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Critical Perspectives on Accounting

journal homepage: www.elsevier.com/locate/cpa

Instrumentalism and the publish-or-perish regime

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ARTICLE INFO

Keywords:

Publish or perish
Instrumentalism
Research cultures
Scholarship
Senior academics' conduct
Resistance

ABSTRACT

Motivated by concerns about the nature and implications of the current publish-or-perish culture in the academe, we firstly examine based on which perceptions and interpretations individual researchers at universities cope with, survive, or even flourish, in the context of the publish-or-perish regime. Secondly, we probe, following a critical agenda of fostering non-instrumentalist understandings of research, to which extent local conditions may impact these perceptions, interpretations, and ways of coping. We conducted interviews with 32 researchers from six different research units in European universities across all ranks of the academic hierarchy, from first-year PhD students to very senior professors. Our focal descriptive category is instrumentalism: the degree to which an instrumentally rational understanding of research as a means of producing publications as items of countable performance dominates the entire research process from its very beginning. In our study we find notably heterogeneous forms of instrumentalism, which we have termed modes of instrumentalism, from purposely instrumentalist to critical non-instrumentalist modes. We identify and describe local research cultures as mediating the perceptions of individual researchers, and thus the influence of the global publish-or-perish regime on them. Based on our conceptualisation of degrees and modes of instrumentalism and the local research cultures we sketch some measures for fostering non-instrumentalist research cultures that would help in resisting the undesirable effects of the publish or perish regime.

1. Introduction

There is currently a widely held view in the academe across all scholarly fields that good scholarship is in danger. Most of these worries relate to the intensifying publish-or-perish regime, including the increasing influence of journal rankings and journal impact factors as well as straightforwardly quantified styles of performance measurement in academic institutions. These concerns have been raised in accounting research (e.g., Hopwood, 2005, 2007, 2008; Panozzo, 1997; Waymire, 2012; see also Humphrey & Gendron, 2015, and the papers in the special issue of *Critical Perspectives on Accounting*, 26, 2015) as well as in other fields of business and management studies (Alvesson & Sandberg, 2011, 2014; Alvesson et al., 2017; Cederström & Hoedemaekers, 2012; Clarke & Knights, 2015; Clarke et al., 2012; Courpasson, 2013; Knights & Clarke, 2014; Lund, 2012; Mingers & Willmott, 2013; Rintamäki & Alvesson, 2022; Sandberg & Alvesson, 2011; Tienari, 2012a, 2012b) and other scientific disciplines (Edwards & Roy, 2017; Tjldink et al., 2016; van Dalen & Henkens, 2012). Most notably for accounting research, and apparently different from other disciplines in the field of business and management research, these concerns are not confined to the interpretive and critical camps of accounting research, but

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<https://doi.org/10.1016/j.cpa.2022.102436>

Received 27 August 2019; Received in revised form 2 February 2022; Accepted 2 February 2022

Available online 27 April 2022

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also have been uttered by so-called ‘mainstream’ accounting researchers (e.g., Waymire, 2012). In very general terms, this performance measurement regime seems to threaten the quality of research – even though one of its intentions, besides increasing research productivity, was to foster research quality.

The publish-or-perish regime, as we use the term here, is characterised by a global performance measurement system (PMS) in research that very notably relies on quantified indicators. Quantity of research performance is measured by counting the number of publications in peer-reviewed scientific journals, often specified in journal lists. These journal lists are now numerous and growing in number and importance. For example, Vogel et al. (2017) list 18 such rankings for the field of business and management studies – and this list is not complete.¹ A so-called “journal quality list” has been compiled by Harzing since 2000 and -has seen tens of updates since then (<https://harzing.com/resources/journal-quality-list>). Books, book chapters, or non-listed journal publications tend to either receive a minimum weight or do not count at all as significant research performance. In many evaluative situations, quality of research performance is measured primarily through the rank of the journal where the research is published without reference to the content of the research. In the publish-or-perish regime, career chances are dominantly dependent on performance against performance targets that are either formulated as expected number of publications in journals of a specified rank or benchmarked against an anonymous market of academic researchers. “To perish” then may comprise, for example, loss of reputation, negative consequences for salary, allocation of more teaching hours and thus less time for research, or failure of promotion and/or tenure, potentially with the extreme consequence of losing the job.²

The basic line of critique towards the global performance measurement regime argues that researchers, like any member of any organisation, answer to the performance measures they are subject to. Humphrey and Gendron (2015), in their introduction to the special issue of *Critical Perspectives on Accounting* on the sustainability of the accounting academia, note that the “performatization” of academia, characterised by neoliberal modes of management and the dominance of KPIs derived from journal rankings produced a “docile academic” exhibiting short-termism, gap-spotting, and careerism. In a similar vein, Gendron (2015) perceives a growing “paying-off mentality” among researchers. With this he refers to “behavior being driven by a sense of benefits and rewards that are expected to materialize in the short run” (Gendron, 2015, p. 169; original emphasis). In an earlier study, Gendron (2008, p. 107) describes the “construction of the academic performer” as an outcome of an “increasing reliance on performance measurement.” Humphrey and Lukka (2011) speak of a growing instrumentalism in accounting research. Courtois et al. (2020) describe how this danger of producing instrumentalist researchers already begins in the phase of doing a PhD. The same type of critique may be found in discourses in other fields of business and management research. In management and organisation studies, Mingers and Willmott (2013) speak of the “Taylorization” of research through the ABS journal list and the inherent risks to heterogeneity and innovation. Courpasson (2013), looking back at his tenure as editor of *Organization Studies*, warns of a shift from a “culture of ideas” to a “culture of productivity”.

Focusing overly, or even exclusively, on quantitative performance indicators shifts attention away from the content of research. For example, van Dalen and Henkens (2012) find that the higher the performance pressure on demographic researchers, the lesser their interest in the wider significance of their research and their interest in contributing to their scientific community. Tjldink et al. (2016) find in their study of biomedical researchers in Dutch universities that researchers feel that they cannot publish negative results, and that for them, in choosing a publication outlet, the journal impact factor is more important than the aims and scope of the journal. Edwards and Roy (2017) express their concerns about “the new normal” in the field of STEM (science, technology, engineering, and mathematics) research that the dominating performance regime provides “perverse incentives.” They argue (ibid., p. 52) that the current metrics for measuring research performance are individualistic and output-oriented “which is not necessarily the same as achieving a goal of socially relevant and impactful research outcomes.” Rather than incentivising high quality research, the publish-or-perish regime tends to result in an “avalanche of substandard incremental papers” (ibid., p. 52, Table 1). Similarly, research grounded in self-determination theory of motivation and the crowding-out effect (Frey, 1994) finds that performance measures and external incentives tend to destroy intrinsic motivation of researchers (see the contributions in Welpe et al., 2015; specifically, Binswanger, 2015; Kremppow, 2015; Lam, 2015; Wilkesmann, 2015).³

Other voices raise the concern that concentrating on publishing in highly ranked journals may also impact the choice of research topics, methodologies, or theories as, for example in accounting research, these journals “only publish certain types of research, particularly that of the North American mainstream” (Hopwood, 2008, p. 94). Thus, O’Connell et al. (2020) find that the introduction

¹ For example, the Brigham Young University accounting journal ranking (<https://www.byuaccounting.net/rankings/jrnlrank/jrnlrankings.php>) and the Finnish national journal ranking, JUFO (<https://julkaisufoorumi.fi/en>), are missing. Moreover, university departments may have their idiosyncratic journal lists as we have learned from our empirics.

² The origin of the phrase ‘publish-or-perish’ is not very well documented. The *Dictionary of modern proverbs* (Doyle et al., 2012) cites as first mentioning of the term ‘publish-or-perish’ an article by C.M. Case from 1927, “Scholarship in Sociology” in *Sociology and Social Research* 12, p. 325: “If it be true that ... the quality of American sociological writing is in inverse relation to its quantity, the reason is to be sought, among other things, in the fact, first, that the system of promotion used in our universities amounts to the warning, ‘Publish or perish!’”. Wilson (1964 [1942]) lists more or less all the phenomena we are critically discussing today as effects of the publish or perish culture in American universities. What definitely has changed since the 1920s and 1940s, however, is an enormous growth in the number of publications, the proliferation of globalised technologies of evaluation as well as in many countries the introduction of New Public Management inspired styles of university governance including increasing competition.

³ There is some irony in the fact that some of the research on the crowding-out effect is based on work by Frey (for example, Frey, 1994) whose contract has been terminated by the University of Zürich due to misconduct in the form of self-plagiarism because he published identical results in multiple journals without indicating or referencing them (see also Correspondence, 2011; Storbeck, 2012).

of the national research assessment in Australia has resulted in a shift of published research in high-ranking departments of accounting towards positivist approaches.⁴ From the non-English-speaking world, Pelger and Grottko (2015) describe how the German accounting academe more and more orients itself towards the North American mainstream and how this phenomenon again impacts accounting doctoral education in German universities (Pelger & Grottko, 2017). Komori (2015; see also Kamla & Komori, 2018) notes that this may even extend to the empirical phenomena studied and research traditions mobilised when there is a *de facto* censorship which only accepts topics and traditions as legitimate and publishable when they are related to, or even supplemented with, North American perspectives, concepts, or data. Similar concerns are raised by Prasad (2015) and Young (2015) in accounting research, Meriläinen et al. (2008) in organisation studies, and Anderson et al. (2020) in human resources development.

In a more general perspective, and mirroring the concerns of Waymire (2011, 2012) and other researchers from the so-called North American mainstream of accounting research,⁵ Hopwood (2007) argues that the dominant role which countable research performance plays for career advancement has led to a self-referential inward-looking community of researchers who ‘play it safe’. “Rather than being excited about the emerging gaps in our knowledge, it is as if the academic accounting community prefers to focus on the leads that arise from within the existing research traditions” (Hopwood, 2007, p. 1370). As a consequence, accounting research has become overly conservative, conformist, and intellectually constrained (ibid., p. 1372). The global performance measurement regime thus undermines traditional values and identities of researchers related to pursuing good scholarship. Kallio et al. (2016) find in their comprehensive study of Finnish academics that they perceive a newly introduced national PMS based on a national journal ranking undermining the basic academic ethos of the Humboldtian university. Aoubichr and Conway (2021) identify five different types of gaming of business school academics under the British REF framework and report that the academics perceived their own behaviour as challenging the ethos and values of the academe. Clarke et al. (2012) and Knights and Clarke (2014; Clarke & Knights, 2015) studied UK academics’ identities and elaborate on how these academic identities came under threat with the growing managerialism in university management which prominently draws on metrics of performance measurement.

One of the broadest critiques of the negative effects of the publish-or-perish regime has been presented by Alvesson and his co-authors (Alvesson & Sandberg, 2011; Sandberg & Alvesson, 2011). They state that there is a tendency towards incremental “gap-spotting” in research neglecting “problematization” that challenges taken-for-granted methodological and theoretical assumptions; later, they speak of “boxed-in versus box-breaking research” (Alvesson & Sandberg, 2014). Alvesson et al. (2017) go on to argue that the performance measurement regime has led academics increasingly to publishing “nonsense”, i.e., often skilfully crafted but meaningless research.

These critiques are illustrative of what Humphrey and Gendron (2015, p. 51) have termed “academics’ schizophrenic or contradictory attitudes” towards the current performance measurement regime and the publish-or-perish culture. On the one hand, the critiques themselves are acts of resistance by academics; on the other hand, they suggest that academics are complicit in reproducing the publish-or-perish regime. Many studies find that there is only little evidence of open or unambiguous acts of resistance against the performance regime. For example, Clarke & Knights (2015, p. 1879) speak of illusionary “so-called acts of resistance”. Gebreiter (2021) and Gendron (2008) find that academics refrain from overt resistance. Others (e.g., Kalfa et al., 2018; Kallio et al., 2016) find that most of their respondents were complicit in playing the game.⁶ However, resistance may occur in rather unobtrusive forms which even mobilise what is the target of critique (for a general argument, cf. Crvelin & Becker, 2020). For example, Bristow et al. (2017, p. 1201) argue that every move of researchers vis-à-vis the performance regime “constitutes an act of both resistance and compliance (...) They can avoid neither resistance nor compliance as part of their ... identity.”⁷ Anderson (2015) draws on James Scott’s ideas of the “weapons of the weak” and finds “more subterranean forms of resistance” (ibid., p. 261), such as hidden transcripts, i.e., discursive critique of managerialism, avoidance to comply with reporting requirements, and qualified minimalist compliance. Rintamäki and Alvesson (2022) find that such unobtrusive forms of resistance may be triggered by what they term “harsh management practices” in a university. In conjunction with a “mercenary mentality” this may result in “resiliance”, which they understand as “an amalgamation of resistance and compliance: signalling a resistance mindset to relevant colleagues and to self while simultaneously complying with management demands for work outputs” (ibid., p. 5).

While we share the fundamental critique of the publish-or-perish regime,⁸ we nonetheless feel that the discourse on the publish-or-perish regime and specifically considerations on how to counteract the publish-or-perish regime and foster non-instrumentalist research approaches would benefit from a better empirical grounding. This comprises, on the one hand, how researchers experience the publish-or-perish regime and how they lead their academic lives under this condition and, on the other hand, how this global

⁴ The experiences of the editors of this journal with the Australian ABDC journal ranking remind us that the rankings themselves are not neutral but often privilege ‘mainstream’ methodological and ideological orientations (Andrew et al., 2020).

⁵ Accounting seems to be the only discipline in the field of business and management studies where also authors from the quantitative mainstream voice serious concerns vis-à-vis the effects of the publish-or-perish regime. Other contributions comprise for example former AAA presidents Haka (2008) and Sunder (2006) as well as Demski et al. (1991), Demski (2007), Fellingham (2007), or Kaplan (2011).

⁶ Some studies show, however, that academics resist more openly the introduction of completely new PMSs (e.g., Townley, 1997; Wagner et al., 2011).

⁷ Bristow et al. (2017) speak about early career critical management researchers, but we think that this extends in principle to every researcher.

⁸ We disclose that in doing this research we have an agenda that is essentially critical towards many aspects and implications of the publish and perish regime. We share the basic concerns represented in the literature reviewed in this section and with our research we want to contribute to finding strategies for preserving and nurturing non-instrumentalist and engaged scholarship in the current situation. This will necessarily transpire in the introduction as well as discussion and conclusion sections of this paper. We claim, however, that this agenda did not unduly bias our empirical analysis.

publish-or-perish regime is translated into the specific contexts in which they work and live. Therefore, we firstly examine based on which perceptions and interpretations individual researchers at universities cope with, survive, or even flourish, in the context of the publish-or-perish regime. Secondly, we probe, following the critical agenda of fostering non-instrumentalist understandings of research, whether and to which extent local conditions may impact these perceptions, interpretations, and ways of coping.

