

# Incentives and reward schemes aimed at enhancing the research outputs of South Africa Universities



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# Introduction

Does it "pay to publish"?

If yes, how much?

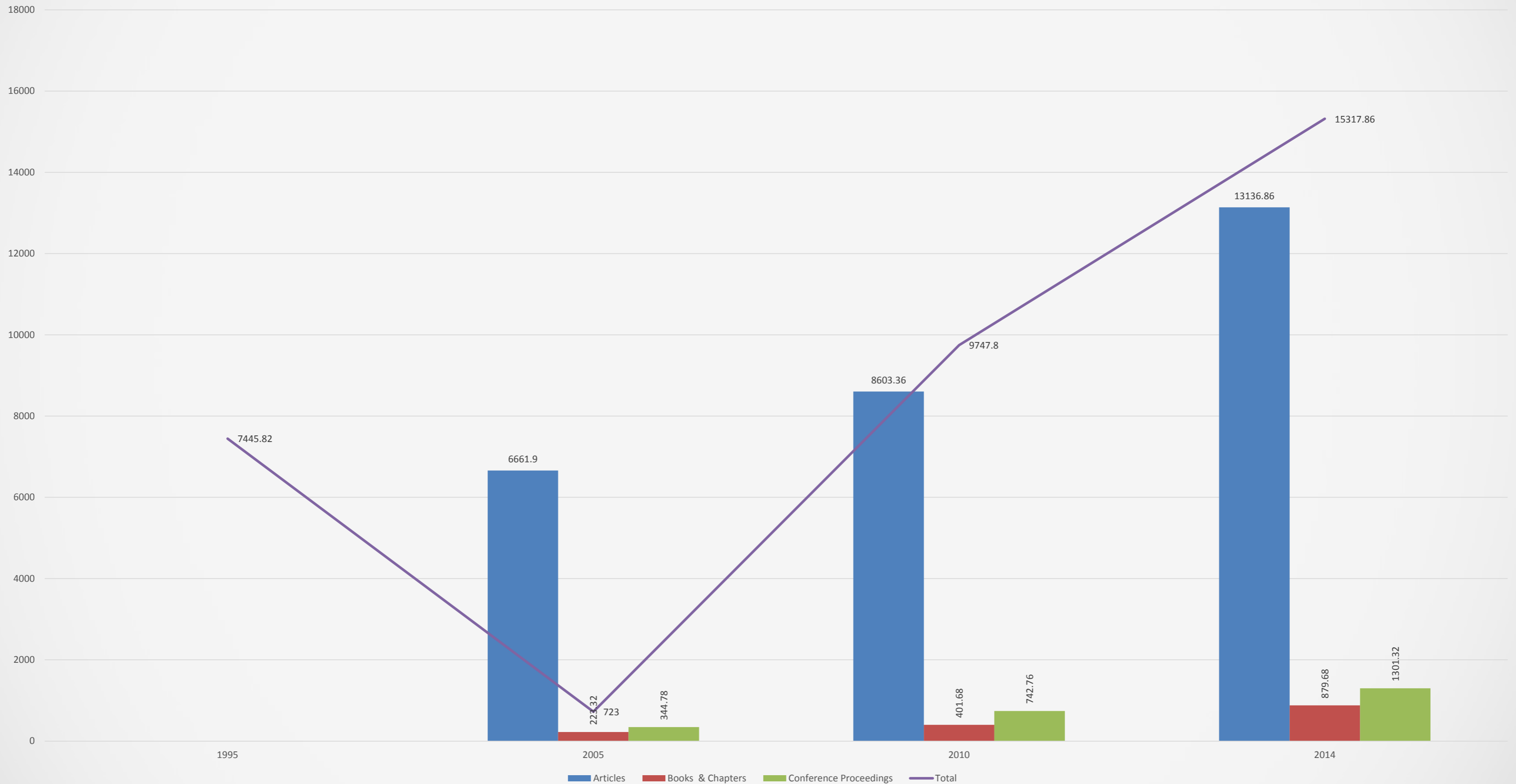
If it pays generously, what impact do the payments have on publication behaviour?

in particular on academic authorship practices?

