



**AFRICAN STANDARDS AND GUIDELINES FOR QUALITY ASSURANCE
IN HIGHER EDUCATION (ASG-QA):
STANDARD 9 - RESEARCH AND INNOVATION
SESSION 1**

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OPENING COMMENTS



INTERNATIONAL
TRENDS



YOUR CONTEXT

100%

IMPLICATIONS
FOR QA



ASG-QA



WHAT IS *QUALITY* IN HE

(Clemons & Jance, 2024; Harvey & Green, 1993, 2010; Prisacariu & Shah, 2016)

- Quality
 - Vague, dynamic, relative, multi-dimensional, elusive & slippery concept, no single definition
 - If we do not know what it is, we cannot improve it
 - Popular in policy & strategic HE documents
 - Political positional power & control struggle
 - Contextually rooted in values & assumptions
 - Academic, managerial, pedagogic and/or employment focus
 - Form of ideology & culture, limiting how we understand role of HE in society
 - Need for culture of quality responsibility & ethics
 - Exceptional, perfection, fitness for purpose, value for money, transformation, conformance to specifications & requirements, loss avoidance, meeting/exceeding expectations
 - Doing the right things in the right ways
 - Both the character of educational development AND educational achievements
 - System: input, process AND output that satisfy various stakeholders' expectations
 - Academic standards and the specific levels of knowledge, skills and abilities that students achieve because of their engagement in higher education

WHY TALKING ABOUT QUALITY ASSURANCE IN RESEARCH AND POSTGRADUATE EDUCATION IS IMPORTANT

(Civera et al., 2020; Chankseliani, et al., 2021; Seyfried & Polenz, 2020)

- What counts as ‘quality research’?
 - So-called ‘blue skies’ /basic versus applied research differ in terms of impact measures
 - Emphasis on inter- and trans-disciplinarity to solve ‘wicked problems’
 - Higher education as a ‘social good’
- Who determines quality?
 - Quality means different things to different stakeholders (e.g. labour market representatives, scientific community, students, society, policy makers & politicians), making it difficult to decide what relevant and methodologically sound indicators (in terms of their validity & reliability) could be used to measure quality
 - What are local, national and global dimensions of quality?
 - Externally defined global challenges (e.g. SDGs) may not reflect locally valued, indigenous meanings of education equity and quality
 - To what extent do academics possess the freedom and agency to imagine university contributions to development and quality?
- What are the un-/intended consequences of quality assurance?
 - Dysfunctional effects of performance-based reward systems - ‘On the folly of rewarding A while hoping for B’ (Kerr, 1975)
- How does funding act as a driver for research & innovation (competition vs egalitarianism)?
 - Performance criteria; Size; Subsidizing the disadvantaged
- What acts as indicators of quality (3 levels)?
 - Efficiency; Quantity; Quality



INTERNATIONAL TRENDS IN PG QUALITY

- PG quality determined through
 - Merit of the PG candidate & thesis
 - Facility and position of the PG supervisor
 - Examination system of the granting universities
 - Publication as proxy for quality
- Seeing more collaborative and structured approaches with associated benefits including
 - Better throughput
 - Mitigation of loneliness and power issues implicated in one-on-one approaches
 - Possibility for a stronger research foundation and interdisciplinary work
 - Structured learning opportunities and personalised professional development plans with formative portfolios
- Concerns about
 - Increasing managerialism whereby support structures focus on efficiencies rather than quality
 - Growing ties between industry and PG education without much critique of possible conflicts

(Baldock & Chen, 2021; Cerda-Navarro et al., 2022; Dominguez-Whitehead & Maringe, 2020; Ganguly, 2020; Kobayashi & Emmeche, 2023; Mantai & Marrone, 2022; McKenna & van Schalkwyk, 2023; Nerad et al., 2022; Sharmini & Spronken-Smith, 2020; Taylor, 2022; Van Schalkwyk et al., 2020; Wilkins, et al., 2021)

QUALITY INDICATORS FOR HE RESEARCH & INNOVATION

- What serves as possible proxies for quality in HE research & innovation?
 - Research reputation
 - Areas of research strength, excellence & influence
 - Nobel Laureates & field medalists
 - Research networks
 - Industry partnerships
 - Proportion of international faculty
 - Proportion of international students
 - Availability of research resources
 - Research income generated
 - Student-to-supervisor/lecturer ratio
 - Publications
 - Citations & citation indices (per faculty member & per paper)
 - Number of publications indexed
 - Publication/citation impact factors
 - Postgraduate research
 - PG completions, throughput & publications
 - Innovation
 - Registered patents
 - Registered companies
 - Research products



ASG-QA STANDARD 9: RESEARCH & INNOVATION

- **Standard**

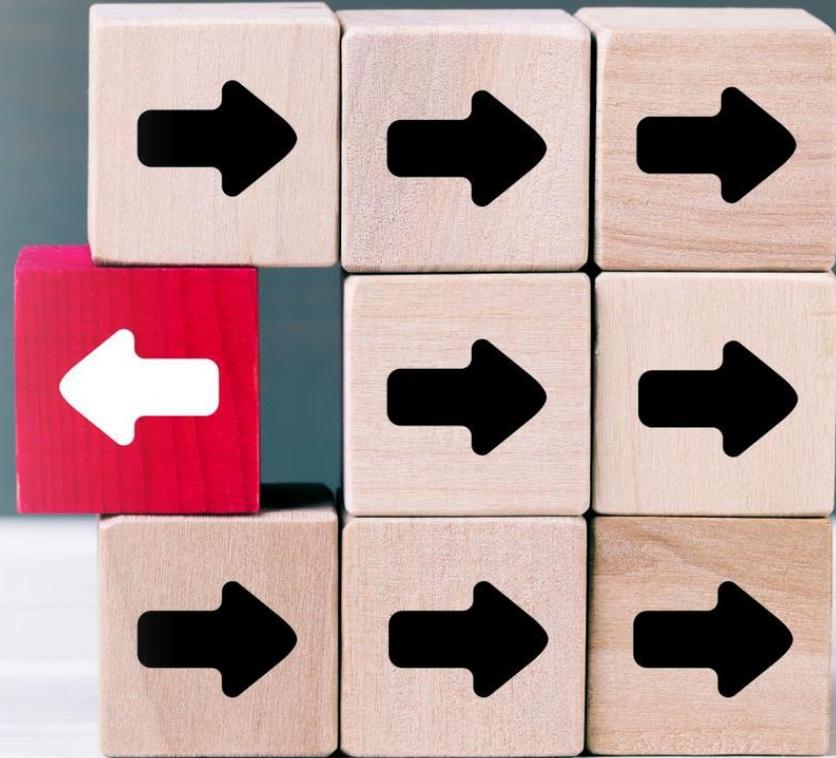
- The institution shall encourage, promote, and engage in innovative research consistent with its policies and strategic plans, and address national, regional, continental, and international needs
- The institution shall encourage innovation in its teaching, learning and research
- The institution shall ensure that the management of postgraduate studies is conducted within an approved framework of institutional policies and plans that ensure quality ethical research



ASG-QA STANDARD 9: RESEARCH & INNOVATION

- **Guidelines**
- Research is one of the core activities of a higher education institution, and the institution therefore requires an institution-wide research policy that sets the direction of its research
- The policy is at both institutional and research-programme level (postgraduate studies) to ensure proper engagement in research
- The institution ensures that:
 1. There is a shared understanding of the nature, role and goals of research
 2. There are standards, procedures and processes for the approval of research proposals, and theses, and the conduct and supervision of research studies
 3. There are policies, research management systems and strategies, adequate infrastructure and resources that facilitate all staff to undertake innovative research, and publish research results
 4. There are standards and processes for the approval of research proposals and theses, in line with the research needs of the national or regional context, and capacity building possibilities for researchers, management of research partnerships and research contracts, handling of intellectual property and commercialisation of research, and effective and trustworthy management of research information
 5. There is adequate academic integrity through the establishment and use of appropriate research committees and boards to ensure academic integrity
 6. The research undertaken is relevant and responsive to the needs for academic advancement and community development expectations
 7. There is effective monitoring and evaluation of the research system

**SHARED
UNDERSTANDING
OF THE NATURE
ROLE AND GOALS
OF RESEARCH**



AFRICAN RESEARCH THAT MATTERS

(Butler-Adam, 2017)

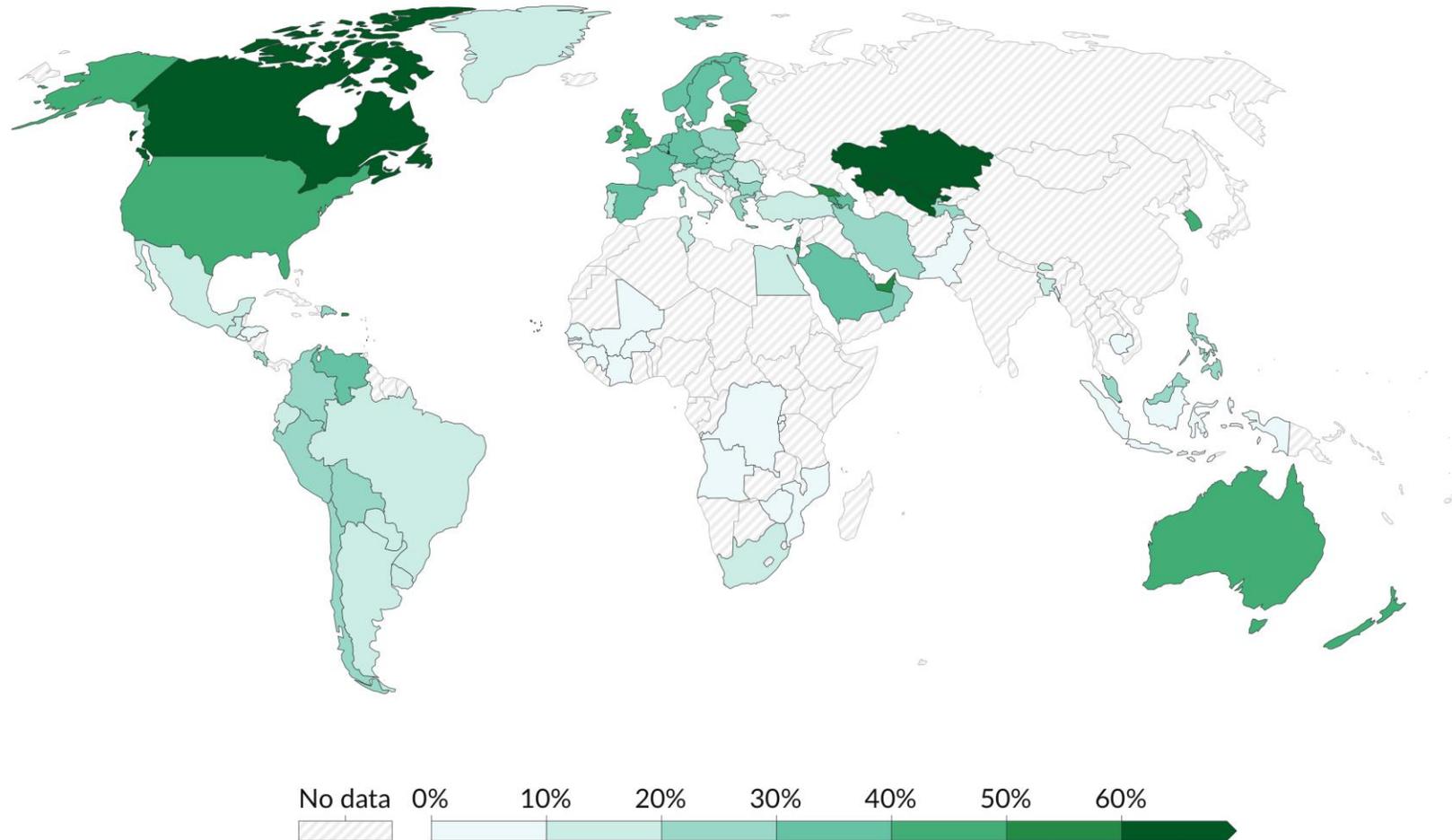
- Africa produces 1.1% of global scientific research
 - Africa and its universities, institutes and scientists need to make far greater contributions to world knowledge
 - BUT high quality and important research is happening
 - The contribution might be small, but smart people are undertaking smart and important work
 - The range of research being undertaken is remarkable in view of the size of Africa's overall contribution
 - Irrespective of the disciplines involved, the research is tackling both international concerns and those specific to the African continent and its people's needs
- Despite these advances, development is skewed across African countries
- What role does doctoral education play in the African research context?

TALENT AND ABILITY ARE EVERYWHERE, BUT OPPORTUNITY IS NOT (Roser, 2019)

- ‘Wicked problems’ demands ideas and innovation
- Creative and talented people who can contribute to this important work are everywhere, but the opportunity to develop is limited to only a small number of well-off children
- As a consequence of this, we are missing out on the creativity and innovations that would enrich our world and help us move forward
- Those who have brilliant ideas are often able to make a good living from them for themselves, but big insights and discoveries also benefit society as a whole
- We should make sure that all talented people have the chance to develop new ideas

Share of the population with post-secondary education, 2019

Percentage of the population aged 25 and over who have completed post-secondary education (ISCED level 4 or higher).



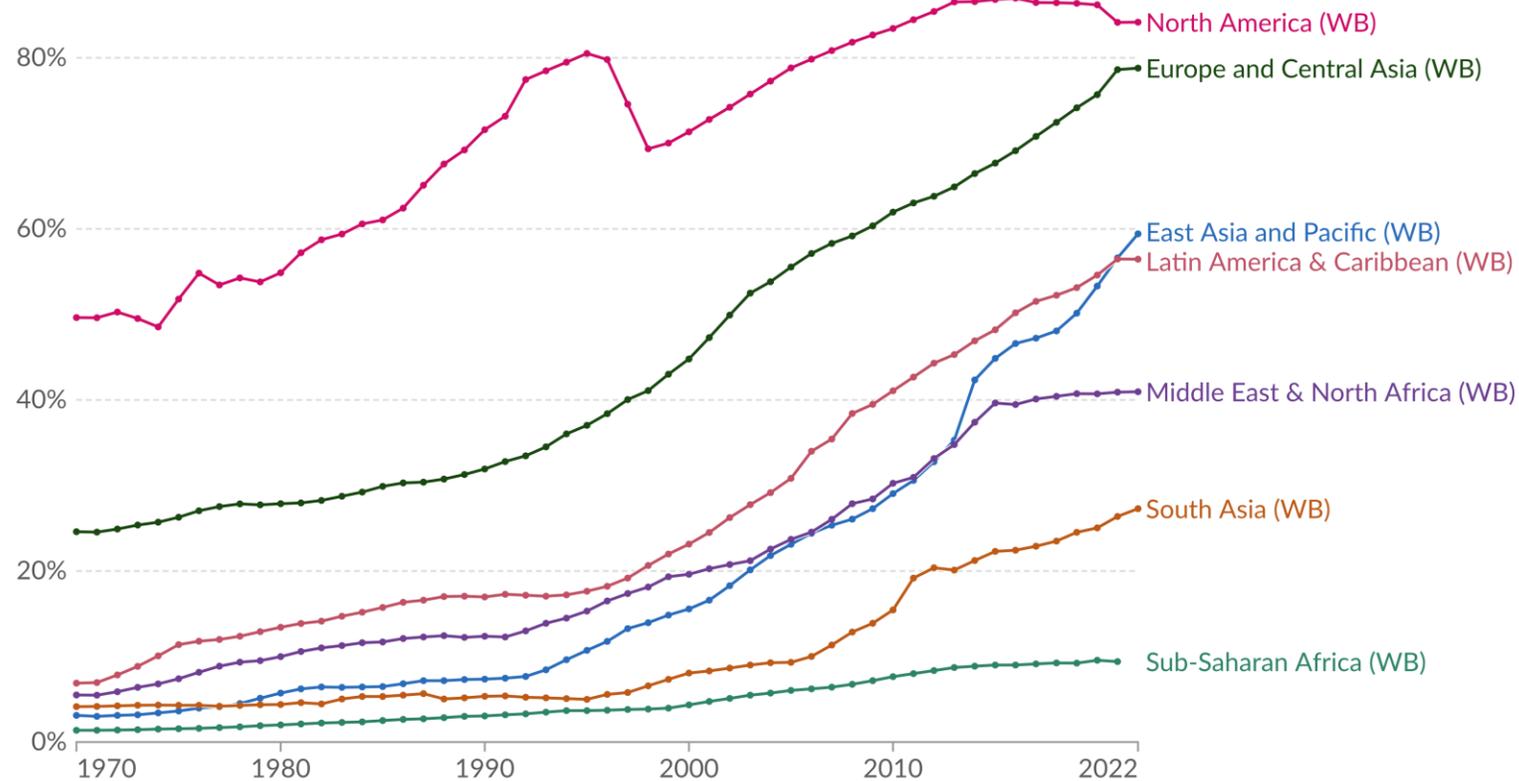
Data source: UNESCO via World Bank

OurWorldinData.org/global-education | CC BY

Gross enrolment ratio in tertiary education, 1970 to 2022



Number of people of any age group who are enrolled in tertiary¹ education expressed as a percentage of the total population of the five-year age group following on from secondary school leaving.