For this purpose, we conducted interviews with 32 researchers from business and management studies from six universities in Europe across all ranks of the academic hierarchy, from first-year PhD students to very senior professors. We open up the black box of instrumentalism and find surprisingly heterogeneous degrees and modes of instrumentalism. Further, we demonstrate that the impact of the global publish-or-perish regime is mediated via the local research cultures that transpire specifically through the significance and use of local PMSs and senior academics' conduct. Based on such advanced understanding of modes of instrumentalism and their interplay with elements of local contexts, we conclude by sketching strategies for fostering non-instrumentalist approaches to research under the global publish-or-perish regime, in order to help resisting its undesirable effects.

We developed our argument and analysis in an abductive research process (Ahrens & Chapman, 2006; Dubois & Gadde, 2002; Locke et al., 2008; Lukka & Modell, 2010). We have hence cultivated our descriptive concepts – the modes of instrumentalism and the local research cultures – in constant dialogue between data, ideas, and theoretical concepts. Our presentation of the research, however, does not accurately follow this movement “back and forth” (Ahrens & Chapman, 2006; Lukka & Modell, 2010) between data, interpretation, and theory. Rather, we present our research in a more straightforward re-constructive manner to help its readability. Specifically, the development of our concepts in sections 3 and 5 of this paper should be read as grounded in, and resulting from, this abductive reasoning.

The remainder of this paper is structured as follows. In the next section, we describe our research methods. In section 3, we outline our understanding of instrumentalism and the modes of instrumentalism as our basic descriptive concepts. Sections 4 and 5 then present a detailed description of our empirical findings on the degrees and modes of instrumentalism and the relevant contexts of researchers' instrumentalism. In section 6 we discuss our findings in light of our basic motivation of fostering non-instrumentalist approaches to research. The paper ends with a brief conclusion.

2. Methods

In this study we are interested in how academic researchers from the field of business and management studies lead their lives in the current publish-or-perish regime. Specifically, we examine based on which perceptions and interpretations individual researchers at universities cope with, survive, or even flourish, in the context of the publish-or-perish regime and whether and to which extent local conditions may impact these perceptions, interpretations, and ways of coping. For this purpose, we conducted semi-structured interviews (see Appendix 1 for the interview guide). We interviewed overall 32 business and management studies researchers from all stages of an academic career – from first-year PhD student to senior professor⁹ – from research units in six European universities (see Appendix 2 for the list of interviewees).¹⁰ The interviews lasted between 49 and 100 min and were conducted in English.¹¹ All interviews were recorded and transcribed. In addition, the central contents and the most relevant quotes from each interview were condensed to memos of a few pages. We used Nvivo software for documenting and supporting our analysis.

Interviewees were selected in two ways: in three universities, we contacted a senior academic in the institution, and asked them to mediate contacts with at least one senior professor, one postdoctoral researcher, and one PhD student. In the other three universities, we used our own contacts to select the interview partners. We used this sampling strategy because our research topic needs a high amount of trust from the interviewees' side in the integrity of the researchers. At the start of the interview, we informed the respondents about our general research interest, but nothing more to control for any potential halo effects.

For analysing our data, we proceeded in an abductive way (Ahrens & Chapman, 2006; Dubois & Gadde, 2002; Locke et al., 2008; Lukka & Modell, 2010). We started with a basic understanding of good scholarship derived from the literature (e.g., Czarniawska, 2011, pp. 54–55; Alvesson et al., 2017, p. 66) and our analysis was catalysed by our broad worry about the negative consequences of the publish-or-perish regime (see section 1). In a close dialogue, and going back and forth, between our original theoretical ideas, concepts, data, and interpretations (Ahrens & Chapman, 2006; Lukka & Modell, 2010), we gradually derived the key concepts for describing the perceptions and interpretations of our interviewees regarding their research in the current performance regime: the modes of instrumentalism and its constituent features. More specifically, we thoroughly and repeatedly read and discussed the interview transcripts and the memos prepared immediately after each interview, and over time developed the key concept of instrumentalism as well as the additional emerging themes (i.e., perceived performance pressure, concern, type of motivation, and career stage). This development was informed by the interview data as well as conceptual considerations from the literature. We then estimated from the interview data the degrees of instrumentalism, perceived performance pressure, and concern using a very simple distinction between high, medium, and low degree. Regarding career stage, we distinguished tenured vs. non-tenured positions, and regarding the type of motivation we distinguished autonomous vs. controlled motivation drawing on extant literature, specifically

⁹ In five of the six research units included in this study we were able to interview at least one senior professor, one researcher with a PhD, and one PhD student. In research unit UK we did not talk to any PhD student.

¹⁰ We conducted one more interview with a researcher from an Australian university but decided to exclude it from our analysis because we could not interview other researchers from this university. This interview formed a very helpful background and reference material for the interpretations made in this study.

¹¹ One interview was partly conducted in Finnish.

Ryan and Deci (2000) and Pfister and Lukka (2019). We specifically referred to how interviewees described their understandings of good research, their approach to research projects, and their perceptions of the effects of performance measurement they are subject to. This allowed us to form a systematic understanding of the perceptions and interpretations of our interviewees and subsequently group them into different modes of instrumentalism. A caveat must be made, however: due to the cross-sectional design of our study, the interviewees' experiences and interpretations are situated in time and current context and may change over time. We, therefore, can only provide a snapshot and cannot capture dynamic developments over time.

The entire research process was significantly facilitated by a careful keeping of a research diary, consisting of chronologically organised notes on everything that we thought mattered in our research: notes on brain-storming sessions concerning our main theoretical ideas, the development of the research questions and their motivation; brief impression kind of notes right after each interview; notes on the development of our theoretical storyline and conclusions over the entire abductive process; and notes on editor's and reviewers' comments.

3. Instrumentalism

We are investigating how individual researchers at universities perceive and interpret their situation as researchers vis-à-vis the publish-or-perish regime and how these perceptions and interpretations enable them to cope with, survive, or even flourish under these conditions. For this purpose, we introduce a descriptive framework for systematically describing our data. Our focal descriptive category is *instrumentalism* (cf. Humphrey & Lukka, 2011). In the following, we first develop our understanding of instrumentalism in research in general. After that, we argue that instrumentalism is not a simple one-dimensional phenomenon and introduce different degrees and modes of instrumentalism.

3.1. Defining instrumentalism

Researchers' growing instrumentalism has been recurrently noted as a matter of concern. While some critics explicitly use the term instrumentalism (e.g., Alvesson et al., 2021; Butler, 2020; Clarke & Knights, 2015; Gebreiter, 2021; Humphrey & Lukka, 2011; Tourish & Willmott, 2015), others refer to this phenomenon implicitly (e.g., Edwards & Roy, 2017; Gendron, 2015; Hopwood, 2007, 2008; Humphrey & Gendron, 2015; Mingers & Willmott, 2013). The concern regarding instrumentalism in research is connected to the Janus-faced character of publications under the publish-or-perish regime. Publications are, on the one hand, a means for communicating research results and, on the other hand, measurable items of performance. This constellation harbours the danger of the latter undermining the former, i.e., fostering an approach to research "according to which the content and contribution of outputs has become secondary to getting 'hits' in highly-ranked journals" (Gebreiter, 2021, pp. 1–2). This implies subsuming the genuine interest in the research topic, innovativeness, and quality under the goal of instrumental publishing (Humphrey & Lukka, 2011), i.e. playing the publication game (Aboubichir & Conway, 2021; Butler, 2020). Hence, the act of publishing may become a means for the end of quantitative performance instead of being a medium for communicating discoveries and knowledge (Hopwood, 2007).

Admittedly, these conceptualisations of instrumentalism are descriptive and empirically driven. At the same time, the phenomenon of instrumentalism in research can easily be connected to the more general theme of the effects of performance measurement and theoretical considerations underlying this research. Some contributions, for example, refer to disciplinary power and self-formation (e.g., Clarke & Knights, 2015; Gendron, 2008) or to motivation theory (Welpel et al., 2015). However, in contrast to most research on the effects of performance measurement (for an overview, Franco-Santos & Otley, 2018) the critical contributions about instrumentalism in academia are passionate about negative effects and specifically about what is threatened or even destroyed by performance measurement practices: scholarship (Alvesson et al., 2021), quality of research (Humphrey & Lukka, 2011), a "culture of ideas" (Courpasson, 2013), in short, the "complex and exciting agenda" (Hopwood, 2007, p. 1370) of researching organisational and societal phenomena. Instrumentalism is perceived as threat to the fundamental *raison d'être* of research.

This is pointedly expressed in Hopwood (2007, p. 1373) statement that: "focusing on research almost solely as a means rather than an end seriously distorts the research process." We draw on Max Weber's (2013 [original 1922 in German]) distinction between instrumental rationality and value rationality to conceptualise instrumentalism in research more concisely. Value-rational (*wertrational*) action is "determined by a conscious belief in the value for its own sake of some ... form of behavior, independently of its prospects of success" (Weber, 2013, pp. 24–25). This ideal-typical value-rational orientation towards pursuit of knowledge through doing research as having an intrinsic "value for its own sake" is, for example described by Alvesson et al. (2021, p. 2) in characterising the "scholar" as "passionate individual engaged in what s/he finds truly interesting to study"¹² or Humphrey and Gendron's (2015, p. 54) description of a sustainable research community as "vibrant, inspired, inspiring, reflective and communicative."

¹² Alvesson et al. (2021) refer to German philosopher Friedrich Schiller's inaugural lecture at the University of Jena in 1789 where he distinguishes the "*philosophische Kopf*" (philosophically-minded scholar) and the "*Brotgelehrte*" (bread-and-butter scholar).

In contrast to value-rationality, Weber conceptualises action as instrumentally rational:

“when the end, the means, and the secondary results are all rationally taken into account and weighed. This involves rational consideration of alternative means to the end, the relations of the end to the secondary consequences, and finally of the relative importance of different possible ends” (Weber, 2013, p. 26).

In an instrumentalist orientation, the value-rational unconditional pursuit of knowledge through research is subsumed under an instrumentally rational calculation and weighing against concerns relating to the extrinsic rewards gained through publications, like advancing one’s career. Instrumentalism in research hence implies that doing research becomes a means to the end of for producing publications as countable items of performance.

We therefore define our focal descriptive category, instrumentalism, as the degree to which the aim of publishing dominates the entire research process. More concretely, it is the degree to which a researcher perceives the quantifiable features of publications as the primary concern of a research project from the very beginning, i.e., in developing the research interest itself and conceptualising the research *ab initio*. In our understanding, instrumentalism can be described along a continuum from high to low degrees of instrumentalism.¹³ In the case of an ideal-typically high degree of instrumentalism, researchers perceive the substantial research content as a means for achieving publications, i.e., countable items of performance. In the opposite case of an ideal-typically low degree of instrumentalism researchers perceive publications as means for communicating substantial research content; therefore, we also speak of non-instrumentalism when referring to this situation. The perceived means-end-relationship between publication and content is diametrically opposed in the two extremes. Table 1 provides an overview of the two extreme points of the continuum of instrumentalism.

In the first case of an ideal-typically high degree of instrumentalism (right column in Table 1), achieving a publication provides meaning to the substantial research. Researchers tend to feel that the aim to get their research published sets a requirement for them to make a sufficient substantial contribution. The substantial contribution is hence the means to achieve the performance target, i.e., the publication. This implies that considering the target journal as well as appropriate strategies to get the research published therein are prominent considerations already in conceiving the research idea and initially conceptualising the research. Positioning the research vis-à-vis established discourses, probably even limited to the discourses in the specific target journal, plays a major role already in defining research interest and research questions. With this type of ‘positioning research’, researchers attempt to ‘play it safe’ by concentrating on incremental contributions to accepted wisdom, thus minimising possible risks of annoying editors and reviewers by making overly critical or radical claims. Presentations of research at conferences and research seminars as well as reviewer feedback are also overly viewed in an instrumental manner – as a means to increase the likelihood of publication rather than advancing knowledge, learning, and reflecting.

In the second case of an ideal-typically low degree of instrumentalism, the communication of the scientific findings provides meaning to a publication. Hence, considerations of where and how to get the research published play a very subordinate, or even no role at all, in the phase of initially conceiving the research idea and initially conceptualising the research. The eventual publication of a piece of research is perceived as a means to the end of communicating a substantial contribution; it follows from making a substantial contribution to knowledge. Presenting research at conferences and research seminars are seen as opportunities to advance understanding and reflection. Of course, a low degree of instrumentalism does not imply that researchers would not care about publications at all – they do, but they do not let the aim to publish dominate the research process and defining their research interests. However, during the process of conducting the research – ideal-typically towards the end of it – considerations regarding target journals, positioning the research, etc. get more and more prominent because they are important for two reasons. First, making a substantial contribution to a field implies connecting to existing research, theories, and assumption grounds – even if the position would be supremely critical towards them.¹⁴ Second, to successfully communicate a substantial contribution necessitates considering the practicalities of publishing, such as conventions of publishing in the respective research community.

3.2. Moderating instrumentalism

While instrumentalism with its different degrees lies at the heart of researchers’ perceptions and interpretations of researching under the conditions of the publish-or-perish regime, it is not an isolated phenomenon. Rather, we find degrees of instrumentalism combined with four descriptive categories surfacing in our data: perceived performance pressure; concern; career stage; and type of motivation. In the analysis of this paper, combinations of the degree of instrumentalism and these four descriptive categories form different modes of instrumentalism at the level of individual researchers.

Perceived performance pressure

The first descriptive category of researchers’ experience and interpretation of their situation in the publish-or-perish regime concerns how they perceive performance pressure. By this we mean how strongly researchers feel they are subjected to the

¹³ Weber, 2013, p. 26) also states that purely instrumentally-rational and value rational action are ideal types in the sense of “conceptually pure form[s]” for the sake of sociological analysis.

¹⁴ However, especially in attempts to produce very radical contributions, one needs to also consider the risk of being perceived as either uninteresting or absurd (Davis, 1971).

Table 1
Degrees of instrumentalism.

	Low degree of instrumentalism	High degree of instrumentalism
Starting point of research project	Identifying empirical or theoretical puzzle primarily as intellectually or practically challenging phenomenon	Identifying research gap primarily as means or opportunity for achieving a publication as countable performance
Considering practicalities of getting a piece of research published	Insignificant or absent at the early stages of the research process; increasing significance over time and towards the end	Constant high significance over the course of the research process from conceiving the research topic to publication
Relation of content and publication as performance metric	Publication is believed to follow from making a substantial contribution to knowledge; hence the process focuses on developing the latter	Publication requires making a contribution to knowledge; hence the process focuses on identifying an opportunity for and producing what is believed to be a publishable contribution
Style of scientific discourse	Scientific discourse and reviewer feedback seen primarily as means for advancing knowledge, understanding, and communicability of content	Scientific discourse and reviewer feedback seen primarily as means for increasing the likelihood of publication
Means-end relationship	Publication as means to communicate substance of research content	Research content as means for getting publication

requirement to publish a high number of papers in highly ranked journals *and* how much they feel this puts them under duress (Knights & Clarke, 2014). Researchers may feel higher or lower performance pressure regardless of the level of their specific performance targets. An important aspect of perceived pressure is the extent to which researchers feel pushed towards acting in an instrumentalist way. As in the case of instrumentalism, we conceptualise perceived performance pressure as a continuum between the ideal-typical endpoints of perceiving it as high, medium, or low.

