 junior researchers participated. The overall response rate was 26%, with some inter-university variation: the response rate ranged from 21% (Hasselt University) to 27% (Antwerp University).

Do the survey respondents provide a representative picture of the total population of junior researchers at Flemish universities in 2023? To answer this question, we look at Table 1. Compared to the total population of junior researchers, the survey sample shows an overrepresentation of women and Belgian nationals. This pattern is consistent with the 2013 and 2018 surveys. In 2023, gender options were 'male' and 'female', but also 'I use another term' and 'I prefer not to say'. A total of 91 respondents used one of these last two options. Regarding age distribution, the 2023 survey shows an underrepresentation of the youngest and oldest age categories. When looking at the different Flemish universities in our sample, we notice that the 2023 respondents provide a fairly accurate reflection of the junior researcher population in Flanders. When comparing the scientific clusters, an overrepresentation of engineering and technology, and social sciences is observed. In contrast, agricultural, veterinary, and food sciences are underrepresented. Was the under- and overrepresentation of specific scientific clusters in 2023 similar to what we found in previous surveys? We cannot answer this question conclusively because in 2019 Flanders decided to adopt a new classification system of scientific domains and clusters (Vancauwenbergh & Poelmans, 2019).

Table 1. Characteristics of junior researchers in Flanders, 2023: population vs. respondents of the *Survey of Junior Researchers 2023* (N=4550)

	Population 2023	SJR 2023
Gender		
Male	51.6%	41.7%
Female	48.4%	56.3%
I use another term	-	0.7%
I prefer not to say	-	1.3%
Year of birth		
≤ 1990	28.4%	19.2%
1991-1994	16.7%	26.4%
1995-1997	28.7%	35.1%
≥ 1998	26.2%	19.3%
Nationality		
Belgian	51.8%	59.0%
EU27	19.2%	16.9%
Non-EU27	29.0%	24.1%
Science cluster		
Natural sciences	17.7%	16.6%
Engineering and technology	19.5%	23.9%
Medical and health sciences	23.0%	21.7%
Agricultural, veterinary and food sciences	8.6%	3.3%
Social sciences	20.9%	24.7%
Humanities and the arts	9.6%	9.8%
Interdisciplinary sciences	0.7%	0.0%
University		
KU Leuven	38.6%	37.8%
Ghent University	30.6%	31.8%
Antwerp University	14.3%	15.3%
VUB	12.2%	11.6%
Hasselt University	4.3%	3.5%

Next, focusing on other characteristics of the *Survey of Junior Researchers 2023* respondents, Table 2 reveals that 12.9% of them are appointed as academic assistants. A total of 787 respondents reported being funded by an FWO scholarship: nearly 11% indicated conducting fundamental research, 6.5% strategic basic research, and 0.1% chose 'other'. Scholarships from BOF and VLAIO were mentioned by 36 (0.8%) and 183 (4.0%) respondents, respectively. Other scholarships (3.8%) included, among others, internal university resources and scholarships obtained from 'Kom op Tegen Kanker' or VLIR-UOS. Another 5.2% of respondents reported having received a scholarship abroad. Two-fifths of the junior researchers (41.8%) indicated project funding, while 6.9% reported that they had no university funding. An additional 7.2% reported receiving 'other' types of funding. Compared to *Survey of Junior Researchers 2018* respondents, we observe an increase in the share of academic assistants and project funding, and a slight decrease in the number of researchers with Belgian scholarships (FWO, BOF, ...). Further, Table 2 shows that 61.7% of the 2023 survey respondents are involved in teaching activities. This figure in 2023 is 5% higher compared to 2018.

Nine out of ten junior researchers reported being in a PhD trajectory: 15.9% are in the initiating stage, 61.2% are in the executing phase, and 22.9% are in the finishing phase. Compared to the 2013 and 2018 *Survey*

of Junior Researchers, the fraction of PhD students in the final phase remained the same, while the fraction of PhD students in the executing phase showed a slight increase. Of the other researchers, 5.2% indicated they had already submitted their thesis, 0.6% had stopped their PhD research, and 3.1% were not working on a PhD.