Data source: UNESCO Institute for Statistics (2024)

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Note: Gross enrolment rate can surpass 100% when including students outside the official age due to early or late admissions and grade repetition.

1. **Tertiary education:** Tertiary education (International Standard Classification of Education Level 5 to 8) expands upon secondary education by offering specialized learning activities in various fields. It targets advanced levels of complexity and specialization, encompassing both academic and advanced vocational or professional education.

THE POSTGRADUATE SUPERVISION CONTEXT IN AFRICA (Cloete & Bunting, 2013)

- Africa needs strong research universities
- Knowledge transfer, production, re-production and dissemination
 - Universities remain only producers of self-renewing knowledge-producing capacity
 - Production of research-based PhDs as proxy for national knowledge contribution
- Universities better at indirect, long-term knowledge capacity building than at direct short term knowledge application (parastatals, NGOs)
- Vibrant knowledge production landscape only occurs successfully in counties which have a stable PhD producing university sector

RESEARCH EDUCATION AS A QUALITY ISSUE

(Egan et al., 2009; Le Grange et al., 2006)

- Research education varies among systems, countries, disciplines, and timing (e.g part-time versus full-time studies; coursework versus non-coursework)
- No gold standard model of graduate supervision which can be applied in all situations, across all disciplines - for supervision to be effective, it must be an evolving process that concentrates on meeting the needs of different students, programmes and administrative structures
- If research students only experience one kind of learning, such candidates will be ill-prepared to practise in other settings

FACTORS INFLUENCING THE NATURE OF PG DEGREES

- Environmental factors
 - International, national and market demands/influences on quality
 - Functions of PG education and career projections
- Academic factors
 - Scholarly/research considerations that should be self-evident in theses that are submitted and examined
- Administrative factors
 - Contexts in which the degree is offered/conducted/ undertaken
 - All the arrangements that apply to every stage of PG education

GLOBAL CONCERNS ABOUT RESEARCH EDUCATION

- Dropout rates too high, throughput too slow
- Low completion rates
- Funding/subsidy issues
- Quality assurance issues within institutions
- Comparable international benchmarks and standards
- Inconsistencies in the system
- Inexperience and un(der)preparedness of candidates
- Lack of research background and a research base
- Lack of training and inexperience of supervisors
- Expectations of the doctoral production system



DOCTORAL ATTRIBUTES

(CHE National Doctoral Review, 2020)

Knowledge

- Broad, well-informed and current knowledge of field or discipline
- Expert, specialised and in-depth current knowledge of specific area of research
- Insight into the interconnectedness of one's topic of research with other cognate fields
- Ethical awareness in research and professional conduct
- An original contribution to the field of study

Skills

- Evaluation, selection and application of appropriate research approaches, methodologies, and processes in the pursuit of a research objective
- Reflection and autonomy
- Communication skills, including relevant information and digital literacy skills
- Critical and analytical thinking for problem-solving

DIFFERENT DOCTORAL FORMATS

	Traditional PhD (monograph)	Professional doctorate	Doctorate by publication	Doctorate by startup
Scope	Major project planned, executed & reported in a thesis/ dissertation/ book. Up to 100 000 words	High level coursework plus thesis/dissertation Up to 60 000 words	Varies - usually 3-4 published articles or equivalent plus intro and conclusions	New development in Eastern Europe. Researching the entrepreneurial project. Business + thesis
Characteristics	Extended period of research education. Develop future scholars	Market driven Regular contact with clients & industry	Scholarly contribution Peer approval	Close relation between entrepreneurship and research
Evaluation	Examination panel (+ viva). Theory important	Examination panel (+ viva) Reflective practice important	Peer review, examination panel (+ viva)	Expert review, exam panel (+ viva)
Quality assurance	External examiners	External examiners	External examiners + peer review	External examiners + expert review

A woman with short dark hair, wearing a yellow long-sleeved top, stands on the left side of the frame, gesturing with her hands as if presenting. In the background, two other people are seated at a table, looking towards her. The setting appears to be a meeting room or office. The text is overlaid in the center of the image.

**APPROVAL OF RESEARCH
PROPOSALS AND THESES, AND
CONDUCT AND SUPERVISION OF
RESEARCH STUDIES**

IMPLICATIONS: PG QA STARTS AT APPLICATION



QA OF RESEARCH PROPOSALS

- Time allowed for proposal development
- Guidelines on the expected structure and/or content of a doctoral level research proposal
- Existence of higher degrees committees (either at departmental, faculty and/or institutional levels) that consider the academic merit of doctoral research proposals
- Guidelines on the constitution and procedures followed within higher degrees committees
- Requirements to engage with higher degrees committees to defend/discuss research proposals
- Role of supervisors is in relation to the submission and possible defence of doctoral proposals
- Exceptions to standard operating procedures

QA OF RESEARCH PROPOSALS

- Full-time students given six months to develop and defend proposals; part-time students a year
- Variation from very specific guidelines or no guidelines at all
 - Expected to develop a feasible and defensible proposal based on the general discipline, topic and methodological requirements, allowing for flexible and diverse research traditions and approaches

University of the Sunshine Coast, Australia

1. *Background analysis of the research issue being explored*
2. *Literature Review*
3. *Research Question*
4. *Focus Questions/Objectives*
5. *Significance*
6. *Research methodology/method including data gathering and analysis techniques*
7. *Research Rigour/Trustworthiness*
8. *Ethical issues*
9. *Timeline*
10. *Budget*
11. *List of references*

University of Stockholm, Sweden

1. *Stringency of the research question and analysis of earlier work and of the research plan*
2. *Familiarity with the research area of the intended research plan*
3. *Methodological and theoretical understanding and the degree to which reflexivity is reached in the texts*
4. *The qualities of planned research in relation to what it contributes to the discipline*
5. *Ability to express themselves both written and verbally in an academic setting*
6. *The planned study's feasibility within the allotted time*

QA OF RESEARCH PROPOSALS

- Not all universities have a form of a higher degrees committee but, where they do exist, they tend to play a definitive role in admission to and/or vetting of doctoral proposals
 - *The Confirmation Review Panel (CRP) will include all supervisory panel members, including industry-based supervisors. The CRP will include at least 1 additional person who is independent and external to the supervisory panel who will serve as the Chair. This independent person will be the Delegated Authority, or their independent delegate on the panel. They may be the HDR Convenor, or they could be another ANU academic appointed by the Delegated Authority. They must not be a member of the panel or have a close personal relationship to a panel member or the candidate. (Australian National University, Australia)*
- Guidelines used by review panels/committees to consistently consider the academic merit of a proposal are generally based on consideration given to the academic merit of the proposal, the feasibility and ethics of the study, and the potential to make an original contribution to the field of study
- Expert input is sought from internal and/or external reviewers in the institutions where the vetting of proposal quality is overseen by a committee
 - *The panel is considered to have read the proposal in advance; the student gives a presentation outlining their proposed research; the student is questioned by the panel and the research is discussed; the student leaves, and the panel and supervisors have a confidential discussion and reach a decision. The student may be required to do further work and submit revisions to their proposal following the confirmation event if needed. (University of Waikato, NZ)*

QA OF RESEARCH PROPOSALS

- In the cases where a higher degrees committee of some sort oversees the proposal quality, proposals are either reviewed by the committee and feedback given to the student and supervisor for the further development of the proposal where necessary without the student appearing in front of a committee, or students are required to appear in person before the committee to defend their proposal
 - *With the aim of ensuring candidates have set out on their research journey with the best possible chance of success, Confirmation is intended to be a rigorous yet collegial process. Together with their supervisory panel and other experts within or beyond their immediate research environment Confirmation ensures that:*
 - *candidates receive the best possible supervision arrangements*
 - *the project is developed with guidance to be a suitable PhD or MPhil project, and*
 - *resources and training needs are identified and agreed (Australian National University, Australia)*

QA OF RESEARCH PROPOSALS

- The role of supervisors is in relation to the submission and possible defence of doctoral proposals
 - Supervisors play no role in the development of a proposal until such time as the application to the PhD programme has been approved by the selection committee
 - Supervisors play a mentoring and formative role in the development of the proposal
- In the examples from South Africa, all institutions acknowledged the formative role that supervisors play in the development of doctoral proposals, however, supervisors do not actively take part in the cases where a student needed to defend their doctoral proposal to a higher degrees committee, even though they are allowed to attend the defence/presentation
 - *The supervisor may also attend the higher degrees committee meeting where the proposal is being considered and might be called onto offer clarity on certain points, but should not be seen to exert any pressure on the committee - the proposal should 'speak for itself'. (Rhodes University, South Africa)*
 - *While the student is the primary presenter, the supervisor's role is supportive, ensuring the student is well-prepared for any queries from the committee. (Wits University, South Africa)*
- The proposal defence is the student's time to shine and prove their intellectual ownership of the study and potential to becoming a 'creative critical autonomous and responsible intellectual risk takers' (Hannover Recommendations, 2019: 1)

QA OF RESEARCH PROPOSALS

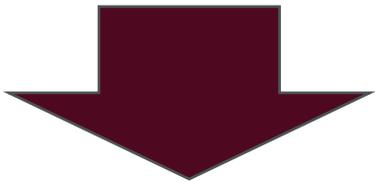
(Dominguez-Whitehead & Maringe, 2020; Geven, Skopek & Triventi, 2018)

- Common to have doctoral proposal review processes coupled with feedback from institutionalized committee structures beyond supervisory inputs
- An oral defence of doctoral a doctoral research proposal is not uncommon, and is seen as an opportunity to develop prospective doctoral students' oral presentation skills and their ability to defend their research ideas (that will also be required along the line if annual review panels and/or an oral exam [or viva voce] is required)
- Nowhere in the literature is mentioned that any particular group or individuals are exempted from process that are institutionally mandated
- Early review and structured input into doctoral proposals are seen as contributors to doctoral success
- Expert inputs and support mechanisms are not limited to that of a single supervisor, even though the literature cited above and elsewhere acknowledge the importance of effective and regular supervision (which is not disputed by us either)

PG SUPERVISION AS A QUALITY CONCERN

(Lee & Green 2009; Parker 2009; Engebretson et al. 2008; Bawa 2007; Wisker et al. 2007; Dysthe et al. 2006)

- Supervising increasing numbers of postgraduate students in challenging higher education contexts
- Traditional approaches challenged
- Supervisors tend to follow apprenticeship approach uncritically



- Supervisors need to be aware of *alternative approaches* to supervision
- *Structured planning* for the postgraduate supervisory process needed

IMPLICATIONS OF MODELS OF DOCTORAL EDUCATION IN AN AFRICAN CONTEXT

Evaluating Doctoral Programmes in Africa: Context and Practices

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Models of doctoral education in Africa remained similar to those in European universities, well into the 2000s. However, there has been an increasing realisation that such programmes are ill-suited for the African realities. With recent efforts to revitalise higher education in Africa, considerable attention has been placed on the need to explore more effective models of doctoral education, better suited to the African context. Doctoral education is key to this rebuilding as it offers the potential for developing skilled staff for academic and research institutions, and is central to the development of much-needed locally relevant knowledge in Africa. In the last decade, innovative programmes have emerged that make use of partnerships to achieve more than individual institutions could, working alone. This paper examines the constraints, challenges and opportunities in African doctoral education and identifies critical elements of doctoral education that have particular nuances in the African context. We propose a framework for evaluating the suitability of the structure and practices of such programmes. We review two of the more successful collaborative Ph.D. programmes with reference to this framework.

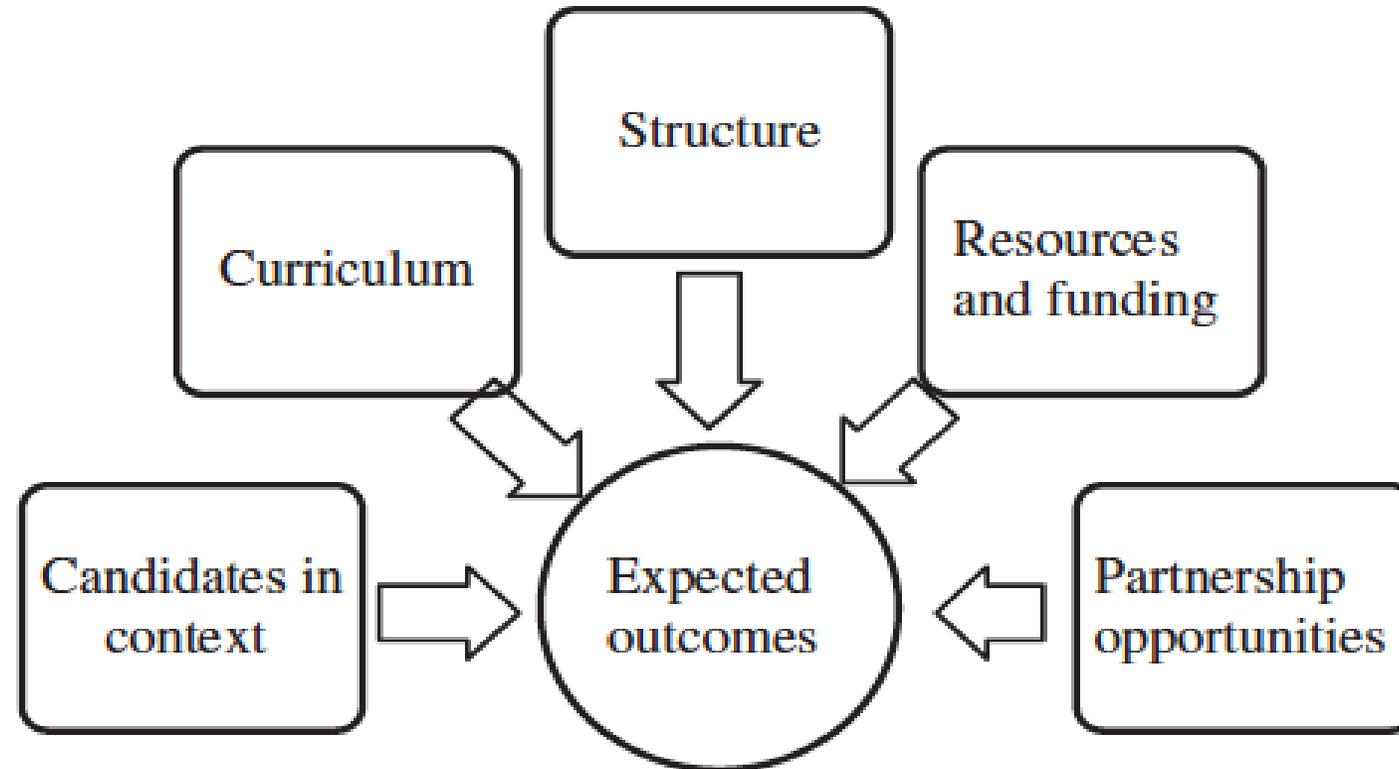
Higher Education Policy (2014) 27, 155–174. doi:10.1057/hpep.2014.1

Keywords: African higher education; doctoral education; graduate education; Ph.D. programmes; collaborative programmes; supervision models

Traditional approaches to doctoral education have served the continent well in the past, but are not scalable to address the growing demand. African universities lack the resources, in terms of supervision, facilities and finances, to replicate successful first-world models of doctoral education. We argue that replication is also undesirable, as that would miss opportunities to create new and better ways of delivering excellent doctoral education. Challenges provide opportunities for innovation (Cross & Backhouse, 2014: 172)

DOCTORAL EDUCATIONAL FACTORS TO CONSIDER IN AN AFRICAN CONTEXT

(Cross & Backhouse, 2014)



WHY ARE WE SEEING MORE ALTERNATIVE APPROACHES TO PG SUPERVISION?