Researchers' concerns

A second descriptive category is how concerned researchers are regarding the impact of the publish-or-perish regime and performance measurement on the research community, naturally including themselves (Kallio et al., 2016), thus reflecting the critical discourse on the publish-or-perish regime. They may, for example, be concerned that the ensuing performance pressure has a negative effect on early career researchers and their development as independent minds. Again, in our descriptive model we depict concern as a continuum between the ideal-typical endpoints of being highly concerned, or not concerned at all, and distinguish high, medium, and low degrees of concern.

Type of motivation

Not surprisingly, motivation is a third descriptive category of researchers' perceptions and interpretations of their situation in the publish-or-perish regime. Decades of research has firmly established that there are relations between performance measurement and motivation in general (for example, Franco-Santos & Otley, 2018) as well as, specifically, in the field of research (Miller et al., 2011; Welpe et al., 2015). Specifically, self-determination theory (Ryan & Deci, 2000), with its detailed conceptualisation of the relations between intrinsic and extrinsic motivation, argues that the way we control and incentivise behaviour influences the type of motivation people hold as well as that these motivations profoundly influence behaviour. However, pure intrinsic motivation is an extreme case hardly observable in organisational settings. Therefore, Pfister and Lukka (2019) focus on Ryan and Deci's (2000) conceptualisation of modes of extrinsic motivation and distinguish the controlled form of motivation, characterised by an external perceived locus of control, from the autonomous form of motivation, characterised by an internal perceived locus of control (Pfister & Lukka, 2019).¹⁵ Controlled motivation has been found to be associated with a tendency of pursuing performance goals, i.e., achieving countable outputs, and autonomous motivation with a tendency of pursuing mastery goals, i.e., an orientation towards substantial achievements in mastering tasks or solving problems (Rawsthorne & Elliot, 1999). Therefore, the type of motivation to do research may influence researchers' perceptions and interpretations of research in the publish-or-perish regime.

Career stage

Lastly, the career stage of researchers, specifically whether they are in a tenured position or not, is likely to interact with how they perceive and interpret their situation in relation to performance measurement, the publish-or-perish regime, or even the degree of instrumentalism.

Summary

To summarise, we draw on the concepts developed in this section in the ensuing analysis of our data. We find degrees of instrumentalism – high, moderate, low – in combination with four descriptive categories: perceived performance pressure, concerns regarding the research community, type of motivation, and career stage. Together, these descriptive concepts provide a framework to systematically describe our empirical data and at the same time to open up the black box of instrumentalism in research.

¹⁵ Autonomous motivation describes what in economics-based crowding theory (Welpé et al., 2015) is somewhat misleadingly termed intrinsic motivation (Pfister & Lukka, 2019, p. 348).

4. Findings: Modes of instrumentalism

We now turn to presenting our findings. Our focal concern is the instrumentalism researchers exhibited in describing their research and their lives as academics. We have defined instrumentalism as the degree to which researchers perceive the quantifiable features of publications as the sole concern of a research project from the very beginning, i.e., in developing the research interest itself and conceptualising the research from the very beginning. On a first level, we distinguish high, moderate, and low levels of instrumentalism transpiring in the respondents' accounts. We term the different groups 'instrumentalist researchers', 'moderate instrumentalist researchers', and 'non-instrumentalist researchers', respectively.

We find degrees of instrumentalism combined with four other descriptive categories surfacing in the self-descriptions of our respondents: degree of perceived performance pressure; degree of concern; career stage; and type of motivation. This allowed us to identify idiosyncratic arrangements of these five components, which we term *modes of instrumentalism*. We thus find three modes of non-instrumentalism: critical non-instrumentalist mode, anxious non-instrumentalist mode, and balanced-non-instrumentalist mode; two modes of moderate instrumentalism: self-conscious mode and integrated mode; and two modes of high instrumentalism: reluctant instrumentalist mode and purposely instrumentalist mode. These modes of instrumentalism enable us to better understand different strategies of coping with, surviving, or flourishing under the publish-or-perish regime. Table 2 provides a condensed profile of these modes of instrumentalism.

4.1. Instrumentalist researchers

Several of our respondents exhibit a high level of instrumentalism. Overall, this group is also mostly homogeneous with respect to the other descriptive characteristics. They perceive themselves to be under high performance pressure and exhibit a high level of controlled motivation. Moreover, they are in untenured positions. In one respect, however, there is a difference. Some of the researchers are highly concerned regarding the effects of the publish-or-perish regime, while others are not at all concerned. This latter mode of instrumentalism we termed *purposely instrumentalist mode*, the former *reluctantly instrumentalist mode*.

Purposely instrumentalist mode

We identify four researchers as exhibiting the purposely instrumentalist mode: two postdoctoral researchers from research units F1 (F1-C) and F3 (F3-B) and two PhD students from research units F2 (F2-H) and G2 (G2-D). The high level of instrumentalism transpires in various utterances, probably most clearly formulated by PhD student G2-D:

"At my level I see that I have to publish. It's this famous 'publish or perish.' So, for the next, say, five years my goal is to understand how journals work, to get some initial work published in those journals, to get a position. And once I have a position in academia then I can think about what do I like more, what do I like less." (G2-D).

The same interviewee also states that there is for them a clear "pecking order" of authoritative advice regarding journal submissions where "editor and reviewers are definitely on top one, supervisors two, and colleagues that might have valuable comments on three" and that they would go with reviewers' advice "even if I deeply disagree with it" (G2-D).¹⁶

A postdoctoral researcher (F3-B) described their situation as "academic entrepreneurs" who constantly must acquire funding, define new research projects, and have to do impression management to appear as "active and progressive researcher." "I think that it's the new logic of that business that ... we are merchants of promises, and we're merchants of research papers." (F3-B) Not least, this view indicates how the purposely instrumentalist researchers live under severe perceived performance pressure.

At the same time, however, they accept the publish-or-perish regime as legitimate and do not perceive the situation as threatening their values regarding research and academic life. For example, postdoctoral researcher F1-C accepts that journal rankings are an adequate measure of research quality:

"I kind of believe in the JUFO [Finnish national journal ranking] system¹⁷ in that sense, (...) I kind of believe in that the better the [JUFO-] level, the better the quality of the journal." (F1-C).

The purposely instrumentalist researchers' motivation is of the controlled type. For example, F1-C states: "And that is something that kind of motivates me, that there is this journal that is the number one in that area" (F1-C). And F3-B concedes that: "And when I started [this] research project ..., of course I'm interested in the empirical phenomenon, but I'm more interested in the potential research manuscript." (F3-B).

¹⁶ A senior professor ironically commented on the tendency to follow reviewers' advice unconditionally, saying: "if the reviewer wants them to write *'deine Oma stinkt aus dem Hals'* [your grandmother has bad breath], they would write it".

¹⁷ The Finnish national ranking of scientific journals, JUFO, distinguishes three levels: Level 3 includes "supreme-level publication channels", level 2 "leading academic publication channels", and level 1 "journals, series and conferences considered to be most important from the Finnish research perspective". All other publications are ranked at JUFO level 0 and are not counted as decent academic publications (<https://julkaisufoorumi.fi/en/evaluations/classification-criteria>).

Table 2
Modes of instrumentalism.

	Instrumentalism	Perceived performance pressure	Degree of concern	Career stage	Type of motivation
Instrumentalist researchers					
Purposely instrumentalist researchers	high	high	low	untenured	controlled
Reluctantly instrumentalist researchers	high	high	high	untenured	controlled
Moderate instrumentalist researchers					
Integrated researchers	moderate	low/medium	low	(mostly) tenured	in-between
Self-conscious researchers	moderate	high	high	(mostly) untenured	in-between
Non-instrumentalist researchers					
Balanced non-instrumentalist researchers	low	low	medium	(mostly) tenured	autonomous
Anxious non-instrumentalist researchers	low	high	high	untenured	autonomous
Critical non-instrumentalist researchers	low	low/medium	high	tenured & untenured	autonomous

All interviewees in this purposely instrumentalist mode perceive themselves as not sufficiently successful yet and are in untenured positions. The awareness of this situation transpires specifically in the openly instrumentalist and opportunistic statements of PhD student G2-D when they say that: “At my level [as a PhD student] I see that I have to publish”, and that: “At a later stage of my career I would more follow my ideals, my views and start arguing probably [with reviewers with whom I disagree].”

Reluctantly instrumentalist mode

The perceptions and interpretations of the two reluctantly instrumentalist researchers – PhD student F3-A and assistant professor G2-C – are largely equivalent to those of the purposely instrumentalist researchers. They talk about their approach to research in a highly instrumentalist manner, they perceive performance pressure being high and, they are in untenured positions and exhibit a high level of controlled motivation. At the same time, and contrary to the purposely instrumentalist researchers, they are highly concerned regarding the effects of the publish-or-perish regime on themselves and on academia in general.

Specifically, G2-C sees a trade-off between the pressure to publish coming from the current PMS and pursuing interesting research projects:

“[The PMS] also kind of influences the way you see different projects. I spend a lot of time and I focus a lot of my attention to particular projects that have the potential. There might be some other projects that are ..., that don’t have the potential to get published in top journals, but they are very interesting for very different reasons, right?” (G2-C).

PhD student F3-A is very critical about the focus on journal publications coming from the current performance regime:

Q: *So, when you do your research, do you from the start think about where could I publish that? is that very much in the beginning...?*
Yes, actually yes because, um, it is worth of nothing to do anything that you can’t, um, publish in international journal that there’s no reason to do research like that it is worthless, heh.” (F3-A).

Or, with scathing irony:

“Who cares about, um, society out there if your research report is not JUFO level journals?” (F3-A).

The publish-or-perish regime also dramatically reduces the attractiveness of academia as a place to work in the view of the reluctant instrumentalist researchers:

“... and actually, when I decided to go in academia, I didn’t really realise how tough it would be down the road. I think ..., and it’s getting tougher and tougher as we know, and so the ..., I think the, kind of, the interest of becoming a researcher nowadays should be lesser and lesser. I have no idea why so many people still want to go into academia. Maybe they don’t know better, but I think the reasons for going into academia are getting less and less, actually. But... yeah.” (G2-C).

4.2. Moderate instrumentalist researchers

The moderate instrumentalist mode is exhibited by the largest group among our interviewees with 14 cases. Their approach to research is somewhere between the more extreme poles of the continuum of instrumentalism and their motivation exhibits controlled

as well as autonomous aspects. The two modes of moderate instrumentalist researchers differ, however, regarding three descriptive categories. *Integrated researchers* perceive low to medium performance pressures, they are little concerned, and they hold – with one exception – tenured positions. *Self-conscious researchers*, on the other hand, perceive performance pressure as high, they are highly concerned, and they are, with two exceptions, in untenured positions.

*Integrated mode*¹⁸

What we describe as a moderate level of instrumentalism is captured in G1-E's statement that:

"... it's always about finding some kind of interesting topic and what is interesting is of course a matter of judgement and so you have to follow, kind of, the debates in the journals and to see into which debates you can contribute something and to make the paper interesting in the eyes of the readers. So yes, but not in an unhealthy sense, I think, I mean I think that's quite natural that you have to position your paper somehow. It doesn't prevent me from doing something that I'm interested in, I would say." (G1-E).

There is a genuine interest in research topics, but this interest is also from the beginning channelled through the discourses in target journals, i.e., depending on the assumed readers, editors, and reviewers.¹⁹ Accordingly, we observe a mix of autonomous and controlled motivation, again in the words of G1-E:

"What I called, kind of, intrinsic motivation before I think it's very much tied to this idea that I have an interest in doing research because I like to do that but also because I like to of course see some kind of output." (G1-E).

Integrated researchers do not see many problems with the current performance measurement regime. They accept that there is a more or less taken-for-granted hierarchy of journals, and that performance targets are a quasi-natural part of academic life as:

"... if they [researchers] would not want that [performance target for publications] themselves they would probably have a career conflict at their individual level". (UK-E).

Moreover, they feel the system of science overall works pretty well, and scholarly effort will be rewarded:

"So, I want to believe that if you build your research question and motivation and produce well and produce a good, interesting contribution, it should kind of end up in good journal, which would show [up in] the [local PM] system." (F2-E).

Thus, in general the integrated researchers are not overly concerned regarding the publish-or-perish regime. They also do not feel to be overly under performance pressure as, for example, can be seen from this excerpt from the interview with F2-B:

"Q: *Okay. Does this performance measurement create pressure for you, or causes stress?*

Yeah. In positive way and in negative way. Yeah, both, yeah.

What is the positive way?

It kind of forces to sharpen what you're doing. And thinking also that what's gonna be the anticipated outcome, what you're doing. I think it's good, because we're enjoying taxpayers' money, so it's good that we get some results. And also hopefully something that benefits the society.

And negatively?

As an example, if you don't get some manuscripts [published] although you have really good effort and collected the data and you have tried your best, and then you're rejected on the fourth round. That hey, why you don't include United Kingdom at that test? Okay, c'mon, it creates stress." (F2-B).

Although F2-B talks about negative experiences here, this obviously does not put this interview partner overly under performance pressure.

¹⁸ The respective researchers are senior professors F2-B, F2-E, G1-E, G2-A, and UK-E, as well as postdoctoral researcher F2-G.

¹⁹ When we decided to call this mode of instrumentalism 'integrated' we were not aware of the work by Howard Becker on *Art worlds* (1982) where he identifies a type of artist he terms "integrated professionals". There is a parallel between Becker's integrated professionals and our integrated researchers. Integrated professionals in Becker's view produce "canonical art works", which are "exactly as the conventions ... dictate (...) Imagine ... a canonical artist, fully prepared to produce, and fully capable of producing, the canonical art work. Such an artist would be fully integrated into the existing art world. He would cause no trouble for anyone who had to cooperate with him, and his work would find large and responsive audiences. Call such artists integrated professionals" (Becker, 1982, pp. 228–9). We thank Samuel Sponem for pointing out this parallel.

*Self-conscious mode*²⁰

What distinguishes the self-conscious researchers from the integrated researchers – besides the fact that most of them are in untenured positions – is the high perceived performance pressure and the high level of concern. Both aspects transpire in the following quote by assistant professor UK-F:

“Paralysis I would say is the main phenomenon I observe. People are absolutely paralysed by the demands either explicitly placed on them or perceived demands placed on them. Because, as I said, the formal [evaluation] process only says ‘publications of international quality’. But then all that imaginary world comes into it, what does it mean, what does it take, what do I have to do? And what I often observe is that many conversations circle just around meeting targets and ultimately people have [been] paralysed by that thought. Because a good conversation over lunch amongst academics should be about the projects they do.” (UK-F).

This quote clearly shows the level of pressure that self-conscious researchers perceive as well as the general concern regarding the unhealthy stress caused by the publish-or-perish regime. In line with this, some self-conscious researchers perceive a lack of control:

“I think publishing is also ..., has a lot to do with luck and ... maybe you can do good research and it does not get published in a very highly ranked journal.” (G1-B).

Other interviewees utter more specific concerns, for example, that their specific research topics are not well represented in the highly ranked journals:

“So sometimes I ..., it will be harder sometimes maybe like wanting to publish in [field-specific] journals because either they’re not on some of these lists, for example, or they tend to be like even the very best journals in [this] area will not be like a four star.” (UK-B).

