

Junior researchers at the Flemish universities: who is most at risk of inappropriate behavior in the workplace?

Authors: Katia Levecque¹, Justine Van de Velde¹, Veerle Huyghe¹, Alain De Beuckelaer^{1,2}, Alexander De Becker³ & Anneleen Mortier¹

INAPPROPRIATE BEHAVIOR IN ORGANIZATIONS STUDIED FROM A SYSTEMS PERSPECTIVE

A substantial body of scientific research has examined inappropriate behavior in the workplace. Initially, this research focused on the perspective of the victim, with particular attention to individual characteristics. The individual characteristics that have received the most attention are gender and membership in minority groups. Regarding gender, a recurring finding is that women are at greater risk of inappropriate behavior than men (Acquadro Maran, 2020; Bondestam & Lundqvist, 2020). As for minority groups, the literature consistently shows that ethnic and sexual minorities face a higher risk of various forms of inappropriate behavior compared to others (Bondestam & Lundqvist, 2020; Liang, 2024).

Over time, the scientific literature has increasingly recognized that organizational factors can also cause, facilitate, or sustain inappropriate behavior. These organizational risk factors can broadly be grouped into three major categories. The first category consists of task-related organizational risks associated with **job content** (e.g., too much or too little job autonomy, workload, unclear or conflicting expectations, insufficient use or recognition of employees' potential), **working conditions** (e.g., lack of office space, noisy or unsafe workplaces), and **employment conditions** (e.g., job insecurity, too much or too little flexibility, career opportunities) (Colaprico et al., 2023; Giménez Lozano et al., 2021; Nielsen & Einarsen, 2018; Van den Brande et al., 2016).

A second major category includes organizational risks related to the social dimension of the organization and **employment relationships** (Colaprico et al., 2023; Liang, 2024). This encompasses relationships and interpersonal behavior among colleagues (e.g., lack of social support or solidarity, chronic tensions), hierarchical relationships (e.g., authoritarian, laissez-faire, or toxic leadership, abuse of power), and, more broadly, relationships with external stakeholders or "clients" (e.g., patients, students). At the highest organizational level, the social dimension refers to the presence or absence of social dialogue and

participatory mechanisms, as well as, more subtly, practices that psychologize and individualize employment relations. At the level of interactions between individuals or larger entities such as teams, departments, or faculties, competitiveness, the frequency of conflict, and patterns of conflict management also play a significant role (e.g., conflict avoidance, lack of conflict-resolution skills, or nonexistent, inefficient, or ineffective conflict-management practices).

The third and final category of organizational risks relates to **work organization** and organizational dynamics themselves, which are reflected, among other things, in internal communication and the degree of formalization within the organization (Colaprico et al., 2023; Liang, 2024). Organizational dynamics may result from situational necessities (e.g., organizational change, restructuring), but can also stem from organizational culture (e.g., cultures of silence, fear, or blame, favoritism, distributive injustice, and the extent to which inappropriate behavior is tolerated in everyday practice) and organizational structures (e.g., formal versus informal hierarchies, lack of organizational coherence, conflicting procedures, or procedures that trigger, facilitate, or reinforce abuses of power) (e.g., Einarsen et al., 2016). These organizational dynamics do not occur in a vacuum but are embedded within a broader social, political, and economic context.

Understanding inappropriate behavior requires more than a one-sided focus on either individual or organizational risk factors. Instead, it calls for a systems perspective that recognizes the complex interplay of risk factors operating at the individual, organizational, and even societal levels. The societal level not only shapes the social, economic, and cultural context in which organizations operate, but also determines the boundaries used by individuals and legal systems to classify certain behaviors as inappropriate. This systems perspective on labor in general, and on inappropriate behavior in particular, is reflected in the approaches adopted by many international organizations, including the European Agency for Safety and Health at Work (EU-OSHA) and the International Labor Organization (ILO, 2022).

¹ ECOOM HR in R&D: Department of Work, Organization and Society, Henri Dunantlaan 2, 9000 Ghent, Belgium

² ECOOM HR in R&D: Ghent University, University Services, Functional Domain Research, Universiteitsstraat 8, 9000 Ghent, Belgium

³ Ghent University, Department of Criminology, Criminal Law and Social Law, Universiteitsstraat 4, 9000 Ghent, Belgium

ZOOMING IN ON JUNIOR RESEARCHERS AT UNIVERSITIES: WHAT DOES THE SCIENTIFIC LITERATURE TELL US?

When we zoom in specifically on universities, what can scientific research tell us about risk factors for inappropriate behavior within academic employment relationships? More specifically, what does it tell us about risk factors affecting junior researchers?

Most scientific studies on inappropriate behavior in universities focus not on employees but on students, concentrate on sexual misconduct, and are conducted in Anglophone countries (see also Bondestam & Lundqvist, 2020; Glowacz et al., 2024; Keashly, 2021). In these countries, as well as in many other regions, PhD researchers are often considered students rather than employees. Existing studies on inappropriate behavior among students rarely pay explicit attention to PhD students, making the resulting findings insufficiently detailed to provide insight into the specific risk factors affecting this group. Moreover, PhD programs in European and North American universities are not directly comparable. While they share certain similarities, they also differ in many respects that may influence the occurrence, experience, and reporting of inappropriate behavior (see also Levecque et al., 2017).