- Intellectual capital currency
 - PG qualifications valued in the workplace (Bloland 2007)
- Commodification
 - Means to get ahead without understanding the extent of what is required (Boehe 2016; Engebretson, et al. 2008)
- Shift in mode of learning
 - More students with Mode 2 knowledge expectations (McAlpine et al. 2013; Evans 2011)
- Focus on vocational utility
 - Fewer students pursuing PG studies primarily for a career in academe as may have been the case for their supervisors (Tymon & Batistic 2016; Acker & Haque 2015; McAlpine et al. 2013)
- Credential inflation
 - Increased numbers of students enrolling in PG studies
- Increased pressure
 - On the institution and the supervisor workload (Usher 2002)
- Increased focus on PG pedagogy
 - Other skills needed than scientific research skills (Baker & Pifer 2015; Lee & Green 2009; Dall’Alba & Barnacle 2007)

CONTEXT

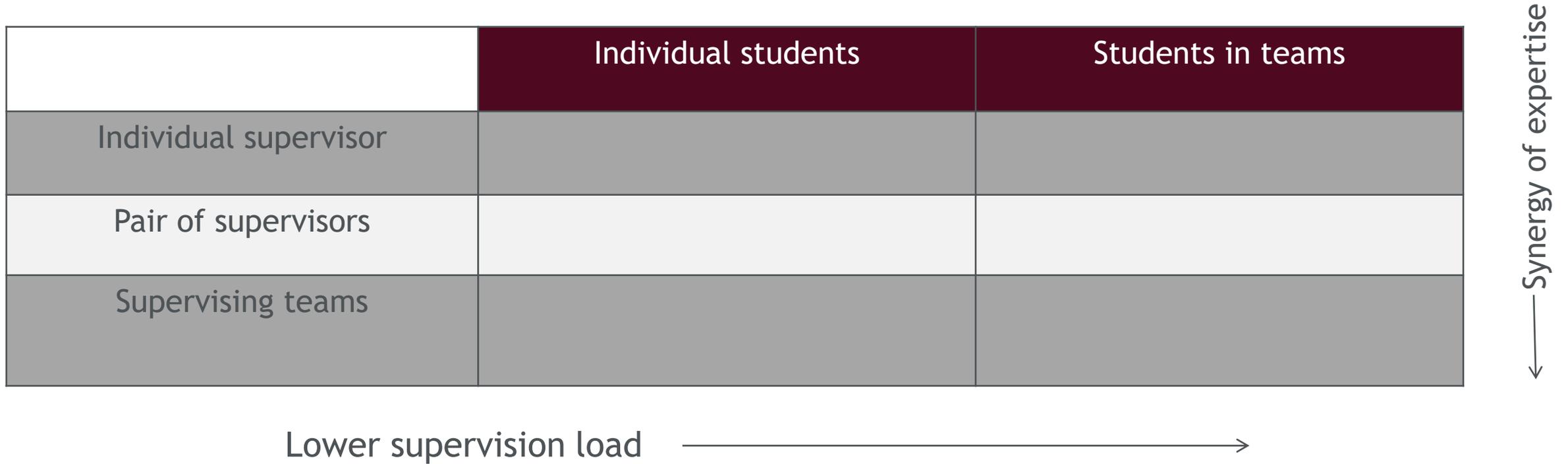
(Lee & Green 2009; De Beer & Mason 2009; Lee 2009; Parker 2009; Manathunga et al. 2006; McKenna & Van Schalkwyk, 2023)

- Default to one-on-one relationship (especially in South Africa)
- Under-theorised position regarding postgraduate supervision
- New skills required: holistic, flexible and creative approaches

Master / apprentice model has increasingly been replaced by group / team supervision

- Actively encourages self-regulation for supervisors
- Students take more active role in managing their supervision
- Changes way power operates in supervision
 - No more command and control
 - More nuanced negotiated power such as trust (Robertson 2017)

SIX MODELS OF SUPERVISION



THE PG ASSESSMENT CONUNDRUM

(Baldock & Chen, 2021)

- Examiners are tasked with providing an independent assessment of a body of scholarship (thesis) to determine whether it meets a required threshold ‘standard’
- Examiners, often international, are usually provided with an examination rubric by the doctoral candidate’s institution of enrolment that gives guidance regarding the criteria which evidences that the thesis has demonstrated
 - Deep disciplinary knowledge
 - Advanced research expertise
 - Independence of thought and approach
 - Original contribution to knowledge
- However, examiners do not always adhere to the criteria of the examination rubric provided and approach the examination process with their own biased interpretations and often subjective opinions as to what constitutes the appropriate PG standard
 - May be informed by their own personal ‘standards’ and experiences or the examination standards of their own institution

ASSESSMENT CRITERIA

(Kumar, Kaur, & Sanderson, 2024)

- Contribution to research
- Relevance
- Overall quality in terms of
 - Empirical dimension
 - Theoretical dimension
 - Methodological dimension
 - Connecting theory and experimental work
- Publication as a proxy for quality
- Quantity
- Focus and depth
- Contribution in collaboration
 - Overview of the earlier research in the field
 - Own contribution in relation to previous work
- Ability to discuss and judge own results
- Communication
 - Structure, coherence, clarity, illustrations, language, editing
- Engagement
- Conditions

CRITERIA TO CONSIDER WHEN SELECTING EXAMINERS

- Masters or doctoral level?
- Subject expertise
 - Balance/representation if different areas are covered
 - Publication record
 - Types of publications
 - Recent?
- Prior experience in examining
- International vs local examiners
- Availability
- Language

APPOINTING EXAMINERS

(Remenyi & Money, 2012)

- Appoint an examiner who is competent
 - At doctoral level this means a world-class or near world-class expert in the field being examined
- Examiners must be knowledgeable of and ‘sympathetic’ to the research methodology used by the student
- The role of supervisors in examiner selection
 - What about the supervisor as examiner?
 - How many examiners are necessary?
 - Internal/external examiners?

ORAL EXAMS

(Kumar et al., 2024; Van Teijlingen et al., 2022)

- The nature and purpose of oral examinations (vivas) at the M and D levels will differ
- Anticipating examiner questions and answering them appropriately
- Oral exams have both cognitive and affective elements
- The role of non-examining chairs
 - Main role is to facilitate a consensus among the examiners
 - Not involved in judging the quality of the thesis itself
 - Have to know
 - Exam regulations
 - Procedure for convening PhD exams
 - Procedure for oral examinations
 - Issues likely to arise during the examination
 - Best practices, as shared by experienced convenors
- The role of supervisors
 - Be present physically
 - Ensure candidates are examination ready
 - Hold a mock oral and motivate candidates
 - Assist the candidate after the oral examination
 - Prepare candidates to be bold, to ask questions, and to stay positive

**UNDERTAKING
INNOVATIVE
RESEARCH AND
PUBLISHING
RESEARCH
RESULTS**



WHY PUBLISH?

Literature and relevant policy delivers a succinct message: publication in quality academic journals is an established measure of individual performance and a pathway to academic promotion and competitive research funding. ...

Given the pressures to publish, and wide acknowledgement that a doctorate is vital for a successful academic career, completing a PhD by Publication should attract considerable attention.

(Jackson, 2013: 356)

TO PUBLISH, OR NOT TO PUBLISH

(Van Schalkwyk, Mouton, Redelinghuys & McKenna, 2020; Wilkins, Hazzam & Lean, 2021)

- In spite of increasing trends in publications by graduates, many are not disseminating their work
 - Significant bodies of research are potentially not being shared with the academic community and not contributing to the relevant discipline or field
- Most of the research publications in a system or institution are typically produced by a relatively small group of highly active academics
- Graduates who obtain one publication, are more likely to have more
 - 75% of those doctoral graduates who do publish manage to publish two or more articles
- Support to disseminate work through publication is important, yet mentorship to support doctoral publication is not common practice, particularly in the social sciences
 - Higher Education Qualifications Sub-Framework makes it clear that this is indeed central to doctoral education as ‘training for an academic career’ through the production of knowledge that should ‘merit publication’
- Developmental benefits of doctoral publishing should not be underestimated
 - Students may become better researchers when they publish, because the demands and expectations of journal editors and reviewers may be greater than those of the doctoral programme
 - Writing for publication force students to think about the originality and contributions of their research, and all aspects of the research process, from developing sound research questions, to conducting a comprehensive and critical literature review, to effectively collecting and analysing data
 - In response to editor and reviewer comments students improve the clarity of their writing and the quality of their reasoning

MAIN TYPES OF RESEARCH PUBLICATION

(Wellington & Szczerbinski, 2007)

- Journals (depending on content)
 - Primary literature, reports of new, previously unpublished data
 - Narrative literature reviews, critical summaries of a current state of knowledge on a given topic
 - Quantitative literature reviews/meta-analysis, compilation and statistical re-analysis of results of all (quantitative) studies on one particular topic, in order to draw a general conclusion about their outcome
- Books (depending on authorship and editorial process)
 - Scholarly monographs - books addressing a single topic, written by one/few author(s)
 - Edited books - each chapter is written by different authors, chapters are revised by editors, who take responsibility for overall consistency, coherence and cohesion, usually (though not always) addresses a single topic
- Presentations at conferences by learned societies or professional organisations
 - Oral presentations
 - Posters
- Conference proceedings
 - Commissioned scientific reports
 - Commissioning body may be government, a charity, or commercial company
- Other
 - Technical reports (Typically prepared for internal distribution, e.g. for a sponsor of the research)
 - Working papers (Reports of work in progress, ahead of more formal peer-reviewed publication, often available online)
 - Blogs (Increasingly common in online research communities)

PUBLICATION COUNTS AS A PROXY FOR PROGRAMME & RESEARCH QUALITY (Heesacker & Elliot, 2007; Kumar, Kaur, & Sanderson, 2024)

- What is programme quality in doctoral education?
- How can we “count” (measure) such quality?
- Can staff (faculty) publication count as a proxy for doctoral programme quality?
- Can doctoral student publication count as a proxy for doctoral programme quality?

DISSEMINATING RESEARCH VIA PUBLICATION

(Aitchison, et al., 2012)

- Some supervisors integrate writing for publication with writing the thesis
 - By planning a publication programme, which dovetails with the thesis itself
 - Seeking reviewer responses as an explicit strategy for helping students develop their writing
 - External peer review as the ultimate authority (even more than the supervisor)
 - Supervisors benefit from expanded circle of readers
 - Students benefit from credentialised feedback
 - Article becomes substantive work for the literature review chapter

THESIS BY PUBLICATION DEFINED

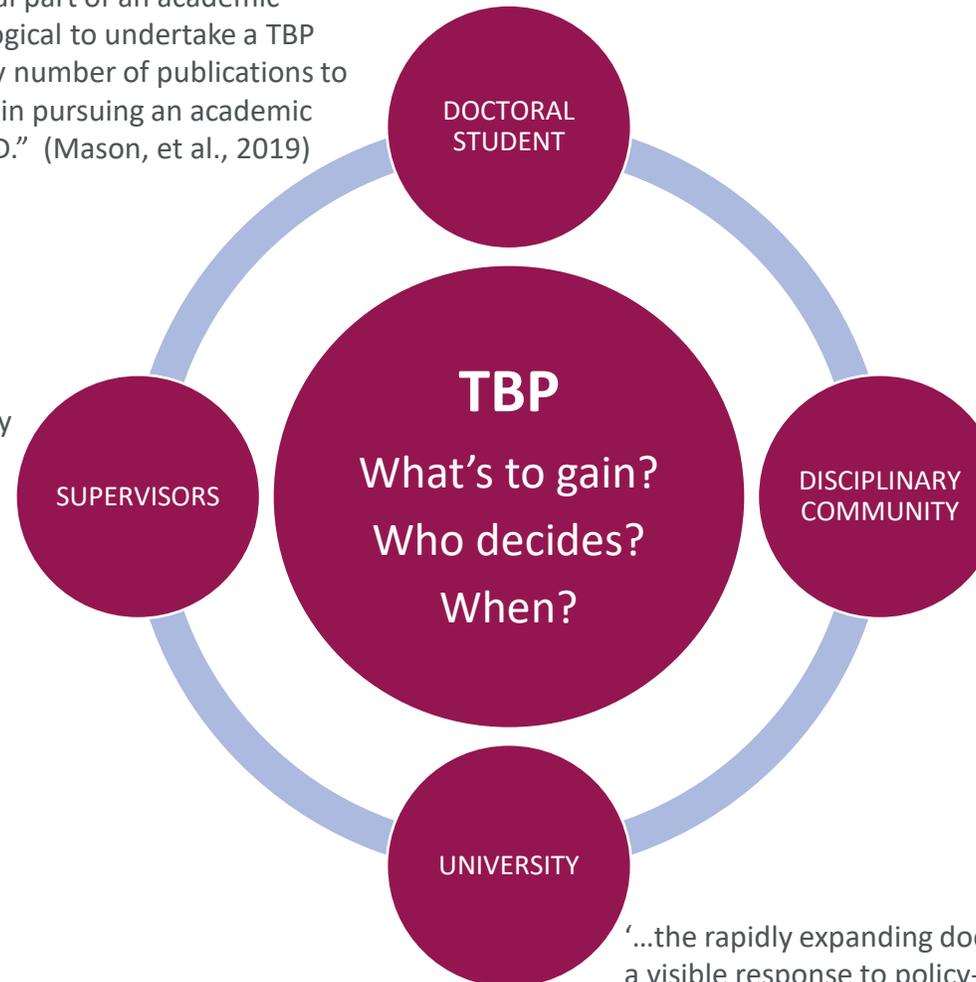
(Mason et al., 2024)

- A doctoral thesis format that includes a variable number of co- or single authored outputs, preferably with the doctoral researcher in lead position, mostly or fully produced during candidature, and ideally published in ‘quality’ peer-reviewed journals
- The final submission must be presented in a coherent way as more than just a collection of outputs, with their relevance and connection to each other and to the overall study evident (for example through introductory and conclusive chapters and/or prefacing text)
- Allows for flexible interpretation across (and even within) contexts, although this may also invite uncertainty for doctoral researchers, supervisors and examiners
- Potential for TBP to be more inclusive of a wider array of publication genres to encourage development of a range of science communication skills, and the generally narrow definition of ‘quality’ in regards to publication outlets could be viewed with a more critical lens to ensure the format does not perpetuate existing biases and unfairly disadvantage doctoral researchers
- Maintains the expected quality of doctoral work as rigorous, coherent, systematic, defensible, and above all, evidence of original and independent thinking

DIFFERENT STAKEHOLDER INTERESTS IN TBP

“Publications are an essential part of an academic career and to me it seems logical to undertake a TBP making sure that I add to my number of publications to make me more competitive in pursuing an academic career after finishing my PhD.” (Mason, et al., 2019)

... the number and frequency of research outputs produced are regularly used ‘to measure personal and institutional performance, and as a criterion for achieving academic promotion and competitive research funding’ (Kamler, 2008: 283).