(e.g. ghost authorship, gift authorship, honorary authorship)

Is money the best and only effective motivator for academic achievement?

# South African Research Outputs 1995-2014



# Subsidy income generated by researcher efforts (publication or supervision)

An article published in DHET listed journal: R80 000

Doctoral dissertation supervised: R50 000

Vienna University: €1000 for article in an A journal

€3000 for article in an A+ journal

## (Monetary) incentives in an academic context

- A basic “law of behavior”: “performance is positively related to effort; effort is unpleasant, and money is good” Gneezy & Rustichini 2000 → higher incentives will lead to more effort and higher performance
- BUT
  - pay enough, or don’t pay at all
  - impact of agents (who pays the incentive?)
  - incentives might have the desired effects in the short term, but they still weaken intrinsic motivations (Easterlin paradox)
  - possibility of perverse effects
  - “in environments where extrinsic rewards are most salient, many people work only to the point that triggers the award – and no further
  - “crowding out” intrinsic motivation to do interesting and path breaking research
  - decrease in creativity
  - Academic status and recognition more important (than money)

# Aim of this study

To gather **factual** information about **direct** and **indirect** research **incentives** and **rewards** to researchers **employed** by or **affiliated** with public Higher Education **Institutions** in South Africa.

# Definitions

## Defining Incentives

- Incentives
  - are **forward looking** mechanisms used to prompt and reward performance (e.g. **research outputs** or successful **supervision** of postgraduate students).
- Two types of incentives
  - **direct monetary** compensation (i.e. benefits, research funding, research infrastructure);
  - or **indirect** incentives (i.e. promotion opportunities, recognition).

# Definitions

## Defining Rewards & Awards

- Rewards:
  - **monetary** incentives that serve to **reward past** research **performance**.
- Awards:
  - **monetary or not**, and are valued because they convey **appreciation** or **recognition** for **past performance**.



# Definitions

## Research funding and Rewards & Awards

- Difficult to distinguish between
  - Research funding;
  - Incentives (rewards and awards) as a sub-category of research funding.

# Approach

## Ethics & Participants

- Ethics:
  - Research Ethics Committee: Humanities at Stellenbosch University.
- Participants:
  - directors of the Research Support Offices; OR
  - senior official in the Research Support Office designated by the Director;
  - from the public Higher Education Institutions in South Africa.

# Approach

## Procedure

- Survey questionnaire consisting of specific questions:
  - do universities pay direct monetary reward for DHET accredited & subsidised outputs?
  - if yes – what amount is paid (in ZAR)?
  - Is the amount paid, or what %, to faculty, school, department, or unit of the staff member?
  - Can the payment can be used as (taxable) personal income?
- Two pilots conducted:
  - One – support staff to test the clarity and structure.
  - Two – Senior Officials in Research Support Offices to test the functionality.

# Method

## Data collection & analysis

- Data collection:
  - a standardized email;
  - requested a copy of the university's policies & guidelines on research incentives / rewards;
  - sent to the research directors at the institutions on 24th June 2016;
  - follow up email on 26th July 2016.
- Data analysis:
  - email responses and policy documents were analysed as qualitative data using ATLAS.ti.
  - presented as matrices or, where appropriate, as direct quotations.
- Proviso:
  - Not comprehensive data set, many gaps, reporting ONLY the data we have;
  - Amounts (indicative, not exhaustive).