To date, scientific research on risk factors for inappropriate behavior within academic employment relationships remains relatively limited (Bondestam & Lundqvist, 2020; Else, 2018; Glowacz et al., 2024; Henning et al., 2017; Keashly, 2021). The available studies are again predominantly conducted in Anglophone countries, although some research has also been undertaken in Western and Eastern Europe, the Middle East, Asia, and Africa (Keashly, 2021). A notable observation is that existing studies are often discipline-specific, institution-specific, or focused on a particular staff category (e.g., professors), and frequently lack representative data (see also Bondestam & Lundqvist, 2020; Keashly, 2021; Levecque et al., 2017). Another limitation is that findings are rarely detailed enough to support conclusions about inappropriate behavior among junior researchers in general, and PhD students in particular.

What the limited available research does demonstrate is that the same individual risk factors identified in other organizations and sectors are also present in universities (see above). For example, the risk of experiencing inappropriate behavior appears to be higher among female researchers (e.g., National Academies of Sciences, Engineering, and Medicine et al., 2018; Schraudner et al., 2019; Science & Technology Australia, 2019; Netherlands Labor Authority, 2024) and among international researchers (e.g., Klingberg, 2025; The Lancet, 2022; Schraudner et al., 2019; see also VLIR, 2024).

Findings concerning organizational risk factors for inappropriate behavior within academic employment relationships are, unsurprisingly, closely linked to the way universities are organized. Considerable variation exists both between universities and across countries. The organization of a university is shaped by its mission, operations, and culture, but also by the social, cultural, economic, political, and legislative context in which it operates. Consequently, insights regarding organizational risk factors derived from universities

with significantly different structures and contexts from those of the Flemish universities cannot readily be generalized to the Flemish setting. More relevant for Flanders are recent studies conducted in higher education institutions in Wallonia (Glowacz et al., 2024), the 14 Dutch universities (Netherlands Labor Authority, 2024), the Max Planck Institutes in Germany (Schraudner et al., 2019), and the UNISAFE study carried out across 15 European countries (UNISAFE, n.d.) (see below).

JUNIOR RESEARCHERS AND INAPPROPRIATE BEHAVIOR: STRUCTURAL DEPENDENCE ON SUPERVISORS AND PRECARIOUS EMPLOYMENT AS KEY RISK FACTORS

When the insights from scientific research on inappropriate behavior in universities are considered alongside university annual reports, reports from labor inspectorates and trade unions (e.g., UCU, 2021), and testimonies published on social media and academic platforms (such as Nature and Science), a recurring theme emerges: the particularly vulnerable position of junior researchers and PhD students within academic organizations. This vulnerability is generally linked to employment relationships and working conditions, and more specifically to a strong dependency on supervisors and a precarious employment position (see, among others, UK Parliament, 2022; Van Den Bossche et al., 2025; see also VLIR, 2024).

The structural dependence of junior researchers on their supervisors manifests itself in several areas: employment, the execution of research activities, and the opening, or closing, of opportunities in subsequent career stages. For international junior researchers, this dependence is often even greater, as their integration, visa status, and sometimes even housing arrangements may also depend on their supervisor (Klingberg, 2025; see also VLIR, 2024). However, the extent of this structural dependence varies considerably across universities, regions, and countries. In many respects, junior researchers at the Flemish universities are less dependent on their supervisors than many of their counterparts in countries such as Germany or Italy. This is reflected, among other things, in the level of legal protection available to junior researchers (see also above and ECOOM-brief 55), as well as in the commitment of the Flemish universities and funding agencies such as the Research Foundation Flanders (FWO) to provide contracts or fellowships that allow sufficient time to complete research projects, typically four to six years. In many countries, junior researchers receive contracts lasting only one, two, or three years and are entirely dependent on their supervisors for contract renewals (see also Bundesverfassungsgericht, 14 February 2012, regarding salary levels and their impact; Wagne et al., 2025).

In many countries and regions, including Flanders, efforts are underway to introduce structural, and in some cases legal, reforms aimed at better protecting and representing the interests of junior researchers (see, among others, Gewin, 2025; Witze, 2018). These initiatives emerge through both top-down and bottom-up processes (see, for example, the #IchbinHanna movement in Germany; Bahr et al., 2021; Klingberg, 2025). The proposed reforms are not limited to reducing junior researchers' dependence on their supervisors. They also seek, for

example, to develop specific competencies and procedures that enhance both performance and well-being within these dependent relationships. Each Flemish university has made its own choices in this regard, resulting in a broad range of initiatives, from policies requiring every PhD project to be supervised by at least two promotors to dedicated training programs for newly appointed professors.

BROADENING THE FOCUS TO BETTER UNDERSTAND INAPPROPRIATE BEHAVIOR AMONG JUNIOR RESEARCHERS

A systems perspective invites us to move beyond the recurring focus on “the supervisor as perpetrator and the junior researcher as victim” as well as the emphasis on structural dependence and precarious employment conditions. There are several ways to do so. We discuss six. A first way to better understand inappropriate behavior among junior researchers in universities from a systems perspective is to consider **all actors** involved in inappropriate behavior within the organization. To date, scientific research, and by extension social media and academic platforms, has primarily given a voice to victims. Research involving witnesses of inappropriate behavior remains limited, while research involving perpetrators is virtually nonexistent (see also Nielsen & Einarsen, 2018; Keashly, 2021). A systems perspective therefore requires examining not only victims, but also witnesses and perpetrators, as well as policymakers, administrative staff, confidential counselors, and members of disciplinary committees.