“to disseminate my results and give credibility to the work I was investigating”
 “make a meaningful contribution to science (and my career) rather than be trapped in a thesis document”
 “the field is too young, and moves too quickly, for four years to be spent without publication”
 “it did not make sense to wait to publish. Others would have got their data out there before me”
 (Mason, et al., 2019)

‘...the rapidly expanding doctorates by publication ... are a visible response to policy-led pressures for research productivity within the “performative” university’
 (Boud & Lee, 2009: 7)

THE TBP AS A UNIVERSITY GOVERNANCE CONCERN

(Mason et al., 2024)

- Limited detail provided by many higher education institutions may be indicative of flexibility, affording doctoral researchers relative autonomy over decisions relating to the content and structure of their thesis
- However, without some detail on issues, it may cause uncertainty for both doctoral researchers and supervisors
- A lack of policy specificity
 - May discourage doctoral researchers from adopting the model
 - May expose institutions to risks associated with the responsible dissemination of research (such as dubious authorship practices and predatory publishers)
 - Creates difficulties in determining what kind of support doctoral researchers need
 - May compromise assessment if policies do not provide clarity on the expectations that a TBP needs to meet, leaving this aspect open to examiners' own interpretation

REQUIREMENTS AND REGULATIONS

- Publishable vs published
- Number of papers required
- Authorship
- Format
 - All included papers reorganized into cohesive, integrated, and sustained work in a logical way with an emphasis on its significance
- Copyright
 - Authorship contribution statement or co-authorship form should be provided
 - Re-typeset the published papers

TIMING OF PUBLICATIONS

(Aitchison et al., 2012; Lee, 2010; Mason et al., 2024; Niven & Grant, 2012; Pare, 2019)

- Almost half of policies did not mention the issue of timing, but prospective TBP is becoming more common than the retrospective TBP
 - Only include publications developed during the candidature period
 - Where outputs published prior to enrolment are allowed, conditions generally apply, limiting the number or percentage of such publications, or the time lapsed since their publication
- Policies that do not explicitly comment on the timing of publications creates lack of clarity
 - Thesis *by or through* publication is misleading as it foregrounds a production oriented view of knowledge creation whereas doctorateness emerges more iteratively and gradually over time
 - May be convincing reasons for including prior publications (especially in contexts where there is a paucity of academic staff with doctorates, such as in South Africa)
 - Takes time and concerted support to develop doctoral researchers' ability to produce publishable work, but no evidence of critical scholarly engagement with whether or not this development needs to be situated narrowly within the doctoral candidature, or can be based on a longer term developmental trajectory preceding actual enrolment in a doctoral program
 - Blanket exclusion of papers published prior to enrolment has implications for early career researchers who may have some research experience but not enough to fulfil the expectations of a doctoral degree, for whom a 'hybrid' model, allowing publications developed both before and during candidature, would be an ideal option
 - While publication can form part of a pedagogical approach to scholarly development, pressuring doctoral researchers to publish too early in the process may rob them of the rhetorical dexterity they need to negotiate their own authorial voice, especially if the language in which they are publishing is not their first
 - Insistence on publication needs to be considered when organising doctoral programs and policies since publication timeframes are often not compatible with the thesis writing timeframe, adding another obstacle to adoption and timely completion

NUMBER OF PUBLICATIONS

(Mason et al., 2024)

- Around half of all policies state a required minimum number of publications for a Thesis by Publication, with one and three being most common
 - More than a quarter of policies (n=54, 28%) do not provide this information
 - Further 9% explicitly state that there is no specific requirement regarding the number of publications
- In some cases a given number refers to the number of outputs to be published, while in others it refers to outputs to be included but not necessarily published
 - For example, the University of Lleida in Spain requires doctoral researchers to include a minimum of four academic articles, of which at least two must be either published or accepted for publication at the time of submission
 - In many policies this distinction is unclear

PUBLICATION STATUS

(Mason et al., 2024)

- Depending on the policy, publications included in a Thesis by Publication may be published, submitted or under review, or prepared in manuscript form, sometimes referred to as being ‘publishable’
- Explicit reference to publication status is limited
 - Japan and Spain seemingly the most insistent on publication
 - Australia and New Zealand more likely to allow under review and publishable outputs

PUBLICATION GENRES

(Mason et al., 2024)

- Scholarly articles published in peer-reviewed journals hold primacy
 - Other genre types mentioned less often
- A number of policies (also) explicitly or implicitly noted genres *not* allowed to be included
 - Non-peer-reviewed outputs (28%, n=53)
 - Books (24%, n=47)
 - Conference proceedings (24%, n=47)
 - Non-written outputs (23%, n=44)
 - Book chapters (21%, n=41)

LANGUAGE OF PUBLICATIONS

(Di Bitetti & Ferreras, 2017; Ma, 2021; Mason & Merga, 2022; Mason et al., 2024)

- Little attention to the language of publications accepted in policies, but may be addressed in broader level policies governing doctoral education as a whole
 - Explicit mention of publication language only in Japan (n=17) and Pompeu Fabra University in Spain which states that at least one publication must be written in English
 - In New Zealand, given a bicultural system, the thesis and publications can be written in Māori.
 - None of the South African policies explicitly mentioned language even though the country has twelve official languages and multilingualism is often promoted within higher education settings
- Majority of highly rated scientific journals are published in English (and are situated in the Global North), genre preference for journal articles may predispose publications to be written in English, perpetuating the centre-periphery dichotomy
 - Adds to the challenges that English as an Additional Language researchers already face in academic doctoral writing
 - Not ‘publish or perish’, but in fact, ‘publish *in English* or perish’
 - Early career researchers who conduct their research training entirely in English environments struggle to communicate research in their local communities, even in their mother tongue
- Conceptualising the Thesis by Publication needs to take such implicit influences into account, especially in contexts where multilingualism is prevalent and promoted

'QUALITY' OF PUBLICATIONS

(Mason et al., 2024; Van Schalkwyk et al., 2020)

- Characteristics of publications that are desired or preferred
 - Adjectives to describe characteristics of publications, publishers, and/or outlets (n=58)
 - Citation-based metrics, such as quartile rankings and/or Impact Factors (n=34)
 - Journal metrics to be reported with their submission (n=5)
 - Required/strongly recommended to publish at least one article (if not all) in journals in the top quarter (n=1), top half (n=11), top three quarters (n=1), or top four quarters (n=2) of journals in terms of citation ranking
- Explicit reference to predatory journals and publishers limited (n=2)
 - Doctoral researchers are provided with links to further information on how to avoid publication in suspect outlets
 - The push to publish in indexed journals has contributed to the rapid rise of predatory publications
- Many of the 'quality' indicators that are given policy attention reflect power inequalities that exist in research production and scholarly publication, giving status to high-impact indexed journals which are commonly produced in English, and owned by corporate publishers and managed by editorial teams positioned largely in the Global North
- Absence of any overt policy attention to Open Access articles, especially with the intention to broaden the audiences to communicate research outputs, and to support doctoral researchers to do so

STRUCTURE AND FORMATTING OF PUBLICATIONS

(Mason et al., 2024)

- Structure

- Importance of cohesion noted in more than half of all policies (n=107, 56%), in a small number doctoral researchers are asked to minimise unnecessary repetition (n=13, 7%)
 - Emphasis on thesis being more than a collection of papers
 - A number of policies (n=32, 17%) explicitly require the inclusion of materials to preface each paper and how it fits in the broader study
- Where an overall structure is mentioned or implied, there appear to be two broad approaches
 - All additional information is presented in a single prefacing ‘global introduction’, ‘comprehensive summary’, ‘overarching statement’ or otherwise named comprehensive introduction (17%, n=33), which precedes the publications presented in the second half of the thesis
 - Structured similarly to a monograph, organised into discrete chapters, with introduction (39%, n=74) and conclusion chapters (46%, n=89) most commonly requested or required
 - Relatively fewer policies noted the need to also include separate methodology (21%, n=41) and/or literature review chapters (15%, n=29).

- Formatting

- Reformatted to be consistent with the rest of the thesis (n=16)
- Final typeset version to be included (n=11)
- Decision for doctoral researchers (n=23)
- Whether or not changes can be made to publications that appear in the thesis (as different to the published version)
 - Allowed (n=13), but generally needs to be highlighted or explained in some way, OR explicitly prohibit changes (n=3)

A WORD OF WARNING!

(Paré, 2010)

- Slow the presses (Paré, 2010)
 - Universities are not skilful in recognising the pedagogical work necessary to acquaint students with the practices of publishing (Aitchison, Kamler & Lee, 2010)
 - Condensing a thesis/article into an article is difficult
 - Too broad topics, extensive & longitudinal methodologies, impenetrable theoretical terminologies, too many references
 - Display of knowledge, but fails to address the dialogue among working scholars (Paré, 2010: 30)
- Rushing publication makes chance-taking less likely, reducing potential for a challenging and transformative rhetorical experience (Paré, 2010: 33)
- Valuable contributions to academic debates are the result of a deep immersion in a community's discourse - an immersion that happens over time through authentic engagement in an ongoing dialogue, and that happens *only* when a writer locates herself [sic] in the historical, ideological and intellectual threads of that dialogue (Paré, 2010: 31)

DEVELOPING QUALITY ASSURANCE INDICATORS FOR PG PUBLICATION

- Consider the student first
 - What is the student to become?
- Consider the project
 - What contribution will it make?
- Consider the timelines
 - It has implications for several parties
- Consider ethics
 - To whose benefit is the research?
- Be careful of too narrowly formalising a particular route of inquiry

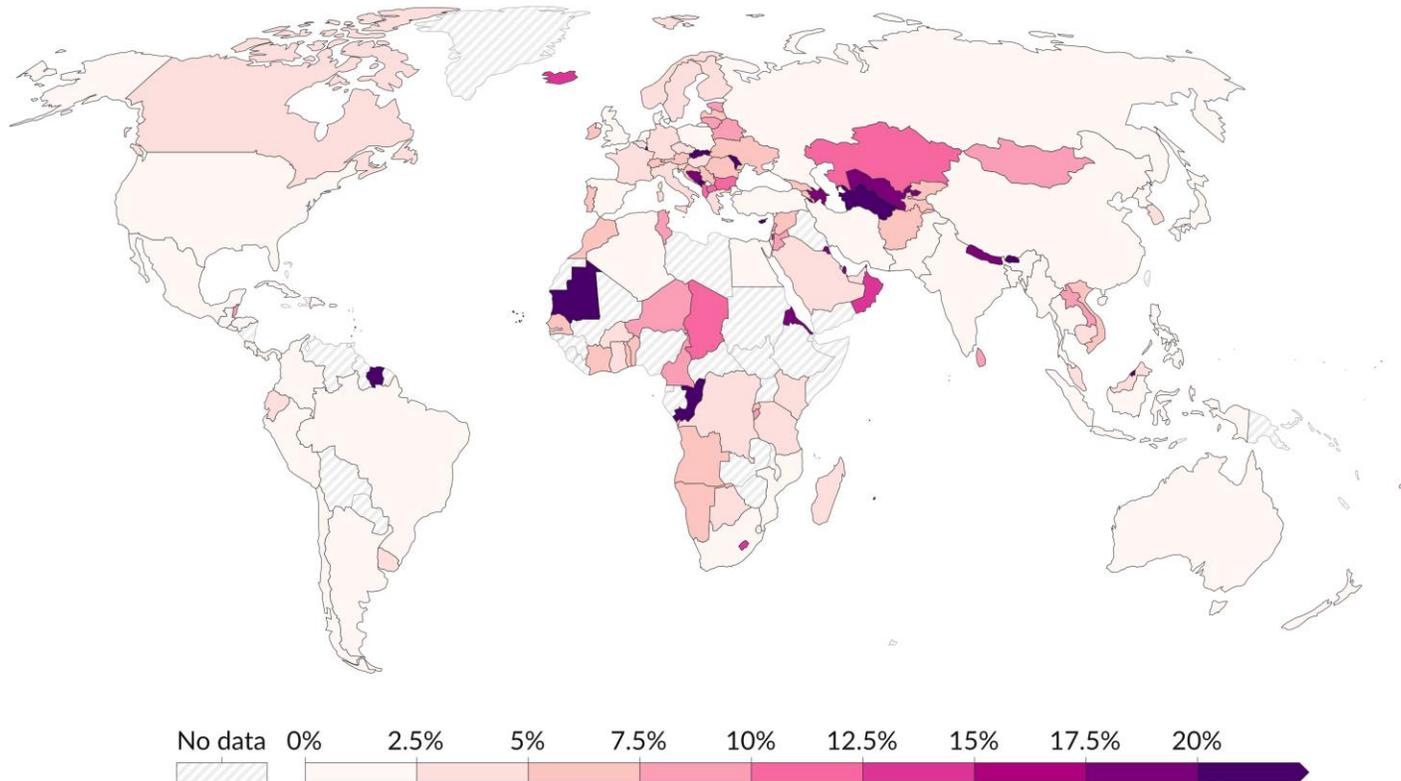
A man in a blue and white striped shirt is writing on a whiteboard with a yellow marker. He is wearing a gold watch and blue glasses. In the background, several other people are looking towards the whiteboard. The scene is set in a bright, indoor environment, likely a meeting or workshop.

CAPACITY BUILDING FOR RESEARCHERS

Share of students studying abroad, 2021

Our World
in Data

Percentage of a country's tertiary¹ level students studying abroad as international students. International students are those that move from their home countries for education, identified based on their past education, residence, or distinct immigration regulations.



Data source: UNESCO Institute for Statistics (2024)

OurWorldinData.org/global-education | CC BY

Note: Values can be greater than 100% when more students are studying abroad than are studying in the home country.

1. Tertiary education: Tertiary education (International Standard Classification of Education Level 5 to 8) expands upon secondary education by offering specialized learning activities in various fields. It targets advanced levels of complexity and specialization, encompassing both academic and advanced vocational or professional education.