Finally, looking at the working regime of the respondents, nine out of ten work as full-time researchers. Respondents who combine part-time research with another part-time job are spread across various sectors, most prominently combining their research with working in industry or private business (1.8%), hospital (1.5%), or a university in Flanders (1.9%).

Table 2. Position in the academic field of respondents of the *Survey of Junior Researchers 2023* (N=4550)

Type of assignment	
Academic assistantship	12.9%
Belgian scholarship – FWO	
Fundamental research	10.8%
Strategic basic research	6.5%
Other	0.1%
Belgian scholarship – BOF	0.8%
Belgian scholarship – VLAIO	4.0%
Belgian scholarship - other	3.8%
Foreign scholarship	5.2%
Project funding	41.8%
No university funding	6.9%
Other	7.2%
Involved in educational activities	
Yes	61.7%
No	38.3%
Situation in relation to a PhD	
Doing a PhD	91.1%
PhD recently submitted/defended	5.2%
Dropped out of PhD studies	0.6%
No/never PhD-activities	3.1%
PhD phase	
Initiating	15.9%
Executing	61.2%
Finishing	22.9%
Working regime	
Full-time researcher	90.1%
Part-time researcher with no other job	1.8%
Part-time researcher with other job in industry/private business	1.8%
Part-time researcher with other job in government	0.7%
Part-time researcher with other job in hospital	1.5%
Part-time researcher with other job in higher, non-university education	0.6%
Part-time researcher with other job in schools outside of higher education	0.2%
Part-time researcher with other job in non-profit sector	0.6%
Part-time researcher with other job in an academic establishment in Flanders	1.9%
Part-time researcher with other job in an academic establishment outside Flanders	0.8%

[SURVEY OF JUNIOR RESEARCHERS 2023: WHAT QUESTIONS DID WE ASK?](#)

The *Survey of Junior Researchers 2023* reiterates several questions from the 2013 and 2018 surveys allowing us to monitor trends over time. Additionally, the 2023 survey includes a series of unique, new questions aimed at capturing and deepening specific aspects of junior researchers' careers.

In addition to traditional questions about sociodemographic characteristics, the 2013, 2018, and 2023 surveys also explore the position of junior researchers in the academic field (see Table 2), their research environment (supervisor[s], leadership style of the supervisor, working relationship with supervisors, team climate, decision-making in the team), and job-related aspects (workload, decision-making regarding job contents, conflicting role expectations between family and work). In 2023, also an enquiry was made as to whether the researcher is involved in interdisciplinary research.

As in 2013 and 2018, the survey paid significant attention to the performance and well-being of junior researchers in 2023. Both job outcomes and health outcomes were examined. Job outcomes included job satisfaction, turnover intentions, and reasons for turnover. Health outcomes covered negative results such as mental health problems, musculoskeletal complaints, headaches/migraines, loneliness/isolation, and alcohol problems, while positive results were captured in questions about vitality and self-confidence, among others.

Other aspects of junior researchers' careers that were monitored over time (2013, 2018 and 2023) include career perspectives and aspirations, as well as junior researchers' assessment of the value of a PhD for employers outside of academia. The interested reader will find information on how employers in R&D-intensive companies in Flanders perceive the (added) value of a PhD in ECOOM-brief 49. Information on how PhD holders and key stakeholders in government and business perceive the (added) value of a PhD is provided by Stassen et al. (2016). In addition to career perspectives and aspirations and the perceived value of a PhD for the non-academic labor market, the 2023 survey also explored future career paths outside of Flanders and interest in entrepreneurship.

Finally, for the first time, the *Survey of Junior Researchers 2023* included questions exploring transgressive behavior within the work environment of junior researchers. The survey differentiates between being a victim of transgressive behavior and being a witness. The survey also assesses participants' awareness of relevant authorities where such transgressive behavior can be reported, as well as the participants' willingness to submit an official report.

The data collected through the *Survey of Junior Researchers 2023* will be analyzed in the upcoming period. The interested reader can follow our findings through the ECOOM website (<http://www.ecoom.be>).

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