A second way to gain a better understanding of inappropriate behavior among junior researchers is to map **all the positions** that junior researchers occupy within the university (e.g., employee, student, instructor, colleague, etc.), as well as the **different work and power relationships** that flow from these positions and the role set associated with each. A **role set** refers to all the roles, and therefore the explicit and implicit, and sometimes conflicting, expectations attached to a position.

Little scientific research, and few testimonies on social media or academic platforms, address inappropriate behavior perpetrated by actors other than the supervisor. Yet such behavior may also come from other supervisors, senior or junior colleagues, students (individually or collectively), or third parties (e.g., patients, research participants, or industry partners).

The study conducted at the prestigious Max Planck Institutes in Germany explicitly investigated who engaged in inappropriate behavior. The researchers found, for example, that in half of the cases of unwanted sexual behavior, the perpetrator was either the supervisor or another supervisor, while in one quarter of the cases the behavior involved one or more colleagues from the same research group (Schraudner et al., 2019).

The same study also found that bullying generally extended over longer periods of time, usually occurred within the victim's immediate work environment, and often involved multiple perpetrators. Group dynamics therefore appear to be particularly important in these forms of inappropriate behavior. In approximately half of the cases, supervisors

were involved in the bullying, while in two out of five cases colleagues from the same research team were involved. Whether bullying involves only supervisors, only colleagues, or both partly depends on the specific form of bullying.

Research on workplace bullying typically distinguishes between work-related bullying and personal bullying. Regarding work-related bullying by supervisors, junior researchers report experiences such as unreasonably high and unattainable work demands, last-minute denial or repeated withdrawal of previously approved leave, threats of dismissal or non-renewal of contracts, threats to withhold recommendation letters, withholding important information or funding opportunities, improper appropriation of intellectual property, and exclusion from activities and meetings (e.g., Gewin, 2025). At times, distinguishing such behavior from the exercise of managerial authority may be difficult. Work-related bullying by colleagues includes repeatedly ignoring opinions and input, withholding information, and excluding individuals from activities and meetings. Personal bullying, by contrast, may involve exclusion from informal activities or social interactions, ignoring or ridiculing individuals, spreading rumors, excessive joking, or making insulting remarks. Among female junior researchers, inappropriate behavior may also take the form of threats of sanctions or dismissal in the event of pregnancy (e.g., Kupferschmidt, 2018; Rutten & Rieke, 2024).

A third way to understand inappropriate behavior among junior researchers from a systems perspective is to examine **two specific positions** in greater detail: that of employee and that of student. In Flanders, approximately nine out of ten junior researchers are pursuing a PhD degree, but they do not all do so under the same **legal status**. Their status may be that of an employee, a student, or a combination of both. Not everyone pursuing a PhD is an employee. PhD scholarship holders, for example, receive a fellowship rather than a salary and are only partially covered by labor legislation. For most junior researchers who are employees, their employment and/or PhD research is funded either through resources obtained by one or more supervisors or through a personal scholarship. Regardless of their employment status, all PhD students at the Flemish universities must be officially enrolled as students. In addition to employment-related obligations, this may entail additional requirements such as participation in training or professional development programs. This dual status of employee and student entails a range of rights, obligations, and interests that are often difficult to reconcile. It is precisely this ambiguity that may create fertile ground for inappropriate behavior. To date, however, no scientific studies have examined this issue in greater depth.

A fourth way to better understand inappropriate behavior among junior researchers is to focus on the **role they play in education**, whether formally assigned or not. Education-related roles can be highly diverse, ranging from lecturer, course assistant, and supervisor of master's theses and workshops, to evaluator. Do junior researchers involved in education experience inappropriate behavior more frequently than colleagues without education activities? We found no empirical studies on this question. There is, however, research showing that students are

one of the main sources of bullying directed at academic and scientific staff (Lampman et al., 2009; Schraudner et al., 2019).

There is also a substantial body of literature on so-called student incivility, which may manifest itself through intentionally disrupting or sabotaging classes, challenging authority, verbal or non-verbal aggression, threatening to file complaints with supervisors, course coordinators, or ombudspersons, or threatening legal action (Keashly, 2021; McKay et al., 2008). In addition, there is growing sensitivity surrounding specific and sometimes controversial topics or actions that may arise in educational settings (Keashly, 2021; see also VLIR, 2024). Within today's higher education environment, students possess considerable informal and formal power, both individually and collectively. This is reflected, among other things, in the importance of student satisfaction measures in evaluations of courses and instructors. For junior researchers who lack clear guidelines, formal authority, institutional power, and support from the course coordinator, these circumstances may create a work environment in which the risk of student incivility is substantial. At the same time, the risk of inappropriate behavior may also originate from the course coordinator or, in case these are not the same persons, from the supervisor. Such behavior may include systematically disregarding working-time arrangements and work agreements that are established not only contractually but also legally.

