DST-NRF Centre of Excellence in Scientometrics and Science, Technology and Innovation Policy

Scholarly publishing in SA: The qualitative imperative

J Mouton

CREST Seminar on Scholarly Publishing
28 September 2017

Introduction

The aim of this presentation is to focus on a number of issues that I believe are crucial to our understanding of where we are as far as scholarly publishing in South Africa is concerned today. This presentation succeeds our report to ASSAf on the state of scholarly publishing which was completed in January. CREST has since been commissioned by the DHET to conduct a one-year study which specifically focuses on how we can improve the quality of SA's research publications. This presentation focuses on the "qualitative challenge" we now face. But there are other – even more systemic issues – that we also need to face (e.g. an in-depth political economy analysis of scholarly publishing in SA).

Contents

- The DHET funding system: Aims and importance
- Understand how the DHET system works
- The challenge of developing appropriate measures of quality (and integrity)
  - Quality indicators within the context of citation indexes
  - Quality indicators within the context of non-citation indexes
- Conclusion: The ambivalence of incentive frameworks

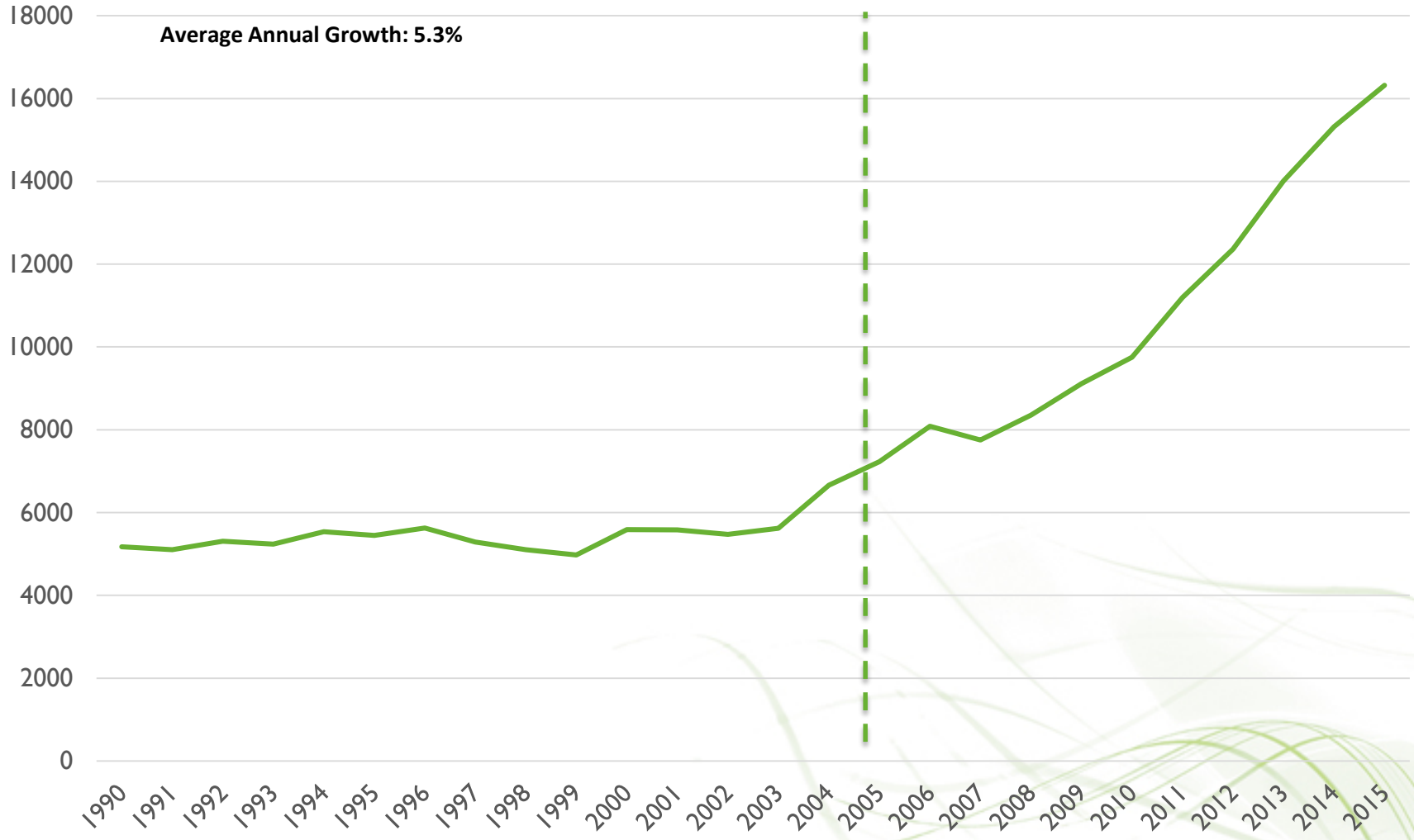
The DHET funding system: Aims and importance

The original aim: Incentivizing scholarly production in SA

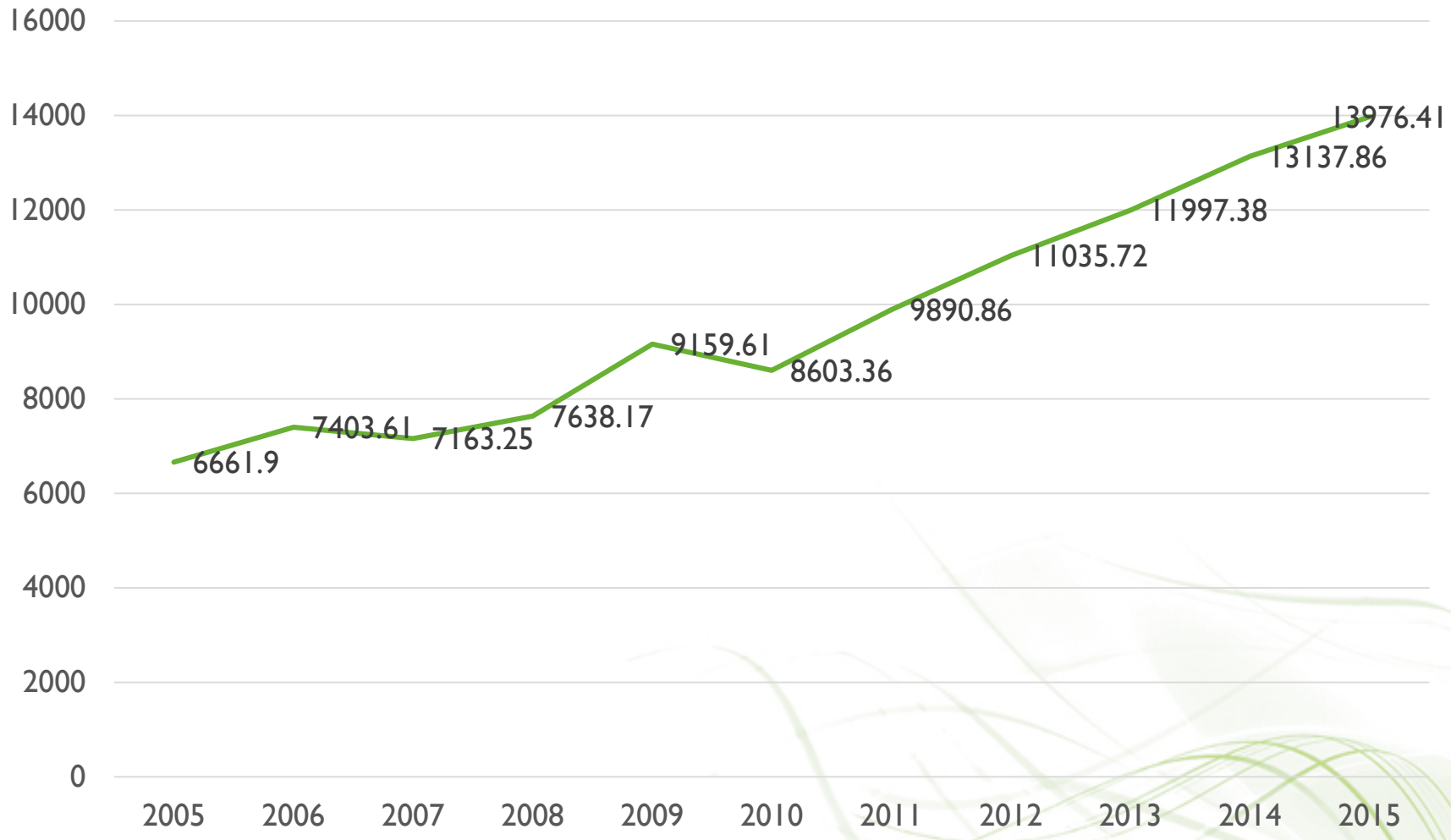
The purpose of this policy is to encourage research productivity by rewarding quality research output at public higher education institutions. However, the policy is not intended to measure all output, but to enhance productivity by recognising the major types of research output produced by higher education institutions and further use appropriate proxies to determine the quality of such output. (2003; Research Output Policy)

This statement shows that the DHET had both a quantitative and qualitative objective in mind: to incentivize research production (productivity) but also ensuring that such output would be of acceptable quality. Let's first address the quantitative outcome.

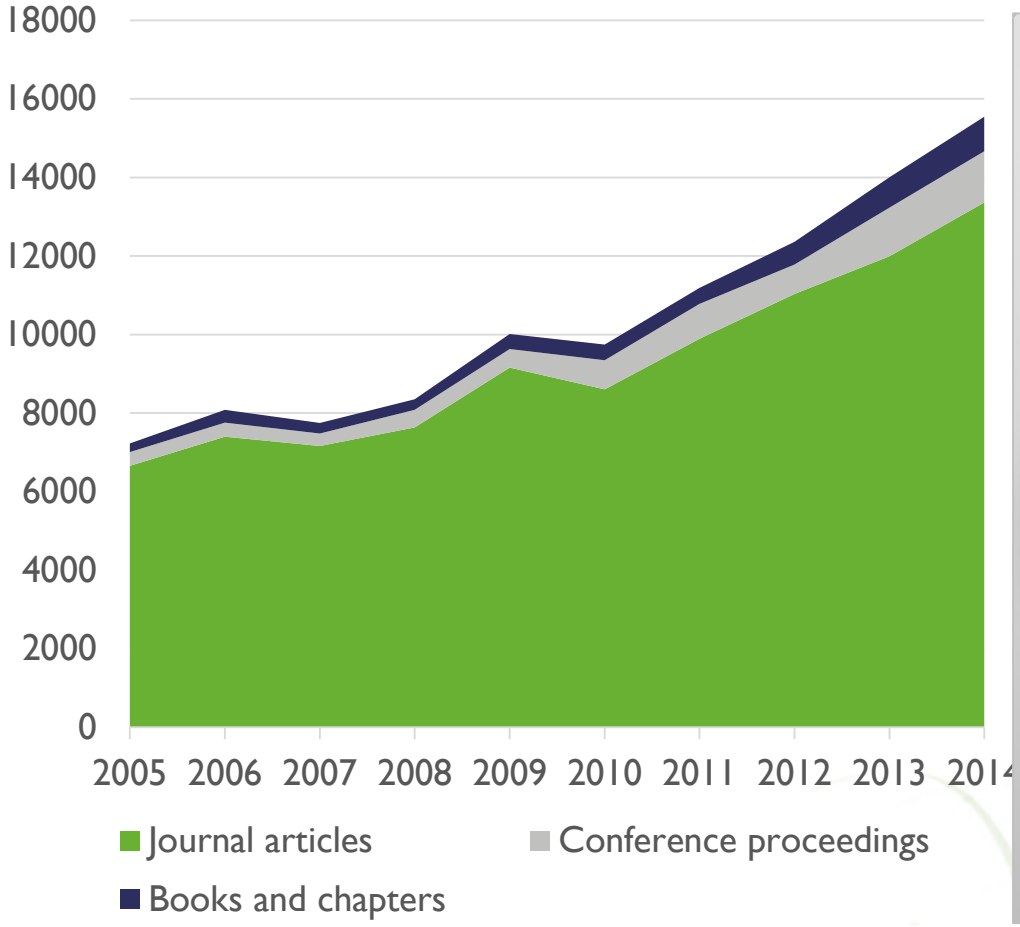
Total HE research publication output (subsidy units rounded off): 1993-2015