Other concerns relate to the perceived discouragement to take on long-term and innovative research projects.

4.3. *Non-instrumentalist researchers*

As the name indicates, we subsume researchers whose perceptions and interpretations of research under the publish-or-perish regime exhibit a low level of instrumentalism under the broad category of non-instrumentalist researchers. This group is the most diverse with three modes of instrumentalism, *balanced*, *anxious*, and *critical non-instrumentalist* modes. All three modes have in common that the interviewees speak about research in a non-instrumentalist way and that they tend towards autonomous motivation. Regarding the other descriptive categories, the three modes differ.

Balanced non-instrumentalist mode

The balanced non-instrumentalist mode is characterised by a low level of perceived performance pressure, a medium level of concern, and mostly tenured positions of its proponents. Senior professors F3-C and UK-D as well as postdoctoral researcher F2-F are in this group.

The non-instrumentalist manner of approaching research is nicely illustrated by the following quote, which describes an approach to starting research which is led by puzzles emerging from the field rather than spotting gaps or considering practicalities of publishing:

“What I do in my work, well, one of the things people know me about is that I seldom plan much ahead in terms of research when we start to do something. We go and do interviews and start thinking that what’s interesting here. It’s not like grounded theory stuff, but it’s anyway, it’s more like, what kind of things could be interesting ... within this project and what kind of things emerge, and from there we start to think, ok where are these things then discussed ...” (F3-C).

Most characteristic of the balanced non-instrumentalist mode is the differentiated approach towards performance measurement which we have coded as medium level of concern. On the one hand, interviewees have reservations because they see for themselves or for others constraining effects. For example, postdoctoral researcher F2-F says:

“So, ... I believe academics should strive to publish academic articles with an academic focus, theoretical, but then as much as possible to get their practical message into some practitioner forum. I have not done that myself, but I see it as an ideal aim ..., ideal goal. I think the practical message should go to the proper forum that the practitioners read.

Q: *Why is it that you haven’t invested your time in doing that part of your projects ...?*

²⁰ The respective researchers are senior professor F1-B, associate professor (untenured) G1-A, associate professor (tenured) UK-B, assistant professors G2-B and UK-F, postdoctoral researchers UK-A, and PhD students F2-D and G1-B.

Well here perhaps the performance measurement goes into place, yes. We are not encouraged to go into this direction and since publishing in a practitioner forum is so low-grade by, in our systems, they are JUFO [levels] one or less. Of course, you focus on what you know is valued.” (F2-F).

Researcher F2-F thus perceives performance measurement as alienating them from communicating research findings to practitioners. And researcher F3-C observes that the prevailing performance measurement regime drives researchers to do meaningless research:

“I feel often times that well there is, um...a range of papers which to me are not contributing to any knowledge, that’s repeating what we already know (...) and to me the structures are driving people to do those papers, that they have to do certain things, they have to get them to conferences, they have to try to publish something instead of trying to do innovating and new, more risky work which might then, umm... contribute to our knowledge.” (F3-C).

However, on the other hand, balanced non-instrumentalist researchers also see a necessity of some kind of output-based research performance measurement. For example, F3-C states:

“Yes, I think there needs to be a [formal performance measurement] system ... We need to have something in place ... and well first of all what I think it needs to be transparent. It needs to be something that you, kind of, know that there is.” (F3-C).

And UK-D says:

“The other way of putting it, I’m not actually against performance assessment! ... So, to say, it’s not that I’m actually against performance assessment but I think it’s incredibly difficult to do it well.” (UK-D).

Both researchers emphasise that rather than having no performance measurement at all, the challenge is to set up a transparent and well-working functional one. Hence, this mode has been termed ‘balanced’ because its proponents try to balance the perceived positive and negative effects of formalised output measurement without compromising non-instrumentalist research.

Anxious non-instrumentalist mode

The anxious non-instrumentalist mode differs from the balanced mode specifically with regard to the high perceived performance pressure and the high level of concern. Moreover, its proponents are in untenured positions (postdoctoral researcher F2-C and PhD student G1-D).

For example, PhD student G1-D talks about the performance pressure resulting not only from specific performance requirements but also from the general atmosphere of fear fostered by performance measurement and the publish-or-perish regime:

“It’s not so much about the content I think, ... it’s not ... very often that people talk about the content [of their research] and yeah it’s like the other huge thing that I always hear is this, kind of, fear or talk about the future, the uncertainty and that this job is not very attractive because of these requirements and because you cannot control it and you will always be not very sure about when you get a job or what job you get and, yeah. So actually, I mean, although I really like what I do, kind of makes you think sometimes is this really a good choice? Do you want to stress yourself with respect to this? So, there’s a lot of talk, kind of, evoking these feelings, yeah.” (G1-D).

Thus, anxious non-instrumentalist researchers perceive their situation as fundamentally stressful. Additionally, postdoctoral researcher F2-C relates how the PMSs influenced their research in very substantial unwanted ways:

“Yes, very sure, yes, ... so I have, for example one project where I suggested to people we might go for specific journal which was a journal that was outside their evaluation criteria (laughs) and ... of course this changed, this ... brought up a big discussion what to do about it and of course and we had to adjust a bit our target so that it is in a range for everybody in the evaluation system [...] So I think ... that definitely has a big impact how people think and also where you go with certain projects.” (F2-C).

Hence, the PMS is perceived as forcing on the researchers a more instrumentalist approach than they would want.

Moreover, anxious non-instrumentalist researchers are critical about the role of academics themselves in upholding a system they perceive as dysfunctional:

“I mean what I kind of find contradicting or kind of confusing for me is that everybody seems to not like these systems, these performance systems and everybody is kind of criticising them, especially in the [specific research] community being aware about these measurement things, thinking about measurement things but everybody plays their game”. (G1-D).

For PhD student G1-D, this perceived hypocrisy of senior academics is worrying, because there seems to be no prospect of escaping the pressures of the publish-or-perish regime when even the critics play to its rule book.

Still, however, the anxious non-instrumentalist mode is exactly this: non-instrumentalist:

“I think the first thing is you yourself ... need to like what you do ... So, once you have written something you should at least like it and then I think it goes on to other people in the review process.” (F2-C).

Critical non-instrumentalist mode

The critical non-instrumentalist mode differs from the anxious non-instrumentalist mode as it is connected to only low to medium perceived performance pressure. One of the interviewees is associate professor (G1-G), the other assistant professor (G1-F). What is most characteristic of the critical non-instrumentalist mode – also compared to the balanced mode – is the stance towards the perceived negative effects of the publish-or-perish regime which gives the high level of concern a specific critical turn.

They are very much driven by autonomous motivation and a low level of instrumentalism and emphasise the empirical puzzles as driving their research very much in their interviews:

“Often you understand the quality of research as the quality of the theorising. I’m not so sure. Maybe I’m very empirically driven. I see papers that attempt good theory but end up just using a lot of jargon and not really telling us something about the world out there. Then you see papers that seem to be descriptive but are so densely descriptive that they really tell us something new, so even they use, they mobilise the empirics in such a way that is fresh and genuine. It throws a new light on things.” (G1-F).

Researcher G1-F prioritises the engagement with the empirical content over a type of theoretical positioning (“jargon”) that threatens to prevent them from producing relevant and innovative findings. Somewhat related, G1-G emphasises societal relevance and the personal urge for understanding as the driving forces behind his/her research activities.

“There are probably two parts in it. One part, it is ideally some sort of relevance, social relevance, not just relevance for some profit-oriented organisations. But this is hard to achieve. I think what in the process makes it meaningful for me is also a very personal thing; understanding something better ... also makes it meaningful, even if it is just me who is understanding it better, or my co-author.” (G1-G).

The critical non-instrumentalist mode is also characterised by a highly self-reflexive stance towards own research activities. Thus, G1-G self-critically recalls a paper they had published in a 4-star journal when still in an untenured position as not good in terms of content:

“... it’s extremely nicely positioned but I wouldn’t even be able to tell you now what it precisely is about” (G1-G).

Again, overly concentrating on ‘positioning research’ is seen as producing uninteresting research – even in the case of one’s own research.

G1-F states that performance measures are pervading all interactions of researchers today, colonising their talk:

“That’s how we go around in conferences and, instead of seeing colleagues, we see output.” (G1-F).

The omnipresence of performance pressure tends to alienate researchers from engaging in personal relations and in substantial discussions about the content of research. As a coping strategy, they emphasise the importance of distancing oneself personally from the publication game:

“Well, maybe one thing. I don’t know, maybe it’s a bit silly, but does it all matter in the end? Do we feel that it all matters ultimately, you know, that this game we play as academics and this performance and top journals and the quality of our research, is it such a fundamental question that determines who we are as human beings? I don’t think so ... So... It’s important to distance oneself from all this and maybe, yeah, it shrinks a little bit and it doesn’t look as this big monster machine swallowing us anymore.” (G1-F).

Associate professor G1-G is specifically worried about the impact of the publish-or-perish regime on junior researchers:

“No, I think my main point would be that these measures can be particularly disastrous for juniors who have not yet a clue what they can do themselves and that I think is the most damaging thing. So that you don’t give them a bit of a time to breathe and to understand first their own research and their own goals and so on. If from the very beginning you tell them in the PhD process you can’t have a PhD if you don’t publish two papers, I think that’s disastrous and that sets the scene for the rest of it.” (G1-G).

The critical non-instrumentalist researchers' criticism extends to the perceived negative consequences for the more vulnerable members of the research community, such as PhD students. They, thus, are not only worried for themselves but also for the future researchers.

4.4. Summary

Our analysis so far has demonstrated that the instrumentalism of researchers that has been identified as one of the major problematic consequences of the publish-or-perish regime (Edwards & Roy, 2017; Hopwood, 2007; Humphrey & Lukka, 2011; Mingers & Willmott, 2013) may emerge in quite varying forms. First, we see in our sample that, in their perceptions and interpretations of research under the publish-or-perish regime, by far not all interviewees are exhibiting high levels of instrumentalism. Rather, we find that most researchers in our sample show a moderate level of instrumentalism while the extremes of unambiguously high or low instrumentalism are less frequent. Second, we also show that the distinction between high, moderate, and low instrumentalism is still too crude. Within high and moderate instrumentalism, we find two different forms, or modes of instrumentalism, and within low instrumentalism even three (see Table 2).

The distinction between the purposely and reluctantly instrumentalist modes is grounded in the way researchers interpret the dangers of the publish-or-perish regime for their respective research communities. The same aspect is important for distinguishing the integrated and self-conscious modes of moderate instrumentalism. Here, the stage of the respondents' careers seems to play a role, too. Both career stage and degree of concern distinguish the balanced, anxious, and critical non-instrumentalist modes.

There is a close association between the larger categories of high, moderate, and low instrumentalism with the type of motivation. This does not seem too surprising. However, the seemingly self-evident assumption that the status of a tenured position is associated with low instrumentalism and vice versa does not hold so clearly in our empirical data. While in our sample all researchers falling within the two high-instrumentalist modes hold untenured positions, the picture regarding modes of moderate and low instrumentalism is much more diverse. As all researchers participating in our study are subject to the publish-or-perish regime in one way or another, we suggest that features of the immediate contexts of the researchers, i.e., of their research units, mediate the influence of the global publish-or-perish regime on the individual researchers.²¹

5. Contexts of researchers' instrumentalism

In one way or another, all academic researchers perform their research under the influence of the more and more standardised global performance measurement regime that increasingly penetrates all universities and that is the major constituent of the publish-or-perish regime (Edwards & Roy, 2017; 2015; Pelger & Grottko, 2015; Tjeldink et al., 2016). All our interviewees mention it as an important aspect of their research environment.

The six research units in our study, however, have been exposed and reacted to the global publish-or-perish regime in different ways. While research unit F2 has exposed itself for a long time already to the global research environment, the other two Finnish units F1 and F3 have mostly been oriented towards the local business community or concentrated very much on teaching. However, when Finland introduced the national journal ranking JUFO in 2012 and began to connect budget allocation to publication performance, things began to change gradually. The German-speaking business academia had long been developing somewhat isolated from the international discourses with their own German-language journals. This began changing in the late 1990s (Macharzina, 2012; Messner et al., 2008) mostly due to a new generation of researchers getting into influential senior positions who have been exposed to the international research community. In the German-speaking business research community in Germany, Austria, and the German-speaking parts of Switzerland, the influence of national or state regulation for research assessment is low. However, there is an accepted journal ranking of the German Academic Association of Business Research (Jourqual). Research unit UK has been exposed to a quite strict publish-or-perish regime in the environment of the British business school culture for a long time. They have, however, for long also tried to go against the current, for example by refusing to formally use any journal rankings. This only recently has changed due to increased pressure from the university management as well as new senior professors' influence.

While the global publish-or-perish regime is gaining momentum also in national business research contexts where it has not been traditionally strong, our empirics show that the way researchers are subject to this publish-or-perish regime and how they cope with it is quite diverse. In section 4 we have looked at the descriptive categories that seem to affect the variation of responses at the individual level (the modes of instrumentalism); in this section we turn to the local conditions under which the researchers work and live their academic lives.

Table 3 shows the allocation of the modes of instrumentalism across and within the six research units. It is obvious that there is much heterogeneity both between and within each research unit. For example, there are no instrumentalist modes present in research

²¹ It may, of course, be argued that factors in researchers' personalities exclusively account for these differences. This might specifically be argued for individual motivation. However, in line with self-determination theory (Ryan & Deci, 2000), we hold that motivation is not solely a personality trait but closely intertwined with the context actors are in.

Table 3
Research units, cases, and modes of instrumentalism.

Research unit	Purposely instrumentalist	Reluctant instrumentalist	Unspecific high-instrumentalist*	Integrated	Self-conscious	Balanced non-instrumentalist	Anxious non-instrumentalist	Critical non-instrumentalist	Unspecific non-instrumentalist*
F1 F2	F1-C F2-H		F2-A	F2-B F2-E F2-G	F1-B F2-D	F2-F	F2-C		F1-A
F3 G1	F3-B	F3-A		G1-E	G1-A	F3-C	G1-D	G1-F	G1-C
G2 UK	G2-D	G2-C	G2-E	G2-A UK-E	G1-B G2-B UK-A	UK-D		G1-G	UK-C
					UK-B UK-F				

*Not all respondents' perceptions and interpretations did fit neatly into the seven modes of instrumentalism. However, we could clearly identify the degree of instrumentalism. They feature in the columns 'unspecific high-instrumentalist' and 'unspecific non-instrumentalist'.

units G1 and UK, and no non-instrumentalists in G2. The highest degree of internal heterogeneity is found in research units F1 and F2. In the following, we present our findings regarding the conditions of the local contexts mediating the influence of the publish-or-perish regime. We describe the features of researchers' immediate contexts as shaped by and shaping the local research cultures.

