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Title: Defining success in a changing academic landscape

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AUTHOR CONTRIBUTIONS

All authors contributed to data collection, analysis and writing.

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ETHICS STATEMENT

The survey used in this research was given ethical approval by King's College London.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Abstract: How one individual characterises another successful individual varies widely. At a time when work-life balance and the use of metrics are key concerns within the academic landscape, Early Career Academics (ECAs) are voicing particular worries about the opacity with which we discuss and define success in academia, which influences recruitment and progression in unseen ways. Drawing on the results of a survey of 92 geomorphologists, earth and environmental scientists (96% from Europe or North America) and textual analysis of 54 job advertisements for early career positions at UK institutions spanning 2010-2021, we posit that there is a divergence between the perceptions, expectations and realities of academic success and that this has widened over the last decade. We find limited evidence of gendered differences in how academics define success, in stark contrast to employment and promotion outcomes within universities. We also find notable differences in how individual, more senior academics value publications and grant capture, which is at odds with advice usually given to ECAs. This mismatch is reinforced by the steady rise in the total number of essential job criteria listed on job advertisements for early career positions. Strong applicants are expected to excel in more areas than a decade ago. We put forward a series of recommendations implementable at local levels (e.g., research groups, learned society committees, departments) to help ensure markers of success are defined, valued and implemented in more appropriate and consistent ways. These include: the necessity of establishing clear guidelines for recruitment, promotion and awards, and ensuring these are visible and accessible; greater transparency around the weightings given to different criteria in a job advert; and a call to the community to reflect on how our individual markers of success match our career advice and the decisions taken by hiring or promotion panels we sit on.

Keywords:

Academic career progression; Call to action; Career stage; Defining academic success; Perception versus experience.

Introduction

What does a successful person look like? You may instinctively be thinking about their awards, outputs or other material accomplishments, their actions or behaviour, their relationships or perhaps a physical trait. Another reader probably has a different depiction. Defining career success will bring an equal mixture of responses (Dries, 2011). Extending this to academia, there is general agreement on the range of expected duties: research and scholarship, teaching and communication, and service, the latter including institutional or Society administration, outreach, advisory or consultancy roles, paper and grant reviewing (Rosewell and Ashwin, 2018). Defining academic success is a growing area of active research (Figure 1), especially in business and management studies (Sherif *et al.*, 2020). Nevertheless, several aspects remain far from clear. For example, how different academic duties map onto common perceptions of a 'successful' academic career and how these judgements are communicated to new or prospective academics have rarely been directly examined in the literature (Sutherland, 2015; Smith, 2017; Hollywood *et al.*, 2020; Clemens *et al.*, 2021).

As the academic landscape becomes increasingly measured and scrutinised using quantitative targets (Fernandes *et al.*, 2020; Smith, 2017; Woolston, 2019; Forrester, 2021), Early Career Academics (ECAs) reasonably want to know where to focus efforts to maximise their prospects. Clear answers are hard to come by. Institutional missions and priorities can vary substantially - for example, the proportional workload allocation towards teaching versus research (Gale, 2011; Clemens *et al.*, 2021). Convention in the UK for roles with a responsibility for research and teaching is a 40:40 split, plus 20% allocated to service. Nevertheless, at one institution where workload allocations are easily accessible online, 1100 out of 1550 hours (71%) per annum are assigned to teaching (University of Huddersfield, 2023). Differing higher education systems and expectations between countries adds further intricacy. There are also persistent

concerns that unwritten and unspoken – and potentially unconscious – weightings, priorities and measures of success beyond the criteria set out in a job specification do influence hiring panels. These concerns stem from ECAs often being outside of the decision-making processes, inconsistent advice from more senior colleagues and opaque or overly generic Human Resources guidance (Sutherland, 2015; Alderson *et al.*, 2022). More institutions are setting out formal expectations for promotion or tenure applicants, but the wide range of measures, from strict metric-based thresholds through to qualitative descriptors, has been flagged as a limitation (Rice *et al.*, 2020).

