

CHAPTER

4

Re-valuing research excellence: From excellentism to responsible assessment

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Excellence and excellentism

Research excellence (RE) has become a very powerful concept in 21st century science policies. The *Oxford English Dictionary* defines ‘excellence’ as ‘to be superior or pre-eminent, to surpass others’; it is a normative concept that acquires its meaning only in a proper comparative context. It is often presented as ‘supreme quality’ – a distinctive mark (the verb ‘to excel’ originated from the Latin verb *cellere* – i.e. to rise high). The fusion of ‘excellence’ and ‘research’ suggests an almost indisputable measure of quality, of being the best within a group of comparators. Within the area of science and scientific research, the notion has certainly caught on as referring to a desirably high level of performance. Nobel prizes are often considered, especially by the general public, to be an ultimate accolade of international excellence. High performance, excellent individuals or organisations are regarded as PR and marketing assets, which may not only attract wider attention in the press, but also boost research funding success rates.

It seems that every major city, region or country worldwide now aspires to have at least one centre of research excellence in its national science system, preferably housed prominently at the local university.

Any web search will show a proliferation of research organisations, university websites and science funding agencies that have tagged someone or something as excellent. But what is the quality of the evidence? It usually refers to some well-deserved prestigious award or noteworthy achievement, but more and more without convincing evidence to back up such a claim to fame (Sørensen et al. 2015). In the current hype and buzz, RE seems at risk of becoming a strategic construct that is ever more loosely connected to its originally intended meaning. This process of ‘excellencism’¹ creates an environment in which excellence seems to be an increasingly easy target for misinterpretation and misuse. Some outspoken critics go so far as to describe the ongoing rhetoric as nothing less than fetish where RE has become a catch phrase in which performance has taken on almost mystical qualities (Moore et al. 2017).

Responsible assessment of research excellence

Similar to ‘research quality’, RE remains a fuzzy and unstable construct. And it is not difficult to see why: RE suffers from divergent theoretical perspectives, a plethora of analytical frameworks and a wide range of performance indicators (both quantitative and qualitative). Narrowly defined criteria of what quality RE may, or may not, entail are susceptible to criticism from those being assessed and may create fierce disputes between all parties involved. Some may say that, like any other subjective assessment, such assessment processes are bound to be messy and pragmatic, driven by incomplete information and shifting considerations.

Running an assessment system means facing many methodological challenges, analytical practicalities and implementation issues with regard to the required information to pass judgement. In addition to designing transparent protocols, checking data validity, ensuring sufficient comparability and many other concerns, one must also choose the most appropriate information items – opinions may differ widely as to how appropriate some of those selected items actually are.

Allowing access to understandable information is essential. Quality assessment inevitably involves an external review of relevant

outputs. *Ex ante* assessments of research proposals, often describing anticipated research achievements, differ from information-gathering methodologies in *ex post* evaluations of research performance. Where proposal assessments tend to be based on the subjective opinions of individual experts or panels, thereby introducing the risk of questionable or unreliable information, evaluations are more likely to incorporate objectified data extracted from tangible outputs such as scientific publications. Research articles published in high-impact, peer-reviewed international scholarly journals, or books issued by international publishers, are usually recognised by the scientific community as significant *ex post* achievements.² But such outputs are no longer seen as the ultimate proof of quality; the focus has shifted to the appreciation by users of those impacts.

An increasingly large number of indicators-based analysts now prefer to operationalise and quantify RE in terms of producing high levels of citation impact within the international scientific community (Tijssen et al. 2002). Such a narrow definition of RE, reflecting knowledge creation outcomes of radical novelty, presents an extremely homogenised case of global RE. Some experts and scholars prefer to see research impacts, rather than outputs, as the defining part of research quality and apply impact-based standards to capture RE (OECD 1997; Boaz and Ashby 2003; Tijssen 2003). Other analysts note that quality and research impact are actually two different elements of research excellence (Grant et al. 2010).

To avoid the risk of becoming a truly contentious concept, and perhaps even a meaningless term, more transparency is needed. To achieve this, we should move away from a focus on research output or impact-related ‘achievement-based’ descriptions. RE should be more broadly framed, and transcend beyond the production of ground-breaking scientific discoveries and impacts of the global scientific community. RE is now usually viewed as being highly multi-dimensional and can manifest itself in different ways and at various stages of research processes: across a wide range of ‘input’ dimensions (originality of research proposals, human capital development, research infrastructures, etc.); but also via ‘throughputs and processes’ (methodological rigour, ethics compliance, reproducibility, etc.);

‘outputs’ (ground breaking, internationally leading, etc.); and impacts (scholarly, cultural, socio-economic). The focus on outputs is gradually being replaced by that of outcomes, in terms of their relevance and impacts, as a decisive indicator of high-quality RE.

Current science policies, mostly in Europe, have started to embrace this broader perspective. Acknowledging a multidimensional view, the overarching notion of *Responsible Research and Innovation* (RRI)³ is becoming one of the major driving forces in ongoing debates on the future of science. In the broader framework of RRI, research performance incorporates a range of good scientific practices, such as ‘open access’ publications and ‘open science’ data sharing, ethical considerations and societal responsibility. RRI-driven assessments of research performance should develop more appreciation for interdisciplinary research and aim to open up new dimensions of scientific quality – not only with regard to application-oriented (or applied) science and social innovation by practitioners, societal engagement with policy-makers and the public, but also for the representation of minorities in the scientific community.