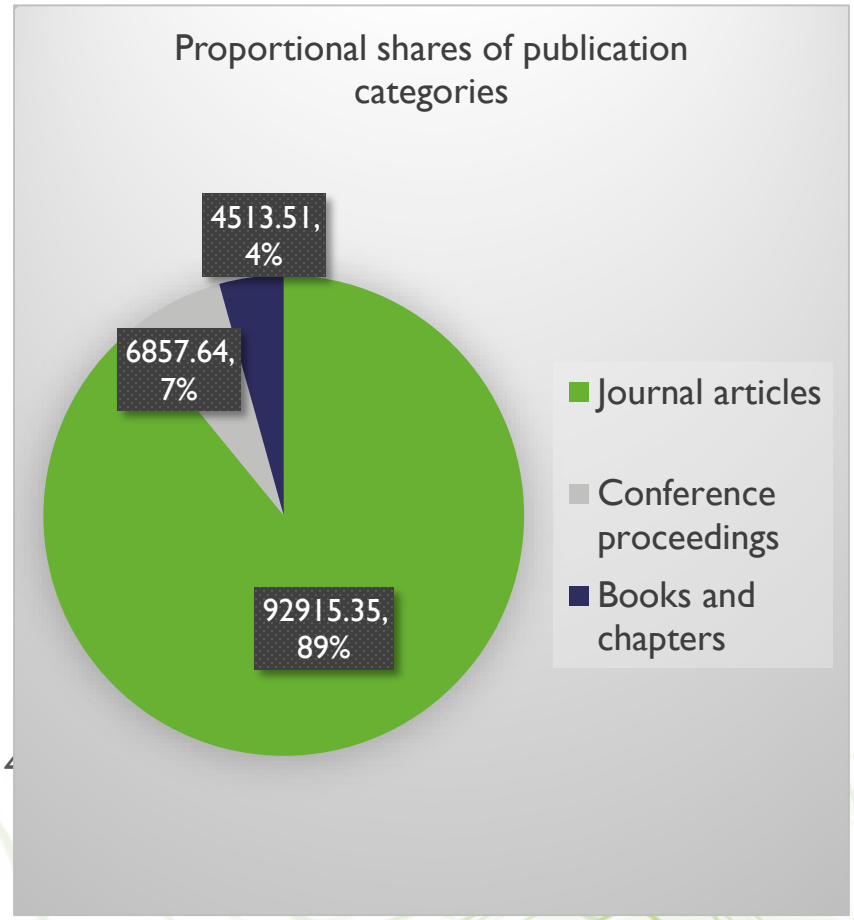


Article unit outputs in accredited journals (2005 - 2015)



Trends in total publication outputs (2005 – 2014)





Major trends in output: 2005 - 2015

The most obvious impact of the revised funding framework of 2003 has been the steep increase in the number of research publications since 2005 In our view the introduction of new funding incentives was the single biggest cause for the observed increase in output. Linked to this was the increase in the number of SA journals accredited by the DHET. The overall number increased from around 210 in 2003 to 318 in 2016. There was also a commensurate increase in the number of SA journals indexed in the WoS from around 26 in 2003 to 69 in 2015. In addition two other factors would have contributed to these trends:

- The introduction of the NRF rating system to the social sciences in 2003 which expanded the pool of applicants for ratings and concomitant demands on academics to publish.
- There has been an increase in the academic capacity of the university sector to produce additional output: from 12 800 permanent instructional staff in 2005 to 18 567 in 2015. And, we should also take into account that universities have implemented other “strategies” to augment their active human capital base!

And on meeting the qualitative objective?

The recent past has seen increasing critical voices questioning whether the funding framework is achieving its qualitative aim. These comments usually refer to differences in the quality controls of the different indexes, the proliferation of local journals on the lists and – over the past 15 months – evidence of various unethical practices (especially predatory publishing). As a result of these comments, some scholars have called for the scrapping of the system.

My presentation today is a response to calls such as these and is twofold: First, there are good financial reasons for not scrapping the system. Second, the shortcomings in the system that relate to concerns over quality and ethics are not irreparable or fatal and can be corrected. First the financial argument.

Comparison between DHET and NRF funding of public science

	DHET (Budget) R millions	NRF (Total expenditure)	NRF (RISA)
2011/12	R 2 224	R 2 132	R 1 318
2012/13	R 2 226	R 2 312	R 1 415
2013/14	R 2 253	R 2 774	R 1 932
2014/15	R 2 770	R 2 833	R 2 021
2015/16	R 3 013	R 3 800	R 2 745
2016/17	R 3 186	R 4 013	R 2 886
2017/18	R 3 346		

The DHET budget amounts do not include earmarked research development grants. In 2017/2018 this amount was R209 million. My thanks to DHET and NRF staff for providing me with this information.

How they differ

	DHET	**NRF**
Scope	Exclusively focused on HE	HE + (but excluding Health Sciences)
Nature	Essentially rule (formula) - based funding/ Post-hoc reward/ Limited potential for steering the system/ Potential for unintended consequences are high	Mix of funding instruments: strategic, open-ended, incentive-linked. Large potential for steering in line with policy goals (SARChi Chairs/ CoE's/SKA)
Transaction costs	Limited: Relatively efficient	Extensive: To be determined

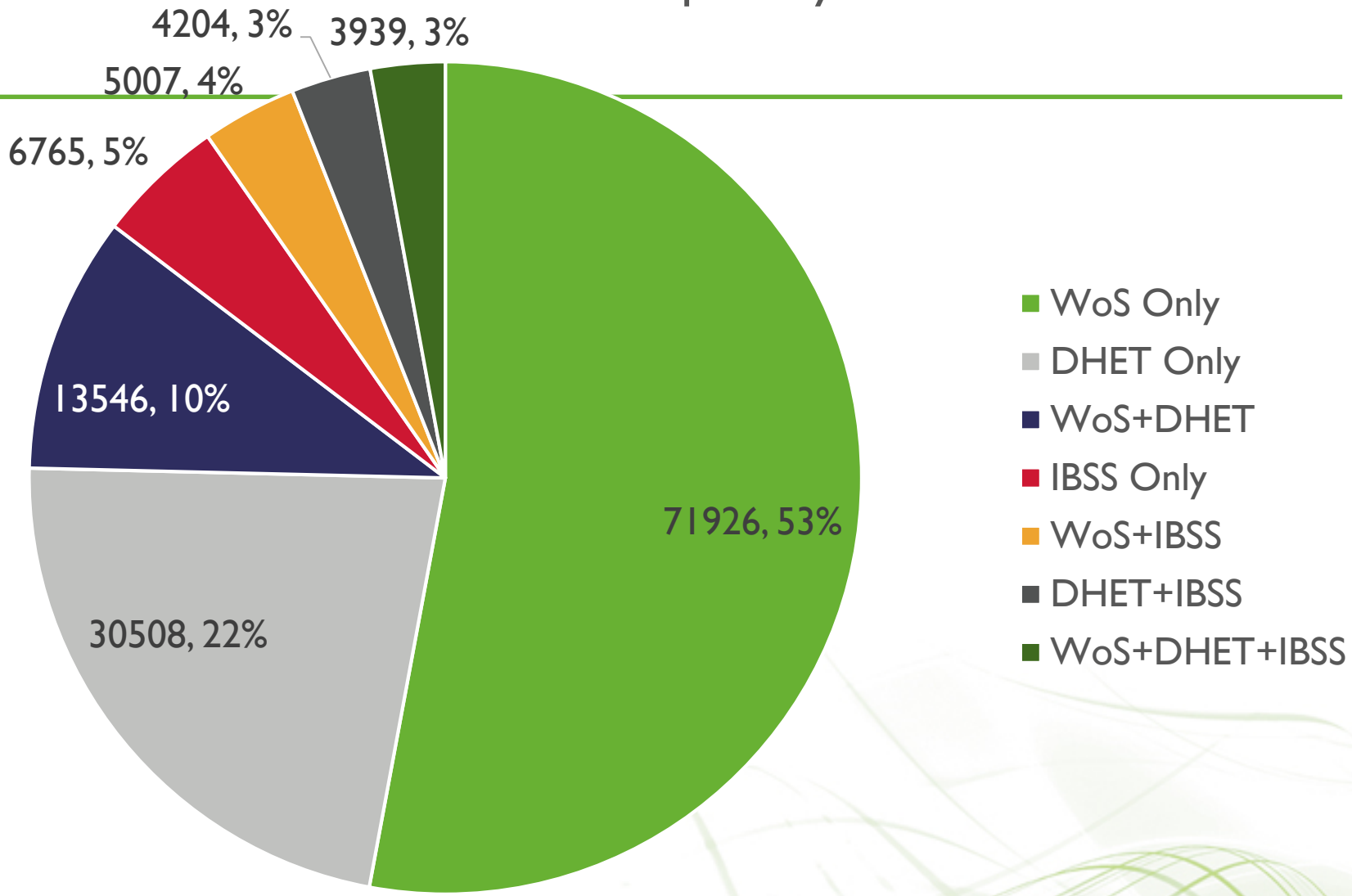
But perhaps the biggest difference between these two "funding systems" is what happens downstream: what happens to the DHET funding once it reaches the university – what is it being used and not used for. In the case of the NRF, there are much more stringent measures of accountability and evaluation in place for awards made.