WHAT WE FOUND IN SOUTH AFRICA AND SWEDEN

(Frick et al., 2016)

- Doctorate a preparatory mechanism for developing early career researchers’
 - Knowledge and intellectual abilities
 - Self-reflection on personal effectiveness
 - Clarification on aspirations for professional and career advancement
- But not for
 - Multiplicity and complexity of academic practice
 - Research governance and organisation, particularly research funding
- Ability to engage with and influence others seem to vary based on individual experiences during their doctoral studies
 - Supervisors play a key role
- Do not assume that the doctorate serves as adequate preparation in all respects for building a successful research career
 - Need further professional development opportunities
 - Need for developmental initiatives that are sensitive to different needs
- Doctoral education not an end point in a lifelong quest for knowledge production

ECR SUCCESS: BEING STRATEGIC (Ramsden, 1998; Sutherland, 2015)

- Predictors of ECR success
 - Being a member of a highly active research group
 - Active research departments with a strong culture of research and staff support to develop research careers
- Measures of ECR success
 - Research productivity
 - Publications
 - Citations
 - External grant funding

FACTORS CRITICAL TO ACADEMIC RESEARCH SUCCESS

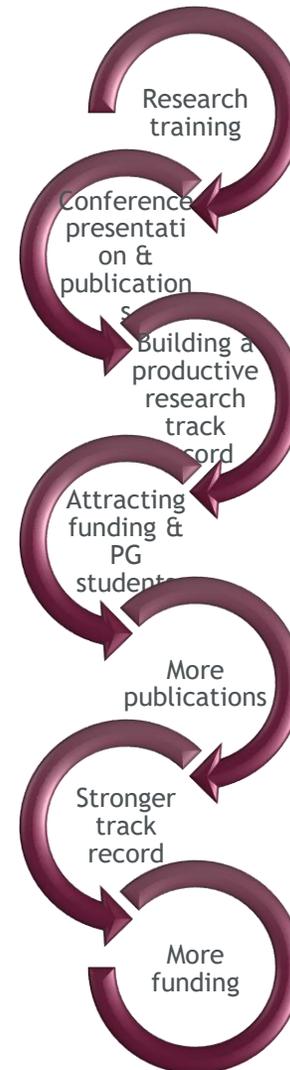
(Browning et al., 2017; Deyer et al., 2006; Grant & Drakich, 2010)

- Having a doctorate
- Having/creating research opportunities
- High degree of passion
- Being mentored
- Working in a supportive research environment that emphasises research quality
- International connections and networks
- Having effective mentors
- Participating in collaborative research
- Being part of an active research group
- Attending and presenting at conferences
- Writing for publication + publishing
- Supervising postgraduate students
- Moderate involvement in academic duties
- Involvement in government funding bodies
- Grant writing skills
- Access to resources (incl. start-up funds)
- Institutional impacts and practices



**Developing a
research track
record**

DEVELOPMENTAL TRAJECTORY FOR A SUCCESSFUL ACADEMIC RESEARCH CAREER (Browning et al., 2014)



CAREER TRAJECTORIES OF POSTDOCS

(Simmonds & Bitzer, 2018)

- Postdoc programmes serve the research interests of host institutions and postdocs
 - BUT postdoc a temporary position, thus a stepping stone in a larger career trajectory
 - No guarantees of academic career or any other employment amidst rising levels of unemployment, economic recession (affecting research funding and support), scarcity in full-time academic employment, as well as the increasing number of postdocs
- Postdocs place too much prestige on academia, fail to see knowledge production beyond its most traditional sense
 - Should consider alternative career opportunities
 - Postdocs need specific research skills development and support, so that positions not only serve strict research output purposes
 - Require the involvement of HE institutions in developing partnerships
- Postdoc as a developmental opportunity, not as a career (can lead to professional paralysis)

FROM ECR TO RESEARCH LEADER

(Browning, Thompson & Dawson, 2017)

- ECR ➤ Leading researcher ➤ Research leader
 - First 5 yrs critical for establishing a research track record
 - Establishing a research group (PG students, postdocs)
 - Obtaining funding
 - Publishing with students and colleagues
 - Average career path 14 yrs from PhD to Prof



SUPPORTING EARLY CAREER RESEARCHERS

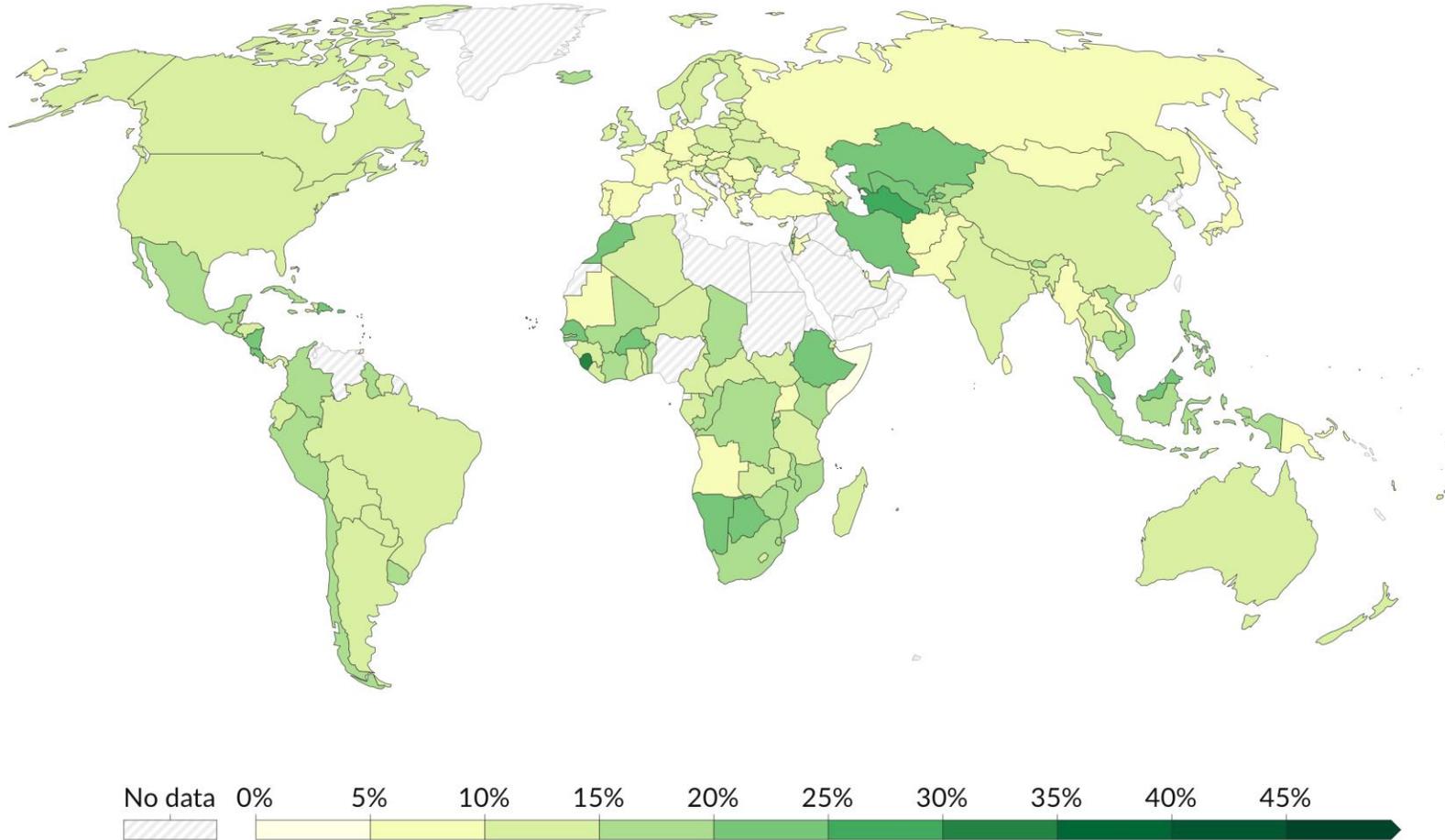
- Self-development
- Mentoring
- Networking
- Institutional initiatives

A close-up photograph of two individuals in business attire shaking hands. The person on the left is wearing a dark suit jacket, and the person on the right is wearing a light blue button-down shirt. The background is a blurred office environment with a desk and a chair. The text "MANAGEMENT OF RESEARCH PARTNERSHIPS & CONTRACTS" is overlaid in the center in a bold, white, sans-serif font.

MANAGEMENT OF RESEARCH PARTNERSHIPS & CONTRACTS

Education spending as a share of total government expenditure, 2022

Total general government expenditure on education as a percentage of total government expenditure on all sectors.

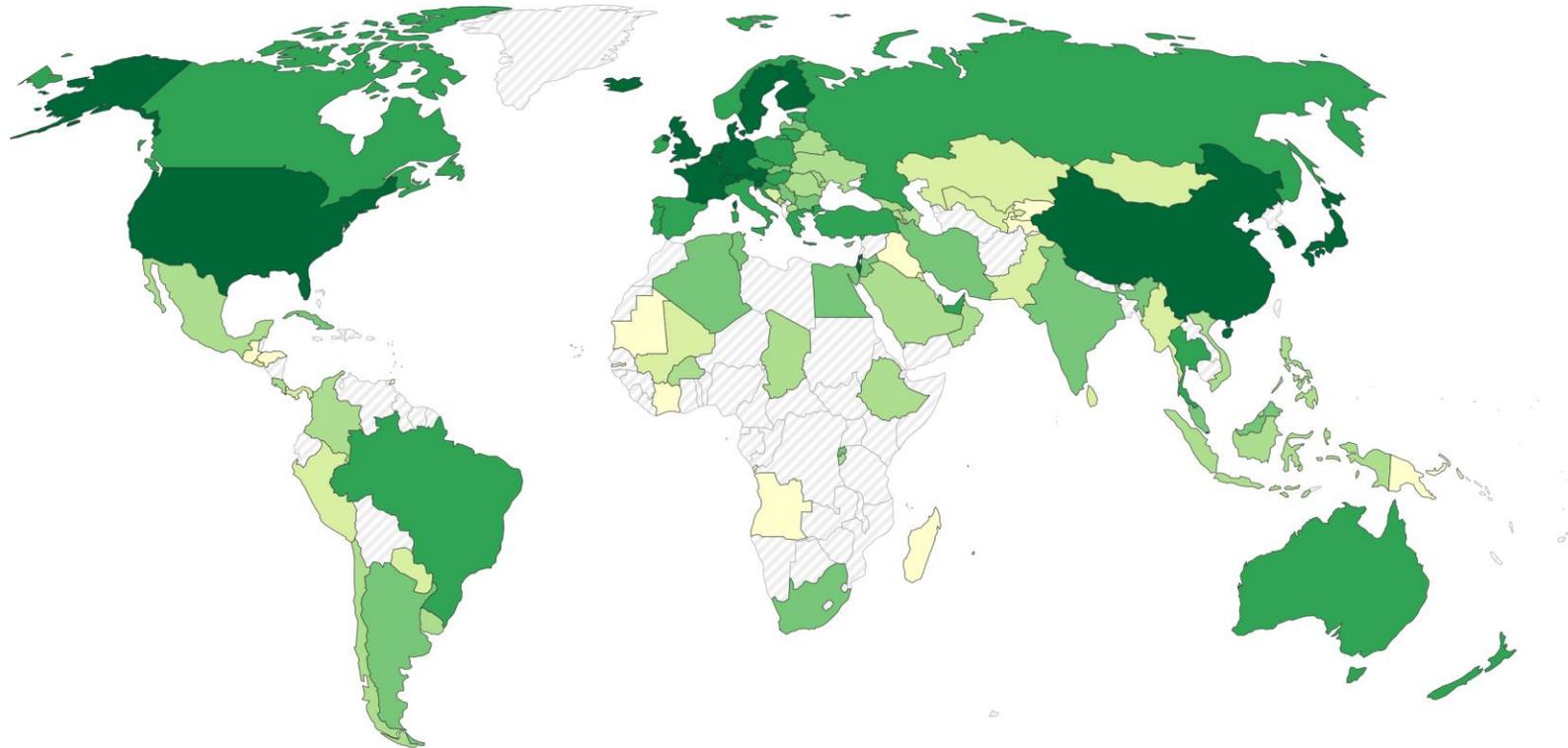


Data source: UNESCO via World Bank

OurWorldinData.org/financing-education | CC BY

Research & development spending as a share of GDP, 2021

Includes basic research, applied research, and experimental development.



Data source: Multiple sources compiled by World Bank (2024)

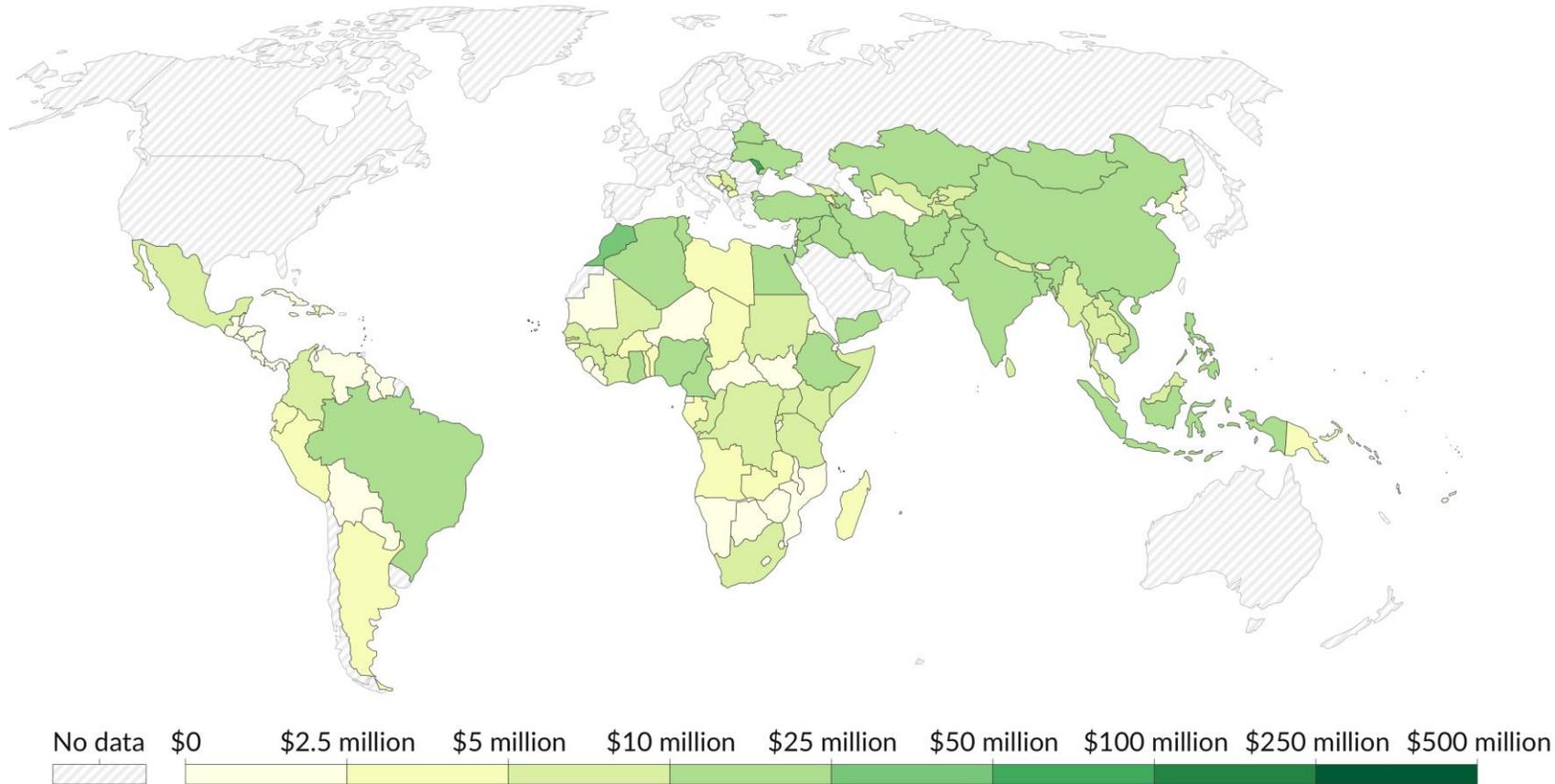
OurWorldinData.org/research-and-development | CC BY

Note: Spending includes current and capital expenditures (public and private) on research.

Gross overseas development assistance (ODA) from all donors for scholarships, 2021

Our World
in Data

Scholarships are defined as financial aid awards for individuals towards systematic instruction in private or public institutions of higher education to follow full-time studies or training courses in the donor country. This data is expressed in US dollars. It is adjusted for inflation but does not account for differences in the cost of living between countries.



Data source: Organisation for Economic Co-operation and Development
Note: This data is expressed in constant 2021 US\$.