A fifth way to understand inappropriate behavior among junior researchers in universities from a systems perspective is to focus on the role of **the PhD student**. The explicit and implicit expectations associated with this role evolve throughout the PhD journey. The specific interpretation of these expectations varies among promotor and PhD students, as well as across departments, faculties, and universities. Throughout the PhD process, expectations, agreements, and boundaries must be renegotiated repeatedly. This requires specific competencies and skills from both promotor and PhD students. Such adjustments are not always made explicitly and deliberately; they may also develop implicitly and organically. Ideally, continual adjustment of expectations, agreements, and boundaries leads to improved performance and well-being. However, it may also result in increased ambiguity, frustration, disagreement, and conflict, or in behaviors that are perceived as inappropriate. To date, there is no scientific research examining what promotor and PhD students perceive as "acceptable" or "inappropriate" behavior, nor whether these perceptions evolve throughout the PhD process.

A sixth, and final, way to better understand inappropriate behavior among junior researchers in universities is to consider **scientific disciplines**. Some authors argue that certain disciplines, due to their culture, organization, and mode of operation, are more prone to inappropriate behavior, but there is little empirical research explicitly testing this claim (Keashly, 2021; Metzger et al., 2015). Scientific disciplines differ in how work is organized, and these differences may significantly affect the positions, roles, and work and power relationships within which junior researchers operate.

For example, research in STEM disciplines is more often organized according to a so-called solar system model, meaning that work is

conducted in teams, within the more structured environment of laboratories and experiments, and often under the additional supervision of senior researchers or postdoctoral researchers. In non-STEM disciplines, research is more frequently conducted individually and under the direct supervision of a supervisor or principal investigator. Compared with the STEM solar system model, junior researchers in non-STEM disciplines often experience greater autonomy and less oversight, but at the same time frequently receive less support.

ACADEMIC CULTURE AND INAPPROPRIATE BEHAVIOR

A systems perspective on inappropriate behavior in organizations not only calls for mapping the social architecture of organizations by examining positions, relationships, and roles. It also requires attention to the cultural architecture of organizations and an exploration of how cultures and subcultures, as well as values, norms, and behavioral patterns, may cause, facilitate, or sustain inappropriate behavior. To date, little scientific research on inappropriate behavior within universities has specifically addressed this issue.

Research on the cultural architecture of inappropriate behavior first requires insight into the diversity of value frameworks through which university **employees** interpret behavior and perceive it, or not, as inappropriate (see ECOOM-brief 53). This diversity of value frameworks may be particularly pronounced among junior researchers: one in two junior researchers in Flanders is an international researcher. Research on the relationship between cultural diversity and employee (mis)treatment in multinational organizations suggests that variation in value frameworks is an important factor in understanding how inappropriate behavior occurs, is experienced, and should be addressed (Harvey et al., 2006; Keashly, 2021; Leng & Yazdanifard, 2014).

In addition to cultural values and norms at the individual level, there are also formal and informal cultures and subcultures at the level of **organizational units**, including teams, departments, faculties, scientific disciplines, and universities. Together with attitudes, prevailing perceptions, emotions, and beliefs, these cultures and subcultures form the university's undercurrent. This undercurrent constitutes the invisible, informal dynamic that shapes what actually happens in day-to-day working life.

What we do find in the existing scientific literature on inappropriate behavior in universities are references to "**academic culture**". The question, however, is what exactly this concept entails. Keashly (2021) offers an answer grounded in three principles upon which universities are built: academic freedom, shared governance, and peer-based social control. According to Keashly (2021), the principle of academic freedom enables professors to develop ideas and viewpoints that may be controversial, unpopular, or contrary to prevailing schools of thought and narratives. Professors must be able to do so without fear of retaliation or sanctions. This requires the ability to function autonomously, job security, and an environment in which ideas can be freely promoted, challenged, accepted, or rejected. Debate, argumentation, criticism, and disagreement are therefore essential practices within universities, and academics are trained to be analytical, critical, challenging, argumentative, and persistent (see also Armstrong,

2012). Through the principle of shared governance, these rules of engagement are not only applied to the development of knowledge but also to institutional decision-making (Keashly & Neuman, 2013). The principle implies that some professors occupy governance roles within the university, thereby bringing their skills in debate, argumentation, and critique into policy processes and challenging management decisions. The principle of the power of the peer is intended to ensure that professors assess not only each other's ideas but also each other's professional conduct, for example through collegial decision-making processes (Braxton & Bray, 2012). According to Keashly (2021), the prevailing rules of engagement, the practice of shared governance, and the legitimate authority granted to professors to evaluate one another's professional behavior are not commonly found in other organizations or sectors (see also Christy, 2010; Fratzl & McKay, 2013). In this respect, the academic environment differs from others because those occupying higher hierarchical positions are also one another's peers. Moreover, professors often perform governance and evaluative responsibilities through systems of rotating appointments. This implies that the argumentation and opposition that are academically necessary take place among the same individuals who must also collaborate in decision-making processes, albeit within a different dynamic. Keashly argues that behavior expected under these principles could, outside the university setting, be viewed as unacceptable, problematic, disruptive, or inappropriate. Within universities, however, the very same behavior may be regarded as acceptable, necessary, or even desirable when demonstrated by professors, while being perceived as problematic when exhibited by other staff members, such as junior researchers (see also Nelson & Lambert, 2001).

