

Perceived academic freedom of researchers and relationships with motivation and well-being: a mixed-methods study







Martin Daumiller, Johanna Ott, Mathangi Ramasubramanian, Andrew Frein, Ronja Steinhauser, Stefan Janke, Oliver Dickhäuser, Markus Dresel

Angaben zur Veröffentlichung / Publication details:

Daumiller, Martin, Johanna Ott, Mathangi Ramasubramanian, Andrew Frein, Ronja Steinhauser, Stefan Janke, Oliver Dickhäuser, and Markus Dresel. 2026. "Perceived academic freedom of researchers and relationships with motivation and well-being: a mixed-methods study." *International Journal of Educational Research* 138: 102990. <https://doi.org/10.1016/j.ijer.2026.102990>.



Perceived academic freedom of researchers and relationships with motivation and well-being: A mixed-methods study

Martin Daumiller^{a,b,c,*} , Johanna Ott^c , Mathangi Ramasubramanian^c ,
Andrew Frein^c, Ronja Steinhauser^d, Stefan Janke^d , Oliver Dickhäuser^d ,
Markus Dresel^c 

^a University of Freiburg, Germany

^b Ludwig-Maximilian University of Munich, Germany

^c University of Augsburg, Germany

^d University of Mannheim, Germany

ARTICLE INFO

Keywords:

Freedom
Motivation
Faculty
Need satisfaction
Higher education

ABSTRACT

Academic freedom is widely recognized as a cornerstone of higher education, yet little is known about how individual researchers perceive their academic freedom and how such perceptions relate to their motivation and well-being. This mixed-methods study conceptualizes perceived academic freedom as a psychological resource reflecting researchers' perceived epistemic agency under conditions of perceived constraint. A total of 483 researchers (age: $M = 45.6$ years, 62% female) from Germany, Norway, and South Africa spanning career stages and disciplinary fields completed a cross-sectional online survey including a newly developed scale of perceived academic freedom, potential psychological correlates (need satisfaction, achievement goals, well-being), and open-ended questions on experienced restrictions and their consequences. Structural equation modeling indicated that higher perceived academic freedom was associated with all psychological correlates considered, with particularly strong links to autonomy need satisfaction, job satisfaction, and lower work strain. Associations with mastery goal pursuit and relatedness need satisfaction were statistically significant but weaker, and the weakest association emerged for competence need satisfaction. Content analysis of open responses identified five types of perceived restrictions, most commonly lack of funding and organizational barriers. Restrictions on research conduct and communication were often experienced as intertwined. Many participants directly linked such restrictions with demotivating effects, but a few also described motivational reappraisal or adaptive coping. Taken together, findings highlight perceived academic freedom as a meaningful psychological construct—with direct implications for researchers' epistemic agency, motivation, and well-being.

“Whatever does not spring from a man's free choice, or is only the result of instruction and guidance, does not enter into his very being, but still remains alien to his true nature; he does not perform it with truly human energies, but merely with mechanical exactness.”

— Wilhelm von Humboldt

* Corresponding author at: Chair of Educational Psychology, Institute of Psychology, University of Freiburg, Engelbergerstr. 41, D-79085 Freiburg im Breisgau, Germany.

E-mail address: martin.daumiller@psychologie.uni-freiburg.de (M. Daumiller).

<https://doi.org/10.1016/j.ijer.2026.102990>

Received 26 May 2025; Received in revised form 12 January 2026; Accepted 11 March 2026

Available online 27 April 2026

0883-0355/© 2026 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

Academic freedom is often considered to be under strain, particularly in light of politicized science debates, reputational pressures, and broader authoritarian tendencies in parts of the world (UNESCO, 2017; V-Dem Institute, 2024). Formal protections may persist in many countries, yet lived experiences of researchers often diverge from institutional guarantees. As Wilhelm von Humboldt made clear over two centuries ago, it is not enough to permit knowledge production: without the grounding of academic freedom, research risks becoming disconnected from ethical orientation and critical reflection (Humboldt, 1810/1970). When academic work is shaped predominantly by funding logic, political alignment, or reputational anxieties, its output may be mechanically efficient, but its inside epistemically hollow. Worse yet, the produced knowledge is distorted—guided not by curiosity or truth-seeking (which, when pursued freely and diversely, tends to self-correct across the academic community), but felt oppression, compliance, and self-censorship. Researchers who do not feel free stop asking uncomfortable questions, avoid controversial lines of inquiry, or prioritize “safe” topics that align with institutional expectations or social desirability.

This is no trivial matter. After all, researchers are a foundational engine of societal reflection and renewal, with recent cross-national evidence showing that academic freedom contributes directly to scientific innovation and knowledge quality (Audretsch et al., 2024). Whether addressing climate science, historical memory, public health, or democratic resilience, free academic inquiry is necessary to move humankind forward. Academic freedom protects not only the integrity of scientific inquiry; it arguably also matters for sustaining motivation and well-being of researchers themselves. While much scholarly and political attention has been paid to the policy and structural aspects of academic freedom, comparatively little is known about individual perceptions of such constraints and how they affect psychological functioning and professional experience of individual researchers—the topic of the present investigation.

Our study complements the perspectives taken in this special issue (Rónay et al., editorial) by conceptualizing perceived academic freedom as a psychological construct. Drawing on frameworks from motivational and organizational psychology (Job-Demands-Resources Model, Bakker & Demerouti, 2007; Self-Determination-Theory, Deci & Ryan, 1985, 2000; Conservation of Resources Theory, Hobfoll, 1989), we investigate researchers’ perceptions of their academic freedom and how these are linked to motivation and well-being. Combining quantitative reports with open statements on experienced restrictions from researchers in Germany, Norway, and South Africa, we show that academic freedom is not just an abstract macro-level principle on governance, but also an individually perceived and meaningful psychological resource.

1. Academic freedom: from macro-level indices to perspectives centering on the individual research

Academic freedom refers to the right of scholars to pursue research, teaching, publication, and academic exchange without undue interference, and is distinct from—but related to—freedom of speech (Bartel, 2019; Vrieling et al., 2011). It encompasses individual liberties alongside institutional autonomy to shield these liberties from external control (Altbach, 2001; UNESCO, 1997). Rooted in Enlightenment values and, as prominently articulated by Wilhelm von Humboldt, academic freedom serves as a cornerstone of higher education systems and its critical thought, intellectual pluralism, and scientific progress (Readings, 1996). By protecting scholars’ ability to engage in research independent of external authority, academic freedom is a structural precondition for epistemic diversity, self-correction within scientific communities, and the long-term production of reliable knowledge.

At the macrolevel, academic freedom is commonly understood as a multi-dimensional construct encompassing individual liberties (e.g., freedom to research, teach, publish, and communicate) as well as institutional conditions, such as institutional autonomy, participatory governance, and campus integrity. The Academic Freedom Index (AFI; Kinzelbach et al., 2020) integrates these facts into a globally validated composite indicator, enabling cross-country and longitudinal within-country comparisons. Analyses based on the AFI reveal substantial variation both across countries and within countries over historical periods. While many countries with comparatively strong structural protections of academic freedom have shown relative stability, recent data indicate notable declines even among such cases (Kinzelbach et al., 2025). Fig. 1 illustrates these dynamics for Germany, Norway, and South Africa—three countries selected for the present study because they combine relatively high AFI levels with distinct higher education systems and governance traditions, thus providing a meaningful context for examining how strong formal protections coexist with individual differences in perceived academic freedom.

Over 30 years, all three countries range around the 80th percentile globally, suggesting a generally strong structural protection of academic freedom. Germany, in particular, has long maintained high AFI scores—underpinned by its constitutional guarantee of academic freedom, but with a modest downward shift since 2022, which likely reflects intensified public discourse over science communication, legal controversies surrounding politically sensitive public statements by professors (e.g., related to COVID-19 policies or identity politics), and growing scrutiny of research funding allocations tied to ideological debates (Kinzelbach et al., 2022; Wissenschaftsrat, 2022). Norway shows a steadier decrease in AFI ratings in recent years—potentially attributable to increased managerial governance and performance-based funding mechanisms (Bleiklie, 2018). In contrast, South Africa’s scores have fluctuated modestly since the late 2000s although it made significant gains in the post-apartheid period. This likely reflects campus securitization, political contestation within universities, and governance disruptions (Kinzelbach et al., 2022; Langa et al., 2017).

While the AFI renders valuable macro-level insights into legal and institutional guarantees of academic freedom (Spannagel & Kinzelbach, 2023), it does not address how academic freedom is experienced by individual researchers in their professional lives. However, a long-standing psychological truism is that objective conditions and subjective experiences need not coincide. As captured by the Thomas theorem, “If people define situations as real, they are real in their consequences,” individuals’ perceptions systematically shape motivation, behavior, and well-being, even when formal or structural conditions are held constant (Deci & Ryan, 2000; Vansteenkiste & Ryan, 2013). This is particularly well documented regarding perceived climate in educational or working contexts, where the same formal environment can be interpreted quite differently depending on individual appraisal. For example, formal

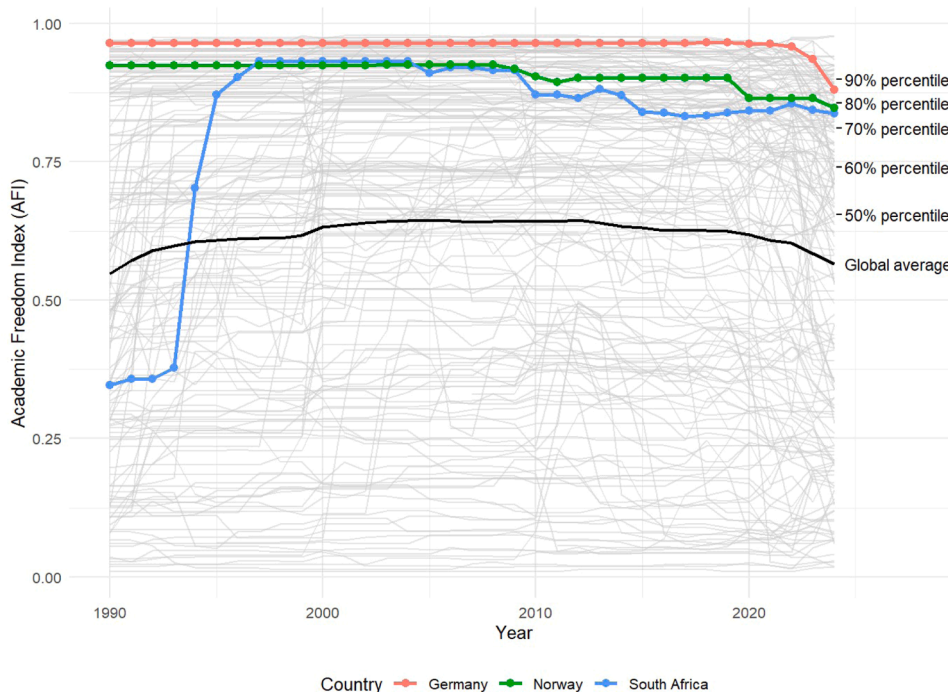


Fig. 1. Development of the academic freedom index (AFI) from 1990 to 2024 with national trajectories of Germany, Norway, and South Africa highlighted.