In this commentary, we strive to move beyond anecdotes and draw attention to (in)consistencies and differences in how academics judge success, and the ensuing implications on career progression, at a time when ECAs are questioning what it takes - and what it costs - to be successful in academia (Hollywood *et al.*, 2020; Alderson *et al.*, 2022). We evaluate the perspectives of geomorphologists, earth and environmental scientists gathered through an online survey and a critical review of stipulated job requirements for UK ECA posts advertised over the last 11 years.

Methods and dataset

To gauge how academic success is defined by individuals, a short survey designed in Microsoft Office Forms was distributed for four weeks in April 2021 by the authors through their personal networks, relevant learned societies, professional email lists and Twitter. The survey was open to anyone self-identifying as a geomorphologist, environmental or earth scientist from any country and career stage. The survey consisted of six questions asking about personal characteristics and career stage and a free-flowing comment box where respondents summarised what they consider to be the most important criterion or criteria for defining a successful individual colleague in academia. Respondents who had spent more than five years working in academia were then asked whether they consider their definition of success to have materially changed since the early stages of their career and, if it has, to explain in what regard(s). For all questions, trends were first evaluated across all respondents and then disaggregated by gender and career stage.

We also gathered 54 job advertisements for ECA roles (Lecturer, Teaching Fellow, Postdoctoral Research Associate¹) in physical geography and environmental science at UK institutions advertised over 11 years (2010-2021). University Human Resource systems and personal data protection legislation mean these are not stored publicly in perpetuity, so we drew on personal networks. We acknowledge this is therefore not a systematic review but should capture general patterns. We extracted from each job advertisement the number of essential and desirable criteria and then applied axial (thematic) coding as defined by Wicks (2012) to assess trends in the written criteria. We also acknowledge that our interpretation of the results and resulting recommendations are framed by the authors' experiences working solely within the UK higher education system.

Similarities in definitions of academic success by gender

The survey received 92 responses, with a roughly equal split between those who identify as women (45%) and men (50%) (Figure 2A). Five identified as non-binary or chose not to say. We also had good representation across all career stages (Figure 2B). The vast majority of respondents were based at institutions in the UK (60%), Europe (16%) or North America (20%) so we acknowledge we captured perspectives from the Western and Northern Hemispheres.

We find a number of intriguing patterns in the survey responses. First, there is no gendered difference in the value placed on each indicator of academic success (Figure 2A). This seems at odds with the stark differences between men and women in terms of recruitment and progression within academia (Huang *et al.*, 2020; Alderson *et al.*, 2022). For example, previous research has found gendered differences in how individual academics judge whether they've attained a prerequisite level of success to merit promotion, with women often delay applying (Baker, 2010). This disparity seemingly exists despite individuals defining success in similar ways. We interpret this as more evidence of the systemic barriers that exist in university reward frameworks.

¹ In the UK higher education system, these roles and associated duties are generally defined as follows: A Lecturer can be fixed-term or permanent and can be teaching-focused or a combination of teaching and research; A Teaching Fellow is a fixed-term position focused on teaching and student support; A Post-doctoral Research Associate is a fixed-term position attached to a specific research project.

Differences in definitions of academic success by career stage

Career stage has a mixed influence on indicators of success (Figure 2B). Developing a personal network and mentoring is valued by roughly a third of all respondents and one's research profile (encompassing funding secured and impact delivered) is similarly recognised by 20-25% of respondents at every career stage. On the other hand, securing a permanent job is most recognised by respondents a few years into their careers (20% of "2-5 years" category) but not by senior colleagues ("20+ years"). Similarly, 'recognition from peers' only becomes an indicator of success at later career stages ("5-10 years" and onwards). Why? It could reflect a reordering of priorities once a permanent post has been secured. At the earliest stages of one's career, what matters most is being valued by the next hiring panel. More senior colleagues assembling their promotion cases are reliant on references from external colleagues.