OurWorldinData.org/government-spending | CC BY

DOCTORAL EDUCATION AS A SPACE FOR RESEARCH PARTNERSHIPS

- Background
 - From the single isolated scholar on a lone knowledge quest into a diverse array of programme formats and supervisory arrangements
 - Diversity within doctoral education systems and structures include the crossing of national borders and institutional boundaries for both students and supervisors, sometimes through formal arrangements such as dual and joint degree programmes
 - BUT research is limited, which restricts our understanding to anecdotal evidence
 - Existing research does not explore the complexities inherent to arrangements when partnerships are forged between more than two partnering institutions, when North-South divides are crossed, when there are historical and current inequalities to navigate, and differences in structures, policies and practices across the partnering institutions
- Exploring what potential for innovation joint doctoral programmes of this nature may offer in terms of
 - Structuring collaborative spaces in doctoral programmes
 - Development of early career researcher capacity (for both students and novice supervisors)
 - Challenging institutional hierarchies and establishments

AN INTERNATIONAL PERSPECTIVE ON JOINT DEGREES

(Crăciun, 2018; De Wit & Altbach, 2021; De Wit et al., 2019; Heleta, 2022; Jooste & Hagenmeier, 2022; Lee & Stensaker, 2021; Magee, 2020; Marginson, 2010; Quinlan, 2021)



- Globalisation and internationalisation
 - Growth in the global knowledge economy created increased emphasis on research and research education within higher education institutions, with universities becoming strategic in internationalising their offering and countries and regions developing policies in support of international collaboration
 - Increased emphasis on internationalisation within the higher education sector, with stakeholders including scholars, policymakers, funding organisations, university leadership and practitioners
 - Internationalisation as “the active engagement with the design of policies, plans, programs, strategies and approaches at various levels of decision-making so as to promote the idea of internationality in higher education” Crăciun (2018: 97), yet the same study found that only 22 out of a total of 95 reviewed countries had a national strategy or policy on internationalisation of higher education, with so-called more 'developed' countries more likely to regulate strategies and policies of this nature at a national level
 - ‘Policy Framework on the Internationalisation of Higher Education in South Africa’ (2019) in terms of the Higher Education Act, 1997 (Act No. 101 of 1997, as amended) is the first of its kind on the African continent
 - Such policies imply a consciousness at both national and institutional levels that borders and boundaries are being crossed in the name of research and research education
 - BUT the capacity to implement and govern such policies remain debatable

AN INTERNATIONAL PERSPECTIVE ON JOINT DEGREES

(Bamford, 2020; Chan, 2021; Fourie-Malherbe et al., 2016; Hou, 2020; Knight, 2009; Knight & Lee, 2021; Kompanets & Vääänen, 2018; Stevens, 2013)



- Joint degrees defined
 - Involves an international academic collaboration between a local and international partner institution abroad on a jointly defined and entirely shared study programme through a single qualification awarded by both the partnering institutions
 - If the partners cannot come to a joint decision to award a joint degree, none of the partners may proceed to award the degree outside the agreement as a single institution degree
- Joint doctoral degrees
 - Serve as a vehicle for both internationalisation and research collaboration
 - Strategically important as the nexus between teaching and learning, and research as knowledge production
 - Promote the mobility of academic staff, students and ideas across national borders
 - Provide a vehicle towards collaborative qualifications, internationalisation, and funding opportunities
 - Require partnership agreements where students are expected (or have the opportunity) to enrol for collaborative qualifications at two or more of the partner institutions involved in such bi- or multi-national consortia

CRITICAL PERSPECTIVES: STRUCTURING COLLABORATIVE SPACES IN DOCTORAL PROGRAMMES (Frick & Wimpenny, 2024)

- The realities of implementing a programme during a global pandemic
 - Cohort only met face-to-face as a group two years into the actual project amidst safety measures such as vaccination pre-requisites, which led to the exclusion of some stakeholders
 - Working across three distinctly different institutions and across two very different national higher education systems was exacerbated by the enforced isolation and effects of the pandemic
 - Creating a collaborative space where both students and supervisors have vastly different personal and professional realities, levels of online and computer hard- and software access, levels of support, and capabilities was difficult
- Well-functioning collaborative spaces depend on the development of trust between all stakeholders involved
 - Trust difficult to establish within the ever-evolving context, took more time than was implicitly anticipated
 - Informal networks between students were established over time (but remain voluntary)
 - While there are clear targets and deadlines, the space for collaboration can only be created, not enforced
- A cohort approach may not work equally well for everyone, which is difficult to anticipate and measure during the selection phase of a doctoral programme
- Student cohort probably benefitted more from the structured collaborative spaces we had created than the supervisory cohort
- Set targets, but individuals work at different paces and face different challenges in the completion of individual projects
 - Providing timely input at a teachable moment to everyone in the cohort remains tricky

THE ROLE OF JOINT DEGREE PROGRAMMES IN CHALLENGING INSTITUTIONAL HIERARCHIES AND ESTABLISHMENTS

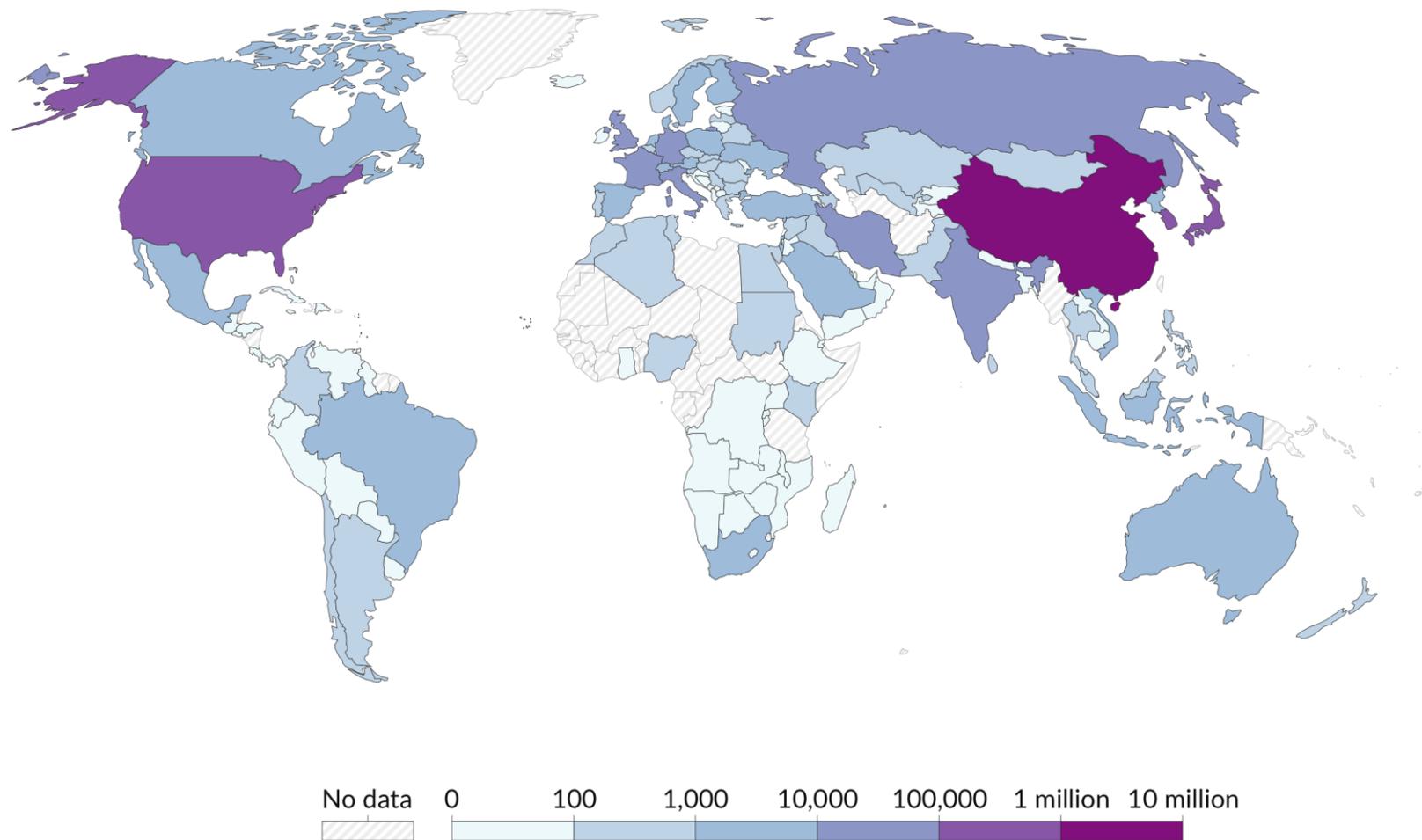
(Frick & Wimpenny, 2024)

- Some institutions are more equal than others
 - Challenges (and opportunities) for not only the project team and participants, but also for administrators and support staff across the three institutions
 - Regulations and policies guiding practice in three vastly different institutional contexts and cultures
 - Financial systems, academic calendars, and hierarchical reporting structures differ across the institutions
 - Ways in which these elements get interpreted and enacted are nuanced and complex
- We have become acutely aware of the importance of the following:
 - Need for transparency, trust and equality amongst the project leads across the three institutions
 - Necessity of proper financial management and reporting that is centrally administrated and communicated
 - Importance of proactive planning, and flexibility, to accommodate systems that are operating from vastly different points of departure and within vastly different operational realities
 - Critical value of timely and open communication amongst all stakeholders
 - Acknowledgement that access to resources and structures may be different across institutions and role players, which may influence expectations and outcomes
 - Quintessence of humility, the willingness to listen, and be accommodating when working within complex and different organisational structures and with a diversity of people
 - Having senior academics who have direct access to institutional decision-makers and structures has been important throughout the project
 - Holding the institutions accountable for that which they have signed up for when agreeing to be a partner in this programme

IP & COMMERCIALISATION OF RESEARCH



Annual patent applications, 2021



Data source: Multiple sources compiled by World Bank (2024)

OurWorldinData.org/research-and-development | CC BY

Note: Each country's data includes patent applications for which the first-named applicant is a country resident.

RESEARCH AS A DRIVER FOR INNOVATION

(Baptista et al., 2015; Busch, 2023; Huggins et al., 2020)

- Innovation involves the process of transforming an invention into practical application
- Innovation as part of doctoral research privileges the production of knowledge that is economically useful, either in terms of technological advances or societal use
 - Technological innovation is typically linked to marketable technologies, for example developing patents
 - Social innovation would relate to applied research aimed at improving societal conditions or solving societal problems
- Innovation requires vast socio-technical infrastructure
- Universities with the most central positions (*network centrality*) within university-industry network structures also have high rates of relational involvement in activities such as spin-off generation and engagement in externally funded research projects
- Some forms of activity, in particular intellectual property protection through patenting, are found to be negatively associated with centrality
 - Increasing an inventor's share in university patent revenue does not necessarily encourage researchers to develop and commercialize more remunerative patents
 - BUT patents may provide reputational benefits or encourage faculty-run spin-offs, or financial incentives
 - Lack of a measurable impact of higher royalty shares on patenting activity suggests that, from a social welfare perspective, it may be preferable for a larger share of royalties to be retained by universities, which are then reinvested in science research and education

A photograph of a server room with rows of server racks. The racks are filled with server units, and the room is illuminated with blue light. The perspective is looking down a long aisle between the racks.

MANAGEMENT OF RESEARCH INFORMATION

RELATIONSHIPS BETWEEN QUALITY, EXTERNAL AND INTERNAL QUALITY ASSURANCE (ANSAH, 2017)



RESEARCH ASSESSMENT & INFORMATION MANAGEMENT

(Schöpfel & Azeroual, 2023)

- Research assessment (RA)
 - Multifaceted process aimed at evaluating the quality, impact, and effectiveness of research endeavours
 - Establishing and upholding standards of research quality for purposes of resource allocation, accountability, quality assurance, strategic planning on the institutional level, and recognition and reward of individual researchers
 - Conducted by a variety of entities (e.g. academic institutions for promotion and tenure committees, departments; funding agencies in the form of grant review panels; research councils consisting of advisory committees, program managers, or government bodies for the purposes of national assessment programs)
 - Affects scholarly careers of researchers (promotions and tenure; likelihood of securing grants and funding; reputation)|
- Importance of responsible research assessment (RRA), which advocates for transparency, diversity, quality, and open metrics
 - Acknowledges diverse contributions to research
 - Underscores the imperative of qualitative evaluation while advocating for the judicious use of quantitative indicators
 - Mitigating unintended consequences of metric-driven assessment practices and foster a culture of responsible and equitable evaluation
- The transformation of assessment indicators and procedures directly affects the underlying research information management infrastructures and information systems which collect and store metadata on research activities and outputs



ACADEMIC INTEGRITY

RESEARCH INTEGRITY

(Kruk, 2013; Singapore Statement on Research Integrity, 2010)

- Ethics: basis of scientific research
- Prerequisite for research results to have integrity Without integrity, research loses most of its worth

ISSUES

(Schienke et al., 2009)

- Increasingly competitive funding environment
- Increasing collaboration across fields and continents
- Increased awareness of relevance of research to social, economic, and ethical issues of wide public and political interest

THEREFORE:
importance of science
not only being responsible but also
responsive

ISSUES IN ACADEMIC INTEGRITY

- Interweaving of personal relationships
- Taboo topics (gender, authorship)
- Cultural clashes
- Academic power

Need to untangle the complexity of power issues and contribute to a gradual process of cultural change in enhancing professional self-awareness within academe

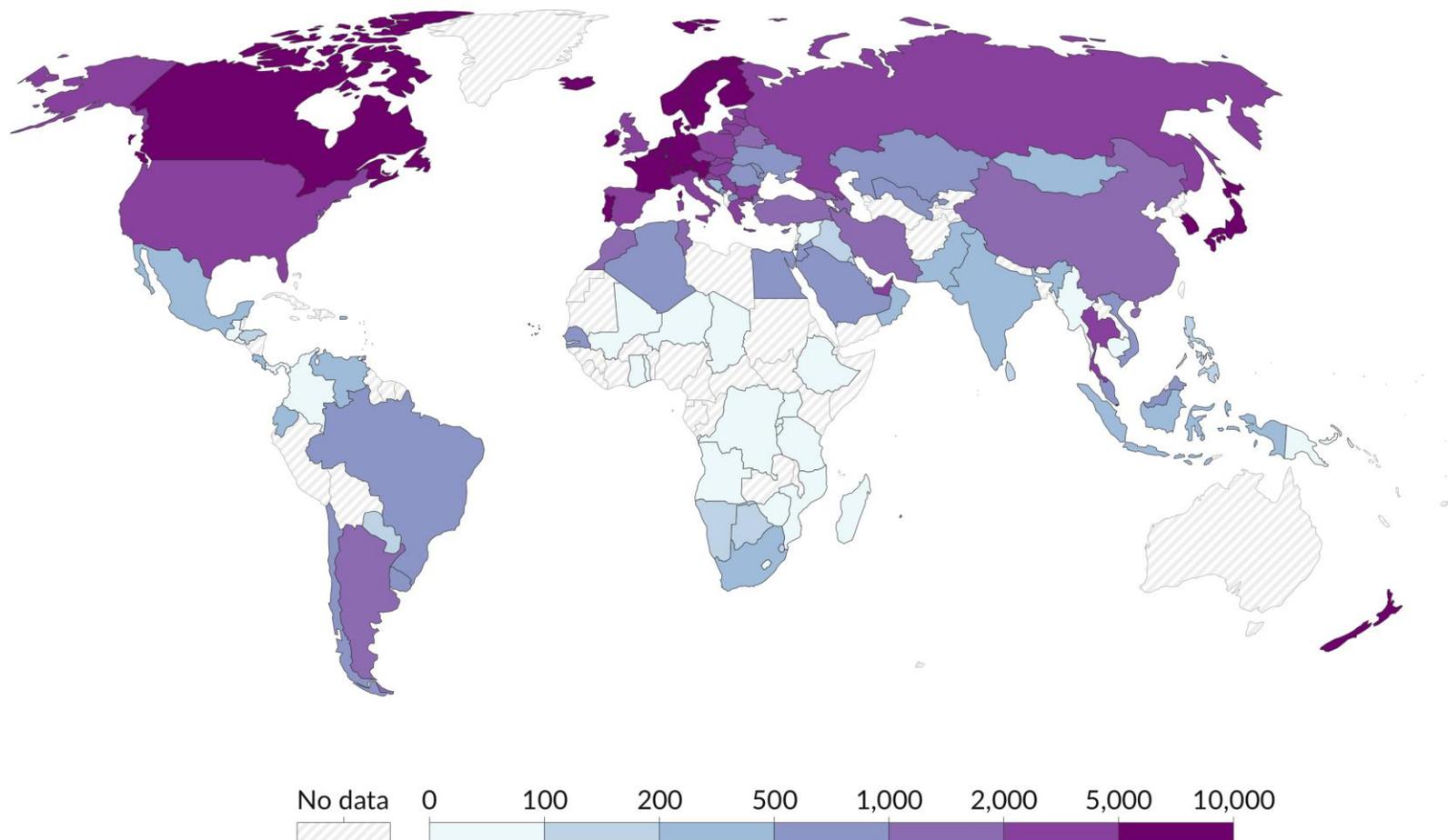


RESEARCH RELEVANT &
RESPONSIVE TO NEEDS
FOR ACADEMIC
ADVANCEMENT &
COMMUNITY
DEVELOPMENT
EXPECTATIONS

Number of R&D researchers per million people, 2021

Professionals engaged in conceiving or creating new knowledge, products, processes, methods, or systems.