Understand how the system works

The DHET Funding Framework

- The DHET recognizes all journals listed in the CA Web of Science (Core collection) for subsidy purposes. This means that a university (affiliated) academic who publishes in any of the 20 000+ journals indexed in the Web of Science (formerly the ISI) automatically qualifies for subsidy.
- The DHET also recognizes all journals listed in the ProQuest International Bibliography of the Social Sciences (IBSS). The IBSS was added in 2003 palpably to ensure better coverage of the social sciences and humanities
- The DHET accredits SA journals for inclusion or exclusion for subsidy purposes. This is an ongoing process as new journals can submit for "accreditation" to the DHET on an annual basis. If they are successful, they are added to the "DHET List". There are currently ca.320 unique SA journals on the list.

Papers by Index



A first result of the ASSAf study: Where do SA academics publish?

One of the most surprising results of the ASSAf study relates to where SA academic publish. This result triggered a range of questions which have since received our attention. To illustrate: the next two slides list the 40 (high volume) journals in which SA academics have published most frequently.

Dataset: 136 496 papers in 9936 journals between 2005 and 2015.

Half of these papers appeared in 331 journals

Top 20 high volume journals (cum 10.97%)

Journal	Nr of papers	%	Cum %	DHET	WoS	IBSS
AJPHERD: African Journal for Physical, Health Education Recreation and Dance	1617	1.18%	1.18%	1		
PLoS ONE	1442	1.06%	2.24%		1	
SAMJ: South African Medical Journal	1238	0.91%	3.15%	1	1	
HTS Teologiese Studies / Theological Studies	1008	0.74%	3.89%	1	1	
South African Journal of Science	1005	0.74%	4.62%	1	1	
South African Journal of Higher Education	831	0.61%	5.23%	1		
Acta Crystallographica Section E: Structure Reports Online	756	0.55%	5.79%		1	
South African Journal of Botany	836	0.61%	6.40%	1	1	
South African Family Practice: Official Journal of the South African Academy of Family Physicians	662	0.48%	6.88%	1		
Journal of Psychology in Africa	621	0.45%	7.34%	1	1	1
Journal of social sciences	615	0.45%	7.79%			1
Water SA	590	0.43%	8.22%	1	1	
STJ: Stellenbosch Theological Journal	565	0.41%	8.63%	1		
Monthly Notices of the Royal Astronomical Society	551	0.40%	9.04%		1	
Journal of Public Administration	548	0.40%	9.44%	1		
Journal of Contemporary Roman-Dutch Law	542	0.40%	9.84%	1		1
SADJ: Journal of the South African Dental Association	528	0.39%	10.22%	1		
In Die Skriflig	524	0.38%	10.61%	1		
Alternation: Interdisciplinary Journal for the Study of the Arts and Humanities in Southern Africa	498	0.36%	10.97%	1		

Next 20 high volume journals (cum 16.4%)

Journal	Nr of papers	%	Cum %	DHET	WoS	IBSS
African Journal of Biotechnology	480	0.35%	11.32%		1	
African Journal of Business Management	459	0.34%	11.66%		1	
Obiter	456	0.33%	11.99%	1		
Acta Academica	449	0.33%	12.32%	1		
Verbum et Ecclesia	419	0.31%	12.63%	1		
Tydskrif vir Geesteswetenskappe	401	0.29%	12.92%	1	1	
Journal of Human Ecology	399	0.29%	13.22%			1
South African Journal of Psychology	397	0.29%	13.51%	1	1	
South African Journal of Education	389	0.28%	13.79%	1	1	1
Studia Historiae Ecclesiasticae: Journal of the Church History Society of Southern Africa	376	0.28%	14.07%	1		
Corporate Ownership and Control	368	0.27%	14.34%			1
Acta Criminologica: Southern African Journal of Criminology	368	0.27%	14.61%	1		
De Jure	368	0.27%	14.88%	1		
International journal of educational sciences	358	0.26%	15.14%			1
AIDS	352	0.26%	15.40%		1	
Old Testament Essays	351	0.26%	15.65%	1		
SA Mercantile Law Journal / SA Tydskrif vir Handelsreg	348	0.25%	15.91%	1		
African Journal of Marine Science	346	0.25%	16.16%	1	1	
South African Journal of Animal Science	344	0.25%	16.41%	1	1	

First impressions

The 40 journals in which academics published the highest number of articles between 2005 and 2015 include:

- Just five non-SA WoS journals (*Monthly notices of the Royal Astronomical Society* , *Aids*, *Plos One* , *the African Journal of Biotechnology*, and *Acta Crystallographica Section E*) – the latter two now withdrawn from the Web of Science.
- Nine SA journals indexed in the Web of Science (*SAMJ, SAJS, Water SA, HTS, SA Journal of Botany, SA J of Psychology, SA J of Education, African Journal of Marine Science and the SA Journal of Animal Science*)
- Five journals (*AJBM, J of Social Sciences, Journal of Human Ecology, Corporate ownership and control and International journal of educational sciences*) that appeared on Beall's list of predatory journals

First impressions

- One journal (*AJPHES*) that engages in seriously questionable publication practices
- One journal (*Alternation*) which is predominantly an in-house journal (more than 60% of papers produced by UKZN)
- Six out of the 40 journals are in the field of Theology; a further four in Law

Questions raised

- Based on this profile it is worth asking whether our scholarly output has indeed become more international since 2005 or is it the case that more of our local journals are now simply indexed in the WoS and hence confounding the quantitative trends?
- Is it the case that the huge emphasis on quantity and volume has meant that we have steadily ignored/sacrificed quality? The fact that the list contained a significant number of journals that are/were either predatory or de-listed from WoS immediately raised our concern.

The challenge of developing appropriate measures of quality (and integrity)

How is quality assured/assessed in the current system

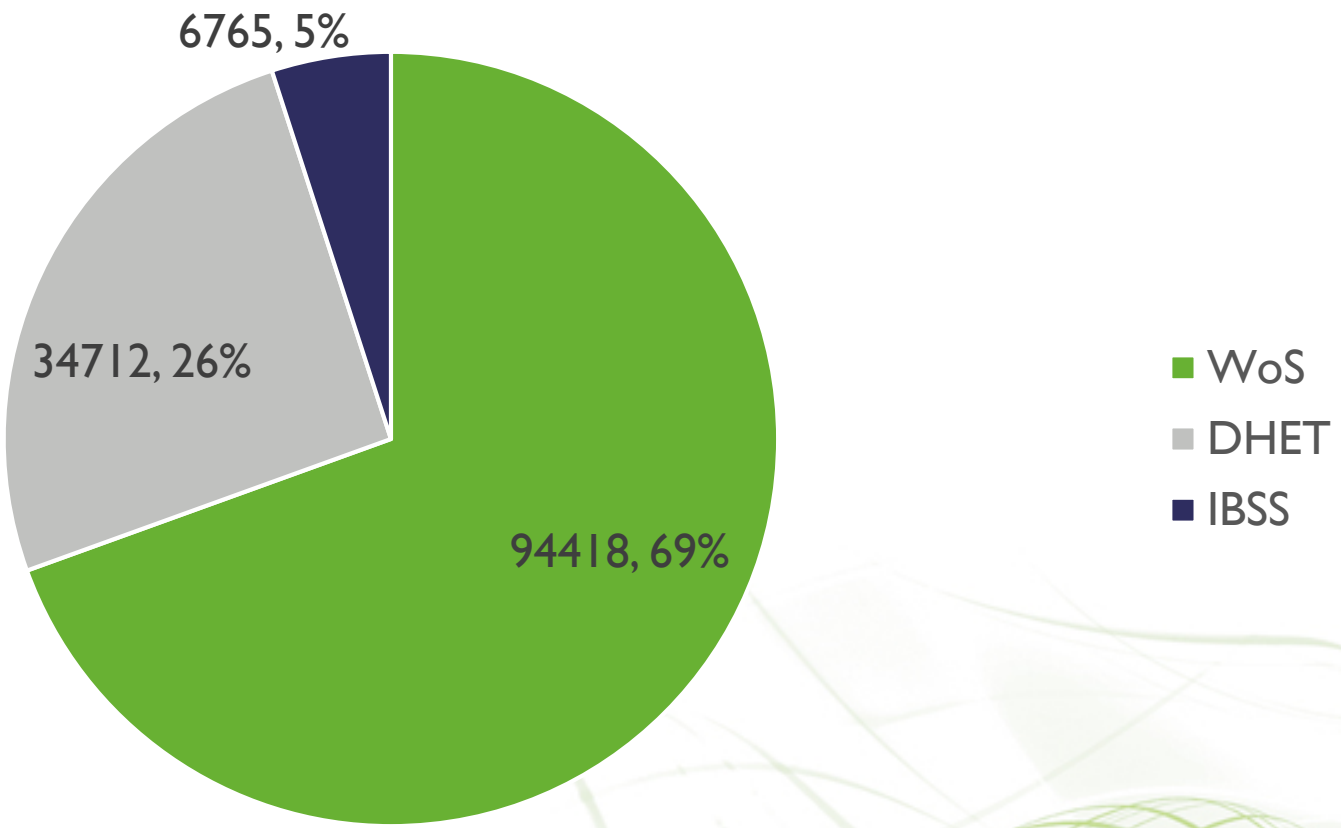
- Application of criteria for inclusion of new SA-journals (by DHET)
- Annual reviews of Book and Conference Proceeding submissions (DHET panels)
- DHET placing trust in external lists (CA WoS/ Scopus/ NSD/ PQ IBSS)
- DHET placing trust in the internal quality control procedures of the universities
- Regular (5-yearly) reviews of journals through ASSAf

However – as our ASSAF report showed – these quality mechanisms are not sufficient.

The challenge: indicators of quality in publishing

There is a big difference in designing indicators of quality for papers published in one of the citation indexes (such as the WoS) and papers published in journals not indexed either in Scopus or WoS. As indicated overleaf, in the SA context this means that we can design/use existing quality indicators for approximately 70% of SA's article production that appears in the WoS, but NOT for the remaining 30% (indexed in DHET and IBSS journals).