Scientific output and communicating research findings are moderate measures of success, overall (Figure 2). More prominent is the steady decrease in the importance of this as a success metric from more junior (25%) to senior academics (9%) (Figure 2B). This fits with the 'publish-or-perish' mantra (Forrester, 2021): ECAs are disproportionately influenced by the increasing metricisation of higher education; or at least the *perception* that 'rankable' outputs such as peer-reviewed publications ought to be prioritised to forge a successful career. Whilst more senior academics recognise that this is one element of an academic career, 'teaching and feedback' and 'personal development and work-life balance' are most valued by those same senior colleagues (Figure 2B). Looking at our results in the context of the "barrage of measurements" applied to ECAs (Smith, 2017, p.1), plus personal and anecdotal experiences, we propose mismatches are emerging between the markers of success senior colleagues personally look out for, and the decisions taken by department, institutions or societies on hiring, promotion and awards.

How definitions of success change with time spent in academia

Slightly more than half (54%) of our respondents who have been employed in academia for five or more years confirmed their markers of success have materially changed through their careers. Across the different career stages there was an equal percentage who had and hadn't changed their perception. Similarly, the percentages were equal amongst men. However, 67% of the women that

responded to the survey indicated that their view of success had changed, and 80% of those that defined as non-binary or preferred not to say specified their view of success remained the same (although it should be noted that the latter constituted a small sample size).

When we asked those 54% of respondents to explain in which ways their definitions of success had evolved over time, some intriguing though modest differences by gender appeared (Figure 3A). For example, the impact and broader value of research and peer esteem were more commonly identified by women whereas men place more emphasis on collegiality and mentoring. This is somewhat unexpected as inadequate access to mentorship is widely recognised as a barrier to women progressing in academia (Cross *et al.*, 2019; Alderson *et al.*, 2022). Perhaps women are over-compensating for other systemic barriers in higher education and thus have less time to share or receive mentoring. There are few differences by career stage (Figure 3B), with research impact and collegiality and mentorship showing decreasing value with seniority. Overall, we interpret Figure 3 as indicating a shift amongst individual academics towards more inclusive definitions of success, with greater emphasis placed on collegiality, outreach and diverse forms of impact and less focus on metric-driven evaluation. We consider this to be a real positive for work culture, whilst acknowledging that this captures only respondents who consider their definition to have changed. This shift also seems at odds with expectations being placed on ECAs to prioritise quantitatively measurable outputs (Smith, 2017).

We were startled to find most adverts for Postdoctoral Research positions listed the same criteria for research prowess (numbers of publications, grants, research network development) as Lecturer-type posts and often with a larger number of criteria to fulfil (Table 1B). This seems unrealistic given these are intended to be one of the first post-PhD steps on the academic ladder. Similarly, we are concerned that job specifications for part-time and/or fixed-term lectureships are generally the same as full-time, permanent roles in almost all cases.

Contrasts between perceptions and expectations of success

Our evaluation of job advertisements at UK institutions confirms this divergence. For lecturer-type posts, the total number of criteria and number of essential criteria have steadily increased over the last decade (Table 1A). Much of this stems from growing expectations of research publications and grant capture (Figure 4). Evidence of securing grant funding was rarely mentioned in 2010, became a desirable criterion in the mid-2010s and is now listed as essential on all 'Teaching & Research' Lecturer posts. This poses at least three acute dilemmas for ECAs. First, our survey shows that securing grant funding is only a moderate factor amongst individuals (25% of respondents) when defining academic success. This is somewhat inconsistent with grant capture being a now-universal essential requirement for Lecturer-type jobs. Second, grant success rates are historically low. Award rates for the Natural Environment Research Council, which funds most environmental and geoscientific research in the UK, declined through the 2010s and typically hover between 10 and 20% (UKRI, 2022a; 2022b). By comparison, some grant schemes had a 92% success rate in the early 1990s (House of Commons, 2003: Section 3 Point 24). Third, national funding bodies in the UK often require the primary applicant (commonly known as the Principal Investigator) to hold a permanent post or a contract that extends beyond the duration of the proposed project. Internal triaging to determine who may apply to a particular grant call is also becoming more common in UK universities. We also note that expectations of strong research profiles are not coming at the expense of other duties (Figure 4B and 4D). This may in part reflect evolving HR policies on job advert design, but in reality confirms that much more is expected of Early Career job applicants in comparison to ten years ago.