Note. Solid black line: global average AFI per year; short horizontal lines to the right: 50th to 90th percentiles of country scores in 2024. Own presentation based on [Coppedge et al. \(2024\)](#).

autonomy-supportive environments may be perceived as controlling if accompanied by high performance pressure or if lacking meaningful choice ([Sheldon et al., 2003](#)). Similarly, academic freedom protections “on paper” may not translate into a felt sense of agency when researchers work under constraints such as precarious employment, funding dependencies, or reputational risks ([Global Coalition to Protect Education from Attack, 2020](#); [Horn, 2020](#)), and, in some contexts, even political pressures ([Bleiklie & Kogan, 2007](#); [Gray, 2022](#); [Roshchin, 2025](#)). In fact, the contemporary academic landscape is not exclusively described in terms of “academic capitalism” ([Rhoades & Slaughter, 2004](#)) but increasingly also by “evaluative metrics regimes” ([Espeland & Sauder, 2007](#)) and managerial governance logics characteristic of audit culture ([Shore & Wright, 2015](#)), where individual success is often tightly coupled with performance indicators.¹ Under such conditions, perceptions of restricted freedom can arise and lead researchers to self-censor, avoid controversial or uncertain lines of inquiry, or prioritize topics with better success chances for publishing or funding ([Felt, 2017](#); [Fochler et al., 2016](#)).

Against this backdrop, a psychologization of academic freedom may be necessary: In this view, it is not only a legal or structural matter, but also as a psychologically experienced resource that operates on the individual level with implications for the motivation and well-being of researchers—who are, after all, the ones who carry out research and on whom the generation of reliable research results primarily depends. Accordingly, we define *perceived academic freedom* as researchers’ subjective appraisal of whether they can pursue lines of inquiry and express academic judgments without anticipating disproportionate sanctions. This is not limited to concrete acts of interference but encompasses broader expectations regarding the legitimacy, safety, and future viability of one’s scholarly activity. Conceptually, this positions perceived academic freedom as a domain-specific form of psychological climate capturing how institutional and social conditions manifest themselves in academic epistemic agency. Note that this construct is closely related to—but not reducible to—perceived autonomy support sensu Deci and Ryan’s Self-Determination Theory, which conceptualizes autonomy as experiencing one’s behaviors as self-endorsed, and/or congruent with one’s personal interests and values ([Ryan & Deci, 2017](#)); perceived academic freedom considers the epistemic environment of scientific work, not only including experienced choice but also anticipatory judgments about risks and constraints of conducting scientific activities ([Baard et al., 2004](#); [Schneider et al., 2013](#); see also [Kende & Pántya, 2025](#)).

¹ Note that at the same time, there are growing counter-movements that explicitly seek to overcome narrow, neoliberal, and utilitarian conceptions of scientific performance—for example, through funding policies that emphasize qualitative research contributions or explicitly support high-risk and exploratory research, as reflected in recent initiatives by the [Deutsche Forschungsgemeinschaft \(2022\)](#). Complementing such policy-level initiatives, multidimensional measurement approaches to research performance (e.g., [Daumiller et al., 2019b](#)) can likewise be understood as contributions to decoupling scholarly quality from one-dimensional metric logics.

This psychological conceptualization also echoes recent research on academic workplace climate showing that autonomy-supportive and need-supportive organizational environments are positively associated with researchers' motivation and well-being, whereas competitive, evaluative climates undermine experienced agency and psychological functioning in higher education settings (Weinstein & Blanchard, 2023). As Ehrhart et al. (2013) emphasize, psychological climate reflects how individuals perceive their work environment in terms of its impact on their well-being—highlighting that subjective appraisals of the same structural setting can diverge substantially. Applied to academic freedom, this means that perceptions of academic freedom are not expected to be uniform across contexts or individuals. They may systematically vary by career stage, disciplinary culture, and institutional climate (Lam, 2011; Laudel & Gläser, 2007; Ylijoki, 2003). Early-career researchers, for instance, often operate in highly asymmetric power relationships, where dependence on supervisors, limited job security, and uncertain funding may amplify vulnerability. Likewise, researchers in politically sensitive fields (such as migration, gender, or history studies) may face greater scrutiny or public backlash, thereby affecting their subjective sense of safety and freedom (Kinzelbach et al., 2022). Beyond such structural positions, social identities also matter insofar as they shape differential exposure to contestation and scrutiny: Locher (2013), for instance, show that faculty of color often perceive their academic freedom as more constrained than their white counterparts—not because of different formal policies but differential exposure to contestation.

Taken together, these considerations suggest that rather than treating academic freedom exclusively as a legal or structural attribute of higher education systems, it is analytically fruitful to examine it as a psychologically experienced phenomenon operating at the individual level, with implications for motivation and well-being. Conceptualizing perceived academic freedom as a psychological construct opens up the analytical space to examine how individual researchers make sense of their agency and how it is felt, constrained, or protected in their professional realities. Complementing standardized measures, more open research approaches can be particularly informative for exploring the concrete, processual, and context-specific consequences of perceived restrictions on academic freedom in a field where systematic psychological evidence is still comparatively scarce.

1.1. Academic freedom as a psychological resource for motivation and well-being

The perception of academic freedom is not only normatively significant and consequential for the range of available research topics, methods, and strategies, but arguably also psychologically consequential. Drawing on core assumptions from motivational and organizational psychology, perceived academic freedom can be conceptualized as a psychological resource shaping motivational functioning and well-being in academic work.

According to Self-Determination Theory (SDT; Deci & Ryan, 1985, 2000), humans strive to satisfy basic psychological needs, one of them being the need for autonomy. Autonomy is generally defined as the perceived capability to determine the course of one's actions, and its support has repeatedly been shown to enhance motivation and well-being in professional settings (Baard et al., 2004; Watt & Richardson, 2020). For researchers, this feeling depends on a number of factors (e.g., balance between teaching and research, pressure to obtain funding, etc.), out of which academic freedom may be considered to be quite essential. Academic freedom enables researchers to choose their topics, methods, and collaborations without coercive constraints. Perceived restrictions should thus impair the satisfaction of this need. Expectations regarding the two other basic psychological needs for competence and relatedness are less clear. Regarding competence, perceived academic freedom might indirectly support feelings of effectiveness by allowing researchers to engage in intellectually challenging tasks of their choosing, which better match their expertise and goals. Regarding relatedness and considering the often voluntary nature of working relationships in academia, perceived academic freedom can be expected to go along with openness towards academic exchange, shared purpose, and intellectual connectedness (which underlie professional relatedness in academic settings; Deci & Ryan, 2014; Edmondson, 1999).

Beyond basic need satisfaction, perceptions of academic freedom should also support the endorsement of mastery goals (i.e., goals oriented towards developing competence and doing tasks right by task-based standards; see Daumiller, 2023), as freedom enables epistemic risk-taking, exploration, and iterative learning. Mastery goals are typically self-concordant for researchers—that is, aligned with their interests and core values (Daumiller & Dresel, 2020; Sheldon & Kasser, 1998). Pursuing and sustaining such goals likely depends on the perceived freedom to engage in meaningful inquiry. Conversely, mastery goals should become harder to reconcile under perceived restrictions. In particular, goals focused on doing tasks correctly by their own standard (task goals) should yield a state of cognitive dissonance (Festinger, 1957) if pursued by researchers who must compromise their personal research agendas.

In terms of well-being, both Conservation of Resources Theory (Hobfoll, 1989) and the Job Demands–Resources Model (Bakker & Demerouti, 2007), provide an established foundation that can be applied to understanding perceived academic freedom as a protective resource. According to Conservation of Resources Theory, individuals seek to acquire and maintain valued resources; when they perceive threats to such resources—such as restrictions to academic freedom—they are likely to experience stress and emotional depletion (Hobfoll et al., 2018). The Job Demands–Resources model complements this by emphasizing that resources can buffer the negative impact of job demands. Perceived academic freedom, in this framework, may mitigate work strain by reducing the emotional toll of institutional pressures, role conflicts, or intellectual dissonance. At the same time, it may enhance job satisfaction by reinforcing a sense of meaning, ownership, and efficacy in one's academic role (Barkhuizen et al., 2014; Bauer et al., 2014; Ismayilova & Klassen, 2019; Taris & Schaufeli, 2015; see Janke et al., 2025, for a similar argumentation). This aligns with the idea that the perception of control or discouragement of epistemic authenticity contributes to emotional exhaustion, cynicism, and disengagement (Felt, 2017; Kinman & Jones, 2008).

1.2. The present research

With the present study we aim to examine how individual researchers perceive their academic freedom and how these perceptions relate to key indicators of motivation and well-being. In contrast to macro-level assessments such as the Academic Freedom Index (AFI) of countries, we take a psychological perspective focusing on the subjective experience of academic freedom.

To this end, we pursue three primary objectives. First, we investigate individual differences in perceived academic freedom among a broad sample of researchers working in three national contexts—Germany, Norway, and South Africa. As these researchers differ substantially in their working conditions, including academic position, disciplinary field, and tenure status, we also explore to what extent variability in perceived academic freedom can be attributed to these factors.

Additionally, we investigate whether perceptions of academic freedom are meaningfully associated with theoretically derived motivational and well-being constructs. Based on the theoretical rationale outlined previously, we hypothesize that lower perceived academic freedom is associated with (H1) lower satisfaction of the basic psychological needs of autonomy, competence, and relatedness, (H2) reduced mastery goals, (H3) increased work strain, and (H4) decreased job satisfaction.

Finally, we go beyond closed-ended measures by analyzing open-ended responses in which participants described actual restrictions they experience in their academic work. This mixed-methods approach allows us to examine how perceived restrictions are articulated in practice, which types of constraints researchers themselves identify, and how these experiences are linked to their motivation and engagement—thereby contextualizing and substantiating quantitative findings through the direct words of the participants.

2. Method

We conducted a cross-sectional online survey targeting academic researchers working in Germany, Norway, and South Africa. These countries were selected for their differences in educational systems and governance while showing similar recent scores on the AFI (Coppedge et al., 2024). Unrelated to the research questions investigated here, we also assessed further motivational and contextual characteristics that we plan to analyze in a subsequent investigation.