According to Armstrong (2012) and Tannen (2002), the power of the peer does not always translate into a cooperative and constructive academic work environment. This form of social control can also be used to enforce conformity and silence voices that challenge the status quo or dominant ideas and narratives. The fact that professors are required to evaluate each other's work for promotions, publications, and grant applications, as well as the work of each other's junior researchers, inherently creates opportunities for abuses of power and derogatory conduct. These opportunities are amplified when evaluations are conducted anonymously, when evaluation criteria are largely implicit and subject to change, and when the evaluator occupies a key position within a network of power relations. The power of the peer may also manifest itself in a different way: as a dilemma about whether to confront a colleague regarding problematic behavior (Crouch, 2016; Keashly & Neuman, 2010). Addressing a colleague's behavior may be perceived as uncollegial and as undermining that colleague's autonomy (Keashly & Neuman, 2010). The result can be the facilitation and continuation of unwanted, or even inappropriate, behavior.

ASSESSING INAPPROPRIATE BEHAVIOR THROUGH THE SURVEY OF JUNIOR RESEARCHERS 2023

In what follows, we examine individual and organizational risk factors for inappropriate behavior among junior researchers at the Flemish universities. To do so, we use the data from the *Survey of Junior*

Researchers 2023, conducted by ECOOM HR in R&D commissioned by the Flemish government. This survey is administered every five years to all junior researchers at the Flemish universities and aims to monitor their performance, well-being, and career development. In 2023, there were 17838 junior researchers, approximately nine out of ten of whom were engaged in PhD research. For further details on the data collection process, respondents, and topics covered in the *Survey of Junior Researchers 2023*, we refer to ECOOM-brief 51.

In 2023, several questions on inappropriate behavior were for the first time included in the survey. These questions were developed in consultation with the five Flemish universities. Findings based on these questions have been reported in ECOOM-briefs 53 through 58. The extent to which the 3877 respondents who answered the questions on inappropriate behavior are representative of all junior researchers at the Flemish universities is discussed in ECOOM-brief 53.

The analysis presented here focuses on the question: "In your workplace how often have you been victimized in the past 12 months when it comes to ...?" Respondents were asked about five forms of inappropriate behavior: physical violence, sexual harassment, bullying, intimidation or threats, and discrimination. For each form, five response options were provided: "never," "sometimes," "often," "always," and "I prefer not to say."

In ECOOM-brief 53, we examined how frequently junior researchers indicated being victims of these forms of inappropriate behavior. In the present brief, we investigate who is most at risk of experiencing these forms of inappropriate behavior at work. Specifically, we examine associations with individual characteristics, job and employment characteristics, and characteristics of the work environment.

Physical violence is excluded from the analyses presented here. As noted in ECOOM-brief 53, the number of respondents reporting physical violence was too small to allow for reliable statistical estimates. Consequently, we focus exclusively on the risk of experiencing sexual harassment, bullying, intimidation or threats, and discrimination.

More specifically, we address the following three research questions:

1. *Does the risk of inappropriate behavior vary according to individual characteristics, such as gender and nationality?*
2. *Does the risk of inappropriate behavior vary according to job and employment characteristics, such as involvement in educational activities, PhD track, PhD phase, number of promotors, and type of appointment?*
3. *Does the risk of inappropriate behavior vary according to characteristics of the work environment, such as science cluster and university?*

DOES THE RISK OF INAPPROPRIATE BEHAVIOR VARY ACCORDING TO INDIVIDUAL CHARACTERISTICS, SUCH AS GENDER AND NATIONALITY?

Table 1 first examines whether experiences of inappropriate behavior differ by gender. With the exception of bullying, we find significant gender differences for sexual harassment, intimidation or threats, and

discrimination in the workplace. Because the number of respondents who indicated their gender as "I use another term" (N=23) or "I prefer not to say" (N=38) was small, the estimates for these groups are less robust. For the sake of completeness, the figures are nevertheless included in the table.

Zooming in on junior researchers who identified as either "male" or "female", we observe that 4.3% of women indicating having experienced sexual harassment during the previous year, compared to 0.5% of men. Regarding intimidation or threats, 7.2% of men and 11.4% of women indicated having been affected. As for discrimination, 10.9% of men indicated that they had experienced discrimination in the preceding year, compared to 16.5% of women.

Turning next to nationality, Table 1 shows no statistically significant differences regarding sexual harassment or intimidation and threats. However, significant differences by nationality are observed for both bullying and discrimination. Experiences of bullying are indicated least frequently by junior researchers with Belgian nationality (7.3%). Among international junior researchers, the figures are 12.7% for those from within the EU-27 and 11.4% for those from outside the EU-27. Looking at discrimination, we see that 8.0% of junior researchers with Belgian nationality indicated having experienced discrimination during the previous year. This proportion rises to 17.3% among international junior researchers from within the EU-27 and to 29.7% among junior researchers originating from outside the EU-27.

Table 1. All junior researchers at the Flemish universities, 2023: Being a victim of sexual harassment (SH), bullying (B), intimidation or threats (I/T), or discrimination (D) at the workplace during the previous 12 months: by gender and nationality (N=3877)

	SH %	B %	I/T %	D %
Gender	***	n.s.	***	***
Male	0.5	7.6	7.2	10.9
Female	4.3	10.2	11.4	16.5
I use another term (§)	8.7	13.0	21.7	30.4
I prefer not to say (§)	5.3	10.5	10.5	30.6
Nationality	n.s.	***	n.s.	***
Belgian	2.9	7.3	9.7	8.0
EU27	3.1	12.7	11.0	17.3
Non-EU27	2.2	11.4	8.8	29.7

Note: Significance based on the Chi²-test

n.s. = not significant *** =p<0.001

(§) = percentage calculated on N<50

DOES THE RISK OF INAPPROPRIATE BEHAVIOR VARY ACCORDING TO JOB AND EMPLOYMENT CHARACTERISTICS, SUCH AS INVOLVEMENT IN EDUCATIONAL ACTIVITIES, PHD TRACK, PHD PHASE, NUMBER OF PROMOTORS AND TYPE OF APPOINTMENT?