Our World
in Data



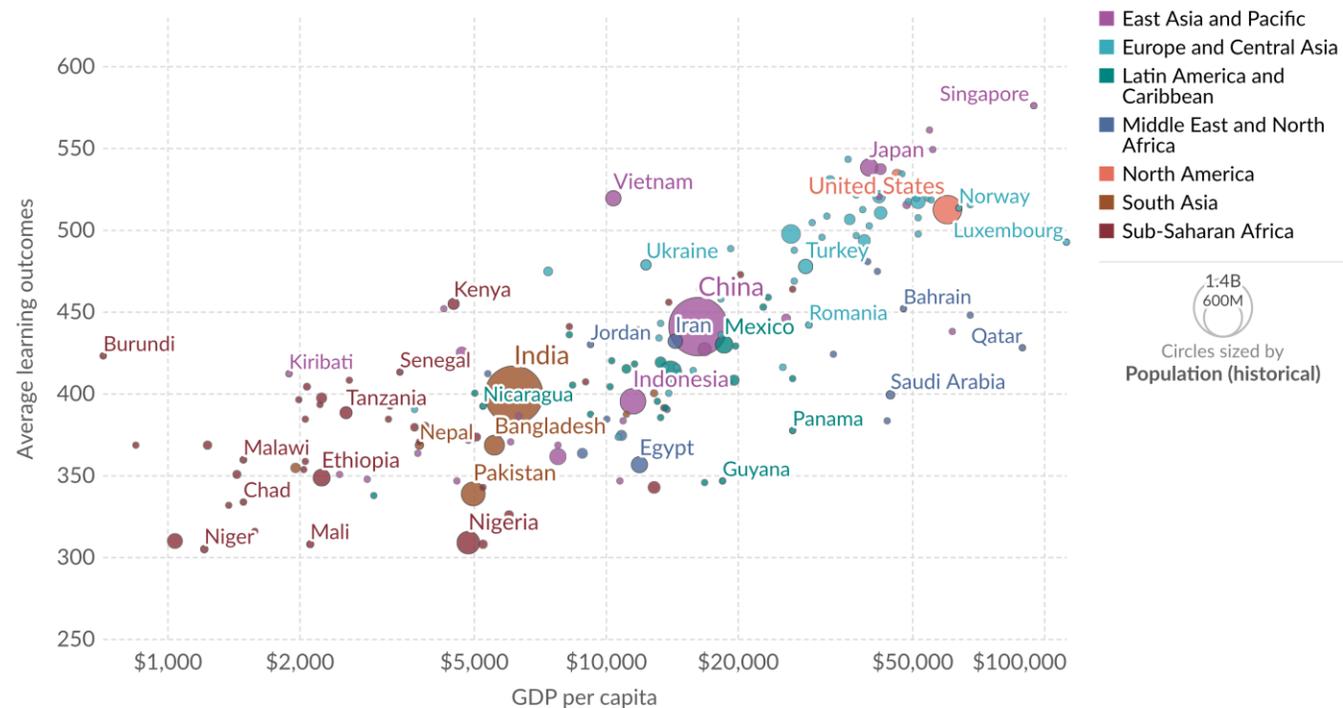
Data source: Multiple sources compiled by World Bank (2024)

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Note: Postgraduate students are included.

Average learning outcomes vs. GDP per capita, 2020

Average learning outcomes correspond to harmonized¹ scores across standardized, psychometrically-robust international and regional student achievement tests.



Data source: World Bank (2023)

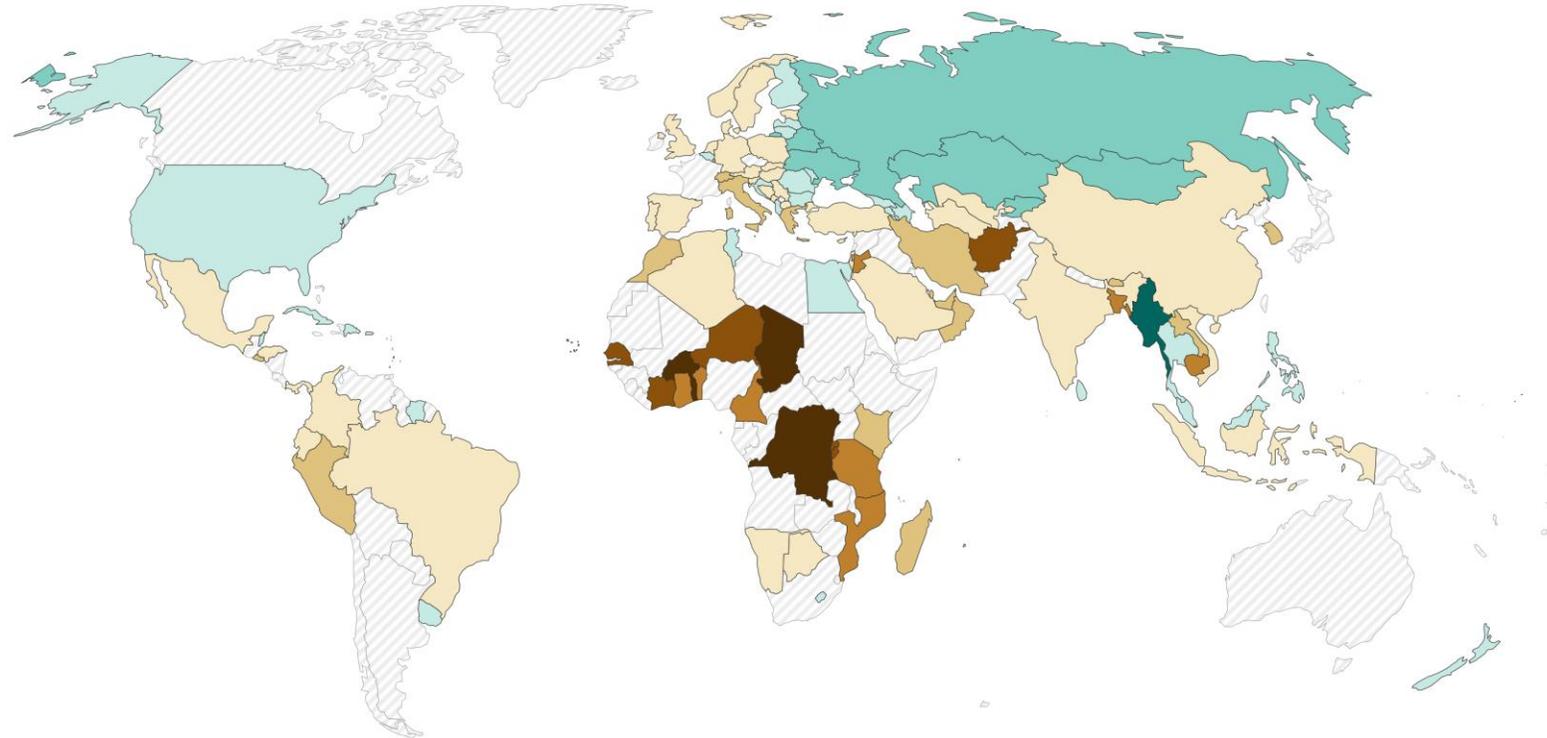
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Note: GDP per capita data is expressed in international-\$² at 2017 prices.

1. Harmonized test scores: Harmonized test scores consolidate data from several international student achievement testing programs, enabling a standardized comparison of educational attainment across different educational systems and cultures. These scores are measured in TIMSS (Trends in International Mathematics and Science Study) - equivalent units, with 300 denoting minimal attainment and 625 representing advanced attainment.

2. International dollars: International dollars are a hypothetical currency that is used to make meaningful comparisons of monetary indicators of living standards. Figures expressed in international dollars are adjusted for inflation within countries over time, and for differences in the cost of living between countries. The goal of such adjustments is to provide a unit whose purchasing power is held fixed over time and across countries, such that one international dollar can buy the same quantity and quality of goods and services no matter where or when it is spent. Read more in our article: What are Purchasing Power Parity adjustments and why do we need them?

Share of academic staff in tertiary education who are female, 2023



Data source: UNESCO Institute for Statistics (2024)

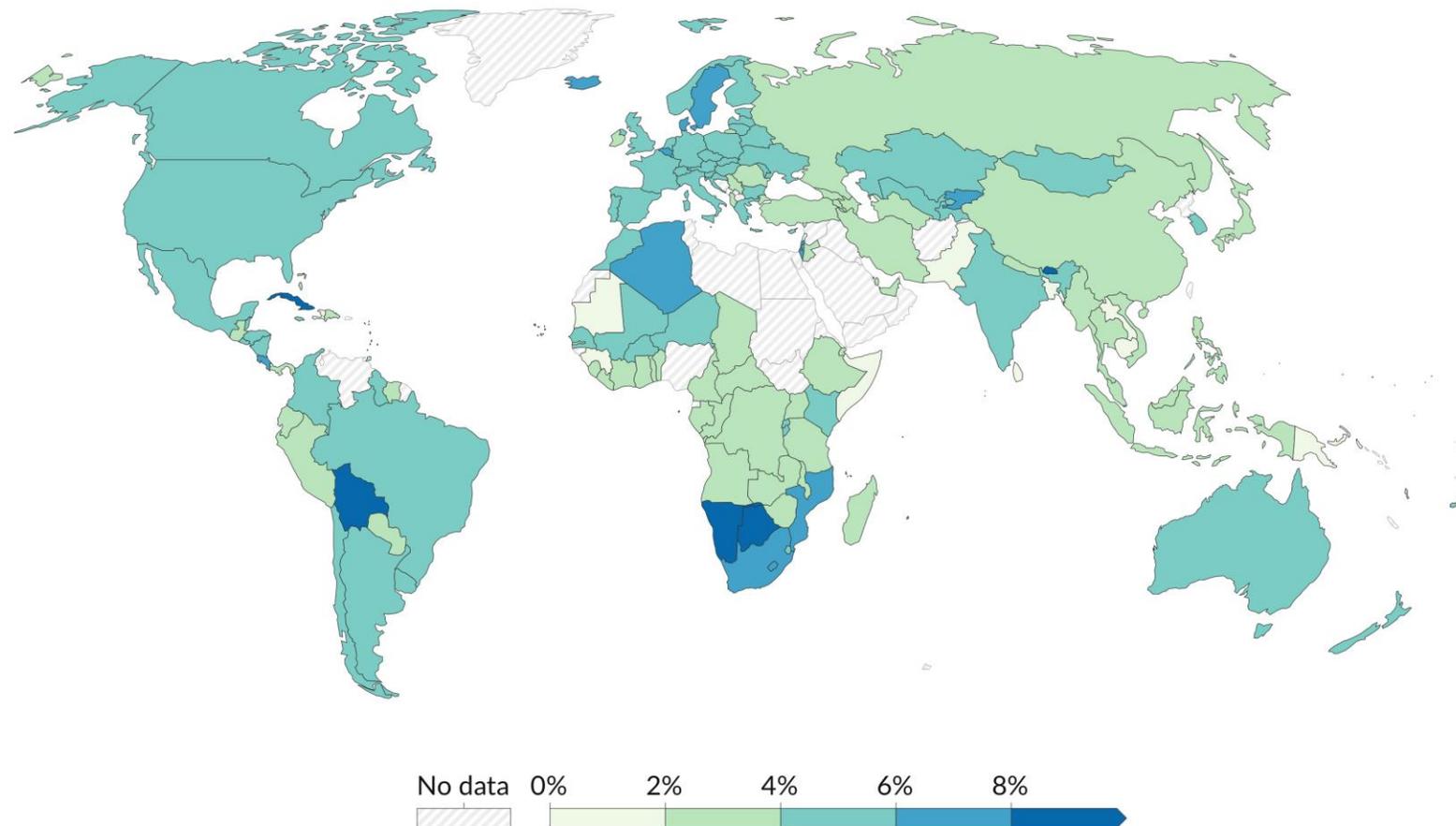
OurWorldinData.org/global-education | CC BY



**MONITORING & EVALUATION OF
RESEARCH SYSTEM**

Public spending on education as a share of GDP, 2022

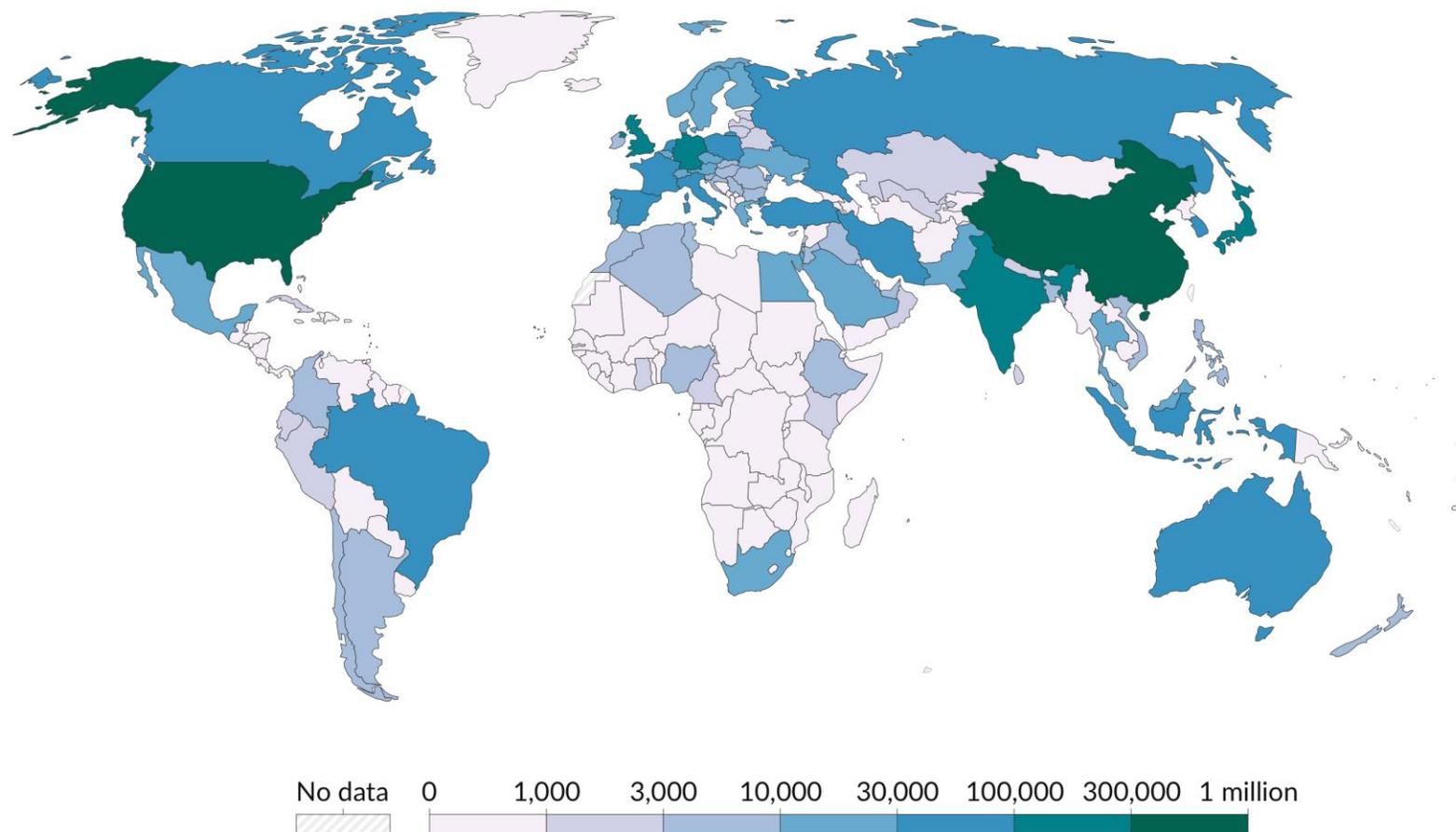
Total general government expenditure on education (all levels of government and all levels of education), given as a share of GDP.