2.1. Procedure and sample

Participants were recruited via personalized emails. Participation was voluntary and anonymous. Ethical approval for the study was obtained from the Ethics Committee of the University of Mannheim under the approval number EK Mannheim 28/2018 and all participants provided informed consent before beginning the survey. Participants first responded to the items assessing academic freedom, then the psychological correlates. Sensitive demographic information was collected at the end of the survey. A small thank-you gift (5 € voucher) was provided to incentivize participation.

In total, we invited 4615 researchers (0.7% of emails returned with out-of-office responses) whose primary role involved academic research, irrespective of whether they also held teaching duties. Administrative staff and non-academic personnel were not included. Participants were required to provide a response to at least one item of the perceived academic freedom scale. The final sample consisted of $N = 483$ researchers, with an average response rate of 11.3%. Participants were based in Germany ($n = 162$), Norway ($n = 141$), and South Africa ($n = 180$); 90 were pre-doctoral researchers (19%), 203 postdoctoral or junior researchers (42%), and 180 senior academics (37%). Disciplinary affiliation spanned the natural sciences ($n = 223$; 46%), life sciences ($n = 98$; 20%), social sciences ($n = 127$; 26%), and humanities ($n = 35$; 7%). The mean age of participants was $M = 45.6$ years ($SD = 11.6$), with an observed range from 23 to 78 years. Regarding employment status, 119 reported holding untenured positions and 198 tenured positions. Gender was reported by 312 participants, with 117 identifying as male (38%) and 195 as female (62%). See Table 1 for more details.

Participants who provided institutional affiliation ($n = 260$) reported coming from 42 different universities, with an average of 8.18 participants per university. While 7 institutions were represented by only one participant each, several universities had 10 or more participants, enabling a cautious exploratory multilevel investigation concerning potential institution-specific clustering of perceived academic freedom.

2.2. Measures

2.2.1. Individual perceptions of academic freedom

To assess perceptions of academic freedom, we used a 13-item scale adapted from the Academic Freedom Index from Kinzelbach et al. (2020) seeking to translate the AFI's country-level indicators into meaningful individual-level perceptions of academic freedom (Appendix A). We specifically focused on (1) freedom in conducting, sharing, and publishing research, and (2) institutional freedom including institutional autonomy, campus integrity, and participatory governance. Items were rated on a 5-point Likert scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*).

To assess the structure and psychometric quality of this scale, we conducted a series of psychometric analyses, based on classical approaches and Item Response Theory (IRT). These analyses supported a two-factor structure consistent with our theoretical distinction between scholarly and institutional academic freedom, with high internal consistencies ($\alpha = 0.95$, average inter-item correlation = 0.58) and good model fit. However, due to the strong correlation between the two dimensions ($\rho = 0.80$), we used a general factor score in subsequent analyses for parsimony. Item-level distributions were left-skewed, with most responses clustering at the "strongly agree" end of the scale, indicating generally high perceived freedom. This skewed response pattern, along with the

Table 1
Descriptive statistics and bivariate correlations.

	All respondents (N = 483)				Comments subsample (n = 291)				Bivariate correlations						
	N	M	SD	Skew	N	M	SD	Skew	[1]	[2]	[3]	[4]	[5]	[6]	[7]
[1] Individual Perceptions of Academic Freedom*	482	0.01	0.95	0.50	290	0.13	0.94	0.27		0.37	0.19	0.24	0.24	0.38	-0.40
Psychological correlates															
[2] Autonomy need satisfaction	329	5.63	1.22	-1.23	211	5.57	1.24	-1.15	0.34		0.42	0.37	0.12	0.37	-0.35
[3] Competence need satisfaction	327	5.92	0.95	-1.19	210	6.00	0.87	-0.97	0.11	0.43		0.25	0.21	0.31	-0.13
[4] Relatedness need satisfaction	327	4.91	1.32	-0.56	210	4.89	1.36	-0.54	0.19	0.38	0.31		0.02	0.40	-0.30
[5] Mastery (task) approach goals	451	7.36	1.01	-3.56	285	7.39	0.93	-3.28	0.19	0.12	0.19	0.09		0.12	0.01
[6] Job/research satisfaction	384	7.36	2.00	-1.18	247	7.30	2.09	-1.11	0.35	0.17	-0.03	0.13	-0.12		-0.59
[7] Work strain	387	2.92	0.88	0.06	250	2.99	0.91	-0.14	-0.35	-0.35	-0.17	-0.34	0.01	-0.58	
Demographics and background variables															
Age	317	45.6	11.6	0.16	201	45.0	11.5	0.22	0.10	0.18	0.06	0.15	0.02	-0.04	0.11
Country															
Germany	162	34%			92	32%			0.03	-0.01	0.04	0.01	-0.11	-0.11	0.03
Norway	141	29%			71	24%			0.08	-0.01	-0.16	0.01	0.01	-0.13	0.07
South Africa	180	37%			128	44%			-0.10	0.02	0.12	0.01	0.10	0.22	-0.09
Position															
Pre-doctoral	90	18%			51	17%			-0.06	-0.10	-0.11	-0.09	-0.01	-0.09	-0.04
Postdoc/Junior	203	42%			123	42%			-0.08	-0.04	0.01	-0.12	0.01	0.18	-0.12
Senior	180	37%			108	37%			0.13	0.12	0.09	0.20	0.01	-0.11	0.16
Tenure															
Untenured	119	24%			76	26%			-0.06	-0.13	0.04	-0.07	-0.07	-0.12	0.08
Tenured	198	40%			129	44%			0.06	0.13	-0.04	0.07	0.07	0.12	-0.08
Discipline															
Natural Sciences	223	46%			134	46%			-0.01	0.02	-0.07	0.03	-0.22	0.03	0.01
Life Sciences	98	20%			65	22%			-0.04	-0.03	0.06	-0.02	0.12	0.07	-0.08
Social Sciences	127	26%			67	23%			0.13	0.07	0.05	0.01	0.11	-0.09	0.08
Humanities	35	7%			25	8%			-0.16	-0.15	-0.05	-0.04	0.04	-0.02	-0.02
Gender															
Men	117	24%			89	31%			-0.12	-0.14	-0.01	-0.08	0.08	0.13	-0.16
Women	195	40%			110	38%			0.12	0.14	0.01	0.08	-0.08	-0.13	0.16

Note. Descriptive statistics are presented separately for the full sample and for the subsample who provided open-text responses. Correlations in the upper-right triangle refer to the subsample with comments; all others to the full sample. Due to dropout throughout the survey not all demographics were responded to by all participants. In addition to the bivariate correlations with the dummy variables (which can be interpreted like *t*-tests), mean-level differences in individual perceptions of academic freedom across country, career stage, tenure status, and disciplinary groups were examined using one-way analyses of variance (ANOVAs); corresponding group means and standard deviations are reported in the supplementary materials (Table B1).

* θ -score from unidimensional IRT model.

ordinal nature of the data, further supported the use of an IRT framework. We applied a unidimensional graded response model estimating a latent variable of perceived academic freedom (θ), which accounts for item discrimination and difficulty parameters. Higher θ -values reflect greater perceived academic freedom. Full details on item distributions, reliability, factor analyses, model comparisons, and IRT modeling are provided in Appendix A.

Immediately after responding to the closed scale, participants were asked to answer two short answer questions on specific restrictions about conducting and communicating research (as two distinguishable domains in which academic freedom manifests itself most prominently): (1) “How has your academic freedom to do research been restricted in the past? To what extent has this affected your motivation in any way?” and (2) “How has your academic freedom to communicate your research been restricted in the past (e.g., publishing or presenting results, exchange of ideas with colleagues, disseminating knowledge)? To what extent has this affected your motivation in any way?”

2.2.2. Perceived basic need satisfaction

Perceived satisfaction of autonomy, competence, and relatedness in the context of academic research was assessed using the 9-item Hein et al. (2020) adaption of the Balanced Measure of Psychological Needs (BMPN) scale (Sheldon & Hilpert, 2012). Each need was measured with three items beginning with the prompt “In the context of my research ...” Participants responded on a 7-point Likert scale ranging from 1 (*do not agree at all*) to 7 (*agree completely*) regarding satisfaction of autonomy (e.g., “I am free to do things my way”), competence (e.g., “I master even difficult things well”), and relatedness (e.g., “I feel connected to others”). Internal consistencies were in the range of Cronbach’s $\alpha = 0.84$ – 0.91 .

2.2.3. Mastery (task approach) goals

Participants’ mastery-based motivation in their research activities was assessed using the task approach subscale of the researcher achievement goal framework developed by Daumiller et al. (2019a), Daumiller and Dresel (2020). Following the item stem “In my current research activities ...”, the subscale includes four items (e.g., “My goal is to conduct research very well”) capturing the intention to perform research tasks as well as possible. Responses were provided on an 8-point Likert scale ranging from 1 (*do not agree at all*) to 8 (*agree completely*). Internal consistency was $\alpha = 0.85$.

2.2.4. Work-strain

Individuals’ work strain was measured with a shortened version of the work-related strain inventory (WRSI) from Revicki et al. (1991) consisting of eleven items such as “I am working harder but getting less done” and “It seems like I cannot get the recognition that I deserve” addressing multiple stressors experienced in work environments. Responses were given on a 6-point Likert scale ranging from 1 (*does not apply to me*) to 6 (*does apply to me*). Internal consistency was $\alpha = 0.77$.

2.2.5. Job satisfaction

Following Schaufeli et al. (2002), job satisfaction was measured with two items assessing participants’ general satisfaction with their current academic position as well as their research specifically (e.g., “Overall, how satisfied are you with your work as a researcher?”; “How satisfied are you with your academic work overall?”). Responses were given on a 10-point Likert scale ranging from 1 (*not satisfied at all*) to 10 (*completely satisfied*). The two-item composite showed good reliability (Spearman–Brown $r = 0.74$).

2.3. Analyses

2.3.1. Quantitative analyses

To examine the psychological correlates of perceived academic freedom, we estimated a structural equation model (SEM). Perceived academic freedom was specified as a predictor of autonomy need satisfaction, competence need satisfaction, relatedness need satisfaction, mastery goals, job satisfaction, and work strain. In addition, perceived academic freedom was regressed on dummy-coded demographic and background variables. The psychological outcome variables were allowed to correlate with one another. For parsimony and because they were not central to the research questions, no direct paths from demographic or background variables to the psychological outcomes were specified. To formally compare the strength of the associations between perceived academic freedom and the psychological outcomes, we conducted a series of Wald tests imposing pairwise equality constraints on the corresponding regression coefficients.