We also classified the proportion of keywords in job adverts attributable to research, teaching and administration. This reveals that keywords pertaining to administrative and service tasks (e.g., networking, communication, project management) are now the most common within essential criteria for Lecturer job listings and show the largest increase, from 34% of all keywords in 2010 to 47% in 2021. This is matched by an almost identical decline in the proportion of administration-linked desirable keywords since 2010. There has also been a 15% rise (21% to 36%) in the number of administration-linked essential keywords for Postdoctoral research positions. There's no suggestion that expected standards

have lowered. Rather, there has evidently been a steady rise in the number and diversity of tasks in which ECAs are expected to excel (Figure 4). We also note that Lecturer adverts list “postgraduate supervision experience”, “ability to work as part of a multi-disciplinary team” and “industry/non-academic links” as desirable criteria. These are relevant to academic work but were not reported by our survey respondents as active measures of success. Gaining appropriate experience in these areas as an ECA is particularly tricky. On the one hand, it’s good to see diverse skills and experiences being valued (Figure 4), but this creates material risks of unrealistic expectations. More positively, we did find that Equality, Diversity and Inclusion (EDI)-focused criteria have become much more prominent in the last couple of years.

Valuing diverse forms of success

We posit there is a growing divergence between the perception, expectations and reality of academic success, and how these are communicated, with often unforeseen and overlooked effects on university hiring and promotion outcomes. There is no question that expectations of a successful ECA have risen dramatically over the last decade, with research continuing to receive the greatest emphasis (Figure 4). Publication rates have steadily increased over the last decade (Savage and Olejniczak, 2022), almost certainly creating a trickle-down effect. Anecdotally, more and more applicants to environmental and geoscience PhD programmes in UK universities already hold at least one peer-reviewed publication. We question whether there continues to be a tendency to portray success as metric-driven by default during formal processes like hiring, promotion or award-giving, whereas individuals judge the success of other academics in much more varied ways.

There is scope to design and implement recruitment, promotion and awarding processes that more faithfully align with academics’ varied definitions of success. Change is already underway. Several global and national initiatives have been launched to improve the fairness and diversity of academic recognition systems. The San Francisco Declaration on Research Assessment (DORA) promotes approaches for assessing research quality that do not depend on metrics (DORA, 2023). The Royal Society in the UK launched a Résumé for Researchers to capture a wide range of contributions to scholarship and society (Royal Society, 2022). UKRI is also following suit (UKRI, 2023). Similarly, the Swiss National Science

Foundation does not use journal impact factor as an assessment criterion (SNSF, 2023) and the Better Science Initiative is a community-driven effort to improve working culture in universities across Switzerland (Better Science, 2023). Whilst we hope these deliver positive outcomes, we are concerned that there is a mismatch between large-scale, top-down initiatives and the decisions, actions and advice given at local levels.