# Three categories

## Overview of the Universities

Weighted per Capita Research Output of SA Universities 2008-2014

University	2008	2009	2010	2011	2012	2013	2014	2008 - 2014
Stellenbosch University	2.13	2.3	2.37	2.38	3.06	2.97	3.03	6
University of Pretoria	1.35	1.4	1.43	2.03	2.14	2.4	2.78	5.18
Rhodes University	1.75	1.75	1.92	2.17	2.31	2.49	2.65	5.14
University of Cape Town	2.01	2.3	2.21	2.24	2.38	2.57	2.49	5.06
University of the Witwatersrand	1.53	1.75	1.68	1.99	1.94	2.32	2.5	4.82
University of KwaZulu-Natal	1.2	1.4	1.48	1.49	1.78	2.08	2.35	4.43
University of Fort Hare	0.49	0.84	1.26	1.49	1.53	1.38	2.15	3.53
University of the Western Cape	0.93	1.11	1.31	1.48	1.51	1.75	1.71	3.46
North West University	1.17	1.19	1.22	1.21	1.41	1.69	1.6	3.29
University of Johannesburg	1.04	1.05	1.13	1.42	1.47	1.43	1.58	3.01
Nelson Mandela Metropolitan University	0.95	0.89	1.14	1.37	1.42	1.39	1.49	2.88
University of South Africa	0.72	0.67	0.7	0.84	1.05	1.19	1.49	2.68
University of the Free State	1.06	1.28	1.31	1.39	1.26	1.27	1.41	2.68
University of Zululand	0.53	0.69	0.69	0.64	0.67	0.53	0.89	1.42
University of Venda	0.32	0.29	0.41	0.61	0.55	0.57	0.71	1.28
Tshwane University of Technology	0.34	0.41	0.44	0.55	0.58	0.57	0.66	1.23
University of Limpopo	0.28	0.34	0.34	0.38	0.54	0.54	0.65	1.19
Central University of Technology	0.3	0.31	0.24	0.34	0.34	0.49	0.53	1.02
Cape Peninsula University of Technology	0.25	0.35	0.36	0.37	0.46	0.43	0.53	0.96
Durban University of Technology	0.12	0.18	0.2	0.3	0.21	0.4	0.51	0.91
Vaal University of Technology	0.14	0.19	0.21	0.32	0.36	0.35	0.38	0.73
Walter Sisulu University	0.04	0.05	0.09	0.11	0.13	0.12	0.1	0.22
Mangosutho University of Technology	0.01	0.03	0.05	0.13	0.09	0.09	0.08	0.17

Aggregate

CHET

- DHET Report on research outputs
- Identifier e.g. R2  
NB Numbers are coded and do not correlate with position on the list.

# Results

## Institutional responses

- All six red universities responded to our email request
- Six out of seven green universities responded
- Six out of ten blue universities responded

Formal status of the policy	Total	Red	Green	Blue
No policy – no info	2	R4, R5	-	-
No policy – some info	2	R1, R3	-	-
Busy updating –no info	1	-	-	B1
Busy updating –some info	1	-	-	B2
Have approved policy	12	R2, R 6	G1, G2, G3, G4, G6, G7	B4, B6, B9
No response to email	6	-	G5	B3, B5, B7, B8, B10

# Results

**Main themes** Institutional responses & policies on research incentives / rewards

Types of funding	<p>We present our analysis using the categories/themes of the Research Funding model of the University of Limpopo</p> <p>Challenges</p> <ul style="list-style-type: none"><li>• Overlapping themes</li><li>• Difficult to map all other universities onto this model</li></ul>
A. Human capacity development and support	
B. Niche research areas, equipment/facilities and research units/centres/institutes and research chair support	
C. Fostering a research culture and promoting the dissemination of research findings	
D. Miscellaneous support for research	
E. Achievement and research productivity incentives	
F. Recognising and rewarding research excellence	

# Results

## Main themes Institutional responses & policies on research incentives / rewards

Types of funding	Total	Red	Green	Blue
<b>A. Human capacity development and support</b>	4	R1, R3, R6	-	B6
<b>B. Niche research areas, equipment/facilities and research units/centres/institutes and research chair support</b>	4	R3, R6	-	B6, B9
<b>C. Fostering a research culture and promoting the dissemination of research findings</b>	4	R1, R3	-	B6, B9
<b>D. Miscellaneous support for research</b>	2	R1	-	B6
<b>E. Achievement and research productivity incentives</b>	13	R3, R6, R2	G1, G2, G3, G4, G6, G7	B2, B4, B6, B9
<b>F. Recognising and rewarding research excellence</b>	3	R6	G2	B6