Against this background, we evaluated model fit using multiple indices with values of approximately $CFI \geq 0.90$ and $TLI \geq 0.90$ indicating acceptable fit alongside $RMSEA \leq 0.08$ and $SRMR \leq 0.08$ (e.g., Hu & Bentler, 1999). TLI is known to be conservative in complex structural models with multiple correlated outcomes, as it penalizes model complexity more strongly than other fit indices; accordingly, we primarily rely on RMSEA and SRMR to evaluate absolute model fit (Marsh et al., 2004). Models were estimated using robust maximum likelihood estimation (MLR). Missing data were handled using full information maximum likelihood (FIML). Results are reported using fully standardized regression coefficients (β). All analyses were conducted in R (version 4.3.2) using the *lavaan* package.

2.3.2. Qualitative analyses

We analyzed the responses to the two open-ended questions regarding perceived restrictions on academic freedom in research and communication using a combination of deductive and inductive content analysis (see Appendix C for details). Initial codes were generated based on established definitions of academic freedom and iteratively refined during practice coding rounds to ensure

sufficient breadth and specificity.

The final coding scheme comprised 14 main restriction codes (see Table 1). These included lack of funding, negative climate, lack of academic collaboration, lack of extramural expression, lack of research autonomy, organizational restrictions, lack of time for research, lack of access to resources, restrictions on publishing, restrictions on sharing data, lack of job security. The code no restriction was used when respondents explicitly stated that they had not experienced limitations. Each response received at least one code, and responses were segmented and cross-coded between both short answer questions (freedom to conduct research and freedom to communicate research). To prevent overrepresentation of emphasized themes, each code was applied at most once per response. For analytical clarity, the 14 codes were subsequently clustered into five overarching thematic categories based on conceptual similarity and co-occurrences. Beside restriction types, we also coded perceived sources of restrictions to distinguishing if they were location-related (e.g., department, university, national context), identity-related (e.g., gender, ethnicity), or politically related (e.g., Russia/Ukraine conflict). Finally, responses were coded for whether a motivational impact (positive, negative, or neutral) was explicitly mentioned.

Data coders underwent four rounds of training with practice coding and discussions to ensure consistency. The coders collaboratively coded each response and agreed on one definitive coding scheme for the entire data set. Initial coding agreement was high, with coders agreeing on > 95% of coding decisions. Remaining disagreements were subsequently resolved through discussions until concurrence was reached.

3. Results

3.1. Variability in perceived academic freedom scores and psychological correlates

Based on the observed, non-standardized scale scores, perceived academic freedom showed substantial interindividual variability, despite generally high average levels. Although psychometric analyses supported a distinction between scholarly and institutional dimensions, their strong correlation ($\rho = 0.80$) justified the use of a unidimensional score for the main analyses. All models were also re-run separately for the two subdimensions, yielding comparable results (see ESM 1 + 2).

Demographic variables including country, position, and discipline were only weakly associated with perceived academic freedom, and comparisons between all respondents against those who provided open-ended responses revealed negligible differences. A multilevel null model indicated that the variability in perceived academic freedom was not substantially attributable to institutional clustering, with a cautiously interpretable intraclass correlation coefficient (ICC) of 0.049, 95% CI [$< 0.001, 0.25$]. However, perceived academic freedom showed more substantial bivariate associations with the psychological correlates under investigation, which the subsequent analyses are based upon.

Fig. 2 summarizes the results from the structural equation model, which yielded an adequate fit to the data, $\chi^2(60) = 144.54$, $p < 0.001$; CFI = 0.94, TLI = 0.86; RMSEA = 0.054, 90% CI [.043, 0.065]; SRMR = 0.047. Confirming our hypotheses, we found statistically significant links with all psychological correlates considered. In particular, higher levels of perceived academic freedom were linked to higher autonomy need satisfaction ($p < 0.001$), greater job and research satisfaction ($p < 0.001$), and decreased work

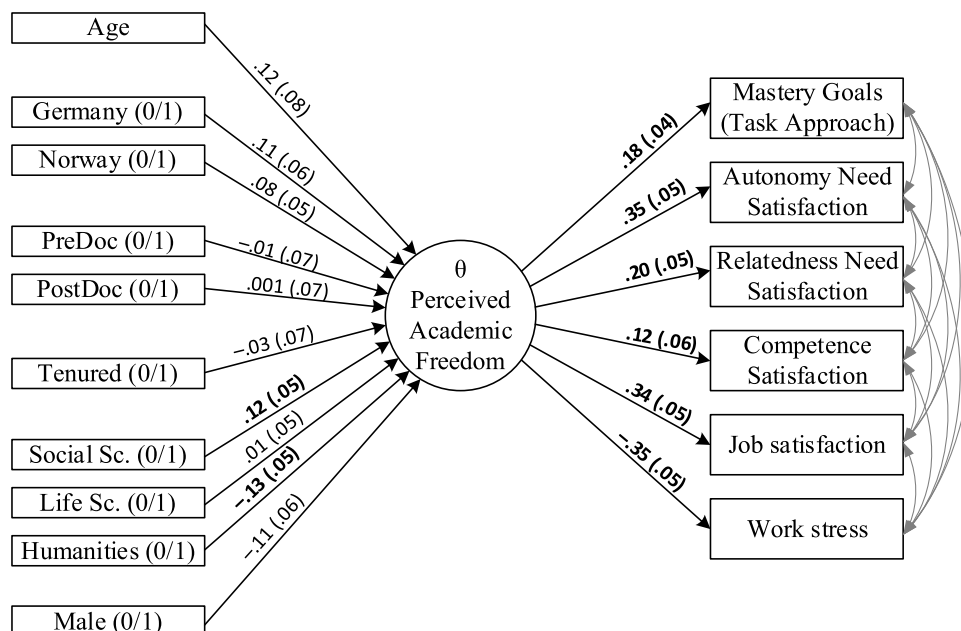


Fig. 2. Structural equation modelling results of the psychological correlates of academic freedom.

strain ($p < 0.001$). Statistically significantly smaller ($\chi^2s \geq 4.64, ps \leq .031$) regression weights were observed for mastery goals ($p < 0.001$) and relatedness need satisfaction ($p < 0.001$), while the weakest—though still statistically significant association ($p = .04$)—emerged for competence need satisfaction ($\chi^2s \geq 23.48, ps < 0.001$). Most demographics were not statistically significant predictors of perceived academic freedom. The only statistical differences emerged regarding academic disciplines, with respondents from social sciences reporting slightly more academic freedom, and respondents from humanities slightly less, compared to natural sciences. Separate analyses for the scholarly and institutional subscales showed highly similar patterns, as did robustness checks using arithmetic mean scores and analyses restricted to participants who provided open comments.²

3.2. Differences in academic freedom scores based on reported restrictions

Participants who provided open comments on a restriction, did, however, differ statistically significantly from the other participants in terms of their academic freedom scores (Fig. 3), as evidenced by Welch's t -test, $t(271.2) = 6.27$, with an effect size of Cohen $d = 0.83$, 95% CI [0.66, 1.00]. This additionally speaks to the convergent validity of the quantitative scale and warrants a qualitative investigation into how participants themselves characterize their perceived restrictions, as we did in this study through our analysis of the short-answer questions. Table 2

3.3. Qualitative analyses on mentioned restrictions and their motivational impacts

To deepen our understanding of how the participants experience academic freedom we analyzed open responses concerning restrictions in their research and communication practices. Our structured content analysis yielded five core themes that emerged across both domains. Doing and communicating research were often intertwined in practice, supporting the conceptual integration of scholarly and institutional freedom as seen in the quantitative analyses. Below, we present the key thematic patterns, illustrated with representative quotes.

3.3.1. Influence of the research environment

This was the most prominent theme ($f = 160$), encompassing restrictions that hindered participants' ability to initiate, lead, or sustain research activities. A central issue were direct *organizational restrictions*—typically procedural or bureaucratic in nature. Respondents cited bureaucratic or procedural issues, such as time-consuming ethics approval processes and burdensome administrative protocols that created delays and added stress. While some acknowledged the legitimacy of ethical oversight, they generally viewed the system as inefficient and poorly resourced, with one noting that “the process can be onerous and result in significant delays” (NO-S-LS).³ University hierarchy was also identified as a barrier: researchers sometimes required departmental approval for grant applications or conference travel, which they felt limited their independence. Participants also frequently articulated directly lacking *research autonomy*, often reported when external actors (e.g., supervisors, funders, governments) shaped the scope and direction of research. One participant noted that government-defined research calls “force one to tune research programs towards politically motivated goals,” describing these as distorted by “public media hypes” (DE-P-SS). Others reported that university policies limited permissible collaborations, by banning work with certain industries while supporting others. A *negative relational-normative work climate*, characterized by experiences of hostility or exclusion, was also frequently mentioned. This included accounts of bullying by supervisors, institutional retaliation, or academic marginalization based on research topic. One respondent described being “undermined... in front of other components of the group” by a supervisor (SA-P-SS), while another explained how their focus on feminist economics had been dismissed as “not real economics” (NO-P-SS). Finally, many participants also emphasized the *lack of time* as a structural constraint, frequently linked to heavy teaching loads, committee work, or publication pressure. As one explained, “you are now more focused on churning out papers... rather than conducting slow and careful research” (DE-S-NS).

3.3.2. Access to funding and materials

The second most frequent theme ($f = 137$) directly revolved around *lack of funding* and *limited access to resources*. Lack of funding emerged as the single most common restriction reported across all codes. Respondents pointed to both systemic scarcity and political steering of research funding. One participant described how funding priorities “strongly controlled by political agendas” left little space for basic or curiosity-driven research (SA-S-SS). Others noted that funding decisions were discretionary and sometimes subject to favoritism: “The line manager funds activities they like... anything else gets no support” (NO-D-NS). Especially respondents from South Africa cited currency instability, logistical barriers, and lack of training opportunities. One described “inefficient systems and poor management” as compounding already tight research timelines (SA-P-LS), while another complained about having to personally finance access to region-specific newspapers needed for ongoing research (NO-P-SS).

² Additionally, we examined whether the associations between perceived academic freedom and the psychological outcomes differed across countries using multi-group SEM. First, a model allowing all regression paths to vary freely across groups was estimated. Next, regression coefficients were constrained to be equal across countries and compared to the freely estimated model using a robust Satorra-Bentler scaled χ^2 difference test. The constrained model did not fit statistically significantly worse than the unconstrained model, $\Delta\chi^2(12) = 13.15, p = .36$, indicating that the strength of the associations between perceived academic freedom and the psychological outcomes was largely invariant across countries.

³ Abbreviations after direct quotes represent: Country – DE: Germany, NO: Norway, SA: South Africa; Position – S: Senior, P: Postdoc/Junior, D: Pre-doctoral; Discipline – LS: Life Sciences, SS: Social Sciences, NS: Natural Sciences, HU: Humanities.