5.1. Local research culture

It is widely acknowledged that there are different academic cultures in different countries or regions. In accounting research, for example, [Messner \(2015\)](#), [Pelger and Grottke \(2015\)](#), and [Panozzo \(1997\)](#) imply that Continental European universities often exhibit academic cultures different from UK and North American universities. While these authors talk about a more general regional/national level, we find that there are significant differences in the research cultures of research units in the same region/country. Research culture on an organisational level (for an overview, cf. [Tucker & Tilt, 2019](#)) is usually discussed as a set of factors positively influencing the orientation towards engaging in research and fostering research productivity, for example "beliefs, rituals and values underpinning the pursuit of scientific capital" ([Deem & Lucas, 2007](#), p. 125). More generally, we can understand research culture as a special case of organisational culture (e.g., [Schein, 2004 \[1990\]](#)). While there are numerous conceptualisations of organisational culture ([Smircich, 1983](#)), we draw on [Geertz \(1973\)](#) notion of culture as structures of significance that has been mobilised, for example, in a classic study on accounting and culture ([Dent, 1991](#)):

"Believing, with Max Weber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretive one in search of meaning" ([Geertz, 1973](#), p. 5).

We therefore define research culture as the "conceptual structures that inform our subjects' acts" ([Geertz, 1973](#), p. 27) on research, research performance, and overall academic performance in the research units. These may be expressed, for example, in the degree of emphasis on publication numbers in the formal PMS as well as in discourse and practice; in the pressure towards PhD students to write a paper-based dissertation as opposed to a classic monograph; or in the relative weight research performance is given in the actual evaluation of overall academic performance. An important instantiation of research culture may also be hosting a regular research seminar where own research as well as that of national or international guest presenters is discussed and researchers are exposed to international scientific discourses – or not at all, where such research seminars are not existing. Specific systems and practices of research and research performance measurement thus are vested with significance transpiring a specific understanding of research performance prevalent in a research unit – tending more towards one or the other pole of the continuum of instrumentalism (see [Table 1](#)). In an instrumentalist research culture, doing research and the content of research draw their significance from being instrumental for publishing in the name of career concerns whereas in a non-instrumentalist research culture, doing research and the content of research is the source of meaning assigned to publishing and an academic career.

In Appendix 3 we have listed the most important features of the research units related to the local research cultures. These comprise the history of the research unit, the local research PMS, and the conduct of senior academics. First, the history of the research unit is relevant as it provides the ground on which structures of significance have developed. Second, local research PMSs are significant inasmuch they translate the pervasive, but quite abstract performance standards of the global publish-or-perish regime into concrete performance measures. This translation is mediated by the local structures of significance. Appendix 3 provides an overview of the performance measures used in the research units studied as well as their roles in promotion procedures and incentivising. In all research units, publication numbers play a significant, mostly dominant role. However, they are measured and used in different ways, for example drawing on different, or even multiple, journal rankings. On a more general level, we can distinguish the extreme cases of a narrow and rigid PMS from the extreme case of a broad and flexible PMS. In a narrow and rigid PMS, only publications in the most highly ranked academic journals are acknowledged as countable performance and researchers have clearly specified measurable performance targets. A broad and flexible PMS meticulously documents all kinds of research-related achievements, such as publications of different types, reviewing activities, presentations in research seminars and at conferences, acquisition of third-party funding, and has only loosely defined and negotiable performance targets.

Third, the conduct²² of senior academics has been acknowledged as important in multiple ways in the literature. For example, [Waymire \(2011\)](#), [Demski et al. \(1991\)](#), and [Hopwood \(2007\)](#) all bemoan the problematic role senior academics may play in furthering instrumentalism and fostering a "paying-off mentality" ([Gendron, 2015](#)). Others ([Messner, 2015](#); [Prasad, 2015](#); [Young, 2015](#)) appeal to senior academics to take on what they see as their responsibility, namely advising junior academics to take a broader and less instrumental stance towards their research (see also [Alvesson et al., 2017](#), pp. 110ff. and 115ff.). The role of senior academics is also often mentioned by our interviewees, either as relating to junior researchers' experiences and expectations or through senior researchers themselves talking about their responsibilities towards junior researchers as well as their research communities. Senior academics' conduct is significant in enacting the local research culture and it may mediate the influence of the publish-or-perish

²² We use the term 'conduct' in the double sense following [Foucault \(2009\)](#). Conduct implies conducting others as well as conducting oneself. In this sense, senior academics' conduct refers to how they act in the publish-or-perish regime themselves as well as to how they influence and guide others, specifically junior academics they feel responsible for. In our interview guide and earlier presentations of this paper we used the term 'academic leadership' instead, which we yet dropped later because it is deeply tainted by neoliberal university governance. We thank Iain Munro and Sven Modell for pointing us to this matter in their commentaries.

regime in quite diverse ways, amplifying a rigid performance regime or buffering junior academics in part from it. Not least, senior academics' conduct may provide role models for junior researchers.

5.2. Local research cultures of the research units

We find quite diverse research cultures in the six research units in our sample. In *research unit F3*, research had long been seen as a kind of hobby that academics engage in after other obligations are fulfilled. Consequently, there was for a long time no relevant PMS measuring research performance. Only since the introduction of the Finnish national journal ranking JUFO and its connection to budget allocation, publications and third-party funding are recorded. These performance measures, however, do not play any significant role in managing the research unit or evaluating individual performance. Moreover, there was traditionally not much guidance for junior researchers' research ambitions – if the latter existed at all. Research, thus, was accorded little importance. Due to a generational change in senior academic positions, this begins to change slowly but is not really established at the time of our interviews. A research seminar has been introduced recently, signalling that research is a significant feature of academic life. In this not research-friendly environment, junior researchers thus lack support in developing their research in their local environment. As the local research unit provides little orientation, the global publish-or-perish regime impacts junior researchers comparatively unfiltered. In this situation, an ambitious junior researcher may turn to the perceived international publish-or-perish regime for orientation whereas others may become cynical.

Research unit F1's research culture is grounded in its long history of close links to company practice and clinical interventionist research. The significance of creating publications from projects has only recently started getting hold. There is little research discourse within the research unit and exposure to broader international discourse through a regular research seminar is lacking. The impact of the Finnish national journal ranking JUFO is felt a bit more severe than in research unit F3, as publication numbers are communicated in department meetings. The acquisition of third-party funding is perceived as more significant than publications as the former is a traditionally important source of income. Senior academics' conduct is influenced by the practice-oriented tradition and not much is invested in introducing junior researchers to research and publishing. Similar to research unit F3, the only partially research-friendly environment of F1 seems to motivate the more ambitious junior researcher to enact a rather instrumentalist attitude they perceive as appropriate in the global publish-or-perish culture.

In both cases, F3 and F1, the PMSs record journal publications ranked according to JUFO and third-party funding and thus seem narrow. They are, however, not rigid as there are no targets or individual evaluations connected to these measures. Rather, the formal PMSs are perceived as hardly relevant, if at all. This irrelevance together with the lack of guidance or exemplary behaviour by senior academics provides a fertile ground for junior researchers to turn to the instrumentalism associated with the publish-or-perish regime.

Different from the two other Finnish research units, *research unit F2's* research culture is characterised by a high emphasis on research and a discourse that explicitly prioritises quality over quantity in research output but acknowledges possible trade-offs between both. This goes back to the times preceding the introduction of the Finnish national journal ranking JUFO. F2 hosts an established international research seminar. The PMS captures publications as well as other research-related performances, such as reviewing, editorships, citations, and third-party funding. Though they do not have defined quantitative targets and promotion criteria, senior academics tend to signal strongly through the PMS's use in annual appraisal talks that the desired type of research performance is not confined to countable publications. The tension between quantity and speed of publication, on the one hand, and quality, on the other, are explicitly addressed. The emphasis is put on quality, though the underlying belief is that good quality of research tends to also lead to good publications. However, junior researchers perceive this at times as ambiguous as they often feel being under publication pressure. On the other hand, research unit F2's research culture clearly allows for and encourages the development of non-instrumentalist orientations towards research.

In *research unit G1*, research is accorded high significance. Research tends towards critical research, and researchers regularly interact with international scholars presenting at a research seminar. The PMS captures journal publications and third-party funding. Characteristic for G1 is that the PMS has a strong relevance for PhD students and junior researchers but only little for senior researchers whose performance evaluation is perceived as not very important. PhD students pursuing paper-based dissertations – there is strong pressure towards this by senior academics – and junior researchers in tenure-track positions have clear publication targets thus signalling an output emphasis. There is, however, some leeway as researchers have the choice between different journal lists and may pick for each publication the most favourable one; PhD candidates may switch from a paper-based dissertation to a quasi-monograph in case publication targets will not be achieved in time. In research unit G1, the role and influence of senior academics is perceived as not very strong. They are seen as concentrating on giving specific advice in matters of publication projects and thus concentrating more on issues of quality. The more principled discourse on the tension between quality and quantity present in research unit F2 is absent. Research unit G1 provides a research-friendly environment, which does not put much pressure on senior academics. For junior researchers, the PMS is somewhat narrow and rigid. There is, however, sufficient flexibility in the PMS and how it is practised to make the perceived performance pressure bearable and allow for low to moderate instrumentalist orientations towards research.

Research unit UK puts a high emphasis on research and has a reputation as leading in its field. Accordingly, there is a long-standing and high-level research seminar and faculty is highly connected internationally. At the time of our study, research unit UK only recently had changed its PMS from a rather broad and flexible to a narrow and rigid system introducing a department-specific journal

list. This change affects both junior and senior researchers. The performance targets for tenure changed from “four high quality outputs” – not restricted to journal publications alone – in the “old system” to four publications in the top category of the journal list in the “new system”. In addition, senior researchers are now required to submit four journal publications from the top category of the journal list to the regular institutional evaluation called REF.²³ This generally signals a strong emphasis on output. In research unit UK, the role of senior academics’ conduct is perceived to be strong. However, there are two factions of senior academics perceived as representing the old PMS and the new PMS, respectively. This creates severe tensions for the more junior academics among our interviewees as most of them started at UK under the old system and the guidance of the senior academics associated to this system. However, their influence is dwindling as the new generation representing the ‘new system’ is now in responsible positions and perceived as gaining power. With this, quantitative measures gain significance in defining good research performance. Perhaps as most of our interviewees entered research unit UK under the old, broad, and flexible PMS and the guidance by senior academics had been rather non-instrumentalist, we did not find any hard-nosed instrumentalist junior researchers. The recent change created a lot of uncertainty, however, and this raised concerns.

Research unit G2 puts high emphasis on research and explicitly follows the perceived model of top business schools. Research performance is measured in a narrow and rigid manner: only publications in top-level journals according to a specific internationally accepted journal ranking are counted as performance. This is backed up by significant financial incentives, signalling a strong output orientation in research. Tensions arise as there is high uncertainty for junior faculty on the exact promotion criteria and because there are numerous other informal academic obligations, such as supervising masters and PhD students and relating to company practice. This PMS, however, only applies to junior faculty; senior faculty have a much more comprehensive set of performance measures. G2 does not have a typical research seminar, but PhD students must present regularly at an internal seminar, which is perceived as a kind of examination. Senior academics in research unit G2 support the narrow and rigid PMS for junior faculty arguing that such a strict performance measurement regime helps identifying “charlatans.” The narrow and rigid PMS as well as senior academics’ conduct and guidance push junior researchers towards instrumentalism.

5.3. Research cultures and modes of instrumentalism

While the global publish-or-perish regime exerts a pervasive influence on researchers and the perceptions and interpretations of research, this influence is unfolding mediated through the local research cultures. The research cultures comprise the meaning inscribed into the discourses and practices regarding research performance as well as overall academic performance in the research units. They are closely intertwined with the design and practice of the local PMSs and to senior academics’ conduct as superiors, advisers, and role models. We picture these local research cultures as the spaces of meaning within which researchers’ understanding of research develops and is enacted.

In two of the research units, F1 and F3, we find that the local PMSs are hardly or not at all perceived relevant for the individual researchers. In both cases, also the role of the senior researchers is perceived not very strong in terms of guidance for less experienced researchers. With the insignificance of PMSs and lack of guidance by senior researchers comes a kind of research cultural vacuum which leaves specifically junior researchers without orientation in matters of research. They may then perceive research not as an activity to aspire to, or they may, if they are ambitious to do research, turn to the perceived “guidance” of the global publish-or-perish regime. Publishing then tends to become a reified symbol of being a good researcher.

In research units F2 and G1, the PMSs seem to be the most flexible. In F2, the formal PMS is itself broad and in G1, flexibility is in the use of different rankings as well as in a “workaround” for PhD students in danger of not achieving publication targets. Senior academics are perceived as emphasising quality over quantity or at least providing support in specific projects. Research cultures tending towards the non-instrumentalist end of our continuum together with the flexible PMSs leave room for manoeuvre for researchers, allowing heterogeneity of research orientations and non-instrumentalism.

In research unit G2, local guidance is very much in line with the global publish-or-perish regime; the local and the global understandings push researchers in the same instrumentalist direction. Junior researchers either wholeheartedly embrace this instrumentalism, or they feel forced to act accordingly. At the time of our research, research unit UK is also modelling its PMS according to the global model, but the actors involved are mostly socialised in the old research culture which tends towards non-instrumentalism. This may account for the fact that there are no instrumentalist researchers in our sample from research unit UK despite the now narrow and rigid formal PMS.

6. Discussion: Towards non-instrumentalist research cultures

Sharing the concerns regarding the negative impact of the publish-or-perish regime on scholarship (Alvesson et al., 2017; Courpasson, 2013; Edwards & Roy, 2017; Gendron, 2015; Hopwood, 2007; Humphrey & Lukka, 2011; Mingers & Willmott, 2013), we have investigated based on which perceptions and interpretations researchers in the management and business studies field cope with the pressures related to this regime. We have identified as our main worry a high degree of instrumentalism in research. By this we mean that the instrumentally rational (Weber, 2013) understanding of research as a means of producing publications as items of countable performance to the end of advancing an academic career dominates the entire research process from its very beginning.

²³ Research Excellence Framework, a national institutional research evaluation procedure in the UK that takes place approximately every six years.

Instrumentalism threatens to crowd out the value-rational (Weber, 2013) unconditional pursuit of knowledge through research. Table 1 contrasts these ideal-typical orientations. In our empirical study we find notably heterogeneous forms of instrumentalism, which we have termed modes of instrumentalism, from purposely instrumentalist to critical non-instrumentalist modes (see Table 2). In conceptualising instrumentalism along a continuum from high instrumentalism to non-instrumentalism and connecting these degrees to the other components of the degrees and modes of instrumentalism, we can open the black box of instrumentalism to search for possibilities of fostering non- or at least moderate instrumentalist modes. Further, we demonstrated that the perception and interpretation of the global publish-or-perish regime is mediated via the local research cultures of the research units. These local research cultures may assign research and research performance a more instrumentalist or more non-instrumentalist meaning.

We are not claiming to be neutral regarding the publish-or-perish regime. Rather, we share the worries uttered by many and the motivation of our study is not only opening up the black box of instrumentalism, but also to contribute to finding ways of fostering research cultures enabling non-instrumentalist research orientations. We therefore in the following discuss our empirical findings in light of this agenda.