# Results

## A Human Capacity Development and Support Related Funding

	Red	Green	Blue	Amount specified	For personal income YES/NO	For research activities YES/NO
Research establishment competitive grant - emerging researchers	-	-	B6	R5 000 to R30 000	-	Y B6
Seed funding to kick-start research	R3	-	B6	R50 000	-	Y R3, B6
Staff qualification scholarship programme for emerging researchers	-	-	B6	-	Y B6	Y B6
Scholarship programme for emerging researcher	R3, R6	-	B6	-	-	-
Support for development & career advancement of young staff researchers and researcher staff from designated groups: - Teaching and / administrative leave - Support for designated groups - Research training and mentorship for research staff	R1, R3, R6	-	B6	R180 000	Y B6	Y R1, R3, R6, B6
Student researcher support and development - Attracting & Supporting Quality Post-graduate Students - Top-up funding for Master's and Doctoral students - Post-graduate External Research Training Programmes.	-	-	B6	R80 000 to R150 000	Y B6	Y B6
<b>Aggregate</b>	R1, R3, R6	-	B6		B6	R1, R3, R6,B6

# Results

## A Human Capacity Development and Support Related Funding

- Distribution of red, green & blue universities
  - Three red, no green, and one blue university
  - Red university reported funding linked to:
    - investing in young researcher;
    - funding as start-up grants, emerging researcher grants – widening the pool of productive researchers;
    - research training and mentorship programmes for research staff;
  - Blue university reported funding linked to:
    - Reported funding across all sub-themes.

# Results

## A Human Capacity Development and Support Related Funding

- Eligibility criteria:
  - Permanent staff;
  - Younger than a certain prescribed age (e.g. 35 years old or 45 years old);
  - Strictly for research projects in the Universities niche of research areas.

# Results

## A Human Capacity Development and Support Related Funding

- Amount:
  - The amount allocated to respective sub-themes ranged from R5 000 to R180 000.
- Amount used as personal income:
  - Only one university, B6;
  - As part of the staff qualification scholarship;
  - Post-doctoral fellowship programme.
- Amount used for research purposes:
  - To aid newly appointed staff;
  - A research/teaching assistant or Other research running expenses;
  - Fast-tracking the careers of young research “stars”.

# Results

## A Human Capacity Development and Support Related Funding

- **Observation / synthesis:**
  - Most universities required that funding only be used for research purposes;
  - Where funding may be used as personal income – highlight funding is to be used for research development & career advancement.

# Results

## Main themes Institutional responses & policies on research incentives / rewards

Types of funding	Total	Red	Green	Blue
A. Human capacity development and support	4	R1, R3, R6	-	B6
B. Niche research areas, equipment/facilities and research units/centres/institutes and research chair support	4	R3, R6	-	B6, B9
C. Fostering a research culture and promoting the dissemination of research findings	4	R1, R3	-	B6, B9
D. Miscellaneous support for research	2	R1	-	B6
E. Achievement and research productivity incentives	13	R3, R6, R2	G1, G2, G3, G4, G6, G7	B2, B4, B6, B9
F. Recognising and rewarding research excellence	3	R6	G2	B6

# Results

## **B** Niche research areas, equipment/facilities and research units/centres/institutes and research chair support

	Red	Green	Blue	Amount specified	For personal income YES/NO	For research activities YES/NO
<b>Supporting researchers by providing additional Human Resources</b> - Research Assistantship Programme - Post-graduate / supervisor Support Grant for Research Projects	-	-	B6	R2 500 to R180 000	-	Y B6
<b>Acquiring and Maintaining State-of-the-Art Research Equipment and Facilities</b>	R3, R6	-	B6, B9	R50 000	-	Y R3, R6, B6, B9
<b>Support for Research Units/Centres/Institutes and Research Chairs</b>	R3, R6	-	B6	-	-	Y R3, R6, B6
<b>Aggregate</b>	R3, R6	-	B6, B9	R6, B6, B9	-	R3, R6, B6, B9

# Results

## **B** Niche research areas, equipment/facilities and research units/centres/institutes and research chair support

- Distribution:
  - Two red, no green, & one blue university reported types of funding related to this theme;
  - The red & blue universities reported funding linked to:
    - contribute to: research facilities and infra-structure; e-Research Centre, the Libraries;
    - equipment, as well as technical and other support staff.
  - The blue university also included funding linked to:
    - research assistantship programmes;
    - top-up funding for grant holders;
    - post-graduate / supervisor support grant for research projects.