Papers in indexes (mutually exclusive counting)



Quality indicators that can be applied to WoS-papers

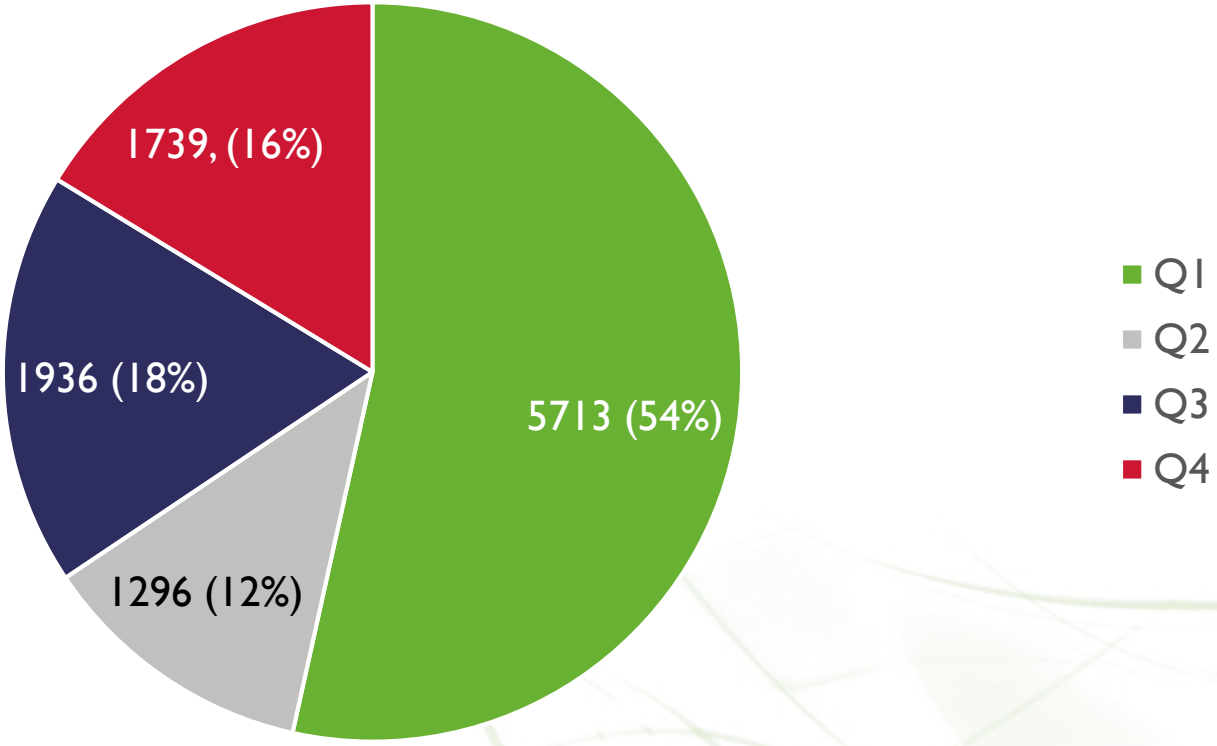
Journal level metrics	JIF and 5 JIF Journal Rank Other Journal-level metrics % uncited papers in Journal
Article level metrics	Average field-normalized citations per paper (CMNS) Top 1% highest cited Top 10% highest cited

WoS Journal-level metrics: JIF and Journal ranks

Journal metrics of selected (non-SA) WOS-journals

Journal	Nr of papers	%	Cum %	JIF	Rank
PLoS ONE	1442	1.06%	2.24%	2.806	Q1
Acta Crystallographica Section E: Structure Reports Online	756	0.55%	5.79%	0.347 (2011)	Q4
Monthly Notices of the Royal Astronomical Society	551	0.40%	9.04%	4.961	Q1
African Journal of Biotechnology	480	0.35%	11.32%	0.573 (2010)	Q4
African Journal of Business Management	459	0.34%	11.66%	1.105 (2009)	Q3
AIDS	352	0.26%	15.40%	5.003	Q1
Physical Review D	327	0.24%	17.62%	4.568	Q1
Astrophysical Journal	314	0.23%	18.09%	5.533	Q1
International Journal of Tuberculosis and Lung Disease	298	0.22%	18.98%	2.468	Q3
Journal of Ethnopharmacology	264	0.19%	22.05%	2.981	Q1
Minerals Engineering	262	0.19%	22.24%	2.286	Q1
International Journal of Electrochemical Science	258	0.19%	22.81%	1.469	Q3
African Journal of Agricultural Research	252	0.18%	23.18%	0.263 (2010)	Q3
JAIDS: Journal of Acquired Immune Deficiency Syndromes	251	0.18%	23.55%	3.935	Q1
Lancet	246	0.18%	24.46%	47.831	Q1
Journal of Infectious Diseases	231	0.17%	25.51%	6.273	Q1
Astronomy and Astrophysics	227	0.17%	26.18%	5.014	Q1
BMC Public Health	224	0.16%	26.84%	2.265	Q2
Journal of High Energy Physics	219	0.16%	27.48%	6.063	Q1
Zootaxa	214	0.16%	27.80%	0.972	Q3
Cochrane Database of Systematic Reviews	212	0.16%	27.96%	6.264	Q1

Distribution of top 100 WoS journals by Journal Rank (Quartiles)



WoS Journal-level metrics: Journal citation metrics

Journal level citation statistics for SA journals currently indexed in the Web of Science.

Publication and citation windows: We present all statistics for two windows: from 2005 to 2009 and 2010 to 2014

Comparison between all papers published in the journal and SA-authored (at least one author with a SA affiliation) during these window periods

Counting method: Full-paper count for all articles and review articles

Citations: Citations to the papers in the publication window (citations sourced from all journals in the WoS)

Self-citations: Author-self citations

Ncs = Average number of citations for the citation period

Relative citation rate:

% of SA authors: Proportion of papers produced during publication window by SA authors

Self-citations as % of all citations: Author-self-citations as proportion of all citations

Example 1

	Articles	Citations	Self-citations	Proportion of self-citations	Ncs	Relative citation rate	Proportion of SA authors
ALL PAPERS (2005 - 2009)	101	5	0	0%	0.05		
RSA PAPERS (2005 - 2009)	81	5	0	0%	0.06	1.25	80%
ALL PAPERS (2010 - 2014)	238	27	4	15%	0.10		
RSA PAPERS (2010 - 2014)	203	24	4	17%	0.10	1.02	85%

- The proportion of authors publishing in the journal with a SA affiliation and the comparative trend (80% increasing to 85% in more recent publication window
- The proportion of self-citations to all citations (0% and 15% respectively)
- The average number of citation (ncs) range between 0.05 and 0.10 (very low citation scores)
- The relative citation rates: This indicator compares whether the SA-authored papers are being cited more or less relatively to the non-SA authored papers. A rate of 1.00 would mean that the citation rates are identical. In this case there is very little difference in the relative citation rates of these two groups of authors.

Overall assessment: *Acta Theologica* remains a predominantly local SA journal (with between 80 and 85% of all papers authored by at least one SA author). The average number of citations is very low which would translate in a very low journal impact factor.

Example 2

Journal facts:
The ***Cardiovascular Journal of Africa (CVJA***) is the official journal of the PASCAR (*Pan African Society of Cardiology*) and has been published since 1990. Published six times a year plus supplements by Clinics Cardive Publishing (Pty) Ltd. Print ISSN 1995-1892, Online ISSN 1680-0745. Weblink http://www.cvja.co.za/.
WoS journal metrics: It has been indexed by the WoS since 2010. The WoS 2015 JIF =1.022

	Articles	Citations	Self-citations	Proportion of self-citations	Ncs	Relative citation rate	Proportion of SA authors
ALL PAPERS (2005 – 2009)	86	63	8	13%	0.64		
RSA PAPERS (2005 – 2009)	37	35	4	11%	0.84	1.31	43%
ALL PAPERS (2010 – 2014)	395	567	34	6%	1.35		
RSA PAPERS (2010 – 2014)	120	257	22	9%	1.96	1.45	30%

Summary overview of journal level indicators

Journal	% self-citations (2010 – 2014)	Ncs (2010 – 2014)	Relative Citation rate	JCR JIF	% SA authors
Acta Theologica	17%	0.10	1.02		85%
African Entymology	19%	0.92	1.49	0.521	57%
African Journal of Aquatic Science	26%	1.37	1.22	0.806	55%
African Journal of Marine SCience	22%	2.83	1.02	1.058	74%
African Journal of Psychiatry	18%	2.44	1.19		60%
African Journal of Zoology	51%	0.66	1.14	0.739	73%
African Journal of Wildlife	21%	0.96	1.06	1.641	81%
Agrekon	10%	0.65	1.00	0.250	80%
African Journal of Aids Research	24%	1.25	1.11	0.716	52%
Cardiovascular Journal of Africa	9%	1.96	1.45	1.022	30%
Development South Africa	18%	1.24	1.07	0.424	78%
Education as Change	30%	0.51	0.98	0.313	81%
Journal of Energy in Southern Africa	28%	0.26	1.28	0.237	65%

Conclusions

- The general result is sobering as it shows rather low average citation rates at the individual journal level, with the result that the Journal Impact Factor values are also low to moderate. Only four journals recorded a JIF-value of higher than 1 (which is the gold standard): the *SA Journal of Botany* (1.244), the *SA Medical Journal* (1.500), the *Cardiovascular Journal of Africa* (1.022) and the *African Journal of Marine Science* (1.058).
- One possible reason for these rather low citation scores may be found in the very high proportions of articles in most of these journals being produced by SA-affiliated authors. In most of the cases, more than 60% of articles in the journal were authored or co-authored by SA academics. The proportions of papers (with a few exceptions) authored by foreign authors are low. This means that although these journals are indexed in the Web of Science and hence should, in principle, give them a high visibility in the scholarly community, the majority of them remain “local” journals serving local scholarly communities. It is, therefore, no wonder that the average numbers of citations to articles in these journals are low which translate into low journal impact factor values.

Quality indicators that can be applied to non-WoS papers

Journal level metrics	DHET journals cited in WoS % SA vs Foreign authors Journal collaboration profile Questionable editorial practices Institutional spread of papers % uncited papers in Journal Article rejection rate
Article level metrics	Correspondence at author level with WoS publication and citation profile

Journal-level metrics: Citations to non-source (SA) journals

Citations to non-source journals

In order for a journal to have a detailed citation profile and specifically to produce a journal impact factor value, it has to be indexed in a citation index such as WoS or Scopus. The calculation of various citation indicators (such as the Journal Impact Factor, cited-half life, immediacy index) is then based on the citations to articles in the indexed journal (such as the *SA Journal of Science*) from other articles that are published in WoS-indexed journals (so-called source journals).

However, the WoS also includes citations from journals NOT indexed in it. These are referred to as "non-source" citations. So, for example, citations from a SA Journal such as *Curiatonis* (which is not indexed in the WoS) will appear in WoS-indexed journals. This feature of the WoS allowed us to do an additional set of analyses, viz. to see what the numbers of citations are from non-source SA-journals to articles in the WoS. This is an interesting indicator as it tells us that although a specific journal is currently not indexed in the WoS, it has some visibility in the WoS. The very first entry in the table – *African Natural History* – generated such a large number of reference in WoS-indexed journals (under its previous name "*Annals of the South African Museum*") that CA WoS decided to include it in from 2014 onwards.

Citations to non-source journals

The Table overleaf lists SA journals currently NOT indexed in the Web of Science (both the “cited work name” in the WoS and its current name with the number of citations to that journal over the past 25 years. It is evident that the vast majority of SA journals that are not in the WoS do not have great visibility in the WoS. However, at the same time, there are also a number of journals which regularly get cited in WoS-indexed journals. We have highlighted in green the journals that were cited more than 200 times in the WoS over the past 25 years.