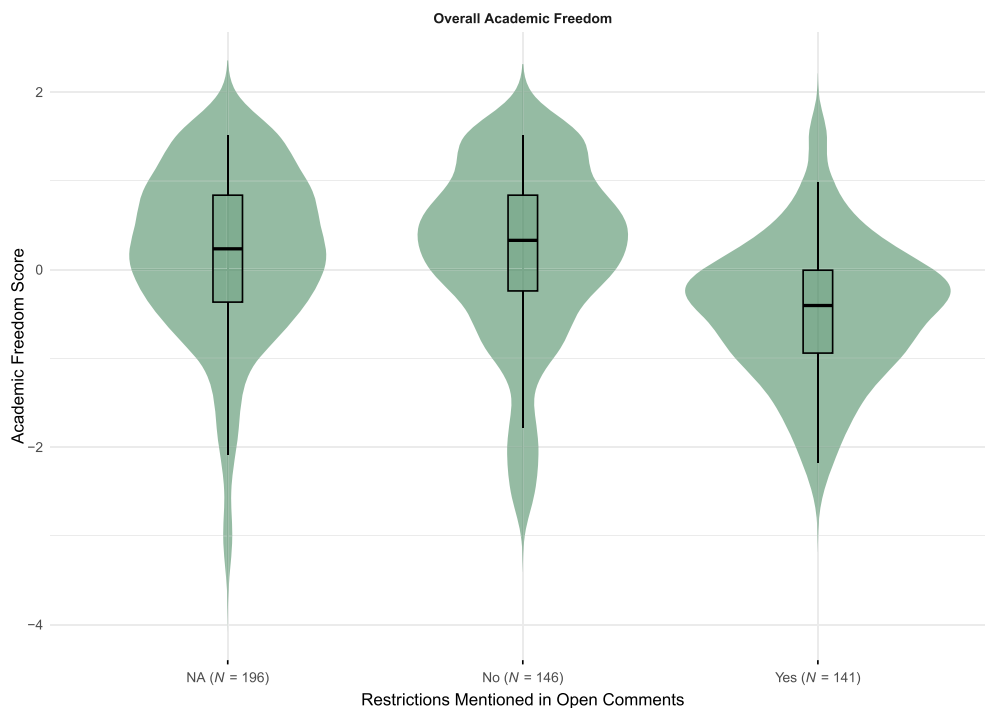


Fig. 3. Violin plots showing distribution and median scores for academic freedom by open comment type: no response, no restriction, or mentioned restriction.

Note. See ESM 2 for separate models for scholarly and institutional freedom.

3.3.3. Ability to exchange information

A third theme ($f = 54$) captured restrictions on collaboration and communication, both within academia and in public or international settings. *Lack of academic collaboration* often stemmed from institutional policies or supervisory control that limited contact with external researchers. One respondent described being discouraged from attending conferences because “our performance management system encourages publishing more than collaboration” (SA-NS), while another reported being “restricted from even sending emails to experts in the field” (NO-D-NS). Several respondents reported suspended partnerships with Russian colleagues due to national policies, noting: “I understand that, but it is a restriction nonetheless” (DE-S-NS). Others cited concerns about speaking freely on political issues such as public health, where expressing certain views was “not always possible” in professional settings (DE-P-LS). *Lack of extramural expression*, though less frequently coded, was characterized by subtle but impactful limits on public engagement. One respondent recounted that after a traumatic incident at work, “leaders of my department did not want me to talk much to journalists” (NO-P-LS). Others described a general wariness about public communication due to “harsh (unfair) critique in non-academic spaces” (SA-D-SS), which discouraged open dialogue and undermined willingness to disseminate research broadly.

3.3.4. Publication and professional collaboration

This theme ($f = 60$) included restrictions related to publishing findings and sharing data. Regarding *restrictions on publishing*, participants noted systematic delays in the review process, intellectual gatekeeping, and institutional controls over dissemination. One commented that institutional policies on research dissemination “complicate and slow down” publication (SA-P-NS), while another described peer reviewers as obstructive, claiming how they require “politically correct, careful wording while reporting” (NO-S-SS). Work with industry partners introduced additional constraints, such as data confidentiality clauses that prevented publication in open-access journals. As one noted, “these restrictions real and perceived mean I tend to avoid working with companies” (SA-P-NS). Others shared experiences of perceived regional or identity-based bias, especially when submitting from Global South institutions: “You can try and publish a paper for a long time and when you add a European author, it happens without problems.” (SA-S-NS). Restrictions on sharing data were linked to fears of plagiarism or institutional control. Several participants described having to delay or limit communication of their findings due to concerns that “ambitions or paranoia can get in the way of disseminating potentially useful research” (NO-P-NS).

3.3.5. Career-related concerns

The final theme ($f = 27$) captured restrictions arising from *lack of job security or limited career advancement opportunities*. These were often reported by early-career researchers or those in precarious contracts. One respondent remarked that they had to “abandon research because of short-term contracts” (SA-P-LS), while another stated, “As a doctoral student... I still had to work three part-time

Table 2

Overview of restrictions coded in the open questions.

Code	f (%)			Definition	Example excerpts
	T	D	C		
No Restriction (NR)	223 (50%)	106 (36%)	117 (40%)	Not restricted	<p>"Academic freedom to do research has not been restricted in the past."</p> <p>"I am free to carry out research without any restrictions."</p> <p>"I don't feel it has. We have a seminar series which includes staff presenting their ongoing research which is supported by the dept, faculty and university."</p> <p>"No restrictions whatsoever. This has provided me with the necessary ammunition and motivation to do my research."</p>
Influence of the research environment					
Negative Climate (NC)	49 (13%)	32 (10%)	17 (5%)	A culture that discourages, undervalues, or undermines research efforts, including a lack of institutional support, bullying, exclusion, or favoritism	<p>"numerous student uprisings directed toward staff of European descent."</p> <p>"unfair work allocation"</p> <p>"...criticized because of research topic."</p> <p>"...little tolerance for dissent from mainstream opinion."</p> <p>".. supervisor decides my projects and actively boycotts the ones I'm interested in."</p> <p>".. big politics get prioritized instead of available scientific advancements."</p> <p>".. heavily discouraged from asking for funding and fellowships to visit other groups."</p>
Lack of Research Autonomy (LRA)	38 (12%)	35 (11%)	3 (1%)	Difficulty in independently choosing research topics, methodologies, or directions without informal external interference or institutional censorship, including government mandates, corporate sponsors	<p>"...restricted in a politically motivated way."</p> <p>"...principal investigator controlled project and output."</p> <p>"... Governments, national and international research bodies define research calls."</p> <p>"...increasing demands of the funding agencies."</p> <p>"...failure to work within the boundaries set by the leaders of the institutions may result in disciplinary action."</p>
Organizational Restrictions (OR)	38 (11%)	29 (9%)	9 (3%)	Restrictions on decision making processes within an institution that affect institutional policies, including a lack of representation or input from staff in departmental decision making, policies, or decisions	<p>"...restricted by the policies of the large scientific collaboration."</p> <p>"cannot hire Chinese"</p> <p>"...onerous ethics application process."</p> <p>"...professional body requirements."</p>
Lack of Time for Research (LTR)	35 (10%)	29 (9%)	6 (2%)	Difficulty conducting research due to time constraints within the institution, such as excessive administrative duties, heavy teaching loads, or service responsibilities	<p>"Heavy teaching load and supervision"</p> <p>"...no local assistance and support for maintenance task"</p> <p>"the pressure they put on publication does hamper my research in the sense that you are now more focused on churning out papers - often of a level you are not happy with - rather than conducting slow and careful research."</p> <p>"...balancing a part-time job alongside my full-time PhD commitments limited my ability to pursue such opportunities."</p>
Access to funding and materials					
Lack of Funding (LF)	106 (29%)	68 (23%)	38 (13%)	Difficulty securing sufficient financial support, including limited access to grants, funding agencies, monetary support, or external sponsorships necessary	<p>"...could not afford to purchase Serbian and Croatian newspapers during the summer months."</p> <p>"...funding and costs to disseminate information on an international platform."</p> <p>"...resource scarcity makes us researchers always think about funding sources."</p> <p>"...funding is limited if you are not publishing in Q1 or Q2 journals - some of the most significant journals in my field are not in either of these quartiles."</p>

(continued on next page)

Table 2 (continued)

Code	f (%)			Definition	Example excerpts
	T	D	C		
Lack of Access to Resources (LAR)	31 (10%)	28 (9%)	3 (1%)	Difficulty obtaining or utilizing essential research tools, materials, or infrastructure, such as databases, libraries, equipment, laboratory facilities, or specialized software and non-monetary institutional support, including instruction or teaching of skills	"...not provided with the training support" "...received very little guidance from supervisor." "...resource limitations, and administrative bottlenecks." "...under-resourcing, inexperience, inefficient systems." "experimental material was challenging during apartheid."
Ability to exchange information					
Lack of Academic Collaboration (LAC)	45 (14%)	16 (5%)	29 (9%)	Difficulty working or communicating with colleagues with similar levels/positions on an ongoing or long-term basis within an academic community, including formal academic events such as conferences, seminars, and presentations	"...approval required to contact other researchers." "...cannot collaborate with Russians." "...the need to be politically correct limits what can and cannot be said."
Lack of Extramural Expression (LEE)	9 (3%)	4 (1%)	5 (5%)	Difficulty working or communicating with those in different positions or levels outside of an academic community on a short-term basis, such as journalist, government bodies, or any other private organization not affiliated with the university, including to share findings or express political or other opinions	"... nasty comments when giving interviews to newspapers." "...strong politicization of topics has restricted free and constructive debates in class." "...potential for harsh (unfair) critique in non-academic spaces."
Publication and professional collaboration					
Restrictions on Publishing (RP)	44 (13%)	10 (3%)	34 (11%)	Limitations on where, how, or whether researchers can make their findings publicly available, including censorship, institutional policies, or external pressures such as political or financial interests	"...restricted from publishing about certain entities." "...politically correct, careful wording while reporting." "...cost implications to publish in top tier journals." "...pressure to keep publishing along the mainstream opinions and believes."
Restrictions on Sharing Data (RSD)	16 (4%)	6 (2%)	10 (3%)	Difficulty sharing data or findings with colleagues inside of a closed community, such as a university or field of study, including confidentiality rules, lack of infrastructure for sharing, or fear of misuse by others.	"...being told not to share details with select individuals." "...hindered from giving presentations about results to peers." "...fear that the results could be stolen by other groups (if unpublished)."
Career-related concerns					
Lack of Job Security (LJS)	10 (3%)	9 (3%)	1 (0%)	Difficult employment conditions, such as reliance on short-term contracts, unstable positions, or lack of vacation/sabbatical opportunities.	"...paid an inadequate, below standard wage, and received no pay in the summer." "...taken off projects with minimum notice" "...still have to work three part time jobs." "...being forced to pause my research to continue working in a different field to earn money."
Lack of Career Advancement (LCA)	17 (5%)	8 (2%)	9 (3%)	Limited pathways for professional growth and development, such as tenure track positions, promotions, higher wages, or recognition within the institution	"Senior managers plagiarized a few projects without due recognition..." "bean counting as a measure of academic excellence."