6.1. *We are not born instrumentalists...*

It is probably good to start with a reminder: we are not born instrumentalists; we are made instrumentalist.²⁴ This is well illustrated by one of our interviewees, first-year PhD student F1-A from research unit F1 with its long-standing tradition of clinical interventionist research and consulting-related company contacts into which they have grown already as masters student. F1-A perceives of this clinical research as what is really relevant and what brought them to continue with an academic career. F1-A considers theorising of results and publishing the research as only add-ons, which function according to an opaque logic with no relationship to the “real thing.” The department and research unit, however, signal that publications are highly important aspects of academic performance:

When we have the ... department meetings we are shown Excels where you see number of publications this year, how much it was last year, how much we should have this year. So, from that I feel like, ok, I, until now I haven't given any contribution to that number that we see on the board. So that gives me impression that they are expecting also me to participate to that number, so... From that I get the feeling that ok, that's the way how we are measured. (...) I mean, our [research] group, we always open a bottle of sparkling wine when someone gets paper published. So that gives me an impression that, ok, that's something where you should aim at, that you get something published. [laughter] Yeah, now when I'm thinking, no one has really told me, what is this, why should you publish or, like, why is it so important, but it comes from all these other signals that ok, that is important. (F1-A).

Obviously, F1-A is highly autonomously motivated to do consultancy-oriented projects with companies and feels the externally set obligation to convert them into publications. Symbolic acts and rituals signify that, in addition to carrying out the practice-oriented projects, now also publishing research has started to really count. F1-A describes his/her situation as a kind of early-stage apprenticeship where the novice is socialised through “legitimate peripheral participation” (Lave & Wenger, 1991). This resonates with Cederström and Hoedemakers' (2012, p. 232) memory of a “genuine intellectual curiosity, blissfully ignorant of incessant calls for four-star publications” as PhD students. Also, even the most senior and instrumentalist of our interviewees share such memories of starting an academic career to pursue mastery goals. Somehow, on the way, this often gets at least partially lost.

6.2. *Non-instrumentalist scholarship*

The ideal type of non-instrumentalist scholarship prioritises content and quality of research, the unconditional pursuit of knowledge, over the mere fact of publication and publication numbers. This is well captured by Czarniawska (2011):

“The topic is chosen because it seems fascinating and relevant, but a great deal of thought is devoted to analyzing one's own motives behind the selection: Why do I want to study just that? (...) Before starting the research, the researcher engages in a thorough literature review ... Relevant studies are quoted, whether the field study was done in Washington or in Tirana. The method is then chosen because it seems to fit the topic, no matter what the discipline and who else is using or not using that method. The results are presented in the best form the researcher can achieve, with an eye to the future audience. (...) Subsequent studies develop rather than repeat, and reflect attentiveness to the ongoing scholarly debate and to the concerns of practice” (Czarniawska, 2011, pp. 54–55).

Importantly, non-instrumentalist scholarship comprises “ensuring that key research findings and advancements in knowledge are disseminated widely” (Humphrey & Gendron, 2015, p. 54).

On the side of the researchers, this non-instrumentalist scholarship needs some form of autonomous motivation, genuine interest in the topic, and the patience to avoid premature publication as well as publishing meaningless research (Alvesson et al., 2017). If these

²⁴ This formulation is inspired by an influential early German feminist book by Scheu (1980), *Wir werden nicht als Mädchen geboren - wir werden dazu gemacht* (We are not born girls - we are made girls).

criteria are fulfilled, we can speak of genuinely publishable research. This is something that should in principle be possible for any researcher independent of the individual career stage, from PhD student to senior professor.

From research institutions and scientific community, this requires that non-instrumentalist researchers must, first, be given appropriate time, intellectual space and support for the research and analysis to develop up to a stage where it is publishable in the above sense. This time and space not least provide the conditions for nurturing autonomous motivation. This will, of course, look differently for early-career researchers and for senior researchers. Second, and closely related, all processes related to performance evaluation, e.g., promotion, hiring, teaching allocation etc., should not be confined to quantified publication metrics. Today, many universities and research institutions worldwide have signed the San Francisco Declaration on Research Assessment (DORA) (<https://sfdora.org/>) and thus – at least formally – committed to exactly this idea.

6.3. Performance measurement systems

We have distinguished narrow and rigid vs. broad and flexible PMS. It seems clear that the former type is not in line with the requirements of fostering non-instrumentalist scholarship as it overly focuses researchers on quantitative output, restricts forms of scholarly expression, and tends to instil pressure and fear, specifically in junior researchers in untenured positions. Research from self-determination theory of motivation (Ryan & Deci, 2000; cf. Pfister & Lukka, 2019) has established that setting measurable goals and providing external incentives may destroy autonomous motivation. For example, studies published in the edited collection by Welpe et al. (2015; see Binswanger, 2015; Krempkow, 2015; Lam, 2015; Wilkesmann, 2015) argue that this crowding-out effect is visible under the current model of research performance measurement in universities. The relation between narrow and rigid PMS and instrumentalism is, however, not a deterministic one as research units G1 and UK demonstrate. Both have narrow and somewhat rigid PMSs, but at the same time exhibit a clear tendency towards moderate and non-instrumentalist modes which are fostered by a non-instrumentalist research culture. In the same stance, we find that even in research unit F2, which has the broadest and most flexible PMS of the research units studied, high instrumentalism may still occur. But we also find that F2 exhibits the widest variation of degrees and modes of instrumentalism (see Table 2), which makes sense given how widely inclusive its type of PMS is. In line with our argument that institutions should provide time and space for non-instrumentalist scholarship, we argue that a broad and flexible PMS is the most enabling form. It is, however, not a sufficient condition for non-instrumentalist scholarship.

6.4. Senior academics' conduct

Humphrey & Gendron, 2015, p. 54), in their editorial to the special issue of *Critical Perspectives on Accounting* on the sustainability of accounting research, put facilitating and maintaining an inspiring and inspired local research culture at the core of a sustainable academia: “‘inspired’ in being passionate and proactive in experimenting with ideas and engendering new ones; ‘inspiring’ in motivating younger individuals (and more senior colleagues to continue) to embrace an academic research career”. This is, of course, not confined to accounting research only, but is most likely valid for all scientific disciplines. The terms ‘inspired’ and ‘inspiring’ capture well what the role of senior academics' conduct in fostering non-instrumentalist research cultures and researchers could be. First, senior academics provide role models for early-career researchers. As a form of inspiring by example, successful senior ‘inspired’ researchers may demonstrate that acting according to non-instrumentalist modes may lead to good and impactful publications, even according to the standards of narrow and rigid PMS. This seems specifically the case in research units UK, F2, and in part G1.

Second, senior researchers may support early career researchers in a very practical manner. Specifically, a broad and flexible PMS may evoke uncertainty for less experienced researchers exactly due to a lack of unambiguously defined performance targets, on the one hand, and the possible danger of paralysis due to over-perfectionism. Here, senior researchers may be instrumental in helping early career researchers with advice to “help them finish.” Under conditions of a narrow and rigid PMS, pressures on early-career researchers, incentives for high instrumentalism, and the danger of crowding-out autonomous motivation will likely be severe. However, a narrow and rigid PMS may provide a sense of certainty specifically for junior researchers as the expectations regarding research performance are clearly defined.²⁵ In this situation, the role of senior academics in fostering non-instrumentalist research may, on the one hand, lie in broadening the horizon of junior researchers in informing them, for example, about the existing plurality of methodologies, methods, and theories (Messner, 2015).²⁶ On the other hand, senior researchers may support struggling early-career researchers emotionally and by trying to buffer some of the perceived pressures.

We must, however, be aware, that all this takes place under the conditions of the globally prevalent publish-or-perish regime and often narrow and rigid local PMS cannot be ignored. This may make the above suggested role of senior academics in supporting and fostering non-instrumentalist approaches to research seem futile, frustrating, and even unfavourable for their own careers. As, for example, Kalfa et al. (2018) have shown in their case study of the introduction of performance assessment in an Australian university, also senior academics may give in to the pressure and become complicit in a system which they perceive as a threat to scholarship and research quality. Then, the ensuing instrumentalism may mute attempts at resisting the publish-or-perish regime.

Senior academics often can take on positions of responsibility in their universities or departments. However, frustration and /or

²⁵ This is in line with one finding of Chatterjee et al. (2020, p. 1238), namely that researchers may perceive performance measurement “allowing greater reflection on their own research ‘progress’”.

²⁶ Our own experiences in teaching methodology courses, for example, suggest that PhD students often do not even *know* about methodological alternatives other than those preferred by their supervisor.

giving in to pressures may be one reason why academics refrain from taking on management positions.²⁷ Senior professor UK-E, however, reminds us:

“I think everyone should understand that there’s research, teaching and service. (...) Then to just say, ‘well, no, that’s not for me’ is somewhat irresponsible, selfish.” (UK-E).

Therefore, we would argue that senior academics often are, or could be, in a position where they have at least some influence on not only evaluating performance, but also on designing local PMS. [Alvesson et al. \(2017, p. 100\)](#) argue that “many academics downplay the freedom they have in constructing their identity” and that “most researchers have more power than they realize” (*ibid.*, p. 139) as they are often the ones who evaluate research and researchers and who participate in academic management, funding bodies and advisory boards. Senior academics, thus, can enact resistance against the publish-or-perish regime, overtly in participating in PMS design and research evaluation activities, or more covert, mobilising Scott’s “weapons of the weak” ([Anderson, 2008](#)), engage in counter-conduct ([Boomsma & O’Dwyer, 2019](#)), or enact unobtrusive practices of resistance in everyday practice ([Crvelin & Becker, 2020](#)). It may be helpful in this context that there are not only many voices critical of current practices of performance evaluation, but also larger initiatives, such as the already mentioned San Francisco Declaration on Research Assessment (DORA) (<https://sfedora.org/>), or more recently the Hong Kong Principles (<https://wcrif.org/guidance/hong-kong-principles>; [Moher et al., 2020](#)). Senior researchers may not only refer to these as sources for a more comprehensive evaluation of researchers’ performance, but also lobby for their institutions to sign these principles.

An important aspect of senior academics’ conduct in fostering non-instrumentalist research cultures and understandings concerns credibility. This is clearly expressed by PhD student G1-D when they state that senior researchers in their research community, on the one hand, criticise the performance regime and, on the other hand, seem to play the publishing game at the same time as if they had no control over it:

“I mean it’s very strange, because actually we are, this is kind of a profession which is very much in control [of] themselves ... It would be very easy [to change something].” (G1-D).

They perceive senior academics’ “decoupling” of talk and action as hypocritical and thus not trustworthy. Importantly, resisting the publish-or-perish regime as senior academic should be more than “decaf resistance” which is “a resistance without the cost of radically changing the economy of enjoyment that ties us to our master” ([Contu, 2008](#), p. 376) – enjoyment which derives from successfully participating in the publication game in our case.

However, the empirical heterogeneity of the degrees and modes of instrumentalism as well as local contexts should be seen as at least partially encouraging. The publish-or-perish regime may exert a pervasive global influence, but it has so far not resulted in complete homogeneity. This provides the chance for local senior academics to engage in PMS design as well as in influencing the local research culture, for example by setting up a regular international research seminar with serious scholarly ambition or engaging in PhD teaching. Specifically, the latter can be turned into an act of unobtrusive resistance when it is used to convey non-instrumentalist research orientations. We see also, however, that specifically in places where the research culture seems not sufficiently developed, such as in research units F1 and F3, early-career researchers may turn to the perceived global publish-or-perish regime, if local guidance by senior academics is absent or insufficient.²⁸

7. Conclusion

We started our paper from the widely shared discourse and sentiment in the academe that good scholarship is in danger due to the intensifying publish-or-perish regime with the dominating influence of journal rankings, journal impact factors and straightforwardly quantified styles of performance measurement in universities ([Alvesson et al., 2017](#); [Courpasson, 2013](#); [Edwards & Roy, 2017](#); [Gendron, 2015](#); [Hopwood, 2007](#); [Humphrey & Lukka, 2011](#); [Mingers & Willmott, 2013](#)). While we share these concerns and the impetus for defending diversity, originality, and theoretical and societal relevance of research, we nonetheless felt there is need for more empirical research on the issue. Consequently, we were interested in how academic researchers react to performance measurement in research and how they lead their lives in the publish-or-perish regime. We, first, examined based on which perceptions and interpretations individual researchers at universities cope with, survive, or even flourish, in the context of the publish-or-perish regime. We focused on the various degrees of instrumentalism as our main analytical category (see [Table 1](#)). By instrumentalism we mean the extent to which producing publications as items of countable performance to the end of gaining extrinsic rewards, such as advancing an academic career, dominates the entire research process from its very beginning, i.e., in developing the research interest itself and initially conceptualising the research. In our empirical study, we find notably heterogeneous forms of instrumentalism, which we have termed modes of instrumentalism, from purposely instrumentalist to critical non-instrumentalist modes (see [Table 2](#)).

²⁷ See, for example, the ambiguous, but in the end surprisingly optimistic, auto-ethnographic account of [Jones \(2022\)](#) of his effort as head of department in a business school to make a difference to managerialism.

²⁸ We have plenty of anecdotal evidence that senior academics’ guidance may also take the form of advising junior researchers how to play the publishing game. Moreover, we see with some concern the plethora of seminars, workshops, and publications on “how to get published.”

Following a critical agenda of fostering non-instrumentalist understandings of research, we secondly investigated local conditions mediating the influence of the global publish-or-perish regime, thus impacting researchers' perceptions, interpretations, and ways of coping. Local research cultures – the “conceptual structures that inform our subjects' acts” (Geertz, 1973, p. 27) in research, research performance, and overall academic performance – provide the spaces of meaning within which researchers' understanding of research develops and is enacted. We found that local research cultures are closely intertwined with the design and practice of the local PMS and to senior academics' conduct as superiors, advisers, and role models in the narratives of our respondents.

We contribute to research on the global publish-or-perish regime, first, by opening the black box of instrumentalism, suggesting an empirically informed concise conceptualisation of instrumentalism in research, and by empirically mapping its different degrees and modes. This allows for a more detailed and reflected understanding of the different forms of instrumentalism. Second, we identify and describe local research cultures as mediating the perceptions and interpretations, and thus the influence of the global publish-or-perish regime on individual researchers. Third, our conceptualisation of the degrees and modes of instrumentalism and the local research cultures allowed us sketching some measures for fostering non-instrumentalist research cultures.

One obvious implication for further research relates to the fact that our study has been undertaken mostly in Continental Europe by European researchers. We have only to a very limited extent looked at other regions with different academic traditions. For example, Tucker and Tilt (2019), who in their study of understandings of research culture draw on a sample dominated by senior academics from Anglo-Saxon Universities, find a majority of understandings of research culture which we would associate with non-instrumentalism. We also have not studied research institutions in the Global South and in so-called emerging economies. In addition, we are aware that there may be more teaching-oriented universities, where the research performance assessment may be quite different. We still know too little about the impact of the global publish-or-perish regime on these institutions and their researchers and would therefore suggest more in-depth empirical studies. Moreover, we could not capture the likely dynamics of respondents' experiences and interpretations over time due to the cross-sectional study design. Therefore, longitudinal in-depth case studies or studies based on biographical methods would add also to our understanding.