These results are interesting as they show that a number of SA journals, although not indexed in the Web of Science, are recognized by scholars working in those fields as producing papers that are worth citing. These are local journal with some international visibility.

Cited Work	Current Name	Total Citations
Annals of the South African Museum	African Natural History	6750
Palaeontologia Africana	Palaeontologia Africana	3651
Marine Ornithology	Marine Ornithology: An International Journal of Seabird Research and Conservation	2897
South African Journal of Plant and Soil	South African Journal of Plant and Soil	2100
Annals of the Transvaal Museum	Annals of the Ditsong National Museum of Natural History	1747
Development Southern Africa	Development Southern Africa	1517
Curationis	Curationis	1382
Transactions of the Royal Society of South Africa	Transactions of the Royal Society of South Africa	1125
Historia	Historia	757
Navorsinge van die Nasionale Museum (Bloemfontein)	Navorsinge van die Nasionale Museum, Bloemfontein	497
Cormorant	Marine Ornithology: An International Journal of Seabird Research and Conservation	471
Journal of the Southern African Wildlife Management Association	African Journal of Wildlife Research	448
Urban Forum	Urban Forum	366
Agenda	Agenda: Empowering Women for Gender Equity	336
Journal of Education	Journal of Education	327
Theoria	Theoria: A Journal of Social and Political Theory	290
South African Journal of Wildlife Research	African Journal of Wildlife Research	285
SA Journal of Industrial Psychology	South African Journal of Industrial Psychology	285
Journal of Contemporary History	Journal for Contemporary History	279
South African Family Practice	South African Family Practice	262
Innovation	Innovation : A Journal for Appropriate Librarianship and Information Work in Southern Africa	243
South African Journal of Library and Information Science	South African Journal of Libraries and Information Science	225
Innovations	Innovation : A Journal for Appropriate Librarianship and Information Work in Southern Africa	217
Africa Insight	Africa Insight	216
South African Journal of Higher Education	South African Journal of Higher Education	204

Journal-level metrics: Journal collaboration profiles

Journal collaboration profiles

	Single Author / No Collaboration	Collaboration within SA HEI	Collaboration outside SA HEI	Unknown	Total Papers
South African Journal of Plant and Soil	5%	43%	42%	10%	285
Southern African Journal of Infectious Diseases	11%	40%	39%	11%	192
South African Journal of Clinical Nutrition	11%	33%	37%	18%	210
Occupational Health Southern Africa	14%	42%	35%	10%	125
Urban Forum	38%	26%	32%	4%	186
Current Allergy and Clinical Immunology	42%	18%	31%	9%	153
South African Journal of Occupational Therapy	16%	38%	30%	16%	147
African Journal of Primary Health Care and Family Medicine	12%	54%	29%	5%	132
Acta Structilia: Journal for the Physical and Development Sciences	9%	47%	29%	14%	112
AJPHERD: African Journal for Physical, Health Education Recreation and Dance	12%	46%	28%	14%	1248
AJRMSTE: African Journal of Research in Mathematics, Science and Technology Education	22%	32%	28%	19%	172
South African Journal of Sport Medicine	11%	50%	28%	11%	142
South African Family Practice: Official Journal of the South African Academy of Family Physicians	19%	40%	27%	14%	645
Health SA Gesondheid	7%	41%	27%	25%	229
Pythagoras: Journal of the Association for Mathematics Education of South Africa	28%	29%	27%	16%	120
Gender and Behaviour	29%	43%	26%	2%	117
SA Orthopaedic Journal	14%	42%	25%	20%	251
International Journal of Educational Sciences	45%	30%	25%	0%	187
South African Journal of Physiotherapy	3%	44%	24%	30%	186

Cells that record some form of collaboration with 30% or more articles have been coded light blue.
Cells that record no collaboration with 30% or more articles have been coded light green.

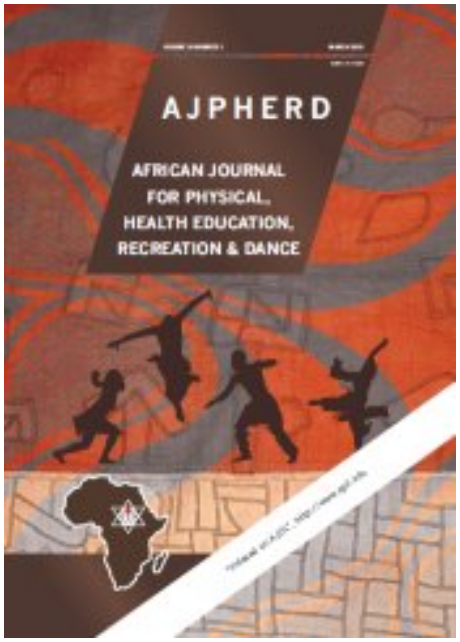
Journal collaboration profiles

	Single Author / No Collaboration	Collaboration within SA HEI	Collaboration outside SA HEI	Unknown	Total Papers
SA Journal of Radiology	10%	56%	24%	10%	147
Africa Journal of Nursing and Midwifery	5%	55%	24%	16%	128
Journal of Human Ecology	33%	44%	23%	1%	283
Curationis	12%	37%	23%	29%	258
Management Dynamics: Contemporary Research Journal of the Southern Africa Institute for Management Scientists	13%	49%	23%	15%	124
Journal of Social Sciences	41%	37%	22%	0%	487
Journal of Education	41%	19%	22%	19%	140
Indilinga: African Journal of Indigenous Knowledge Systems	36%	28%	22%	14%	138
South African Journal of Information Management	14%	40%	22%	23%	132
Africa Insight	47%	24%	21%	8%	234
Perspectives in Education	33%	29%	20%	18%	312
Journal for New Generation Sciences	28%	42%	20%	10%	210
Africa Education Review	30%	31%	19%	21%	221
Southern African Journal of Anaesthesia and Analgesia	33%	35%	19%	13%	172
Social Work / Maatskaplike Werk: A Professional Journal for the Social Worker	25%	30%	18%	27%	292
SA Journal of Human Resource Management	11%	60%	18%	11%	181
SADJ: Journal of the South African Dental Association	12%	32%	17%	39%	526

Cells that record some form of collaboration with 30% or more articles have been coded light blue.
Cells that record no collaboration with 30% or more articles have been coded light green.

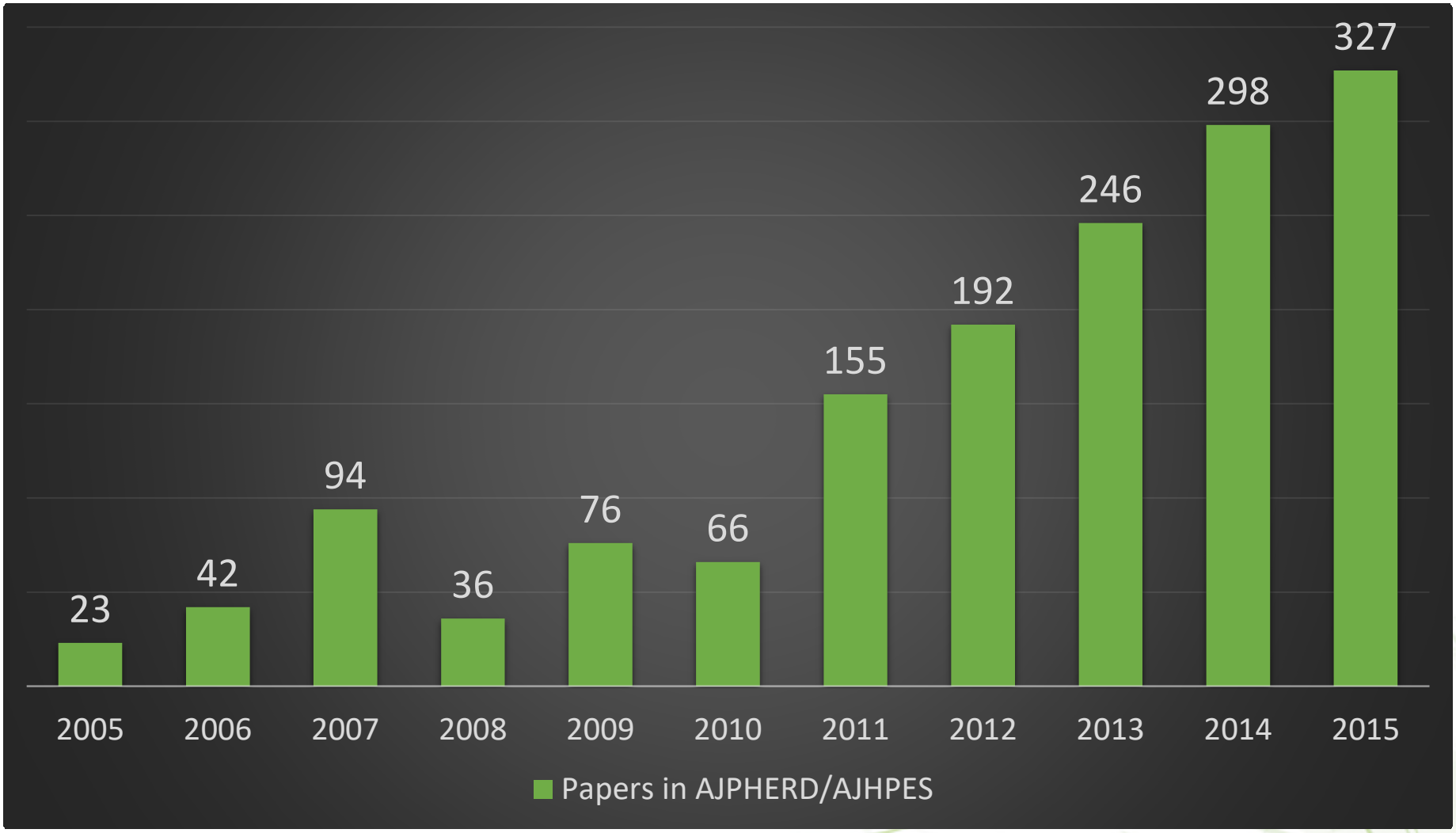
Journal-level metrics: Questionable editorial practices

The South African Journal that published the most articles between 2005 and 2015



African Journal for Physical Health Education, Recreation and Dance (AJPHERD), continued by the African Journal for Physical Activity and Health Sciences (AJPHES) in 2016