# Results

## **B** Niche research areas, equipment/facilities and research units/centres/institutes and research chair support

- Amount:
  - The amount allocated to respective sub-themes ranged from R2 500 to R180 000.
- Amount used as personal income:
  - No funds related to this theme may be used as personal income.
- Amount used for research purposes:
  - To employ fieldworkers or research assistants;
  - To provide funding to purchase and maintain necessary research equipment.

# Results

**B** Niche research areas, equipment/facilities and research units/centres/institutes and research chair support

- **Observation / synthesis:**

- Institutions emphasise:

“Appropriate equipment and facilities, and critical mass, are pivotal to grow, maintain and advance research and innovation.”

# Results

## Main themes Institutional responses & policies on research incentives / rewards

Types of funding	Total	Red	Green	Blue
A. Human capacity development and support	4	R1, R3, R6	-	B6
B. Niche research areas, equipment/facilities and research units/centres/institutes and research chair support	4	R3, R6	-	B6, B9
C. Fostering a research culture and promoting the dissemination of research findings	4	R1, R3	-	B6, B9
D. Miscellaneous support for research	2	R1	-	B6
E. Achievement and research productivity incentives	13	R3, R6, R2	G1, G2, G3, G4, G6, G7	B2, B4, B6, B9
F. Recognising and rewarding research excellence	3	R6	G2	B6

# Results

## C Fostering a research culture and promoting the dissemination of research findings

	Red	Green	Blue	Amount specified	For personal income YES/NO	For research activities YES/NO
<b>Annual Research Day</b>	-	-	B6	-	-	Y B6
<b>Post-graduate Student Research Seminars/Symposia/Conference Attendance</b>	-	-	B6	R8 000 to R15 000	-	Y B6
<b>Seed funding for hosting of Conferences &amp; Workshops</b>	R3	-	B6	R 100 000	-	Y R3, B6,
<b>National Conference Attendance Grant for Staff</b>	R1, R3	-	B6, B9	R 10 000	-	Y R1, R3, B6, B9
<b>International Conference Attendance Grants for Research Staff</b>	R1, R3	-	B6, B9	R 10 000 to R20 000	-	Y R1, R3, B6, B9
<b>Research Seminars at department / school / faculty levels</b>	-	-	B6	-	-	Y B6
<b>Research Associates</b>	-	-	B6	-	-	Y B6
<b>Scholarships for publication of articles</b>	-	-	B6	R3 000 to R5 000	Y B6	-
<b>Page fees</b>	-	-	B6	-	-	Y B6
<b>Aggregate</b>	R1, R3	-	B6, B9		B6	R1, R3, B6, B9

# Results

## C Fostering a research culture and promoting the dissemination of research findings

- Eligibility criteria:
  - Publications & postgraduates graduated count in favour;
  - In the case of conference travel a emphasis is placed on presenting a research output;
  - International conference travel awarded every second year;
- Distribution:
  - Two red universities reported funding related to conference attendance, as well as hosting workshops and other research activities at the university;
  - Two blue universities reported funding that related to conference travel;
  - One of these two blue universities (B9) reported additional funding types related to: e.g. research associate.

# Results

## C Fostering a research culture and promoting the dissemination of research findings

- Amount:
  - The amount allocated to respective sub-themes ranged from R3 000 to R100 000.
- Amount used as personal income:
  - Scholarship - encourage master's & doctoral students to convert their dissertations or theses into DHET accredited subsidised publications;
    - The period of the scholarship is up to a maximum of six months during which the scholarship-holder will prepare journal articles (from his/her master's or doctorate dissertation or thesis) for submission to DHET accredited publications;
    - The doctorate scholarship can be up to R5 000 per month;
    - The master's scholarship can be up to R3 000 per month;
    - At the end of the 3rd month the supervisor must show evidence of the completed manuscript(s) that is ready for submission to an accredited publication within the remaining three months, for eligibility for subsequent awards.