We present in Figure 5 a set of steps and considerations implementable at administrative levels over which individual academics have more influence, such as research groups, learned society committees or departments. We particularly push for greater transparency on how job criteria are weighted. The number of essential criteria in a typical UK Lecturer-type job advert has risen over the last ten years (Table 1), meaning ECAs must be better at more things to be competitive. What remains opaque is how individuals and a collective body (e.g., a hiring panel) value one trait or accomplishment over another. For more senior colleagues, cast your mind back to a hiring panel you sat on recently. How were applicants' experience against different job criteria contrasted by you and other panellists? Was this discussed prior to making a decision? Similar considerations can be integrated into promotion and tenure processes. More departments and institutions are developing clear and transparent guidance on their expectations, which should help colleagues assemble strong promotion packages and be referred to by the evaluation panel. This is a positive step. Nevertheless, there is room to go further, for example by documenting how members of the panel should judge a candidate that surpasses most thresholds but falls short on a certain criterion. There is rightly more focus on how unconscious biases linked to personal characteristics influence university processes. Differences in how individuals define success is likely to be a source of unconscious bias that brings hitherto overlooked and unforeseen effects.

We also call on the community to dig out job advertisements from ten or twenty years ago. Compare these to recent jobs your department has advertised and ask yourselves: how much more are you now expecting? What are the implications of this? Share these considerations with colleagues and make space on decision-making panels for the same discussions. Similarly, the next time you are asked for advice on how to forge a successful career, take time to reflect on your

answers. Are you sharing your personal definition of success? Are you advocating for metrics by default? Does your advice acknowledge the shifting expectations over the last decade? And does your advice adhere to departmental and institutional hiring or promotion guidelines? In a university landscape where finding secure employment is ever more competitive, we can take important collective steps by being transparent and consistent in how markers of academic success are defined, communicated and used.

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Table 1. Average number of criteria requested in job adverts for Lecturer (both Teaching & Research and Teaching focused positions) (A) and Postdoctoral Research positions (B). Maximum and minimum numbers of criteria are given in brackets.

(A)

Year range	Average (total) criteria	no. essential criteria	no. desirable criteria	No. adverts
2010-2012	15 (8 - 23)	9 (6 - 15)	6 (1 - 9)	8
2013-2015	16 (11 - 24)	10 (7-15)	6 (3 - 9)	5
2016-2018	16 (10 - 26)	10 (6-21)	6 (3 - 12)	11
2019-2021	19 (6 - 30)	12 (3-22)	7 (1 - 11)	10

(B)

Year range	Average (total) criteria	no. essential criteria	no. desirable criteria	No. adverts
2013-2015	21 (18 - 26)	16 (11 - 16)	5 (2 - 8)	3
2016-2018	12	9	3	1
2019-2021	17 (11 - 26)	12 (8 - 18)	6 (3 - 8)	6