Data source: Our World in Data based on Tanzi & Schuknecht (2000) and UNESCO via World Bank
OurWorldinData.org/financing-education | CC BY

Annual articles published in scientific and technical journals, 2020

Includes physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering and technology, and earth and space sciences.



Data source: Multiple sources compiled by World Bank (2024)

OurWorldinData.org/research-and-development | CC BY

Note: Articles are counted by the country of the author's institution.

SOME TENTATIVE CONCLUSIONS...

- Research & PG education remain central to the idea of what it means to be a university
 - However, it requires strategic focus and investment of resources
 - Human capability central to the success and sustainability of research & innovation
 - Careful consideration of the role of the continent (and diversity of HE institutions) to global debates on research & innovation
- Research & innovation in Africa requires that:
 1. There is a shared understanding of the nature, role and goals of research
 2. There are standards, procedures and processes for the approval of research proposals, and theses, and the conduct and supervision of research studies
 3. There are policies, research management systems and strategies, adequate infrastructure and resources that facilitate all staff to undertake innovative research, and publish research results
 4. There are standards and processes for the approval of research proposals and theses, in line with the research needs of the national or regional context, and capacity building possibilities for researchers, management of research partnerships and research contracts, handling of intellectual property and commercialisation of research, and effective and trustworthy management of research information
 5. There is adequate academic integrity through the establishment and use of appropriate research committees and boards to ensure academic integrity
 6. The research undertaken is relevant and responsive to the needs for academic advancement and community development expectations
 7. There is effective monitoring and evaluation of the research system

Thank you
Enkosi
Dankie



**AFRICAN STANDARDS AND GUIDELINES FOR QUALITY ASSURANCE
IN HIGHER EDUCATION (ASG-QA):
STANDARD 9 - RESEARCH AND INNOVATION
SESSION 2**

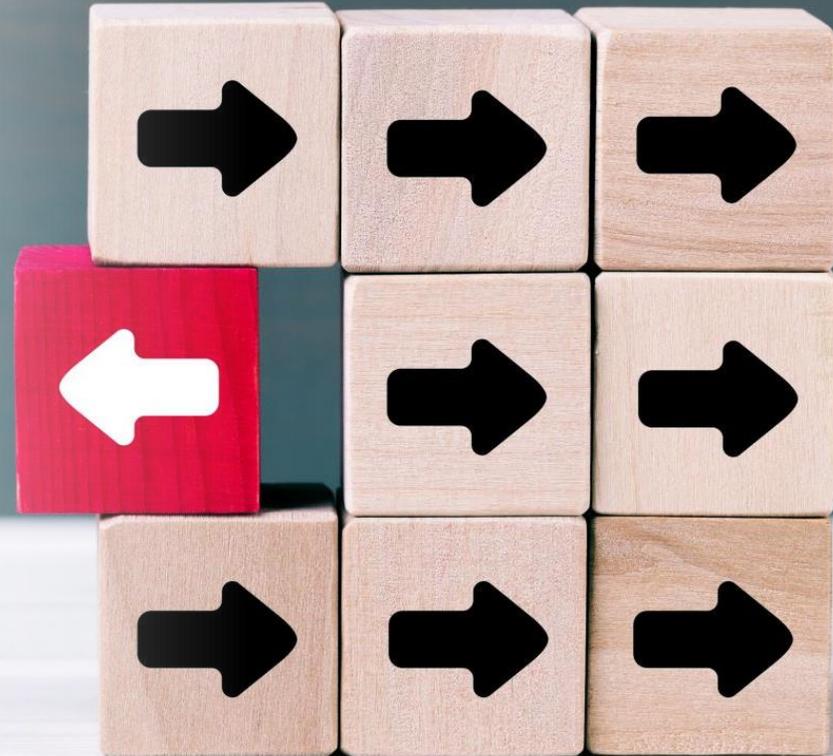
Prof Liezel Frick
Vice-dean (Research & Postgraduate Study): Faculty of Education
Stellenbosch University, South Africa

ASG-QA STANDARD 9: RESEARCH & INNOVATION

- **Guidelines**
- Research is one of the core activities of a higher education institution, and the institution therefore requires an institution-wide research policy that sets the direction of its research
- The policy is at both institutional and research-programme level (postgraduate studies) to ensure proper engagement in research
- The institution ensures that:
 1. There is a shared understanding of the nature, role and goals of research
 2. There are standards, procedures and processes for the approval of research proposals, and theses, and the conduct and supervision of research studies
 3. There are policies, research management systems and strategies, adequate infrastructure and resources that facilitate all staff to undertake innovative research, and publish research results
 4. There are standards and processes for the approval of research proposals and theses, in line with the research needs of the national or regional context, and capacity building possibilities for researchers, management of research partnerships and research contracts, handling of intellectual property and commercialisation of research, and effective and trustworthy management of research information
 5. There is adequate academic integrity through the establishment and use of appropriate research committees and boards to ensure academic integrity
 6. The research undertaken is relevant and responsive to the needs for academic advancement and community development expectations
 7. There is effective monitoring and evaluation of the research system

SHARED UNDERSTANDING OF THE NATURE ROLE AND GOALS OF RESEARCH

- What role does research fulfill in your institution?
- How is this role of research articulated in institutional policy documents?
- What are the implications for practice within the institution?
- What is the nature of research currently conducted at the institution?
 - How does this align to the goals set out by the institution?
 - What are the evident gaps that need to be addressed?



APPROVAL OF RESEARCH PROPOSALS AND THESES, AND CONDUCT AND SUPERVISION OF RESEARCH STUDIES

- What are the different degree levels offered?
 - Which degrees are offered at the postgraduate level?
 - What are the implications for institutional supervision capacity?
 - What are the implications for supervisory practice?
- What are the implications of the different levels of postgraduate qualifications for
 - Postgraduate supervisors?
 - The institution?
- What are the preferred characteristics you are looking for in (an ideal)
 - PG student?
 - PG supervisor?
 - PG co-supervisor?
 - How do these characteristics translate into selection criteria?
 - What is the role of co-supervisors and their relationship with principal supervisors and PG students?
- What does your institutional policy prescribe in terms of master's and doctoral examination?
 - What are the criteria for selecting examiners at your institution?

UNDERTAKING INNOVATIVE RESEARCH AND PUBLISHING RESEARCH RESULTS

- Key questions related to knowledge production trends
 - Total number of publications? (per year)
 - Are there disciplinary differences in research output figures between STEM/HASS programmes?
 - Are there noticeable trends in research outputs over the past 10 years?
 - Would more staff with PhDs enhance both current and future doctoral enrolments & overall research output?
 - How are doctoral students encouraged to disseminate their research
 - What are the actual publication outlets mostly used?
 - Peer-reviewed?
 - Local/International?



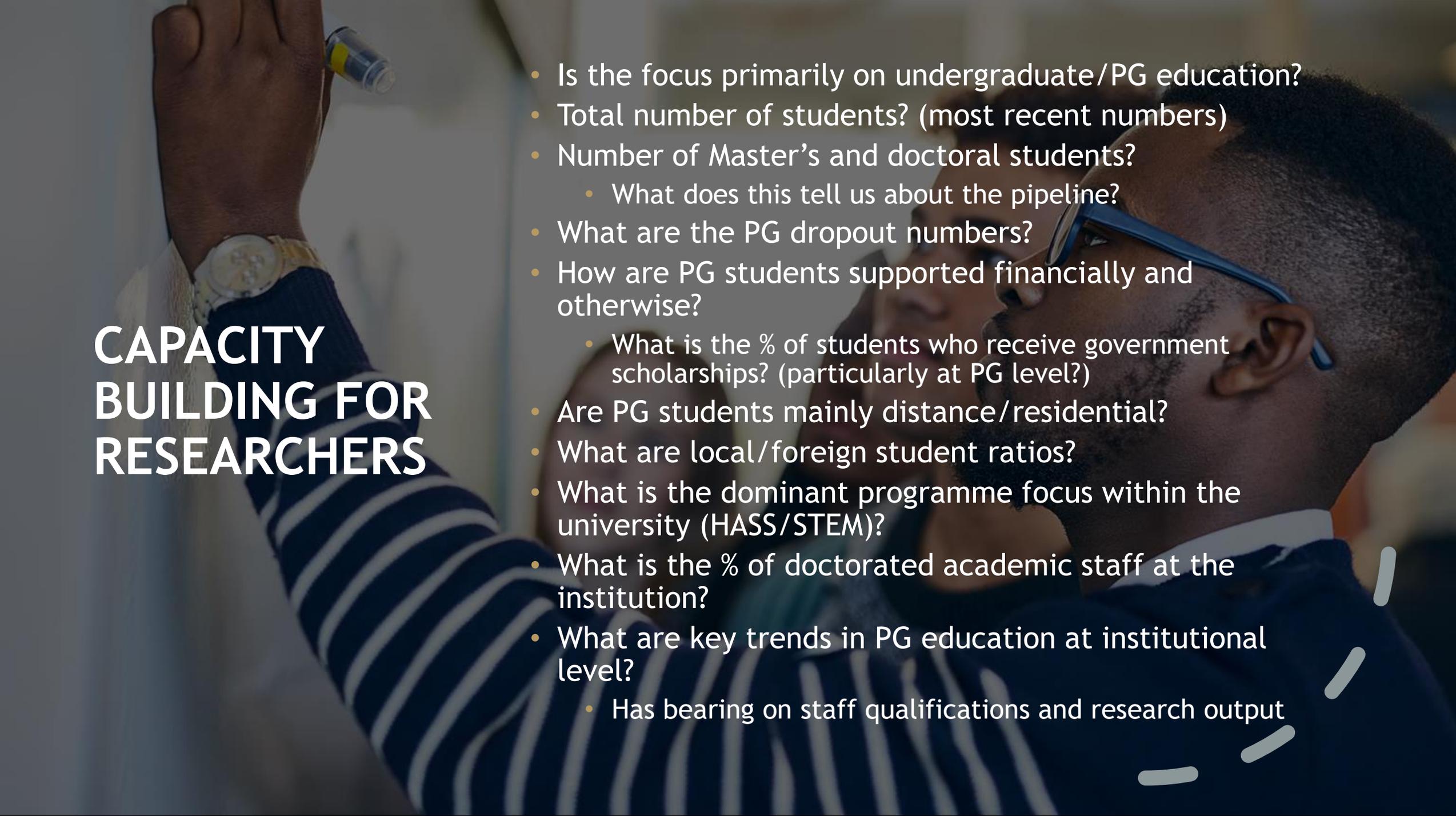
UNDERTAKING INNOVATIVE RESEARCH AND PUBLISHING RESEARCH RESULTS

- The TBP as a university governance concern
 - How do we help the different stakeholders make sense of the TBP?
 - What should TBP policy address?
 - Types of TBP programmes (e.g. PhD by publication, PhD by *prior* publication)?
 - Specifications for proposals?
 - Specifications for thesis structure?
 - Number of papers? Length?
 - Published/submitted/publishable?
 - (Co-)authorship & author order?
 - Nature and format of final submission?



CAPACITY BUILDING FOR RESEARCHERS

- Total number of staff (year?)
 - What are the number of permanent staff?
 - Ratio of academic to administrative/support staff?
 - Ratio of permanent to part-time staff?
 - Gender distribution?
- What are the characteristics of the institutional (academic) staff profile?
 - Number of doctorated academic staff (%)?
 - Are there incentives for staff to become doctorated?
 - What is the compulsory retirement age?
 - What are the requirements for promotion to professorship?



CAPACITY BUILDING FOR RESEARCHERS

- Is the focus primarily on undergraduate/PG education?
- Total number of students? (most recent numbers)
- Number of Master's and doctoral students?
 - What does this tell us about the pipeline?
- What are the PG dropout numbers?
- How are PG students supported financially and otherwise?
 - What is the % of students who receive government scholarships? (particularly at PG level?)
- Are PG students mainly distance/residential?
- What are local/foreign student ratios?
- What is the dominant programme focus within the university (HASS/STEM)?
- What is the % of doctorated academic staff at the institution?
- What are key trends in PG education at institutional level?
 - Has bearing on staff qualifications and research output

MANAGEMENT OF RESEARCH PARTNERSHIPS & CONTRACTS

- How is research in HE funded - self/government/industry?
 - How are PG students funded?
- Are funding schemes linked to programmes relevant to national development?
 - And if so, does it privilege certain disciplines?
- What is the balance between public and private universities?
- Has there been an increase in universities in your country?
- Are there any institutional performance targets?
 - If so, what are they?
- What is the extent of HE research at a national and institutional level?
 - How does this support evidence-based practice at PG level (or not)?

IP & COMMERCIALISATION OF RESEARCH

- What are the (inter-)national policy guidelines on intellectual property?
 - What are the implications for research and innovation at university level?
- What support structures are in place to support innovation and commercialization?



MANAGEMENT OF RESEARCH INFORMATION

- What do we mean by RESEARCH INTEGRITY?
- How does research ethics differ from integrity?
- What is the responsibility of the Doctoral/PG supervisor in terms of ethics and integrity?
- Are there disciplinary differences in terms of research ethical issues?



**RESEARCH
RELEVANT &
RESPONSIVE
TO NEEDS FOR
ACADEMIC
ADVANCEMENT
& COMMUNITY
DEVELOPMENT
EXPECTATIONS**

- What are the national development needs?
 - How does the current research foci within the institution align to these needs?
 - What are the available incentives that will drive research that meet such developmental needs?
- What are the feedback loops that disseminate research results back to affected communities?
 - How is such feedback promoted and incentivized?



ACADEMIC INTEGRITY

- What are the values your institution subscribes to?
- What policies and systems are in place to support and promote academic integrity?
- How are staff and students encouraged to avoid unethical research behaviour?
- What are the consequences of unethical research behaviours?



MONITORING & EVALUATION OF RESEARCH SYSTEM

- Are there any institutional surveys, data or policies directly related to research and postgraduate education that informs evidence-based policy development and practice?
- 

Thank you
Enkosi
Dankie

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