Comments: Development of an early career academic supervisor in Statistics - a discussion on a guiding rubric

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1 An overview of the paper

The authors are commended for highlighting a South African university system problem that has grown steadily over recent years. Much has been written about the dearth of academic statistical expertise in South Africa. In her Presidential address at the 2010 South African Statistical Association conference (see [1]), Ms Yoko Chhana, highlighted two reasons why statistical capacity building was severely restricted in South Africa. Retaining statisticians in academia was highlighted as a key concern, a point which lends support to the crux of this paper. The shortage of experienced staff to mentor and train the next generation of academic statisticians is a result of poor retention policies which therefore impacts on the development of early career supervision skills.

2 Findings of the paper

The paper highlights several problems that young statistics academics encounter as they embark on their career. Early career academics lack experience to supervisor and assess doctoral theses and rely on senior staff to mentor and provide guidance. Unfortunately, there is a distinct lack of senior academics as several have retired and those that are available are unable to meet the needs of all. To address this problem, the solutions proposed are to develop a rubric for supervision guidance and thesis assessment, to develop a network of young emerging researchers within the broader community and to encourage

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the growth of inter-institutional research groups. All three solutions, rubrics, networking, and inter-institutional groups have valid arguments and are possible starting points to the challenges identified.

The paper identifies that in South African tertiary institutions, supervisory experience in the statistics discipline is in short supply. This in turn adversely impacts on the mentorship needs of early career academics. This has a ripple effect throughout the tertiary system as the supervisory constraints impact students who disadvantaged by the limited opportunities to enrol for post-graduate studies. [3] highlights tensions between students and supervisors, given that early career statistical academics are inexperienced, it would be reasonable to expect that statistics post-graduate students may be even more disappointed with their study experiences. This is to be avoided as any loss of interest in academia will perpetuate the cycle which currently exists.

3   Strengths of the paper

The authors have done a thorough investigation into the crisis faced by statistics departments in South Africa. They acknowledge and appreciate that the NRF has been supportive to the statistics discipline by funding post-graduate students via the "crisis in academic statistics" bursary programme that was started in 2016. The funding support provided opportunities for students to enrol at masters and doctoral level with the specific aim that the bursary students would consider a career in academia. The results of this programme were positive with several bursary recipients entering the academy.

The paper provides evidence of a sound understanding of the requirements of a supervisor. A person who takes on the supervisory role is expected to complete several administrative tasks, the supervisor is not expected to undertake the research for a student, rather they are there to guide and support the students via nurturing and reviewing written work. The authors are aware of the institutional differences for doctoral research and raise the lack of consistency as a concern which is inherent in the system. Institutional differences include both supervisory expectations, sometimes established as a memorandum of understanding (MoU), and assessment methods with different guidelines for external examiners which are institutionally defined. As an example, some institutions require an oral and thesis assessment, others only require a thesis assessment.

This paper brings to the fore, a genuine problem within the statistics academy. The demands for statistical training have meant that statistics department are becoming primarily teaching departments as research is constrained by a lack of experience. Early career academics do not receive the mentorship needed to engage in post-graduate supervision, which in turn impacts on their career trajectory. The authors identify that early career academics lack expertise in supervision, have limited experience in budgetary planning, lack experience to ensure the project falls into fundamental research rather than data analytics and are unsure how to assist students with time management and personal motivation.

The paper goes on to propose the establishment of rubrics as methods to guide early career academics. It is suggested that the rubrics be discipline focussed rather than generic across

all research areas, and that rubrics be established for both assessment and supervisory tasks. The proposal has merit and if the rubrics are developed with buy in from all stakeholders, they could be useful to the emerging cohort of academics.

4 Criticisms of the paper

There are some claims within the paper that need rebuttal. The claim that younger academic staff are overloaded (negatively skewed) must be questioned. The implication is that this is a practice that is common within statistics department, however there are institutions which adopt a different approach and have senior staff allocated higher workloads to allow entry level staff to develop their teaching skills. An example of this would be the nGAP programme where entry level academics receive reduced teaching loads with incremental increases each year for the first four years of appointment.

As part of the engagement within the statistics community, the authors of this paper have not reported opinions of senior academic staff. As a next step in the process, it is recommended that the early career academics liaise with senior academics and enlist their expertise to develop the rubrics proposed. In addition, it would be useful to obtain opinions from senior staff as to what they need to be able to assist early career academics. Funding support for senior staff has declined considerably in recent years. Given how students often run short of funding and approach their supervisors for support it seems intuitive that senior academics are hesitant to participate in extensive post-graduate supervision electing rather to focus on fewer students, rather than develop research groups consisting of several post-graduates. In this way the senior academic will find it is easier to assist and address problems that inevitably occur.

The authors indicate that some early career academics had poor experiences during their post-graduate studies, and they are concerned that these practices may continue. Having received poor supervisory support does not imply that the practice will be followed. This may have the opposite effect, with the person overcompensating. Rather than be concerned about these practices, the authors should broaden the network that they have started to develop. This initial step has identified the challenges faced by early career statisticians and by engaging more with the community more mentorship support will be available.

5 Summary of the paper

In summary, the authors are to be congratulated for highlighting this crucial matter in this forum. It would be easy to ignore the issue and let individuals struggle within the system, however the authors have been proactive and attempted to collaborate across institutions to document and record the challenges faced by early career academics. What is pleasing to see is that potential solutions are presented with plans for follow-up actions. The suggestion of "horizontal" mentorship across institutions is arguably an original concept and if successful could be used as an example for other disciplines facing similar challenges.

Overall this paper aligns with the opinions expressed in [2], who indicate that the informal mentorship at institutions be updated with a more formal approach. The suggestion to

adopt a rubric style supervisory and assessment system is considerably more formal than the ad hoc system in place at present. [2] argues that there is strong evidence to support the implementation of a formal mentorship system for emerging researchers. Unfortunately the lack of senior statistics academics in the tertiary system limits that option. However the proposals by the authors can be considered as quasi-formal approaches which could prove to be beneficial.

References

[1] CHHANA, Y. 2010, *Presidential address, SASA 2010.* SASA Newsletter. ISSN 1011-8039, December 2010.

[2] STREBEL, A. & SHEFER, T. 2016, *Experiences of mentorship with academic staff doctoral candidates at a South African university.* Africa Education Review, 13(1):150–163, DOI: 10.1080/18146627.2016.1183919

[3] WADESANGO, N. & MACHINGAMBI, S. 2011, *Post Graduate Students' Experiences with Research Supervisors.* Journal of Sociology and Social Anthropology, 2(1): 31–37, DOI: 10.1080/09766634.2011.11885545