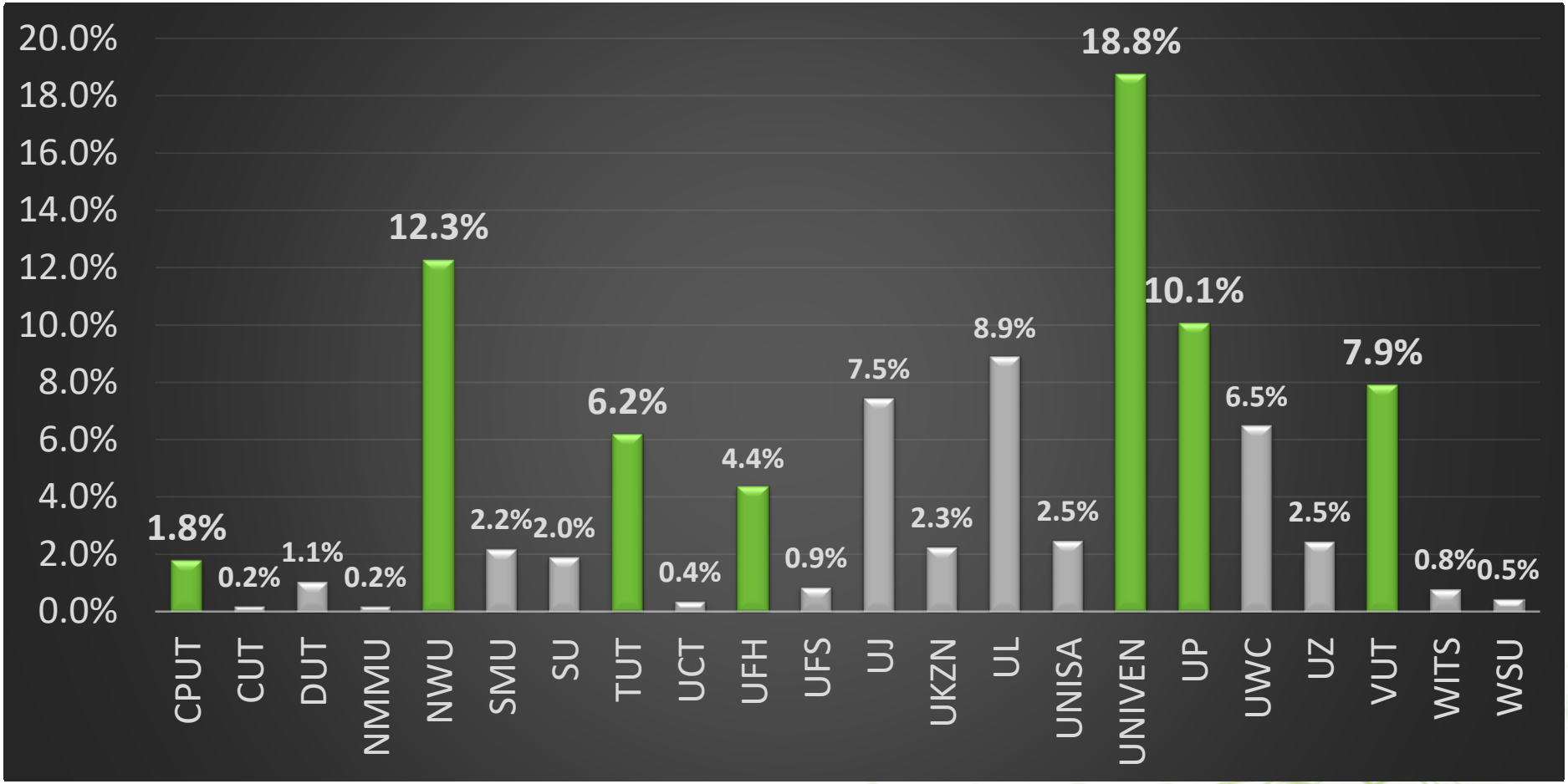
Increase in number of papers by year (AJHPES)



AJHPES (2011 – 2015)

Institution	2011	2012	2013	2014	2015	Total
UNIVEN	94	56	155	176	166	647
NWU	30	56	58	49	57	250
UP	21	99	13	47	48	228
UL	13	17	73	85	89	277
VUT	57	58	30	26	18	189
UJ	17	45	51	55	56	224
UWC	34	4	15	102	41	196
TUT	28	51	27	31	5	142
UFH	1		33	32	86	152
UNISA		7	30	23	19	79
UZ	13	16	21	11	18	79
UKZN	16	20	9	12	1	58
Sefako Makgatho Health Sciences University (SMU)					78	78
CPUT	1	26	11	10	14	62

AJPHERD / AJHPES: % of Papers per university



Note: The editorial board consists of members from the following South African universities (past & present): UNIVEN, NWU, VUT, UFH, UP, TUT & CPUT **(= 63.9%)**

African Journal of Business Management

The AJBM is an open access journal published by Academic Journals in Lagos, Nigeria. It is one of the journals that we flagged because of the anomalous increases in its publications over very short time frames thereby raising the question about their capacity to undertake rigorous and appropriate peer review. Truth records how the journal has expanded exponentially between 2007 and 2011: 'In 2011 it reached a startling 13,579 pages, and has grown by some 28% in 2012. In 2010, its total volume was 4,229 pages, while in 2009 it had 997 pp., in 2008 242 pp., and in its founding year 2007, 243 pp'. Thomson-Reuters was asked in 2010 to review the AJBM and finally removed the journal from its list in Feb. 2012, some 18 months after serious questions regarding the journal's practices were submitted to the knowledge firm.

AJBM

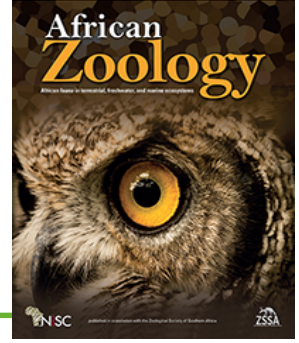
A total of 451 papers with SA authors were published in the journal between 2005 and 2014. These papers were produced by a total of 443 unique authors. The vast majority of authors produced only one or a fraction of a paper. A few authors produced larger numbers. In the Table below we list the authors (in descending order) who have published 6 or more papers in the journal.

Surname	Initial	Nr of papers
Ukpere	WI	69
FATOKI	O	14
Rust	AA	9
Visagie	JC	7
Mpinganjira	M	7
Odeku	K	7
Dorasamy	N	6
Roberts-Lombard	M	6
BRUWER	JP	6

Prof. Ukpere is the Editor in Chief of the journal. In 2011 he authored or co-authored 23 articles and in 2012 he contributed 41 papers to his own journal. He is professor of Industrial Psychology and People Management at UJ

Journal-level metrics: Institutional range of papers

African Zoology



Journal facts

Currently known as *African Zoology* (2000 –current). Formerly known as *South African Journal of Zoology* (1979 - 1999) and *Zoologica Africana* (1965 - 1978). Print ISSN: 1562-7020, Online ISSN: 2224-073X, 4 issues per year. Published by NISC (Pty) Ltd in association with the *Zoological Society of Southern Africa*.

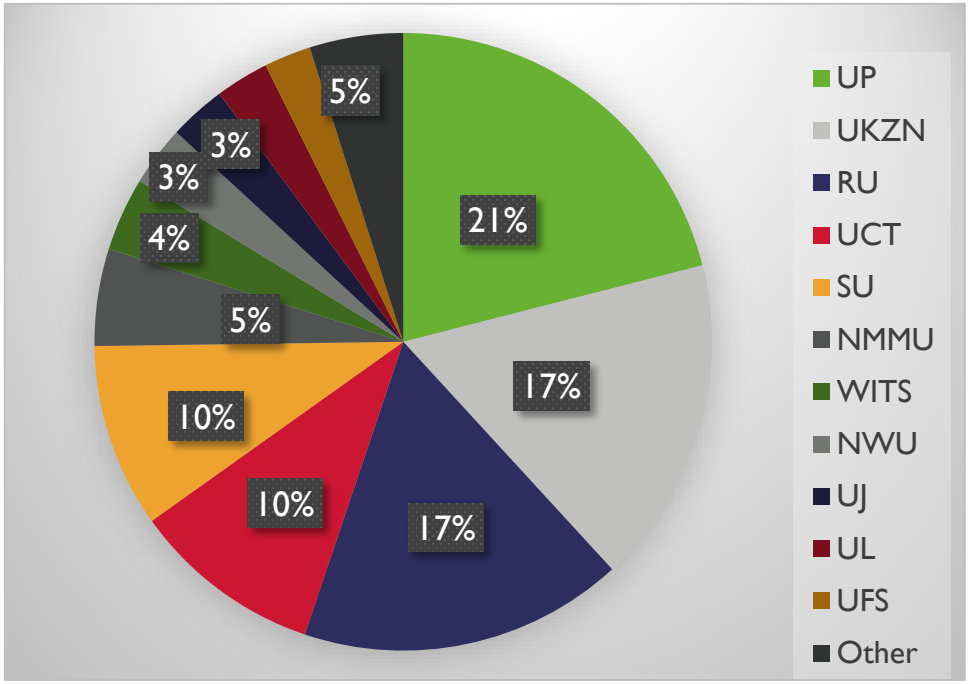
WoS journal metrics: It has been indexed by the WoS since 2001. The WoS 2015 JIF = 0.739

Editors in Chief: Carol A Simon & Theresa C Wossler

Department of Botany & Zoology, Stellenbosch University, South Africa

	Articles	Citations	Self-citations	Proportion of self-citations	Mcs	Relative citation rate	Proportion of SA authors
ALL PAPERS (2005 – 2009)	168	268	59	22%	1.24		
RSA PAPERS (2005 – 2009)	105	155	34	22%	1.15	0.93	63%
ALL PAPERS (2010 – 2014)	205	187	68	36%	0.58		
RSA PAPERS (2010 – 2014)	149	150	51	34%	0.66	1.14	73%

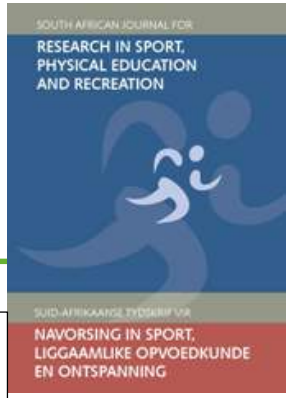
African Journal of Zoology



Total SA authorships = 571
Unique SA authors = 374

Author	Papers	Institution
Downs CT	15	UKZN
Bennett NC	14	UP
Weyl OLF	13	RU
Booth AJ	9	RU
Bateman PW	8	UP
Bester MN	8	UP
Van der Merwe M	8	UP
Mouton PLN	7	SU
Strydom NA	6	NMMU
Bernard RTF	5	RU
Griffiths CL	5	UCT
Hamer ML	5	UKZN
Perrin MR	5	UKZN
Taylor PJ	5	UKZN
Du Preez LH	4	NWU
Ellender BR	4	RU
Hodgson AN	4	RU
Parker DM	4	RU
Slotow RH	4	UKZN

South African Journal for Research in Sport, Physical Education and Recreation



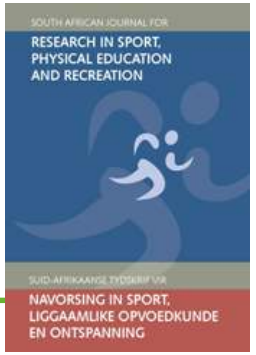
Journal facts:

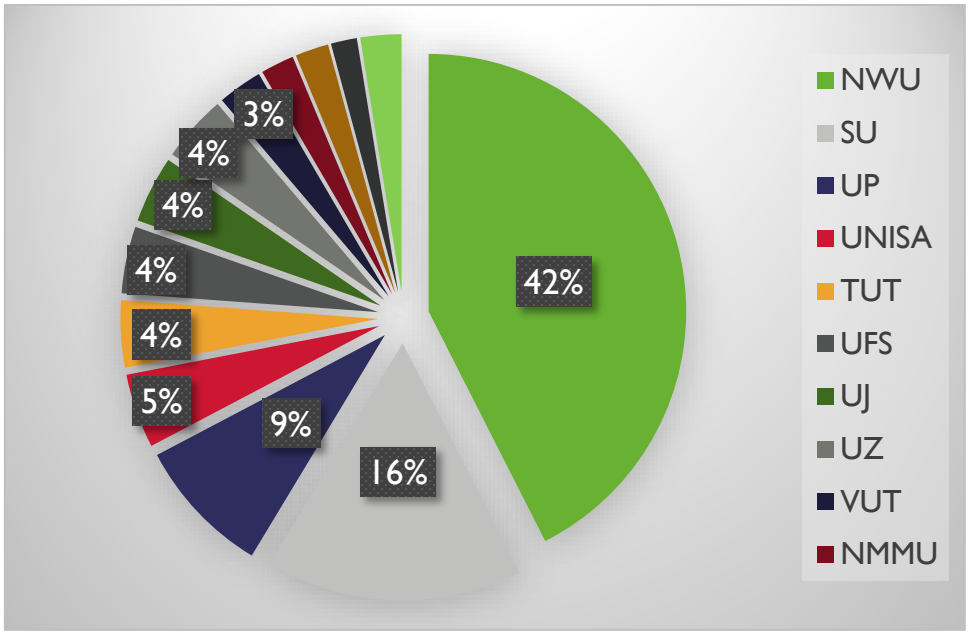
South African Journal for Research in Sport, Physical Education and Recreation was established in 1978. It is published by University of Stellenbosch Department of Sport Science. Published bi-annually. ISSN: 0379-9069. Two issues/year. **WoS journal metrics:**
It has been indexed by the WoS since 2010. The WoS 2015 JIF = 0.244

Editor: Dr Karel J. van Deventer
Department of Sport Science, Stellenbosch University

	Articles	Citations	Self-citations	Proportion of self-citations	Mcs	Relative citation rate	Proportion of SA authors
ALL PAPERS (2005 – 2009)	68	10	5	50%	0.07		
RSA PAPERS (2005 – 2009)	60	8	3	38%	0.08	1.13	88%
ALL PAPERS (2010 – 2014)	188	47	17	36%	0.16		
RSA PAPERS (2010 – 2014)	136	35	12	34%	0.17	1.06	72%

South African Journal for Research in Sport, Physical Education and Recreation





Total SA authorships = 428
Unique SA authors = 255

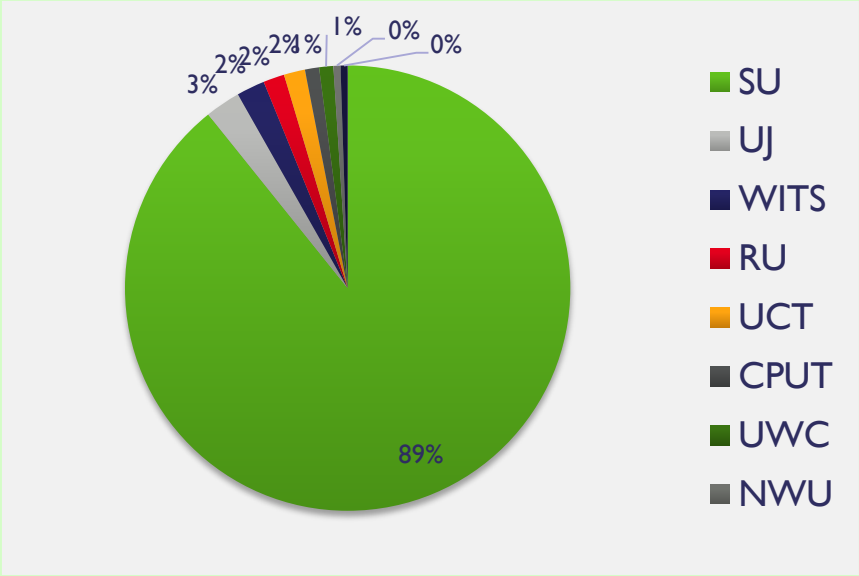
Author	Papers	Institution
Pienaar AE	23	NWU
Saayman M	19	NWU
Van der Merwe FJG	10	SU
Van Deventer KJ	10	SU
Wilders CJ (Cilas)	8	NWU
Ellis SM	7	NWU
Potgieter JR	6	SU
Surujlal J	6	VUT
Steyn BJM	5	UP
Le Roux JG	5	UNISA
Kruger M	5	NWU
STRYDOM GL	4	NWU
MEYER CDP	4	NWU
COETZEE B	4	NWU
Coetzee M	4	NWU
Dhurup M	4	VUT
Edwards SD	4	UZ
Venter RE	4	SU

South African Journal of Enology and Viticulture
SAWWV · SASEV
Website: http://www.sasev.org
SAJEV
Website: www.journals.ac.za/index.php/sajev

Editor: Prof Leon M.T. Dicks
Stellenbosch University, South Africa

Journal	articles	citations	Self-citations	Mcs	Relative citation rate	Proportion of SA authored papers
SA JNL OF ENOLOGY AND VITICULTURE 2005-2009	48	52	12	0.83		
SA JNL OF ENOLOGY AND VITICULTURE 2005-2009 - SA	29	26	6	0.69	0.83	60%
SA JNL OF ENOLOGY AND VITICULTURE 2010-2014	164	468	61	2.48		
SA JNL OF ENOLOGY AND VITICULTURE 2010-2014 - SA	63	229	39	3.02	1.22	38%

South African Journal of Enology and Viticulture
SAWWV · SASEV
Website: http://www.sasev.org
SAJEV
Website: www.journals.ac.za/index.php/sajev



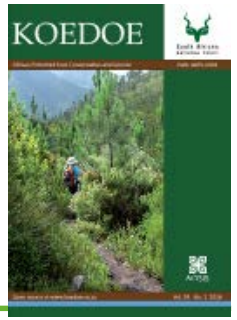
Author	Papers	Institution
Du Toit WJ	10	SU
Du Toit M	9	SU
Hunter JJ	9	SU
Agenbag GA	6	SU
Malan AP	6	SU
Manley M	5	SU
Hattingh SM	4	SU
Nieuwoudt HH	4	SU
Joubert E	4	SU
Strever AE	4	SU
de Beer D	4	SU
Kidd M	3	SU
Bauer FF	3	SU
Viljoen-Bloom M	3	SU
Witthuhn RC	3	SU
Addison P	3	SU

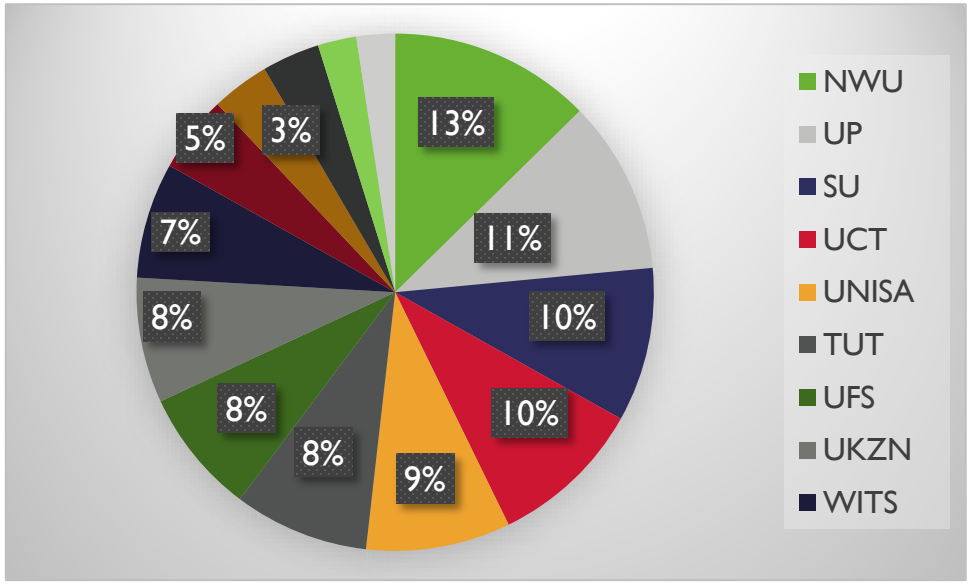
Total SA authorships = 195
Unique SA authors = 113

Editor: Prof Leon M.T. Dicks
Stellenbosch University, South Africa

Koedoe

Editor-in-Chief: Llewellyn C. Foxcroft, South African National Parks, Conservation Services and Centre for Invasion Biology, Stellenbosch University.