When examining whether the risk of inappropriate behavior differs according to specific job and employment characteristics of junior researchers, Table 2 shows that there are no significant differences

associated with involvement in educational activities, being in a PhD track, or the number of promotors involved in the PhD project.

Significant differences do emerge, however, with respect to the PhD phase. Junior researchers in the initiating phase of their PhD show the lowest levels of sexual harassment, bullying, intimidation or threats, and discrimination at work. This may partly be related to the survey design and the relatively long reference period used for early-stage researchers. Respondents were asked about experiences of inappropriate behavior during the previous 12 months, while most respondents in the initial stage of their PhD had been employed as junior researchers for less than 12 months.

When comparing junior researchers in the executing stage and the finishing stage of the PhD, we observe an increase in numbers of sexual harassment, bullying, intimidation or threats, and discrimination in the workplace. For sexual harassment, the prevalence is 1.1% in the initiating phase, 3.3% in the executing phase, and 2.9% in the finishing phase of the PhD. For bullying, the corresponding figures are 4.8%, 9.1%, and 13.3%. For intimidation or threats, the percentages rise from 3.9% in the initiating phase to 9.7% in the executing phase and 14.5% in the finishing phase. The same pattern is observed for experiences of discrimination: whereas 11.2% of PhD students in the initial stage indicate discrimination, the figures increase to 13.9% and 19.0% among PhD students in the execution and completion stages, respectively.

Table 2. All junior researchers at the Flemish universities, 2023: being a victim of sexual harassment (SH), bullying (B), intimidation or threats (I/T), or discrimination (D) in the workplace during the previous 12 months: by involvement in educational activities, PhD track, PhD phase, number of promotors, and type of appointment (N=3877)

	SH %	B %	I/T %	D %
Involved in educational activities	n.s.	n.s.	n.s.	n.s.
Yes	3.1	8.8	10.4	13.7
No	2.2	9.7	8.7	15.6
PhD track	n.s.	n.s.	n.s.	n.s.
Yes	2.8	9.3	9.8	14.6
No	3.1	5.6	6.3	8.6
PhD phase	*	***	***	***
Initiating	1.1	4.8	3.9	11.2
Executing	3.3	9.1	9.7	13.9
Finishing	2.9	13.3	14.5	19.0
Number of promotors	n.s.	n.s.	n.s.	n.s.
One promotor	3.3	9.8	9.8	15.7
More than one promotor	2.6	8.9	9.7	14.0
Type of appointment	n.s.	n.s.	**	***
Academic assistantship	3.1	9.5	13.5	15.1
Belgian scholarship	3.2	10.7	10.1	12.8
Foreign scholarship	2.7	10.4	4.9	26.2
Project funding	2.6	7.8	8.4	12.8
No university funding	2.9	11.9	11.2	22.6
Other/I don't know	1.5	7.0	10.4	14.2

Note: Significance based on the Chi²-test

n.s. = not significant * = p<0.05 ** = p<0.01 *** = p<0.001

Finally, when examining type of appointment, no statistically significant differences are observed for sexual harassment or bullying. Significant differences do emerge, however, for intimidation or threats and for discrimination in the workplace.

With respect to intimidation or threats, the lowest prevalence is found among junior researchers funded through a foreign scholarship (4.9%), followed by project-funded researchers (8.4%). For the other appointment categories, the figures range from 10.1% among those holding a personal scholarship from Belgium to 13.5% among assistants with educational activities. Looking at discrimination, we find much higher prevalence and considerable differences. Junior researchers funded through a personal scholarship from Belgium (e.g., FWO, BOF, Baekeland), as well as project-funded researchers, present the lowest rates of discrimination. Nevertheless, 12.8% of respondents in both groups indicate that they experienced discrimination during the previous 12 months. Assistants with educational activities and junior researchers funded through other or unknown funding sources show somewhat higher prevalence rates, at 15.1% and 14.2%, respectively. The highest prevalence of discrimination is observed among junior researchers who report not being funded by the university (22.6%) and among those conducting research in Flanders with a foreign scholarship (26.2%).

DOES THE RISK OF INAPPROPRIATE BEHAVIOR VARY ACCORDING TO CHARACTERISTICS OF THE WORK CONTEXT, SUCH AS SCIENCE CLUSTER AND UNIVERSITY?

We now shift the focus to the work environment of junior researchers. Table 3 examines differences according to science cluster and university.