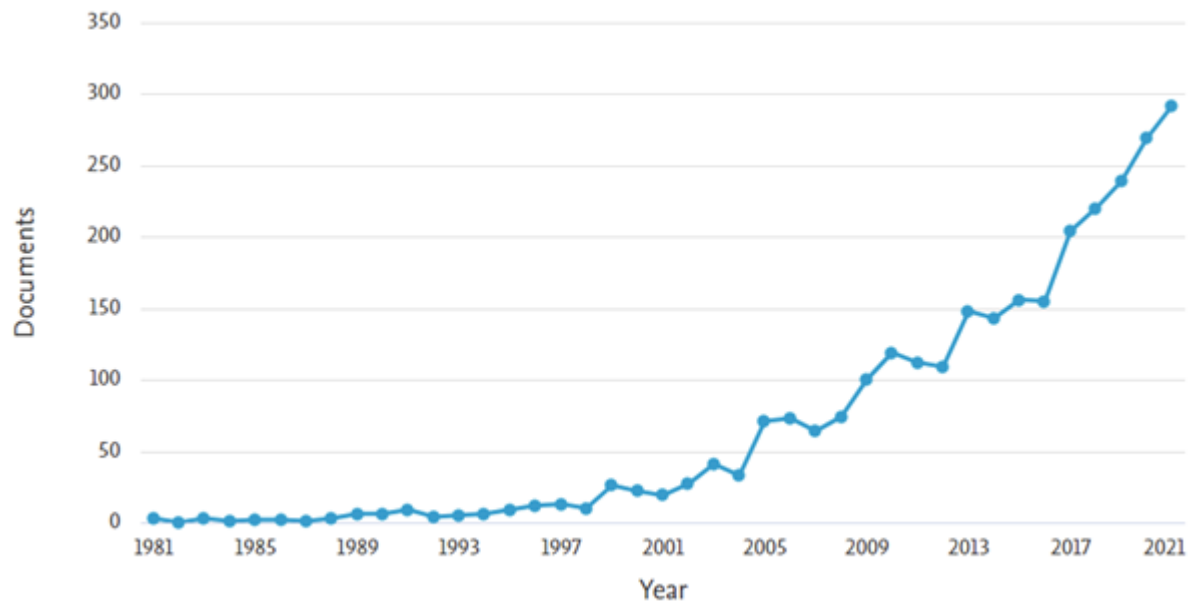


Figure 1. Number of publications per year recorded by Scopus using the search terms "success" AND "academia". Search conducted in October 2022.

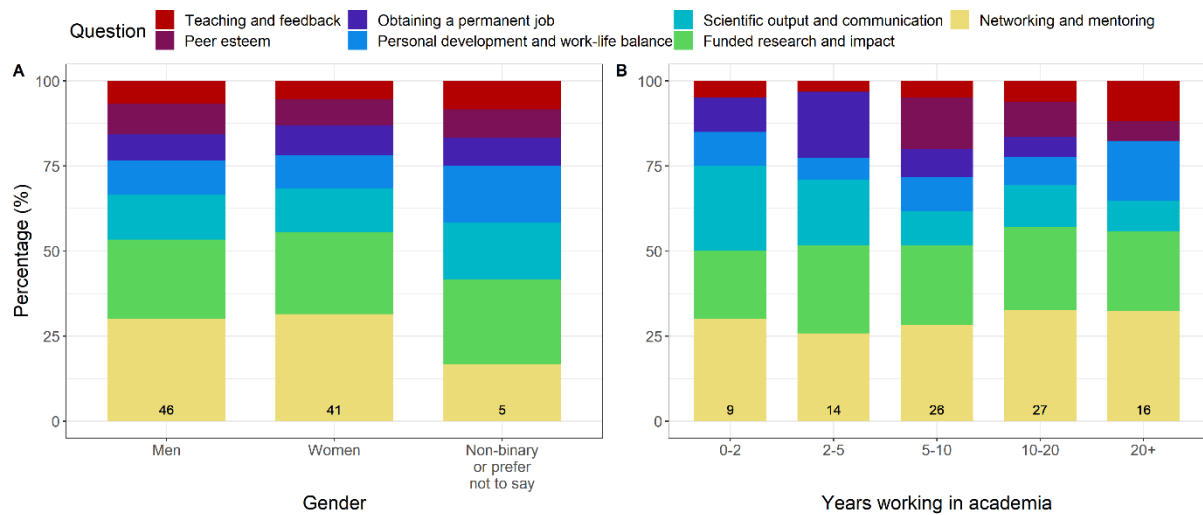


Figure 2. Percentage of respondents split by gender (A) and years working academia (B) who consider the thematic category to be a marker of individual academic success. Black numerals at the base of each bar denote the total number of respondents for that category.