# Results

## C Fostering a research culture and promoting the dissemination of research findings

- Amount used for research purposes:
  - All funding sub-theme other than the scholarship for publication of articles was to be used for research purposes.
- Observation / synthesis:
  - The sub-themes are mostly only for use in research;
  - Personal income – thesis / dissertation to publication
    - requirement is submission to DHET accredited publications from a thesis or dissertation;
    - mechanism in place - 'check' midway before further payment of the scholarship will be made.

# Results

## Main themes Institutional responses & policies on research incentives / rewards

Types of funding	Total	Red	Green	Blue
A. Human capacity development and support	4	R1, R3, R6	-	B6
B. Niche research areas, equipment/facilities and research units/centres/institutes and research chair support	4	R3, R6	-	B6, B9
C. Fostering a research culture and promoting the dissemination of research findings	4	R1, R3	-	B6, B9
D. Miscellaneous support for research	2	R1	-	B6
E. Achievement and research productivity incentives	13	R3, R6, R2	G1, G2, G3, G4, G6, G7	B2, B4, B6, B9
F. Recognising and rewarding research excellence	3	R6	G2	B6



# Results

## D Miscellaneous support for research

	Red	Green	Blue	Amount specified	For personal income YES/NO	For research activities YES/NO
<b>Overall theme (e.g. support for statistical services, editorial and publication services, establishment of research chairs and centres / units of excellence)</b>	R1	-	B6	R30000 to R100 000	-	Y R1, B6

# Results

## D Miscellaneous support for research

- Distribution:
  - One red university & one blue university reported funding that link to this theme.
- Amount:
  - The amount allocated to respective funding sources ranged from R30 000 to R100 000.
- Amount used as personal income:
  - No funding related to this theme is for personal income.

# Results

## D Miscellaneous support for research

- Amount used for research purposes:
  - R1 university – highlight funding to be used for research expenses, not specify any particular expenses.
  - B6 university covers a wide variety of research related expenses;
    - Intellectual Property
    - Travel & accommodation etc. of a visiting scholar / academic / expert in a particular field;
    - Cover costs of literature searches, ordering journal articles through inter-library loan services.

# Results

## D Miscellaneous support for research

- Observation / synthesis:
  - The R1 university provides a smaller amount but has less strict rules for accessing this funding;
  - The B6 university may provide larger amounts as funding but also have more stringent guidelines.

# Results

## Main themes Institutional responses & policies on research incentives / rewards

Types of funding	Total	Red	Green	Blue
A. Human capacity development and support	4	R1, R3, R6	-	B6
B. Niche research areas, equipment/facilities and research units/centres/institutes and research chair support	4	R3, R6	-	B6, B9
C. Fostering a research culture and promoting the dissemination of research findings	4	R1, R3	-	B6, B9
D. Miscellaneous support for research	2	R1	-	B6
<b>E. Achievement and research productivity incentives</b>	<b>13</b>	<b>R3, R6, R2</b>	<b>G1, G2, G3, G4, G6, G7</b>	<b>B2, B4, B6, B9</b>
F. Recognising and rewarding research excellence	3	R6	G2	B6

# Results

## E Achievement and research productivity incentives

	Red	Green	Blue	Amount specified	For personal income YES/NO	For research activities YES/NO
<b>Achievement of NRF Rating Status Incentive (High-Flyer Programme)</b>	R6	G1, G3, G6	B6, B9	R5 000 to R250 000	Y G1, G3	Y R6, G1, G3, B6, B9
<b>Staff incentive for achievement of a master's or doctoral degree</b>	-	-	B6	R4000 to R5000	Y B6	-
<b>Supervisor incentive for master's and doctoral student throughput</b>	R6	G2, G6	B9	R8000 to R50 000	Y B9	Y R6, G2, B9
<b>Staff research output that attracts DHET subsidy incentive</b>	R2, R6	G1, G2, G3, G4, G6, G7	B2, B4, B6	R8000 to R40 000 per output OR 40% =researcher; 50% = institution; 10% = support for research	Y G3, G4, G7, B2, B6	Y R2, G2, G3, G4, G7, B2, B4
<b>Incentive for raising research funding</b>	R3, R6	G2	B6	20% = personal income; 80% = research funds	Y B6	Y R3, G2, B6
<b>Postgraduate tuition waiver incentive</b>	-	-	B6	R10 000	Y B6	-
<b>Aggregate</b>	R2, R3, R6	G1, G2, G3, G4, G6, G7	B2, B4, B6, B9	R2, G1, G2, G3, G4, G6, G7, B2, B4, B6, B9	Y G1, G3, G4, B2, G5, B6, B9	Y R2, R3, R6, G1, G2, G3, G4, G7, B2, B4, B6, B9