Table 3. All junior researchers at the Flemish Universities, 2023: Being victim of sexual harassment (SH), bullying (B), intimidation or threats (I/T), or discrimination (D) at the workplace during the previous 12 months, by science cluster and university (N=3877)

	SH %	B %	I/T %	D %
Science cluster (1)	*	n.s.	n.s.	n.s.
STEM	2.3	9.4	9.6	14.1
Non-STEM	3.6	8.5	9.7	14.9
Science cluster (2)	n.s.	n.s.	n.s.	n.s.
Natural sciences	2.7	10.3	10.5	12.8
Engineering and technology	2.2	8.0	8.1	14.8
Medical and health sciences	2.3	10.0	11.2	13.8
Agricultural, veterinary, and food sciences	1.6	8.9	5.7	17.9
Social sciences	3.5	8.4	9.4	14.3
Humanities and the arts	3.8	8.7	10.1	16.4
University	n.s.	n.s.	n.s.	n.s.
KU Leuven	2.6	10.1	10.6	16.0
Ghent University	2.4	8.1	8.7	13.6
University of Antwerp	3.9	9.6	10.1	13.0
VUB	2.9	9.1	9.6	13.7
Hasselt University	2.9	7.2	7.9	13.8

Note: Significance based on the Chi²-test

n.s. = not significant * = p<0.05

Science cluster is measured in two ways. The first categorization distinguishes between STEM disciplines and non-STEM disciplines. The second categorization is based on the Flemish Research Discipline Standard (VODS) and distinguishes six clusters (ECOOM, n.d.).

The results presented in Table 3 are very clear. None of the analyses examining bullying, intimidation or threats, or discrimination reveal statistically significant differences across science clusters. Only one significant difference emerges with respect to sexual harassment: such behavior is showed somewhat more frequently in the non-STEM cluster (i.e., Social sciences, Humanities, and the arts) than in the STEM cluster. Finally, Table 3 shows that the Flemish universities do not differ significantly from one another in the extent to which junior researchers experience sexual harassment, bullying, intimidation or threats, or discrimination in the workplace.

DISCUSSION

Scientific research on inappropriate behavior within academic employment relationships remains limited to this day and is typically restricted to a specific discipline, university, or staff category (e.g., professors). The studies that do exist rarely rely on representative data and, with a few exceptions, are insufficiently detailed to support conclusions about junior researchers in general, and PhD students in particular. Furthermore, findings regarding organizational risk factors for inappropriate behavior cannot simply be extrapolated to the Flemish context. The organizational factors that cause, facilitate, or sustain inappropriate behavior are closely linked to the way universities are organized, and there is substantial variation in this regard both between universities and across countries. Recent research conducted in institutions that are relatively comparable to the Flemish universities in terms of organization and context can be found in Wallonia, the Netherlands, the German Max Planck Institutes, and the UNISAFE study conducted across 15 European countries (UNISAFE, n.d.) (see below).

In the present study, we gave junior researchers at the Flemish universities the opportunity to indicate their experiences with inappropriate behavior in workplace relationships. This was done within the framework of the *Survey of Junior Researchers 2023*, a five-yearly survey examining the performance, well-being, and career choices of all junior researchers at the Flemish universities. The survey is conducted commissioned by the Flemish Government and is (quasi-) representative (see ECOOM-briefs 51 and 53). Junior researchers are researchers who have not yet obtained a PhD degree, although nearly nine out of ten are currently pursuing PhD research. In ECOOM-brief 53, we examined how frequently junior researchers indicated being victims of inappropriate behavior at work. In the present ECOOM-brief, we explore risk factors, adopting a systems perspective (see Introduction).

Takeaways

First, there are no differences between universities or science clusters (according to the VODS classification) in the risk of becoming victim of sexual harassment, bullying, intimidation or threats, or discrimination at work.

There are also no differences according to whether junior researchers are involved in educational activities, whether they are pursuing a PhD, or according to the number of promotors involved in the PhD. In other words, co-supervision of PhD research does not appear to provide the protective effect against these forms of inappropriate behavior that is sometimes assumed (see, among others, VLIR, 2024; Van Pelt, 2021). Furthermore, there are no differences by nationality or appointment type in the risk of sexual harassment, and no differences by gender or appointment type in the risk of bullying.

Second, the risk of inappropriate behavior does vary according to gender and nationality. More specifically, women indicate being victim of sexual harassment, intimidation or threats, and discrimination in the workplace more frequently than men. International researchers face a significantly higher risk of being bullied and discriminated than researchers with Belgian nationality. These findings for Flanders echo similar observations found in universities and research institutions abroad. One reason international junior researchers may be more exposed to inappropriate behavior is their strong dependence on supervisors, not only for their ongoing (PhD) research, employment contract, and future career, but sometimes also for visa arrangements and housing. In addition, international researchers often lack a protective local social network and may be less familiar with their rights.

Third, some job and employment characteristics are also associated with an elevated risk of inappropriate behavior. Significant differences in being victim of intimidation or threats and discrimination are observed across appointment types. Junior researchers funded through a foreign scholarship display a particularly distinctive profile: they indicate the lowest levels of intimidation or threats, but the highest risk of discrimination, with approximately one in four indicating that they had experienced discrimination. Junior researchers who do not receive university funding also report discrimination more frequently. Looking specifically at PhD students, sexual harassment is least common during the initiating phase of the PhD. Across subsequent stages of the PhD journey, the risk of bullying, intimidation or threats, and discrimination increases steadily. In the completion phase of the PhD, more than one in eight PhD students indicate having been bullied, intimidated, or threatened during the previous year, while one in five reports experiences of discrimination. It is possible that these figures underestimate the true extent of inappropriate behavior throughout the PhD process. PhD students who were the victim of inappropriate behavior may already have left the university and therefore would not have participated in the survey. It is also possible that junior researchers experience higher levels of stress during the final stages of the PhD, making them more susceptible to behaviors that they may previously have regarded as less transgressive.