Note. Shown are absolute frequencies (f) and percentage of respondents (%) regarding restrictions on academic freedom (T = in total, D = doing research, C = communicating research).

jobs" (NO-S-LS). Others pointed to personal disadvantages or discriminatory experiences that impacted their professional trajectory: "I have regularly been omitted from the author list of my own work due to pregnancy/birth related absence." (NO-P-NS), "As a Black African [in South Africa], it was not easy to delve freely into research and be awarded the same opportunities as other racial groups." (SA-P-HU)

3.3.6. Explorative analyses on mentioned motivational consequences

Complementing the quantitative findings, many respondents also explicitly remarked how these limitations impacted their motivation. Most reported a decline in motivation ($f = 65$). This was more frequently associated with limitations on the freedom to conduct research ($f = 40$) than on the freedom to communicate research ($f = 25$). Many described emotional disengagement, reduced professional ambition, or thoughts of leaving academia altogether. One participant, for example, wrote: "Governmental restrictions opposed on zoologists rendered work on wildlife nearly impossible [...] I am considering leaving academia or relocating to another country and have begun to apply for posts" (SA-P-LS). Another noted: "I was denied doing my own research and requested to change field to support the research that would benefit the head of department personally. Needless to say, that it destroyed my motivation" (NO-P-NS). A smaller group ($f = 7$) reported that the restrictions had a motivating effect, prompting increased resolve, broader collaboration, or more strategic research choices. As one participant expressed: "While these restrictions have been frustrating at times,

[...] they have reinforced my determination to seek alternative solutions and collaborate more widely” (SA-P-NS). Two others described a motivational reappraisal, in which initial demoralization gave way to renewed purpose through efforts to reframe or overcome structural barriers: “This is completely demoralizing but it has motivated me to build a research community outside of the university” (SA-P-SS).

4. Discussion

This mixed-methods study set out to investigate how individual researchers perceive academic freedom in their professional contexts—and how these perceptions relate to motivation and well-being. While academic freedom is often addressed at the structural or policy level, we approached it as a psychologically experienced resource. Across three national contexts with relatively strong formal protections (Germany, Norway, and South Africa), we found substantial interindividual variability in perceived academic freedom which was systematically associated with the considered psychological correlates, particularly autonomy need satisfaction, greater job satisfaction, and lower work strain. In addition to these quantitative patterns, our qualitative analyses revealed how researchers themselves articulate such restrictions—ranging from funding constraints and administrative barriers to political tensions and exclusionary environments as well as more subjective notions of unfairness—and how these experiences shape their motivation and professional engagement.

4.1. Academic freedom as a psychologically experienced resource

Academic freedom emerges from our findings not merely as a macro-level principle but as a psychologically experienced climate of scholarly agency. Despite relatively stable macro-level protections across Germany, Norway, and South Africa, researchers’ perceived academic freedom varied substantially, which is consistent with research showing that formal structures and subjective work experiences often diverge (Ehrhart et al., 2013; Vansteenkiste & Ryan, 2013). Notably, only a small portion of this variability could be attributed to institutional affiliation or national context, underscoring that formal guarantees are not a sufficient condition of how free researchers actually feel in their day to day scholarly practice. Instead, perceived academic freedom appears to be shaped by more proximal appraisals of one’s work environment and its anticipated consequences for inquiry and expression.

Our findings also made clear how geopolitical developments can directly disrupt researchers’ sense of freedom. The Russia–Ukraine war, for instance, was repeatedly cited as a source of abrupt termination of collaborations, institutional bans on partnerships, or personal fears of backlash. Beyond direct political restrictions, many respondents described more indirect effects on speech and opinion, both within academia and beyond, highlighting how global crises can affect local research climates in ways that are psychologically salient for individual researchers.

Importantly, participants’ accounts frequently characterized perceived academic freedom as anticipatory and forward-looking. Respondents typically referred to expectations about the consequences of pursuing certain questions, collaborations, or modes of communication. Bureaucratic procedures, funding priorities, evaluation regimes, and public or institutional backlash were frequently interpreted as signals that some forms of inquiry were unsafe, futile, or professionally costly. This shows that perceived academic freedom reflects not only experienced choice but the perceived safety of epistemic risk-taking, closely paralleling work on organizational voice and silence (Detert & Edmondson, 2011; Morrison & Milliken, 2000).

While psychometric modeling supported a distinction between scholarly and institutional dimensions of academic freedom—closely aligned with the conceptual structure of macro-level indices such as the Academic Freedom Index—the five themes identified in the qualitative analyses do not represent a one-to-one mapping onto AFI dimensions. Instead, they reflect researchers’ experiential clustering of perceived restrictions, integrating structural, organizational, relational, and cultural conditions as they are psychologically appraised in everyday academic practice. The strong correlation between them paired with their functional convergence in participants’ words indicate that researchers often experience academic freedom as a unified phenomenon, despite different individual manifestations in form of experiences with concrete restrictions. Notably, several codes that are conceptually tied to communication, including Lack of Academic Collaboration, Lack of Extramural Expression, and Restrictions on Sharing Data, were frequently applied in responses to questions about research conduct. Importantly, the mentioned restrictions were not always tied to identifiable, formal AFI indicators. Many participants commonly interpreted bureaucratic hurdles, politicized funding priorities, and precarious working conditions as restrictions that may not objectively qualify as violations of academic freedom yet had clear psychological consequences. For instance, a slow publication process was interpreted by some as a suppression of open inquiry—though such processes might also reflect legitimate quality controls. Such dynamics can still have “chilling effects,” in which freedom is curtailed not by formal prohibition but by the anticipation of negative consequences (Norris, 2025; Steel & Petley, 2023).

Seen from a broader theoretical perspective, this pattern resonates with long-standing critiques from the philosophy of science under which epistemic progress is possible. Most prominently, Feyerabend’s (1975) rejection of methodological authoritarianism in *Against Method* emphasized that epistemic progress depends on pluralism and the freedom to deviate from dominant norms. While this book concerns epistemic practice rather than psychological experience, our findings suggest that such constraints are not only philosophically problematic but also psychologically consequential when researchers experience limited academic freedom. To this end, our qualitative data also showed how such appraisals can foster self-censorship, topic avoidance, and strategic conformity, thereby shaping everyday research practices.

Accordingly, we argue that this speaks to a consideration of perceived academic freedom as a psychological resource in researchers. Unlike structural definitions focused on formal rights, this perspective centers on the lived reality of researchers being free to think, explore, and communicate without constraint. While perceived academic freedom was positively associated with autonomy need

satisfaction, our findings imply that it is not reducible to autonomy as defined by SDT, namely experiencing one's actions as self-endorsed and volitional (Baard et al., 2004; Deci & Ryan, 2000; Schneider et al., 2013). Rather, perceived academic freedom captures a domain-specific psychological climate that reflects broader, future-oriented judgments about whether one can sustainably select, pursue, and communicate lines of inquiry—and researchers in our sample described these judgments to be shaped not only by explicit rules, but also by informal norms, evaluation cultures, and anticipated reactions from institutions, peers, or publics. Accordingly, a researcher may experience autonomy in making methodological choices while simultaneously perceiving low academic freedom due to systemic constraints narrowing the range of questions that can be safely pursued or publicly articulated. This underscores the analytical value of treating academic freedom as a psychologically experienced phenomenon in its own right, reflecting researchers' perceived epistemic agency under conditions of anticipated constraint.

4.2. Motivational and well-being correlates

In line with our hypotheses, we discuss the motivational and well-being correlates of perceived academic freedom with respect to (H1) basic psychological need satisfaction, (H2) mastery goal pursuit, and (H3–H4) work strain and job satisfaction.

Confirming our hypotheses and in line with assumptions from Self-Determination Theory (Deci & Ryan, 2000), perceived academic freedom was descriptively most strongly associated with autonomy need satisfaction. This makes sense given that the core of academic freedom lies in volitional scholarly activity. By contrast, associations with competence and relatedness were smaller, albeit still statistically significant, reflecting the specificity of academic freedom. These findings imply that while a sense of academic freedom may indirectly facilitate competence and connection, it primarily enables autonomous epistemic volition. In fact, competence can remain high even under constrained conditions—researchers may be highly effective at executing externally steered agendas—while relatedness could partly also be preserved through conformity and alignment with dominant norms. Moreover, and as noted before, these findings also affirm that academic freedom is not reducible to a proxy of general workplace satisfaction but works as a distinct antecedent of motivational functioning.

The positive association with mastery (task-approach) goals further clarifies the motivational role of perceived academic freedom. The positive link to task mastery goal pursuit confirmed our hypothesis and is theoretically coherent with the notion that such goals should be highly self-concordant for researchers (Daumiller & Dresel, 2020; Sheldon & Kasser, 1998). Conversely, when researchers perceive their freedom as restricted, task-related mastery goals become harder to enact and sustain. Our qualitative data corroborated this: Participants frequently described motivational dissonance and disengagement when forced to abandon meaningful research directions in favor of externally imposed topics or metrics. Under such circumstances, goal conflicts likely arise from personally endorsed mastery goals colliding with externally imposed constraints (Cavallo & Fitzsimons, 2012). These accounts are well in line with an interpretation along cognitive dissonance theory (Festinger, 1957), suggesting that personally endorsed scholarly goals collide with felt academic restrictions.

From a well-being perspective, perceived academic freedom appears to function as a protective resource in line with both the Job Demands–Resources model and Conservation of Resources theory. While work strain was inversely associated with perceived academic freedom, job satisfaction showed a positive relationship—suggesting that perceived freedom can not only reduce psychological burden but also enhance affective engagement with academic work. These dual effects are consistent with the Job Demands–Resources model's core proposition that resources both buffer demands and enhance motivation. From a Conservation of Resources perspective (Hobfoll, 1989; Hobfoll et al., 2018), perceived academic freedom can be understood as a higher-order psychological resource whose restriction constitutes a threat to valued resources such as epistemic agency, professional identity, and future opportunities. Anticipating negative consequences may thus initiate resource loss processes that manifest in increased strain and diminished satisfaction. Our findings suggest that perceived academic freedom could not only mitigate the emotional toll of institutional pressures and role conflicts, but also stabilize broader resource systems central to researchers' professional well-being. Importantly, the qualitative insights complemented these patterns by illustrating how restrictions, especially when experienced as arbitrary or politicized, undermined researchers' emotional investment in their work and, in several cases, triggered considerations of leaving academia altogether. These findings extend prior work on academic strain and burnout (e.g., Barkhuizen et al., 2014; Kinman & Jones, 2008) by highlighting perceived academic freedom as a psychologically meaningful resource in this process.