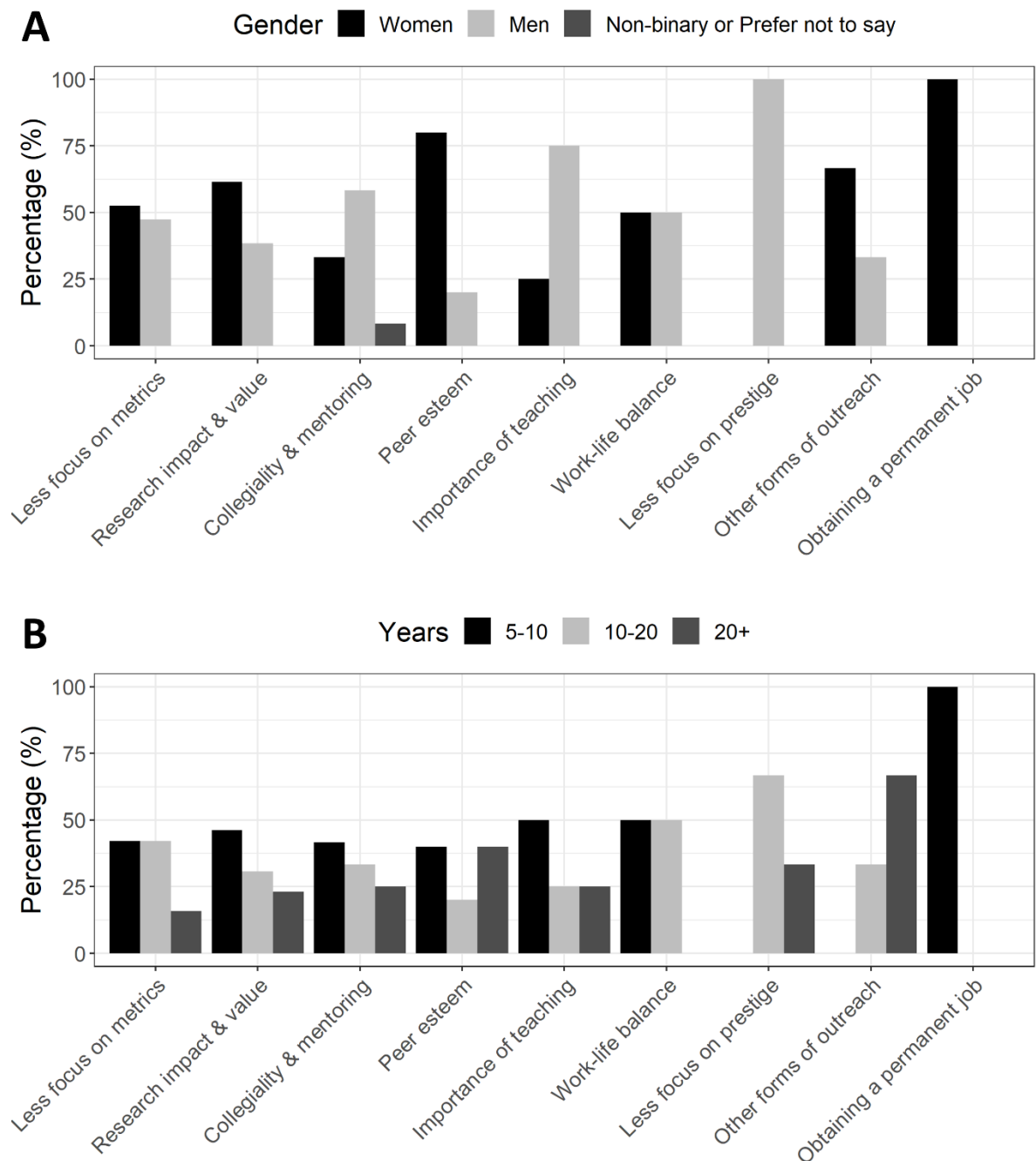


Figure 3. Percentage of respondents working in academic for 5+ years split by gender (A) and years working in academia (B) who consider the thematic category as representing a marker of individual academic success that has materially changed since earlier stages of their career. Black numerals denote total respondents for that category and apply to both panels.

