The performance of PIs before promotion to full professor also increased over years, but the rate of increase was lower than that during recruitment, indicating that the publication requirements for promotion might not have changed that much over time compared to the requirements for recruitment. Interestingly, the time to full professor has lengthened in recent years, yet higher academic performance did not shorten the duration as it did during the recruitment phase. This may be partly due to increasing consideration of accomplishments such as teaching and administrative services by employment institutes in addition to research outputs. Overall, these differences in the temporal patterns of academic performance and career duration between recruitment and promotion phase are likely due to applicants facing increasing competition with others during recruitment and thus higher performance would be advantageous for securing a position faster, whereas getting a promotion depends mainly on individual PI meeting the institutes’ requirements rather than comparing against others’ performance and thus higher performance may have less impact on promotion.

We found that the average performance of a new male PI was higher than that of a new female PI. This may result from higher standards for evaluating the suitability of a potential faculty member for males compared to females (Symonds et al. 2006). Alternatively, it could be due to employment institutes striving to recruit female applicants to enhance gender equity despite the likelihood of female applicants having a lower performance than their male competitors, which can be exacerbated by implicit bias and stereotype threats that females face in biological sciences (Salerno et al. 2019). In contrast, the performance expectations for promotion to full professor did not differ between male and female PIs, indicating that individual performance is the key to further promotion regardless of gender after recruitment, especially when gender equality is enhanced.

Contrary to a previous study showing that researchers from higher-ranked institutes became PIs faster compared to those from lower-ranked institutes (van Dijk et al. 2014), we found no evidence of PhD university ranking influencing the career duration either before recruitment or before promotion. Instead, our results suggest that academic performance during PhD and/or post-PhD period may be more important in determining the academic success compared to the prestige of education itself. However, PIs with Taiwanese PhD degrees did tend to have longer durations before recruitment, which likely resulted from employment institutes favoring candidates with foreign PhD degrees.

The difference in performance before and after recruitment decreased over years. Specifically, PIs in earlier years had on average higher h-indexes after recruitment than before recruitment, yet such a “performance boost” has declined in recent years. This could be due to increasing teaching and administrative demands of new PIs, reducing their time available for research. On the other hand, PIs performed consistently before and after recruitment regardless of their PhD university origin or ranking. However, PIs with Taiwanese PhD degrees did show a decrease in performance after promotion to full professor compared to before promotion, whereas PIs with foreign PhD degrees had relatively consistent performance before and after promotion. One possible explanation is that the training and experiences from foreign universities may have equipped those PIs with greater professional abilities, which together with international connections and collaboration opportunities, help maintain their performance.

It is noteworthy that recruitment is a complicated process involving not only academic performance *per se* but also other considerations such as the suitability of applicants to the research areas of opening positions. Although our study showed increasing academic performance for recruitment over years, we do not intend to discourage the academic community with such results. Indeed, variations in h-index during recruitment phase indicate that it is still possible for an applicant with relatively low h-index to land a position. Moreover, besides research performance, other aspects of academic achievements, including teaching, mentoring, and social outreach, also constitute a significant part of a researcher’s career, and we stress that balancing these different aspects would be necessary for a more holistic professional development. Finally, our analyses were based on PIs in ecology and evolutionary biology. Since the nature of academic job markets can vary considerably among different fields of biology (Larson et al. 2014), the results herein should be interpreted carefully when applied to the fields outside the scope of this study.

Taken together, our findings confirm that succeeding in academia has become more challenging, with publication requirements and career duration both increasing over years. Based on our findings, we offer some suggestions for those who hope to pursue or have already pursued an academic career: (1) For PhD students or early-stage researchers, focusing on research performance is a critical part for academic success, but other aspects of a researcher’s career may also be important as well. (2) For PIs who recently land a position, fulfilling institute’s requirements while maintaining academic output may accelerate the promotion process. (3) For researchers with domestic degrees, seeking international collaboration to expand the research network may help enhance the academic career. Finally, regardless of career stage, boosting performance is still the key to career success in academia in the face of increasingly competitive academic job markets.