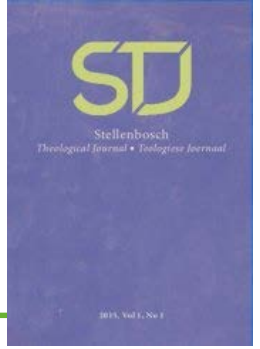


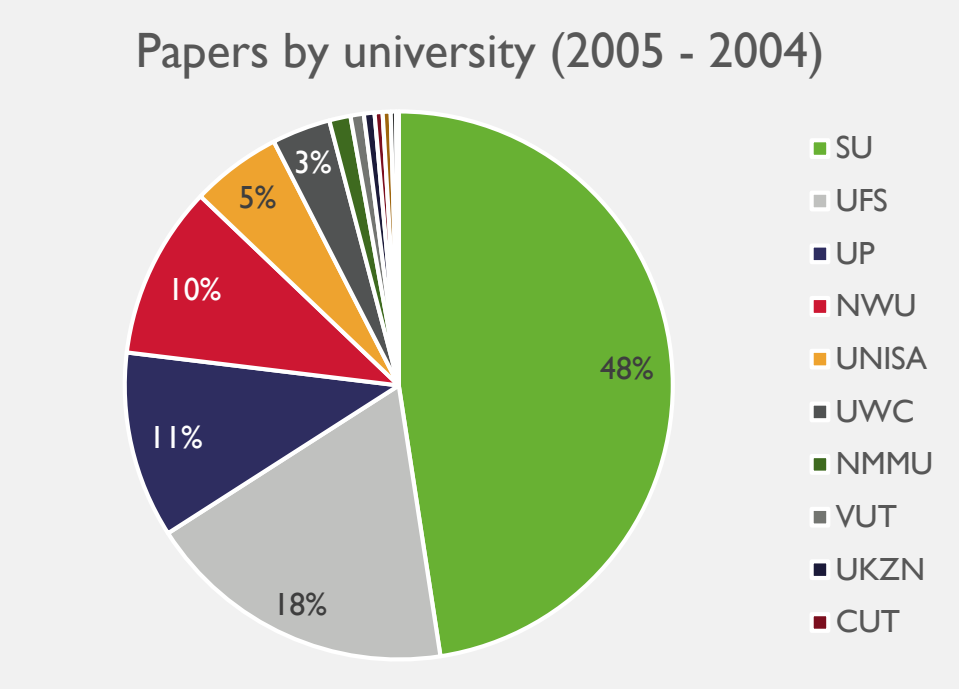


Total SA authorships = 265
Unique SA authors = 167

Author	Papers	Institution
Dippenaar-Schoeman AS	13	UP
Brown LR	13	UNISA
Bredenkamp GJ	10	UP
Saayman M	8	NWU
Van Rooyen MW	7	UP
Siebert F	4	NWU
Barrett L	4	UNISA
Henzi SP	4	UNISA
Reilly BK	3	TUT
Brand RF	3	UNISA
HADDAD CR	3	UFS
Dippenaar SM	3	UL
CILLIERS SS	3	NWU
Siebert SJ	3	UZ
Siebert SJ	3	NWU
Saayman A (Andrea)	3	NWU
Carruthers EJ	3	UNISA
Foxcroft LC	3	SU
Panagos MD	3	TUT
Bond WJ	3	UCT
Du Preez PJ	3	UFS

Stellenbosch Theological Journal



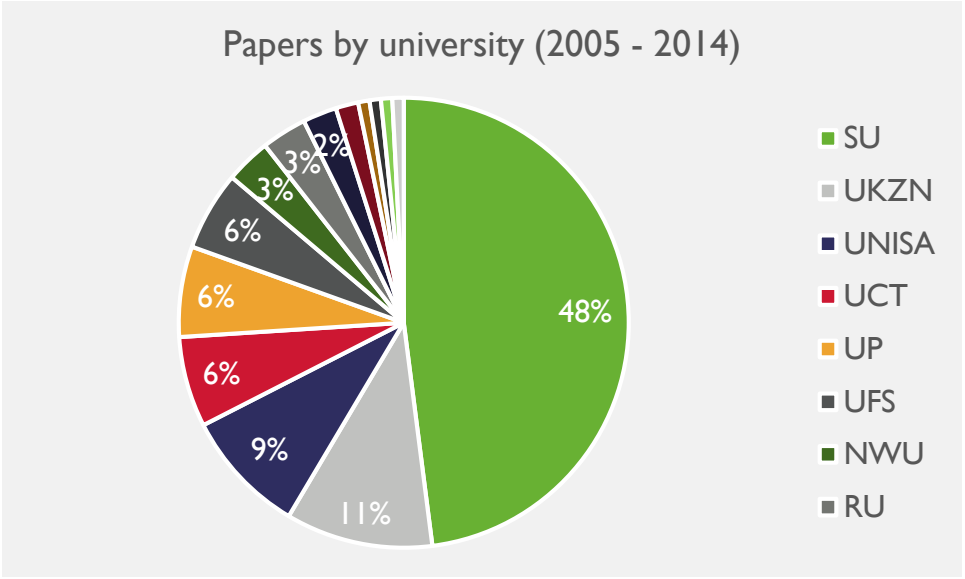


Editor: Robert Vosloo, SU

Total SA authorships = 637
Unique SA authors = 295

Author	Papers	Institution
Coertzen P	22	SU
Hendriks HJ	21	SU
Conradie EM (Ernst Marais)	13	UWC
Koopman NN	13	SU
Smit DJ	12	SU
Verster P	11	UFS
STRAUSS PJ	11	UFS
Viljoen FP	9	NWU
Cilliers JH	8	SU
Van de Beek A	7	SU
Wepener CJ	7	SU
Vosloo R	7	SU
SNYMAN AH	7	UFS
Van der Borght EAJG	6	SU
Vorster JM (Jakobus)	6	NWU
Van Rooi LB	6	SU
Van den Berg JA	6	UFS
Akper GI	6	SU
Brits HJ	5	VUT
Nell IA	5	SU
Theron PF	5	SU
Louw DJ	5	SU
Hofmeyr JW	5	UFS
Thesnaar CH	5	SU
Burger CW	5	SU
Naude PJ	5	NMMU
Van Niekerk AA	5	SU

Scientia Militaria
South African Journal of Military Studies



Author\	Papers	Institution
Scholtz WL von R	5	SU
Wessels A	4	UFS
Visser GE	4	SU
Van Dyk GAJ	3	SU
Wassermann JM	3	UKZN
Esterhuyse AJ	3	SU
Smit HAP	2	SU
Seegers A	2	UCT
Neethling TG	2	UFS
Neethling TG	2	SU
Neethling A	2	SU
Montesh M	2	UNISA
Solomon H	2	UP
Liebenberg JCR	2	SU
Maharaj MS	2	UKZN
Heinecken LPT	2	SU
Ferreira R	2	UNISA
Bezuidenhout J	2	SU
Baker DP	2	UKZN
Louw GM	2	SU
Vreÿ F	2	SU
Van Wyk JK	2	UNISA
Thompson PS	2	UKZN
Van der Waag IJ	2	SU
Van Niekerk B	2	UKZN

Total SA authorships = 123
Unique SA authors = 88

Concluding comments

It is important to keep in mind that scientific journals serve different interests and have different "publics". Journal publishing is also very field dependent. Some journals are national journals (serving the interest of a national society or association or an academy of science). Some journals serve the interests of a specific community of scholars (e.g. Theology and Law). Some journals – especially in the humanities and social sciences – may serve the interests of a specific theoretical or epistemological paradigm. Sometimes, these interests intersect with institutional niche areas (Enology and Viticulture). And finally, journals differ hugely in the size of the scholarly communities they serve. All of these factors impact on editorial and review policies and practices. The end result is the wide variety of journal publishing practices that we have highlighted in this section. When developing an indicator of "institutional spread" it would be important to understand how these difference impact on the indicator.

When you rely on incentives, you undermine virtues. Then when you discover that you actually need people who want to do the right thing, those people don't exist.—Barry Schwartz, Swarthmore College (Zetter, 2009)

The ambivalence of incentives frameworks

On quality and integrity

The notion of quality understood as referring to the intrinsic "merit" or "worth" of something (such as a journal paper) presupposes that a range of prior decisions and actions have been put in place to produce quality. In scholarly publishing we have tended to focus on the "cognitive" elements of this process: the reviews by peers. But quality is co-produced by a range of other decisions – many of which are decidedly normative in nature. Discussing quality without discussing ethics (the integrity of the process) is incomplete. It is impossible to talk about the qualitative imperative without raising deeper issues around the underlying principles and values that inform the production and dissemination of scholarly work.

But we also need a broader perspective on how and why issues around quality and integrity arose. Why is it that we now seemingly face more of these challenges than ever before?

The causes of our concerns

At least three sets of factors contributed to the current state of affairs:

1. A culture of performance management that pervades every aspect of our academic culture
2. Incentive and reward systems that now produce more perverse, unintended consequences
3. And – in the specific case of scholarly publishing – the opportunities for fraudulent and unethical practices that have opened up through the digital and OA movements.

One should also add that these factors thrive in a climate of financial austerity in HE that in itself fuels unhealthy competition amongst academics and scholars and force universities to focus on quantity and volume rather than quality and value.

An all pervasive culture of performance management

Arithmomania: Academic performance or success is now regularly equated with some score or a metric. And perhaps more specifically – metrics that privilege counts, outputs and numbers. Qualitative aspects of academic work – which by definition cannot be reduced to simple measures such as publication counts, h-indices of journal impact factors – are conveniently ignored. We are not asked – in our university – to report on our contribution to scholarship, practice or policy OR the relevance of our work for society OR whether our research is interesting and attractive to emerging scholars. Only: how many subsidy-bearing outputs do we produce and how to increase these!

Arithmomania is a mental disorder that may be seen as an expression of obsessive-compulsive disorder (OCD).[Individuals suffering from this disorder have a strong need to count their actions or objects in their surroundings.

Perverse (unintended) consequences

Academics are (also) human beings that respond to incentives. In universities across the world, academics are incentivized to work hard in order to get their PhD's, achieve tenure and get promoted. In South Africa we have two additional incentive schemes that further drive these behaviours: the NRF rating scheme and the DHET research subsidy scheme.

In recent study on the effect of incentives in American academia, Edwards and Roy (2017: *Academic Research in the 21st Century: Maintaining Scientific Integrity in a Climate of Perverse Incentives and Hyper competition)* the authors (see overleaf) show how good intentions very often give way to bad behaviour.

TABLE 1. GROWING PERVERSE INCENTIVES IN ACADEMIA

Incentive	*Intended effect*	*Actual effect*
"Researchers rewarded for increased number of publications."	"Improve research productivity," provide a means of evaluating performance.	"Avalanche of" substandard, "incremental papers"; poor methods and increase in false discovery rates leading to a "natural selection of bad science" (Smaldino and Mcelreath, 2016); reduced quality of peer review
"Researchers rewarded for increased number of citations."	Reward quality work that influences others.	Extended reference lists to inflate citations; reviewers request citation of their work through peer review
"Researchers rewarded for increased grant funding."	"Ensure that research programs are funded, promote growth, generate overhead."	Increased time writing proposals and less time gathering and thinking about data. Overselling positive results and downplay of negative results.
Increase PhD student productivity	Higher school ranking and more prestige of program.	Lower standards and create oversupply of PhDs. Postdocs often required for entry-level academic positions, and PhDs hired for work MS students used to do.

How digital publishing and the OA movement have "enabled" unethical behaviour

It is important to emphasize that the digitization of publishing and the advent of OA journals and books are in and by themselves progressive forces. These "movements" have greatly increased access to knowledge, improved participation in and even the democratization of publishing through more transparent peer-review processes.

However, as is often the case, they also contain(ed) in themselves the potential for misuse and abuse by unscrupulous publishers, editors and other actors who are intent only on profiting from these through whatever means of deception and misrepresentation.

In conclusion: What to do?

Not surprisingly – given the complexity of the challenge of designing and implementing measures of quality and the scale of unethical practices – we need a multi-facetted response that must include:

- Increased awareness raising and education of (young) scholars
- Improved quality control and "surveillance" of current and new forms of unethical practices
- Clear sanctions and penalties for those who intentionally and continuously violate the rules of ethics and integrity in scholarship.

SciSTIP

DST-NRF Centre of Excellence in Scientometrics and Science, Technology and Innovation Policy

Thank you