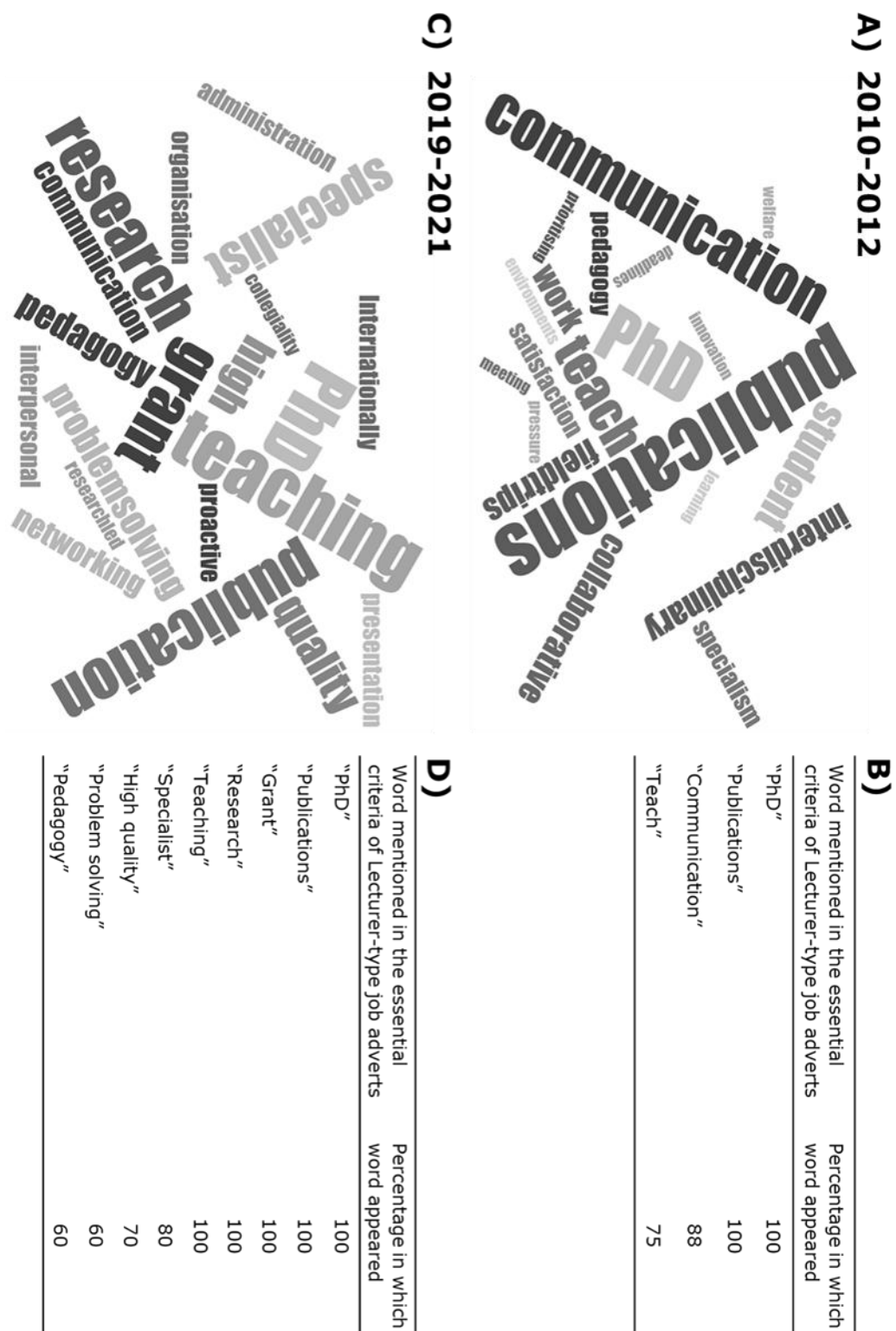


Figure 4: The 20 most common keywords in UK lecturer-type job in 2010-2012 (A) and 2019-2021 (C). Font size is linked to the proportion of job advertisements that held this keyword. The percentage of job adverts in which the keyword was mentioned are also reported (B, D) where percentage > 50%.



Figure 5. Steps and considerations that can be taken at local levels to incorporate more rounded judgements of success into recruitment, promotion, tenure, award giving and similar higher education processes.