Finally, the measurement instrument used in the *Survey of Junior Researchers 2023* also plays a role. The use of self-labeling measures tends to produce relatively conservative estimates of inappropriate behavior (see ECOOM-brief 53).

Policy reflections

A first policy reflection concerns the consequences of inappropriate behavior for both employees and universities. Research on inappropriate behavior in higher education consistently points to its physical, psychological, and professional consequences for individuals. Among these effects are stress, feelings of powerlessness, depression, anxiety, reduced self-confidence, and damage to self-image (Martin-Storey & August, 2015; Henning et al., 2017; Nielsen & Einarsen, 2018; Verkuil et al., 2015); suicidal ideation (Leach et al., 2017; Nielsen et al., 2016); physical pain and medical conditions such as diabetes (Chan et al., 2008; Xu et al., 2018); increased substance misuse (Fedina et al., 2018; McDonald, 2012; Selkie et al., 2015); and a range of work-related outcomes, including reduced career opportunities (Henning et al., 2017), absenteeism, lower job satisfaction, reduced engagement and productivity, and staff turnover (Bondestam & Lundqvist, 2020; Nielsen et al., 2016; Nielsen & Einarsen, 2018; Willness et al., 2007).

Not only being victim of but also witnessing inappropriate behavior directed at colleagues can generate “bystander stress” and lead to conflict within teams (McDonald, 2012; Willness et al., 2007). As reported in ECOOM-brief 53, nearly one in four junior researchers indicated that they had been victim of physical violence, sexual harassment, bullying, intimidation or threats, and/or discrimination during the previous year. We do not have information on the number of witnesses. The present brief demonstrates that not all junior researchers face the same level of risk to be confronted with inappropriate behavior. Elevated risks are particularly observed among women, PhD students in later stages of the PhD, international researchers, and researchers funded through personal fellowships from abroad. Policies aimed at creating sustainable and healthy universities while optimizing performance would benefit from a university-wide approach to inappropriate behavior, coupled with particular attention to the causes and consequences affecting vulnerable groups.

A second policy reflection concerns the management of expectations regarding policy interventions. Different forms of inappropriate behavior are caused, facilitated, or sustained by different and often complex combinations of individual and organizational risk factors. The purpose of the analyses presented in this brief was not to disentangle these complex causal chains but rather to generate initial insights into potential leverage points for policy. The findings call for the carefully managing expectations among both policymakers and staff. Some forms of inappropriate behavior require organizational reforms, whereas others may be driven less by job content, working conditions, employment conditions, employment relationships, or organizational structures and more by individual characteristics of those involved. Research at the Max Planck Institutes (Schraudner et al., 2019), as well as studies conducted in other sectors of the labor market (e.g., Baillien et al., 2006), consistently shows that bullying is strongly shaped by group dynamics and organizational risk factors, requiring critical reflection on organizational structure and culture. The same studies indicate that physical violence and sexual harassment are only minimally explained by organizational factors and therefore require interventions that focus more directly on individuals. Compared with

organizational reforms, interventions aimed at changing individual behavior may produce quicker and more visible effects. Organizational reforms, by contrast, require time because they seek fundamental changes in the functioning, structure, and culture of the organization. Their effects emerge gradually and therefore require sustained effort, patience, and trust.

A third and final policy reflection concerns the evidence base available to the Flemish universities and the Flemish Government for policy development. For now, except for the present study, the evidence base does not provide a sector-wide picture. In ECOOM-brief 53, we reviewed the data currently available and raised the question of whether a sector-wide well-being survey and more in-depth research on inappropriate behavior might offer additional value. One key finding from the present brief is that all Flemish universities and all scientific disciplines face the same challenges: physical violence, sexual harassment, bullying, intimidation or threats, and discrimination occur to a similar extent across institutions and disciplines. This brief generates initial sector-wide insights into a number of individual and organizational risk factors associated with inappropriate behavior among junior researchers. However, these insights are by no means sufficient to unravel the complex causal mechanisms through which inappropriate behavior is caused, facilitated, or sustained. For this, much more is needed. Achieving that objective requires a much broader research agenda, including attention to job content, working conditions, employment conditions, employment relationships, and the organization of work itself (see Introduction). It requires moving beyond a narrow focus on the professor as perpetrator, structural dependence, and the precarious employment conditions among junior researchers, toward a broader consideration of all positions and roles occupied by staff, the work and power relationships these generate, and the cultural frameworks through which behavior is interpreted as inappropriate. It calls for understanding inappropriate behavior not only from the perspective of victims, but also from the perspectives of witnesses, perpetrators, policymakers, staff members, confidential counselors, and disciplinary committees. It requires research that examines not only focuses on the surface-level, the visible and formal aspects of universities, such as regulations, procedures, and reports, but also, and above all, the undercurrent of universities: their cultures and subcultures, attitudes, prevailing perceptions, emotions, and beliefs regarding the organization, which influence day-to-day organizational reality even more strongly than the surface-level. Research into the social and cultural architecture of inappropriate behavior within universities remains to today extremely limited.

In ECOOM-briefs 55 through 58, we continue to give junior researchers at the Flemish universities a voice. In doing so, we focus on both the surface level and the undercurrent of the universities. We explore the extent to which junior researchers know where inappropriate behavior can be reported, but also whether they are genuinely willing to report it. Who is willing to do so? And perhaps even more importantly: who is not?

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