Yet, our findings also suggest that these responses to restrictions are not uniform. Although most participants described demotivating consequences, a smaller subset articulated forms of motivational reappraisal. These respondents reframed constraints as challenges to be strategically navigated. While rare, these cases are theoretically informative as they underscore that perceived academic freedom operates through appraisal processes (Folkman & Moskowitz, 2004). Following this line of thought, it might also be worthwhile to follow up on the potential role of psychological capital and epistemic resilience as moderators.

In sum, we think that these findings lend empirical weight to the conceptualization of academic freedom as a psychologically experienced resource that is linked to need-congruent goal pursuit and protection from work strain. Fostering perceived academic freedom, through sustaining researchers' motivation and well-being, may thus contribute to supporting long-term professional viability. Based on this, we encourage further work to follow up on how perceived academic freedom can be fostered, for instance through transparent, participatory governance (Edmondson, 1999), autonomy-supportive leadership (Van den Broeck et al., 2016), or coping strategies regarding precarious employment (Kinman & Jones, 2008).

Of course, focusing on perceptions does not imply that structural or actual freedoms are less important. On the contrary, they are necessarily complementary. Perceived academic freedom stemming from a range of conditions—formal and explicit, subtle and interpersonal—requires beside structural guarantees also addressing the concrete, individual struggles of researchers that shape how academic freedom is felt and enactable—especially when and where democratic institutions are weakening.

4.3. Limitations and further implications

Several limitations warrant consideration. First, while the overall sample was broad and diverse, missing data and participant dropout—particularly due to the sensitive nature of the topic—cannot be ruled out as potential sources of bias. The final sample likely remains self-selective, consisting of those willing to engage with a politically and personally sensitive survey. This likely introduced a response bias in favor of more reflective or affected individuals (Tourangeau & Yan, 2007). That said, dropout analyses revealed highly similar patterns of association between key variables among those who did and did not complete open-ended questions, providing no indication of systematic distortion. Nevertheless, future studies should consider enhanced privacy protections to improve data completeness, for instance employing techniques such as the randomized response method (Warner, 1965; Blair et al., 2015).

Furthermore, while the study was conducted in three countries with relatively high structural protections for academic freedom, findings may not generalize to more repressive or transitional academic environments. Comparative studies including countries with low AFI scores would be valuable in probing the boundaries between perceived and structural academic freedom and their psychological implications.

Next, although institutional affiliation was included in our dataset, the study was not designed as a multilevel investigation. The resulting ICC values must therefore be interpreted with caution due to their limited statistical power. Moreover, some of the observed variability in perceived academic freedom may reflect random fluctuations or unobserved contextual factors beyond our measurement scope. Still, the scale's adequacy is supported by robust associations with theoretically linked psychological variables, as well as by clear score differences between respondents who reported at least one specific restriction and those who did not—offering preliminary evidence for both convergent and criterion-related validity. That said, additional psychometric validation, particularly across diverse institutional and cultural contexts, remains a necessary step for future research.

Finally, while our analyses were guided by the hypothesis that perceived academic freedom influences motivation and well-being, the cross-sectional nature of the data precludes any causal interpretation. It is also plausible that reduced well-being, especially professional cynicism for instance, may shape researchers' perceptions of their academic freedom. Longitudinal designs will be crucial to disentangling these directional effects.

5. Conclusion

This study suggests that academic freedom should not be treated as a static structural feature but as a psychologically experienced resource shaped by researchers' everyday environments and with clear links to their motivation and well-being. Despite similar structural protections across countries, we found substantial variability in perceived academic freedom, largely unrelated to institutional affiliation but meaningfully associated with autonomy need satisfaction, mastery goals, job satisfaction, and work strain. Qualitative findings complement this by showing how informal constraints such as bureaucratic hurdles, funding dependencies, and exclusionary climates are experienced as real restrictions, often leading to disengagement or even exit from academia. Supporting researchers in practice thus requires more than safeguarding formal rights; it also means fostering academic cultures that are felt as free—so that academic freedom can function not only as something that, when restricted, undermines motivation and well-being, but as a genuine resource that is actively sustaining. As one participant put it, echoing the spirit of Humboldt: "No restrictions whatsoever. This has provided me with the necessary ammunition and motivation to do my research."

CRedit authorship contribution statement

Martin Daumiller: Writing – review & editing, Writing – original draft, Visualization, Supervision, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Johanna Ott:** Writing – review & editing, Validation, Investigation, Data curation, Methodology, Conceptualization. **Mathangi Ramasubramanian:** Writing – review & editing, Formal analysis, Data curation. **Andrew Frein:** Writing – review & editing, Investigation, Formal analysis. **Ronja Steinhauser:** Writing – review & editing, Methodology, Conceptualization. **Stefan Janke:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **Oliver Dickhäuser:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **Markus Dresel:** Writing – review & editing, Project administration, Methodology, Funding acquisition, Conceptualization.

Declaration of interests

We have no known conflicts of interest to disclose.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.ijer.2026.102990](https://doi.org/10.1016/j.ijer.2026.102990).

References

- Altbach, P. G. (2001). Academic freedom: International realities and challenges. *Higher Education*, 41(1), 205–219. <https://doi.org/10.1023/A:1026791518365>
- Audretsch, D. B., Fisch, C., Franzoni, C., Momtaz, P. P., & Vismara, S. (2024). Academic freedom and innovation. *PLoS One*, 19(6), Article e0304560. <https://doi.org/10.1371/journal.pone.0304560>
- Baard, P. P., Deci, E. L., & Ryan, R. M. (2004). Intrinsic need satisfaction: A motivational basis of performance and well-being in two work settings. *Journal of Applied Social Psychology*, 34(10), 2045–2068. <https://doi.org/10.1111/j.1559-1816.2004.tb02690.x>
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309–328. <https://doi.org/10.1108/02683940710733115>
- Barkhuizen, N., Rothmann, S., & Van De Vijver, F. J. (2014). Burnout and work engagement of academics in higher education institutions: Effects of dispositional optimism. *Stress and Health*, 30(4), 322–332. <https://doi.org/10.1002/smi.2520>
- Bartel, C. (2019). Academic freedom and free speech: Distinct concepts, different rights. *Educational Philosophy and Theory*, 51(14), 1477–1487. <https://doi.org/10.1080/00131857.2019.1625718>
- Bauer, G. F., Hämmig, O., Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the job demands-resources model: Implications for improving work and health. *Bridging Occupational, Organizational and Public Health*, 43–68. https://doi.org/10.1007/978-94-007-5640-3_4
- Blair, G., Imai, K., & Zhou, Y. Y. (2015). Design and analysis of the randomized response technique. *Journal of the American Statistical Association*, 110(511), 1304–1319. <https://doi.org/10.1080/01621459.2015.1050028>
- Bleiklie, I. (2018). Changing notions of the governance–creativity nexus. *European Review*, 26(S1), S11–S24. <https://doi.org/10.1017/S1062798717000503>
- Bleiklie, I., & Kogan, M. (2007). Organization and governance of universities. *Higher Education Policy*, 20(4), 477–493. <https://doi.org/10.1057/palgrave.hep.8300167>
- Cavallo, J. V., & Fitzsimons, G. M. (2012). Goal competition, conflict, coordination, and completion: How intergoal dynamics affect self-regulation. In H. Aarts, & A. Elliot (Eds.), *Goal-directed behavior* (pp. 267–299). Psychology Press.
- Coppedge, M., Gerring, J., Knutsen, C. H., Lindberg, S. L., Teorell, J., Gastaldi, L., Good God, A., & Grahn, S. (2024). V-Dem country coding units v14. *V-Dem Dataset*. <https://doi.org/10.2139/ssrn.4782741>
- Daumiller, M., & Dresel, M. (2020). Researchers' achievement goals: Prevalence, structure, and associations with job burnout/engagement and professional learning. *Contemporary Educational Psychology*, 61, Article 101843. <https://doi.org/10.1016/j.cedpsych.2020.101843>
- Daumiller, M., Dickhäuser, O., & Dresel, M. (2019a). University instructors' achievement goals for teaching. *Journal of Educational Psychology*, 111(1), 131–148. <https://doi.org/10.1037/edu0000271>
- Daumiller, M., Siegel, S. T., & Dresel, M. (2019b). Construction and validation of a short multidisciplinary research performance questionnaire (SMRPQ). *Research Evaluation*, 28(3), 241–252. <https://doi.org/10.1093/reseval/rvz009>
- Daumiller, M. (2023). Achievement goals: The past, present, and possible future of achievement goal research in the context of learning and teaching. In G. Hagenauer, R. Lazarides, & H. Järvenoja (Eds.), *Motivation and Emotion in Learning and Teaching Across Educational Contexts* (pp. 35–53). Routledge. <https://doi.org/10.4324/9781003303473-4>
- Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, 19(2), 109–134. [https://doi.org/10.1016/0092-6566\(85\)90023-6](https://doi.org/10.1016/0092-6566(85)90023-6)
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- Deci, E. L., & Ryan, R. M. (2014). Autonomy and need satisfaction in close relationships: Relationships motivation theory. In N. Weinstein (Ed.), *Human motivation and interpersonal relationships: Theory, research, and applications* (pp. 53–73). Springer. https://doi.org/10.1007/978-94-017-8542-6_3
- Detert, J. R., & Edmondson, A. C. (2011). Implicit voice theories: Taken-for-granted rules of self-censorship at work. *Academy of Management Journal*, 54(3), 461–488. <https://doi.org/10.5465/amj.2011.61967925>
- Deutsche Forschungsgemeinschaft. (2022). *Package of measures to support a shift in the culture of research assessment [Policy statement]*. September 1. DFG <https://www.dfg.de/en/news/news-topics/announcements-proposals/2022/info-wissenschaft-22-61/>.
- Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44(2), 350–383. <https://doi.org/10.2307/2666999>
- Ehrhart, M. G., Schneider, B., & Macey, W. H. (2013). *Organizational climate and culture: An introduction to theory, research, and practice*. Routledge. <https://doi.org/10.4324/9781315857664>
- Espeland, W. N., & Sauder, M. (2007). Rankings and reactivity: How public measures recreate social worlds. *American Journal of Sociology*, 113(1), 1–40. <https://doi.org/10.1086/517897>
- Felt, U. (2017). Under the shadow of time: Where indicators and academic values meet. *Engaging Science, Technology, and Society*, 3, 53–63. <https://doi.org/10.17351/ests2017.109>
- Festinger, L. (1957). Social comparison theory. *Selective Exposure Theory*, 16(401), 3.
- Feyerabend, P. (1975). *Against method: Outline of an anarchistic theory of knowledge*. London: New Left Books.
- Fochler, M., Felt, U., & Müller, R. (2016). Unsustainable growth, hyper-competition, and worth in life science research: Narrowing evaluative repertoires in doctoral and postdoctoral scientists' work and lives. *Minerva*, 54, 175–200. <https://doi.org/10.1007/s11024-016-9292-y>
- Folkman, S., & Moskowitz, J. T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology*, 55(1), 745–774. <https://doi.org/10.1146/annurev.psych.55.090902.141456>
- Global Coalition to Protect Education from Attack. (2020). *Education under attack 2020: A global study of attacks on schools, universities, their students and staff, 2017–2019*. <https://eua2020.protectingeducation.org>.
- Gray, K. W. (2022). Normative tensions: Academic freedom in international education. *Lexington*. <https://doi.org/10.5040/9781978722132>
- Hein, J., Janke, S., Daumiller, M., Dresel, M., & Dickhäuser, O. (2020). No learning without autonomy? Moderators of the association between university instructors' learning goals and learning time in the teaching-related learning process. *Learning and Individual Differences*, 83, Article 101937. <https://doi.org/10.1016/j.lindif.2020.101937>
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513.
- Hobfoll, S. E., Halbesleben, J., Neveu, J.-P., & Westman, M. (2018). Conservation of resources in the organizational context: The reality of resources and their consequences. *Annual Review of Organizational Psychology and Organizational Behavior*, 5(1), 103–128. <https://doi.org/10.1146/annurev-orgpsych-032117-104640>
- Horn, K. (2020). Reinventing Liberalism: Comments on the book by Ola Innset. *Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft*, 71, 398–415. <https://doi.org/10.1515/ordo-2021-0021>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Ismayilova, K., & Klassen, R. M. (2019). Research and teaching self-efficacy of university faculty: Relations with job satisfaction. *International Journal of Educational Research*, 98, 55–66. <https://doi.org/10.1016/j.ijer.2019.08.012>
- Janke, S., Steinhauser, R., Helmer, H., Daumiller, M., & Dickhäuser, O. (2025). A dual-process model of early career researchers' well-being: Satisfaction and frustration of basic psychological needs as central mechanism. *APA Citation?*. <https://doi.org/10.1007/s10734-025-01520-1>
- Kende, A., & Pántya, J. (2025). A social psychological perspective on how to preserve academic freedom in illiberal political contexts. *European Journal of Social Psychology*. <https://doi.org/10.1002/ejsp.70049>
- Kinman, G., & Jones, F. (2008). A life beyond work? Job demands, work-life balance, and wellbeing in UK academics. *Journal of Human Behavior in the Social Environment*, 17(1–2), 41–60. <https://doi.org/10.1080/10911350802165478>
- Kinzelbach, K., Saliba, I., Spannagel, J., & Quinn, R. (2020). *Free universities: Putting the academic freedom index into action*. Global Public Policy Institute. Report.