# Results

## **E** Achievement and research productivity incentives

- Eligibility criteria:
  - Faculties are paid a proportion in relation to their productivity:
    - may be distributed within the faculty as they wish; OR
    - according to applications received.
- Distribution:
  - Most institutions reported funding linked to this theme;
  - Three red (R2, R3, R6) universities, five green (G1, G2, G3, G4, G6) universities, & five blue (B2, B4, B5, B6, B9) universities reported sub-themes of funding related to this theme.

# Results

## **E** Achievement and research productivity incentives

- The Red universities reported funding schemes that are linked to:
  - Incentive to recognise research productivity of the faculty;
  - Incentive to recognise and enhance productivity of researchers;
  - Reward researchers for DHET accredited outputs.\*
- The Green universities reported funding schemes that are linked to:
  - NRF rated researchers;
  - Research output that attracts DHET subsidy;
  - Successful supervision of a master's and doctoral student.
- The Blue universities reported funding schemes that are linked to:
  - The Blue universities included funding types that link to all sub-themes.



# Results

## **E** Achievement and research productivity incentives

- Amount:
  - Amounts ranges from R5 000 to R250 000.
- Amount used as personal income:
  - A proportion may be used for personal income and are subject to income tax.
- Amount used for research purposes:
  - Research activities: (e.g. page fees, equipment such as laptops, travel etc.)
  - Enable productive researchers to continue their activity, to widen the pool of productive researchers, and to enhance postgraduate research

# Results

## **E** Achievement and research productivity incentives

- **Observation / synthesis:**

- Most reported funding were linked to NRF rating status & attracting DHET subsidy incentive;
- A strong emphasis is placed on using the funding for research purposes;
- Where funding is used for personal income, only a proportion may be used and are subject to income tax.

# Results

## Main themes Institutional responses & policies on research incentives / rewards

Types of funding	Total	Red	Green	Blue
A. Human capacity development and support	4	R1, R3, R6	-	B6
B. Niche research areas, equipment/facilities and research units/centres/institutes and research chair support	4	R3, R6	-	B6, B9
C. Fostering a research culture and promoting the dissemination of research findings	4	R1, R3	-	B6, B9
D. Miscellaneous support for research	2	R1	-	B6
E. Achievement and research productivity incentives	13	R3, R6, R2	G1, G2, G3, G4, G6, G7	B2, B4, B6, B9
F. Recognising and rewarding research excellence	3	R6	G2	B6

# Results

## F Recognising and rewarding research excellence

	Red	Green	Blue	Amount specified	For personal income YES/NO	For research activities YES/NO
<b>Vice-Chancellor's Awards for Excellence in Research</b>	R6	-	B6	R5000 to R50 000	-	Y R6
<b>University Research Fellowship and Life-Time Achiever Award</b>	-	-	B6	R100 000	-	-
<b>Recognition for Leadership in International Research and Advisory Organizations</b>	-	G2	-	-	-	-
<b>Recognition for Research Excellence: Most cited researchers at international level</b>	-	G2	-	-	-	-
<b>Vice Chancellor's Award for Excellence in Community Engagement.</b>	-	G2	-	-	-	-
<b>Aggregate</b>	R6	G2	B6	B6	-	R6

# Discussion

## Observations / synthesis

- Across institution emphasis on funding to drive research:
- Funding used for personal income:
  - Bursaries – highlight funding for research development & career advancement;
  - Only a proportion & subject to income tax.
- Significant funding is linked to research: e.g. NRF rating status & attracting DHET subsidy.
- So, does it “pay to publish”? Does the payment lead to unintended consequences?
- For further research:
  - questionnaire to all SA scholars (January 2017) , & a set of interviews.

# Thank You For Listening

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Stellenbosch University