Further, we see practical implications for academics and managers of research institutions. We have concentrated our reflections in the previous section very much on the role of senior academics. This is for two reasons. First, senior academics should have greater scope for action and influence than early-career researchers. Second, they also have a special responsibility for the latter. Junior researchers incorporate the future of the academe and are thus crucial for its sustainability (cf. Humphrey & Gendron, 2015). Therefore, we urge senior researchers specifically from interdisciplinary and critical research – which are increasingly in danger to get marginalised in the publish-or-perish regime which is inclined to lead to (further) paradigmatic concentration around the so-called “top journals” – to engage in activities fostering non-instrumentalist research approaches by taking on responsible positions in their institutions (cf. Jones, 2022), engaging in assessment activities, supporting PhD students through supervision and engaging in PhD teaching, and supporting early career researchers. The heterogeneity of modes of instrumentalism as well as of research cultures should encourage us that it is worth and possible to influence the course of events.

We gathered the data for this research in 2016 and 2017. Since then, the publish-or-perish culture has flourished even more. With the spreading of the tenure track system, the focus shifts even more to quantified performance measurement in academia. Besides publication counts and journal rankings, impact case studies – which follow the same logic of the audit society and publish-or-perish culture (Power, 2015) – and third-party funding have gained significance in evaluating researchers. For example, University of Liverpool in 2021 announced the plan to lay off 47 researchers from the life- and health sciences based on their third-party income (Else, 2021). Additionally, we see that critical research comes under even more pressure under increasing budget cuts as, for example, University of Leicester “divested from” critical research, laying off highly reputable researchers, such as Gibson Burrell (see <https://twitter.com/leicesterucu>; Andrew, Cooper, & Gendron, 2021). This adds to the significance of our research and to the issue of resisting the publish-or-perish culture. In the cases of the universities of Liverpool and Leicester we have seen industrial action. In many other places it is up to us senior academics to engage in more than “decaf resistance” (Contu, 2008) to save academia as a “culture of ideas” (Courpasson, 2013).

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

We thank Oana Apostol, Martine Cools, Lukas Goretzki, Rafael Heinzelmann, Marko Järvenpää, Silvia Jordan, Leila Koivunen, Martin Messner, Sven Modell, Iain Munro, Deryl Northcott, Susan O'Leary, Christoph Pelger, Jan Pfister, Utz Schäffer, Ebba Sjögren, Samuel Sponem, Mark Wouters, and Eija Vinnari for their helpful comments on previous versions of this paper. We also profited from discussions at the research seminars at Auckland University of Technology, Turku School of Economics, University of Innsbruck and the TSElosophers meeting at TSE. In addition, we benefited from comments received at the ACMAR 2018 Conference at WHU, the MASOP 2018 Workshop at CBS, and the 2018 IPA Conference.

Appendix 1 Interview guide

Preamble

Introduce ourselves

Our research: We are interested in how researchers in business and management studies perceive measurements and evaluation of research performance, what their experiences are with these measurements and evaluations, and whether and how these influence their academic life as researchers.

Anonymity/confidentiality

Recording OK?

Demographic information

- position
- years of academic experience
- background/career

Field of research of the interviewee

1. What is your field of research?

2. How is the research of the interviewee evaluated?

How is your research evaluated?

[What are the criteria – qualitative/quantitative?]

[What is the role of formal systems? What is the role of informal evaluation? How is the relation between formal/informal evaluation?]

[What is the role of past (research performance) and future (research plans)?]

Who conducts this evaluation?

[What is the role of self evaluation? What is the role of colleagues? What is the role of the research group/seminars etc.?)

Are there incentives related to research evaluation?

Do you think this evaluation is fair?

(Optional for interviewees who are in a managing position)

How do you yourself evaluate your subordinates' research?

3. How does the interviewee perceive the impact of performance measurement and evaluation?

Do you think that these performance measures and evaluations influence your research activities? If so, how?

[e.g., regarding choice of topics; choice of methodology; choice of publication outlets; choice of co-authors/collaborators]

Have you perceived around you examples of short-termism, overly orientation to quantitative measures or instrumentalism?

[Have you perceived problems in your cooperation with other researchers due to systems of performance measurement?]

Does performance measurement and evaluation create pressure or stress for you? Can you elaborate, with what implications?

Thought experiment: What would be different if the current formal performance measurement systems and evaluations would not be there?

4. How does the interviewee identify and perceive good research?

How do you know that you have done good research?

How do you evaluate your own research while conducting it?

How do you know that someone else's research is good research?

How do you perceive the significance of citations as a measure of research performance?

5. How does the interviewee perceive good performance measurement and evaluation?

Do you see differences/contradictions:

between your own criteria of good research and the formal measures you are evaluated with? If so, please elaborate what kind of between different forms/systems of evaluations? If so, please elaborate what kind of?

[What are the differences in detail? Do they lead to conflict or tensions with others? Do they lead to conflict or tensions within yourself?]

How do you deal with these differences/contradictions/tensions?

What is the role of academic leadership in handling possible tensions?

How would you describe the time horizon of research evaluation in your institution?

How should a good performance measurement and evaluation system in research look like?

[What are desirable measures of performance? What should be the consequences of research performance evaluation?]

6. What are the interviewee's motivations and perceived accountabilities?

(to be asked here if did not fit in earlier during the interview)

Why are you in academia?

What is it that makes your research meaningful?

To whom (or what) do you feel accountable as a researcher?

7. Other topics of interest or worry for the interviewee regarding leading academic life in the current contexts of conducting and evaluating research?

Appendix 2 List of interviews

Code	Institution	Position
F1-A	Research unit F1 (Finland)	PhD student
F1-B	Research unit F1 (Finland)	Professor
F1-C	Research unit F1 (Finland)	Postdoctoral researcher
F2-A	Research unit F2 (Finland)	Postdoctoral researcher
F2-B	Research unit F2 (Finland)	Professor
F2-C	Research unit F2 (Finland)	Postdoctoral researcher
F2-D	Research unit F2 (Finland)	PhD student
F2-E	Research unit F2 (Finland)	Professor
F2-F	Research unit F2 (Finland)	Postdoctoral researcher
F2-G	Research unit F2 (Finland)	Postdoctoral researcher
F2-H	Research unit F2 (Finland)	PhD student
F3-A	Research unit F3 (Finland)	PhD student
F3-B	Research unit F3 (Finland)	Postdoctoral researcher
F3-C	Research unit F3 (Finland)	Professor
G1-A	Research unit G1 (German-speaking area)	Professor
G1-B	Research unit G1 (German-speaking area)	PhD student
G1-C	Research unit G1 (German-speaking area)	Assistant professor
G1-D	Research unit G1 (German-speaking area)	PhD student
G1-E	Research unit G1 (German-speaking area)	Professor
G1-F	Research unit G1 (German-speaking area)	Postdoctoral researcher
G1-G	Research unit G1 (German-speaking area)	Associate professor
G2-A	Research unit G2 (German-speaking area)	Professor
G2-B	Research unit G2 (German-speaking area)	Postdoctoral researcher
G2-C	Research unit G2 (German-speaking area)	Assistant professor
G2-D	Research unit G2 (German-speaking area)	PhD student
G2-E	Research unit G2 (German-speaking area)	Professor
UK-A	Research unit UK (United Kingdom)	Postdoctoral researcher
UK-B	Research unit UK (United Kingdom)	Associate professor
UK-C	Research unit UK (United Kingdom)	Professor
UK-D	Research unit UK (United Kingdom)	Professor
UK-E	Research unit UK (United Kingdom)	Professor
UK-F	Research unit UK (United Kingdom)	Assistant professor

Appendix 3 Features of research units related to their research cultures, panel 1.

	General characteristics and research tradition	Performance measures	Role of performance measures for promotion and incentives	Senior academics' conduct and role	Research seminar
Research unit F1	Department within Finnish university; Long history of clinical interventionist research; Close ties to company practice; Finnish business community seen as major constituency; Little emphasis on publishing results in journals	Traditionally: quality of company cooperation and satisfaction; Recently changing to counting JUFO-ranked* journal publications and third-party funding	No clear regulations; No tenure track system; No formal quantified targets; Publication points translated into departmental budgets and individual bonuses; Symbolic use of performance results in departmental meetings etc.	Support in company projects; Emphasise necessity to publish results; Guide in writing papers	No
Research unit F2	Department within Finnish university; High emphasis on research; Explicit discourse on quality/quantity-trade-off	JUFO-ranked journal publications and other types of research-related performance, such as reviewing, editorships, citations	No formal rules for promotion; Requirement: being research active; High amount of discretion of superiors; No formal quantified targets; Monetary incentives for top-level (JUFO-level 3) publications	Senior academics' discourse emphasises quality more than quantity; but publication is communicated as necessary outcome	Yes; Regular international guest speakers
Research unit F3	Department within Finnish university; Traditionally little emphasis on research and publications (Research is what you do after all other obligations are fulfilled); Recently increasing emphasis on research due to change in senior professors	JUFO-ranked journal publications and third-party funding are reported due to national and university management's requirement	Currently, no formal role of performance measures in promotion/incentivising; Expected to change, evoking diverse reactions ranging from fear to enthusiasm	Traditionally, almost no explicit guidance by senior academics; Currently changing due to new senior professors; Mixed expectations, some mistrust in competence of new professors	Recently introduced; Mostly national guest speakers

* JUFO is the Finnish national journal ranking comprising journal lists for all scientific disciplines.

Appendix 3 Features of research units related to their research cultures, panel 2

	General characteristics and research tradition	Performance measures	Role of performance measures for promotion and incentives	Senior academics' conduct and role	Research seminar
Research unit G1	Faculty within German-speaking university; High emphasis on research; Tendency towards paper-based dissertations	Number of journal publications and third-party funding; Idiosyncratic combination of different national and international journal rankings as journal list	Differs according to career stages and type of performance contract: clear formal targets for tenure-track positions and paper-based dissertations, for others, no clear targets; School-wide discourse on comparing performance of different departments	Senior academics influence perceived as not very strong; Concentrates on giving specific guidance in specific situations, e.g., specific publication projects	Yes; Regular international guest speakers
Research unit G2	Department within German-speaking university; High emphasis on research, combined with high emphasis on other fields of academic activity (company contacts, supervision)	Number of publications according to ERIM list; For tenured faculty additionally 7 other categories of academic performance; For untenured faculty informal expectations re. other areas of academic performance	Clear targets for paper-based dissertations; target levels for tenure track positions somewhat ambiguous; For untenured faculty significant monetary incentives for top-level publications; For tenured faculty incentives rather in the form of additional resources	Senior academics' explicit leadership emphasises top-ranked publications as well as other academic obligations	No
Research unit UK	Department within British university; High emphasis on research; High reputation for leading research; Recent change towards more quantified research performance evaluation	Recent change in performance measures from 'publications of high quality' to publications in top-category of journal list; Journal list recently introduced due to request from university leadership	Targets for tenure procedure: 4 publications according to the measures of the 'old' (publications of high quality) and 'new system' (publications in top-category of journal list); Targets for tenured faculty: 4 outputs that can be submitted to REF*	Perceived strong influence of senior academics; Ambiguity re. the direction of influence due to change from 'old' to 'new' standards; Different persons represent the 'old' and 'new' systems	Yes; Regular international guest speakers

* Research Excellence Framework, a national research evaluation procedure in the UK that takes place approx. every six years.

References

- Aboubichr, B., & Conway, N. (2021). The gaming of performance management systems in British universities. *Human Relations*, 00187267211052827. <https://doi.org/10.1177/00187267211052827>
- Ahrens, T., & Chapman, C. S. (2006). Doing qualitative field research in management accounting: Positioning data to contribute to theory. *Accounting Organizations and Society*, 31(8), 819–841.
- Alvesson, M., Einola, K., & Schaefer, S. (2021). Philosophical Minds or Brotgelehrte? *Organization Studies*. <https://doi.org/10.1177/0170840621989002>, 0170840621989002, <https://doi.org/10.1177/0170840621989002>.
- Alvesson, M., Gabriel, Y., & Paulsen, R. (2017). *Return to meaning: A social science with something to say*. Oxford: Oxford University Press.
- Alvesson, M., & Sandberg, J. (2011). Generating research questions through problematization. *Academy of Management Review*, 36(2), 247–271.
- Alvesson, M., & Sandberg, J. (2014). Habitat and habitus: Boxed-in versus box-breaking research. *Organization Studies*, 35(7), 967–987.
- Anderson, G. (2008). Mapping Academic Resistance in the Managerial University. *Organization*, 15(2), 251–270. <https://doi.org/10.1177/1350508407086583>
- Anderson, V., Elliott, C., & Callahan, J. L. (2020). Power, powerlessness, and journal ranking lists: The marginalization of fields of practice. *Academy of Management Learning & Education*, 20(1), 89–107. <https://doi.org/10.5465/amle.2019.0037>
- Andrew, J., Cooper, C., & Gendron, Y. (2020). Critical perspectives on accounting and journal rankings: Engaging in counter discourses and practices. *Critical Perspectives on Accounting*, 102169. <https://doi.org/10.1016/j.cpa.2020.102169>
- Andrew, J., Cooper, C., Gendron, Y. (2021, 25.03.2021). *Open letter*. <https://www.journals.elsevier.com/critical-perspectives-on-accounting/announcements/open-letter>.
- Becker, H. S. (1982). *Art worlds*. Berkeley: University of California Press.
- Binswanger, M. (2015). How nonsense became excellence: Forcing professors to publish. In I. M. Welpe, J. Wollersheim, S. Ringelhan, & M. Osterloh (Eds.), *Incentives and performance: Governance of research organizations* (pp. 19–32). Cham: Springer.
- Boomsma, R., & O'Dwyer, B. (2019). Constituting the governable NGO: The correlation between conduct and counter-conduct in the evolution of funder-NGO accountability relations. *Accounting, Organizations and Society*, 72, 1–20. <https://doi.org/10.1016/j.aos.2018.05.012>
- Bristow, A., Robinson, S., & Ratle, O. (2017). Being an Early-Career CMS Academic in the Context of Insecurity and 'Excellence': The Dialectics of Resistance and Compliance. *Organization Studies*, 38(9), 1185–1207. <https://doi.org/10.1177/0170840616685361>
- Butler, N., & Spoelstra, S. (2020). Academics at play: Why the "publication game" is more than a metaphor. *Management Learning*, 51(4), 414–430. <https://doi.org/10.1177/1350507620917257>
- Cederström, C., & Hoedemaekers, C. (2012). On dead dogs and unwritten jokes: Life in the university today. *Scandinavian Journal of Management*, 28(3), 229–233.
- Chatterjee, B., Cordery, C. J., De Loo, I., & Letiche, H. (2020). The spectacle of research assessment systems: Insights from New Zealand and the United Kingdom. *Accounting, Auditing & Accountability Journal*, 33(6), 1219–1246. <https://doi.org/10.1108/AAAJ-01-2019-3865>
- Clarke, C. A., & Knights, D. (2015). Career through academia: Securing identities or engaging ethical subjectivities? *Human Relations*, 68(12), 1865–1888.
- Clarke, C., Knights, D., & Jarvis, C. (2012). A labour of love? Academics in business schools. *Scandinavian Journal of Management*, 28(1), 5–15.
- Contu, A. (2008). Decaf resistance: On misbehavior, cynicism, and desire in liberal workplaces. *Management Communication Quarterly*, 21(3), 364–379. <https://doi.org/10.1177/0893318907310941>
- Correspondence (2011). *Journal of Economic Perspectives*, 25(3), pp. 239–240: American Economic Association.