- Kinzelbach, K., Saliba, I., & Spannagel, J. (2022). Global data on the freedom indispensable for scientific research: Towards a reconciliation of academic reputation and academic freedom. *The International Journal of Human Rights*, 26(10), 1723–1740. <https://doi.org/10.1080/13642987.2021.1998000>
- Kinzelbach, K., Lindberg, S. I., Lott, L., & Panaro, A. V. (2025). *Academic Freedom Index – 2025 Update*. <https://doi.org/10.25593/open-fau-1637>.
- Lam, A. (2011). What motivates academic scientists to engage in research commercialization: 'gold', 'ribbon' or 'puzzle'? *Research Policy*, 40(10), 1354–1368. <https://doi.org/10.1016/j.respol.2011.09.002>
- Langa, M., Ndelu, S., Edwin, Y., & Vilakazi, M. (2017). # Hashtag: An analysis of the # FeesMustFall movement at South African universities. <https://coilink.org/20.500.12592/8ws7fn>.
- Laudel, G., & Gläser, J. (2007). Interviewing scientists. *Science, Technology & Innovation Studies*, 3(2), 91–111.
- Locher, M. A. (2013). Relational work and interpersonal pragmatics. *Journal of Pragmatics*, 58, 145–149. <https://doi.org/10.1016/j.pragma.2013.09.014>
- Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling*, 11(3), 320–341. https://doi.org/10.1207/s15328007sem1103_2
- Morrison, E. W., & Milliken, F. J. (2000). Organizational silence: A barrier to change and development in a pluralistic world. *Academy of Management Review*, 25(4), 706–725. <https://doi.org/10.5465/amr.2000.37076>
- Norris, P. (2025). *Professors are the enemy: Two faces of academic freedom*. HKS Faculty Research Working Paper Series RWP25-004.
- Readings, B. (1996). *The university in ruins*. Harvard University Press.
- Revicki, D. A., May, H. J., & Whitley, T. W. (1991). Reliability and validity of the work-related strain inventory among health professionals. *Behavioral Medicine*, 17(3), 111–120. <https://doi.org/10.1080/08964289.1991.9937554>
- Rhoades, G., & Slaughter, S. (2004). Academic capitalism in the new economy: Challenges and choices. *American Academic*, 1(1), 37–59.
- Roshchin, E. (2025). Professorial silence: Academic freedom, domination, and self-censorship in contemporary Russia. *The Journal of Politics*. <https://doi.org/10.1086/736025>. Advance online publication.
- Ryan, R. M., & Deci, E. L. (2017). *Self-Determination theory: Basic psychological needs in motivation, development, and wellness*. The Guilford Press. <https://doi.org/10.1521/978.14625/28806>
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness studies*, 3, 71–92. <https://doi.org/10.1023/A:1015630930326>
- Schneider, B., Ehrhart, M. G., & Macey, W. H. (2013). Organizational climate and culture. *Annual Review of Psychology*, 64(1), 361–388.
- Sheldon, K. M., & Hilpert, J. C. (2012). The balanced measure of psychological needs (BMPN) scale: An alternative domain general measure of need satisfaction. *Motivation and Emotion*, 36, 439–451. <https://doi.org/10.1007/s11031-012-9279-4>
- Sheldon, K. M., & Kasser, T. (1998). Pursuing personal goals: Skills enable progress, but not all progress is beneficial. *Personality and Social Psychology Bulletin*, 24(12), 1319–1331. <https://doi.org/10.1177/0146167298241200>
- Sheldon, K. M., Turban, D. B., Brown, K. G., Barrick, M. R., & Judge, T. A. (2003). Applying self-determination theory to organizational research. *Research in personnel and human resources management* (pp. 357–393). Emerald Group. [https://doi.org/10.1016/S0742-7301\(03\)22008-9](https://doi.org/10.1016/S0742-7301(03)22008-9)
- Shore, C., & Wright, S. (2015). Governing by numbers: Audit culture, rankings and the new world order. *Social Anthropology*, 23(1), 22–28. <https://doi.org/10.1111/1469-8676.12098>
- Spannagel, J., & Kinzelbach, K. (2023). The academic freedom index and its indicators: Introduction to new global time-series V-dem data. *Quality & Quantity*, 57(5), 3969–3989. <https://doi.org/10.1007/s11135-022-01544-0>
- Steel, J., & Petley, J. (Eds.). (2023). *The Routledge companion to freedom of expression and censorship* (pp. 232–244). Abingdon: Routledge.
- Taris, T. W., & Schaufeli, W. B. (2015). The job demands-resources model. In S. Clarke, T. G. Probst, & F. J. Passmore (Eds.), *The Wiley Blackwell handbook of the psychology of occupational safety and workplace health* (pp. 155–180). <https://doi.org/10.1002/9781118979013.ch8>
- Tourangeau, R., & Yan, T. (2007). Sensitive questions in surveys. *Psychological Bulletin*, 133(5), 859. <https://doi.org/10.1037/0033-2909.133.5.859>
- UNESCO. (1997). *Recommendation concerning the status of higher-education teaching personnel*. <https://www.unesco.org/en/legal-affairs/recommendation-concerning-status-higher-education-teaching-personnel>.
- UNESCO. (2017). *Protecting academic freedom is as relevant as ever*. Retrieved 20 April from <https://www.unesco.org/en/articles/protecting-academic-freedom-relevant-ever>.
- V-Dem Institute. (2024). *Democracy Report 2024: Democracy winning and losing at the Ballot (high resolution)*. https://v-dem.net/documents/44/v-dem_dr2024_highres.pdf.
- Van den Broeck, A., Ferris, D. L., Chang, C.-H., & Rosen, C. C. (2016). A review of self-determination theory's basic psychological needs at work. *Journal of Management*, 42(5), 1195–1229. <https://doi.org/10.1177/014920631666320>
- Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration*, 23(3), 263. <https://doi.org/10.1037/a0032359>
- von Humboldt, W. (1810/1970). *Über die innere und äußere Organisation der höheren wissenschaftlichen Anstalten in Berlin*. In A. Flitner & K. Giel, *Wilhelm von Humboldt: Werke in fünf Bänden* (Vol. 4, pp. 255–266). Wissenschaftliche Buchgesellschaft.
- Vrielink, J., Lemmens, P., & Parmentier, S. (2011). Academic freedom as a fundamental right. *International Journal for Educational Law and Policy*, 7(1), 43–54. <https://doi.org/10.1016/j.sbspro.2011.03.009>
- Warner, S. L. (1965). Randomized response: A survey technique for eliminating evasive answer bias. *Journal of the American Statistical Association*, 60(309), 63–69. <https://doi.org/10.1080/01621459.1965.10480775>
- Watt, H. M. G., & Richardson, P. W. (2020). Motivation of higher education faculty: (How) it matters! *International Journal of Educational Research*, 100. <https://doi.org/10.1016/j.ijer.2020.101533>. Article 101533.
- Weinstein, M., & Blanchard, J. (2023). Autocratic legalism and the threat to academic freedom: Are we learning the right lessons from Europe. *Journal of Academic Freedom*, 14, 1–12.
- Wissenschaftsrat. (2022). *Acceptance of crisis measures by the population: Lessons from COVID-19. results from two workshops and analysis by the Swiss Science Council (SWR Schrift 1/2022)*. Swiss Science Council.
- Ylijoki, O.-H. (2003). Entangled in academic capitalism? A cultural perspective. *Higher Education*, 45(3), 307–327. <https://doi.org/10.1023/A:1022667925419>