- Courpasson, D. (2013). On the erosion of 'passionate scholarship'. *Organization Studies*, 34(9), 1243–1249.
- Courtois, C., Plante, M., & Lajoie, P.-L. (2020). Performance in neo-liberal doctorates: The making of academics. *Qualitative Research in Accounting & Management*, 17(3), 465–494. <https://doi.org/10.1108/QRAM-11-2019-0127>
- Crvelin, D., & Becker, A. (2020). 'The spirits that we summoned': A study on how the 'governed' make accounting their own in the context of market-making programs in Nepal. *Accounting, Organizations and Society*, 81, 101079. <https://doi.org/10.1016/j.aos.2019.101079>
- Czarniawska, B. (2011). Successful research: In whose eyes? *European Accounting Review*, 20(1), 53–55.
- Davis, M. S. (1971). That's interesting: Towards a phenomenology of sociology and a sociology of phenomenology. *Philosophy of the Social Sciences*, 1(4), 309–344.
- Deem, R., & Lucas, L. (2007). Research and teaching cultures in two contrasting UK policy contexts: Academic life in Education Departments in five English and Scottish universities. *Higher Education*, 54(1), 115–133. <https://doi.org/10.1007/s10734-006-9010-z>
- Demski, J. S. (2007). Is accounting an academic discipline? *Accounting Horizons*, 21(2), 153–157.
- Demski, J., Dopuch, N., Lev, B., Ronen, J., Searfoss, G., & Sunder, S. (1991). *A statement on the state of academic accounting*. Statement to the research director of the American accounting association. Sarasota, FL: American Accounting Association.
- Dent, J. F. (1991). Accounting and organizational cultures: A field study of the emergence of a new organizational reality. *Accounting, Organizations and Society*, 16(8), 705–732. [https://doi.org/10.1016/0361-3682\(91\)90021-6](https://doi.org/10.1016/0361-3682(91)90021-6)
- Doyle, C. C., Mieder, W., & Shapiro, F. R. (2012). *The dictionary of modern proverbs*. New Haven: Yale University Press.
- Dubois, A., & Gadde, L.-E. (2002). Systematic combining: An abductive approach to case research. *Journal of Business Research*, 55(7), 553–560.
- Edwards, M. A., & Roy, S. (2017). Academic research in the 21st century: Maintaining scientific integrity in a climate of perverse incentives and hypercompetition. *Environmental Engineering Science*, 34(1), 51–61.
- Else, H. (2021, 01. April 2021). Row erupts over university's use of research metrics in job-cut decisions. *Nature*, 792(7852), p. 19. <https://www.nature.com/articles/d41586-021-00793-7>.
- Fellingham, J. C. (2007). Is accounting an academic discipline? *Accounting Horizons*, 21(2), 159–163.
- Foucault, M. (2009). *Security, territory, population: Lectures at the Collège de France 1977–1978*. Houndsmills: Palgrave Macmillan.
- Franco-Santos, M., & Otley, D. (2018). Reviewing and Theorizing the Unintended Consequences of Performance Management Systems. *International Journal of Management Reviews*, 20(3), 696–730.
- Frey, B. S. (1994). How intrinsic motivation is crowded out and in. *Rationality and Society*, 6(3), 334–352. <https://doi.org/10.1177/1043463194006003004>
- Gebreiter, F. (2021). A profession in peril? University corporatization, performance measurement and the sustainability of accounting academia. *Critical Perspectives on Accounting*, 102292. <https://doi.org/10.1016/j.cpa.2021.102292>
- Geertz, C. (1973). *The interpretation of cultures*. New York: Basic Books.
- Gendron, Y. (2008). Constituting the academic performer: The spectre of superficiality and stagnation in academia. *European Accounting Review*, 17(1), 97–127.
- Gendron, Y. (2015). Accounting academia and the threat of the paying-off mentality. *Critical Perspectives on Accounting*, 26, 168–176.
- Haka, S. F. (2008). The accounting academy at a tipping point: Renewal or decline? *Accounting Education News*, 36(4), 2–3.
- Haverгал, C. (2015). Is 'academic citizenship' under strain? *Times Higher Education*. Retrieved from <https://www.timeshighereducation.com/features/is-academic-citizenship-under-strain/2018134.article>.
- Hopwood, A. G. (2005). After 30 years. *Accounting, Organizations and Society*, 30(7–8), 585–586.
- Hopwood, A. G. (2007). Whither accounting research? *Accounting Review*, 82(5), 1365–1374.
- Hopwood, A. G. (2008). Changing pressures on the research process: On trying to research in an age when curiosity is not enough. *European Accounting Review*, 17(1), 87–96.
- Humphrey, C., & Gendron, Y. (2015). What is going on? The sustainability of accounting academia. *Critical Perspectives on Accounting*, 26, 47–66.
- Humphrey, C., & Lukka, K. (2011). (A)Ccounting research: The value of qualitative outlook. In B. Lee, & C. Cassell (Eds.), *Challenges and controversies in management research* (pp. 172–189). London: Routledge.
- Jones, D. R. (2022). An alternative liminal journey of a head of department: The unfolding hysteric tensions, questions & lessons learnt. *Academy of Management Learning & Education*. <https://doi.org/10.5465/amle.2020.0060>
- Kalfa, S., Wilkinson, A., & Gollan, P. J. (2018). The academic game: Compliance and resistance in universities. *Work, Employment and Society*, 32(2), 274–291. <https://doi.org/10.1177/0950017017695043>
- Kallio, K.-M., Kallio, T. J., Tienari, J., & Hyvönen, T. (2016). Ethos at stake: Performance management and academic work in universities. *Human Relations*, 69(3), 685–709.
- Kamla, R., & Komori, N. (2018). Diagnosing the translation gap: The politics of translation and the hidden contradiction in interdisciplinary accounting research. *Accounting Auditing & Accountability Journal*, 31(7), 1874–1903.
- Kaplan, R. S. (2011). Accounting scholarship that advances professional knowledge and practice. *The Accounting Review*, 86(2), 367–383.
- Knights, D., & Clarke, C. A. (2014). It's a bittersweet symphony, this life: Fragile academic selves and insecure identities at work. *Organization Studies*, 35(3), 335–357.
- Komori, N. (2015). Beneath the globalization paradox: Towards the sustainability of cultural diversity in accounting research. *Critical Perspectives on Accounting*, 26, 141–156.
- Krempkow, R. (2015). Research and teaching awards as elements of incentive systems in academia. In I. M. Welpe, J. Wollersheim, S. Ringelhan, & M. Osterloh (Eds.), *Incentives and performance: Governance of research organizations* (pp. 207–220). Cham: Springer.
- Lam, A. (2015). Academic scientists and knowledge commercialization: Self-determination and diverse motivations. In I. M. Welpe, J. Wollersheim, S. Ringelhan, & M. Osterloh (Eds.), *Incentives and performance: Governance of research organizations* (pp. 173–188). Cham: Springer.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Locke, K., Golden-Biddle, K., & Feldman, M. S. (2008). Perspective—making doubt generative: Rethinking the role of doubt in the research process. *Organization Science*, 19(6), 907–918.
- Lukka, K., & Modell, S. (2010). Validation in interpretive management accounting research. *Accounting, Organizations and Society*, 35(4), 462–477.
- Lund, R. (2012). Publishing to become an "ideal academic": An institutional ethnography and a feminist critique. *Scandinavian Journal of Management*, 28(3), 218–228.
- Macharzina, K. (2012). Die Internationalisierung der deutschen BWL. In Verband der Hochschullehrer für Betriebswirtschaft (Ed.), *Geschichte des VHB und Geschichten zum VHB* (pp. 243–255). Wiesbaden: Gabler.
- Meriläinen, S., Tienari, J., Thomas, R., & Davies, A. (2008). Hegemonic academic practices: Experiences of publishing from the periphery. *Organization*, 15(4), 584–597.
- Messner, M. (2015). Research orientation without regrets. *Critical Perspectives on Accounting*, 26, 76–83.
- Messner, M., Becker, A., Schäffer, U., & Binder, C. (2008). Legitimacy and identity in Germanic management accounting research. *European Accounting Review*, 17(1), 129–159. <https://doi.org/10.1080/09638180701819808>
- Miller, A. N., Taylor, S. G., & Bedeian, A. G. (2011). Publish or perish: Academic life as management faculty live it. *Career Development International*, 16(5), 422–445.
- Mingers, J., & Willmott, H. (2013). Taylorizing business school research: On the 'one best way' performative effects of journal ranking lists. *Human Relations*, 66(8), 1051–1073.
- Moher, D., Bouter, L., Kleinert, S., Glasziou, P., Sham, M. H., Barbour, V., & Dirnagl, U. (2020). The Hong Kong Principles for assessing researchers: Fostering research integrity. *PLOS Biology*, 18(7), Article e3000737. <https://doi.org/10.1371/journal.pbio.3000737>
- O'Connell, B. T., De Lange, P., Stoner, G., & Sangster, A. (2020). Impact of research assessment exercises on research approaches and foci of accounting disciplines in Australia. *Accounting, Auditing & Accountability Journal*, 33(6), 1277–1302. <https://doi.org/10.1108/AAAJ-12-2019-4293>
- Panozzo, F. (1997). The making of the good academic accountant. *Accounting, Organizations and Society*, 22(5), 447–480.
- Pelger, C., & Grottko, M. (2015). What about the future of the academy? – Some remarks on the looming colonisation of doctoral education. *Critical Perspectives on Accounting*, 26, 117–129.

- Pelger, C., & Grottko, M. (2017). Research diversity in accounting doctoral education: Survey results from the German-speaking countries. *Business Research*, 10(2), 307–336.
- Pfister, J. A., & Lukka, K. (2019). Interrelation of controls for autonomous motivation: A field study of productivity gains through pressure-induced process innovation. *The Accounting Review*, 94(3), 345–371.
- Power, M. (2015). How accounting begins: Object formation and the accretion of infrastructure. *Accounting Organizations and Society*, 47, 43–55. <https://doi.org/10.1016/j.aos.2015.10.005>
- Prasad, A. (2015). Liminal transgressions, or where should the critical academy go from here? Reimagining the future of doctoral education to engender research sustainability. *Critical Perspectives on Accounting*, 26, 108–116.
- Rawsthorne, L. J., & Elliot, A. J. (1999). Achievement goals and intrinsic motivation: A meta-analytic review. *Personality and Social Psychology Review*, 3(4), 326–344.
- Rintamäki, J., & Alvesson, M. (2022). Resisting whilst complying? A case study of a power struggle in a business school. *Academy of Management Learning & Education*. <https://doi.org/10.5465/amle.2020.0070>
- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25(1), 54–67.
- Sandberg, J., & Alvesson, M. (2011). Ways of constructing research questions: Gap-spotting or problematization? *Organization*, 18(1), 23–44.
- Schein, E. H. (2004). *Organizational culture and leadership* (3rd ed.). San Francisco: Jossey-Bass.
- Scheu, U. (1980). *Wir werden nicht als Mädchen geboren - wir werden dazu gemacht*. Fischer-Taschenbuch-Verlag.
- Smircich, L. (1983). Concepts of Culture and Organizational Analysis. *Administrative Science Quarterly*, 28(3), 339–358. <https://doi.org/10.2307/2392246>
- Storbeck, O. (2012). Eigenplagiater: Züricher Ökonom in Zwangsrente geschickt [Self-plagiarism: Zürich economist forced into retirement]. *Handelsblatt*, 23(04), 2012.
- Sunder, S., President's message: Imagined worlds of accounting, Editorial Accounting Education News, Fall 2006 2006 3 6 Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=23426251&site=ehost-live>.
- Tienari, J. (2012a). Academia as financial markets? Metaphoric reflections and possible responses. *Scandinavian Journal of Management*, 28(3), 250–256.
- Tienari, J. (2012b). Critical scholars in the machinery of publishing: Experiences, reflections, alternatives. *Scandinavian Journal of Management*, 28(3), 205–208.
- Tijdink, J. K., Schipper, K., Bouter, L. M., Maclaine Pont, P., de Jonge, J., & Smulders, Y. M. (2016). How do scientists perceive the current publication culture? A qualitative focus group interview study among Dutch biomedical researchers. *BMJ Open*, 6(2), 1–9.
- Townley, B. (1997). The Institutional Logic of Performance Appraisal. *Organization Studies*, 18(2), 261–285. <https://doi.org/10.1177/017084069701800204>
- Tucker, B. P., & Tilt, C. A. (2019). 'You know it when you see it': In search of 'the ideal' research culture in university accounting faculties. *Critical Perspectives on Accounting*, 64, Article 102069. <https://doi.org/10.1016/j.cpa.2019.01.001>
- van Dalen, H. P., & Henkens, K. (2012). Intended and unintended consequences of a publish-or-perish culture: A worldwide survey. *Journal of the American Society for Information Science and Technology*, 63(7), 1282–1293.
- Vogel, R., Hattke, F., & Petersen, J. (2017). Journal rankings in management and business studies: What rules do we play by? *Research Policy*, 46(10), 1707–1722. <https://doi.org/10.1016/j.respol.2017.07.001>
- Wagner, E. L., Moll, J., & Newell, S. (2011). Accounting logics, reconfiguration of ERP systems and the emergence of new accounting practices: A sociomaterial perspective. *Management Accounting Research*, 22(3), 181–197. <https://doi.org/10.1016/j.mar.2011.03.001>
- Waymire, G. B. (2012). Introduction for essays on the state of accounting scholarship. *Accounting Horizons*, 26(4), 817–819.
- Waymire, G. B. (2011). *Seeds of innovation in accounting scholarship*. Working paper. American Accounting Association. Retrieved from <http://commons.aaahq.org/hives/a3d1bee423/summary>. Accessed 11 May 2017.
- Roth, G., & Wittich, C. (Eds.). (2013). *Economy and society: An outline of interpretive sociology* (Vol. 1). Berkeley: University of California Press.
- Welpe, I. M., Wollersheim, J., Ringelhan, S., & Osterloh, M. (Eds.). (2015). *Incentives and performance: Governance of research organizations*. Cham: Springer.
- Wilkesmann, U. (2015). Imaginary contradictions of university governance. In I. M. Welpe, J. Wollersheim, S. Ringelhan, & M. Osterloh (Eds.), *Incentives and performance: Governance of research organizations* (pp. 189–206). Cham: Springer.
- Wilson, L., *The academic man: A study in the sociology of a profession* (1964 [1942]). Octagon Books New York.
- Young, J. J. (2015). (En)gendering sustainability. *Critical Perspectives on Accounting*, 26, 67–75.