Research excellence in the Global South

Aspirations and initiatives to achieve ‘research excellence’, without any clear definition of the core concept and how it should be operationalised in performance assessments, are likely to produce misguided policies and sub-optimal investments. In an era where many public sector science budgets are no longer increasing, and tough choices about funding priorities are unavoidable, we need more clarity on the merits of RE-guided policy initiatives. This predicament applies full force to low- and medium-income countries (LMICs) in the Global South, especially in those countries that aim to catch up or benchmark themselves with the world’s scientific leaders. Where science budgets are low and aspirations are high, LMICs tend to emulate science policy models and associated research assessment systems from the Global North. In doing so, not only do they run the risk of ignoring local societal needs, but also of downplaying the existence of relevant indigenous research strengths.

Science funding and RE ambitions in the Global South require a customised approach (Tijssen and Kraemer-Mbula 2018). To gain more clarity on if and how investments in science are delivering sufficient value for (inter)national funders of science, a more focused discourse is needed on establishing productive meanings of RE and associated concepts. Tijssen and Kraemer-Mbula (2017), in their policy brief entitled ‘Perspectives on research excellence in the Global South: Assessment, monitoring and evaluation in developing-country contexts’, present a critical view of mainstream methodologies to assess and evaluate RE in African science systems. The policy brief proposes practical suggestions for more appropriate analytical models and diagnostic kits, geared towards the needs of science funders and review panels that inevitably operate in difficult, resource-constrained policy environments. One of the brief’s main general conclusions states that

evidence-based decisions on science funding require robust science policy tools and analytical frameworks. Future contributions could consider different avenues and perspectives that can help science granting councils around the world, but especially in the LMICs of the Southern hemisphere, address a perceived need to fund research excellence without sacrificing broader objectives related to research impact, inclusivity, social responsibility, transparency and accountability.

To develop and implement such instruments, one first needs to recognise and acknowledge that any attempt to clarify or harmonise RE’s multidimensionality runs into a set of ‘wicked’⁴ conceptual and methodological problems. The remainder of this chapter picks up on where the above-mentioned policy brief ended, namely with the following two research questions to guide practical steps to re-value RE:

- Is RE an appropriate objective for research-funding decisions in the Global South?
- Which RE-oriented analytical models, tools and assessment frameworks should be applied with the specific intent of strengthening local research?

Focusing specifically on LMICs (African countries in particular), these questions require further critical thinking and empirical analysis. Discussing the topic of RE within a problem-driven, interdisciplinary context, one faces idiosyncratic logics and conflicting views that force evaluators, analysts and stakeholders to justify what we are doing and why. Core assumptions and expectations about the nature of RE and its impacts will inevitably differ. So, we need to ask ourselves the underlying question: do we need to develop a shared understanding of RE, and if so why? The next subsections will present information and arguments to answer this core question affirmatively.

Conceptual issues and methodological problems

Any effective discourse and decision-making on how to perceive RE should be driven by shared terminology and common definitions. A generally accepted ‘dominant’ heuristic is needed to help identify RE in its many shapes and forms; a convincing rhetoric is required to influence researcher communities and their major stakeholders. Only then can one hope to arrive at a set of methodological principles that can underpin common practices with regard to the assessment of research proposals, activities and outcomes.

The late Robert Merton – one of the founding fathers of the sociology of science⁵ – presents a plea for more clarity on the topic, apparently driven by the reluctance he observed in this environment to pin down the key characteristics of research achievements and the associated notion of excellence:

Many of us are persuaded that we know what we mean by excellence and would prefer not to be asked to explain. We act as though we believe that close inspection of the idea of excellence will cause it to dissolve into nothing. (Merton 1973: 422)

Merton poses three pivotal questions to aid us in a closer examination of RE:

- What unit of achievement is to receive recognition?

- Who shall judge the achievement?
- What qualities of achievement are to be judged?

As for the first question, some examiners of research proposals or evaluators of achievements will argue that RE is primarily about the individual researcher as a unit of assessment. Striving for RE, or attaining it, is then about personalised processes of creativity, methodological rigour and achievement. Those are the gifted individuals who are able to create new knowledge and innovate. Such ‘excellent’ researchers are the ambassadors of rich and diverse science ecosystems with ‘research cultures’ that are diverse, innovative and quality driven. Adopting this micro-level, person-oriented viewpoint, organisations or networks can never be regarded as excellent. Fine-tuned and tailored incentive systems become essential conditions for RE, as well as dedicated human resource management practices and researcher-centered performance assessment systems. Another strand of evaluators might stress the importance of organisational factors, external determinants and accumulated earlier achievements by others. Although RE is still seen as a person-embodied level of performance, it is now primarily facilitated, shaped and driven by environmental, organisational and historical circumstances and developments. The organisation is the main unit of achievement.

Irrespective of how RE is perceived or at what level it is assessed, of particular interest remains the extent to which outstanding scientific achievements are recognised and judged in accordance with common understandings of quality, relevance and impact. Clarity on these issues opens up the possibility to develop and apply assessment models and practices that target those research characteristics that are valued most within the context of science in LMICs.

Academic literature review

Focusing on Merton’s third question, this section presents a summary review of academic studies to shed some light on how to create a clearer general understanding of RE within the context of research performance assessment frameworks. A comprehensive literature

study, stretching back 50 years to Robert Merton’s seminal work, does not exist. However, the scholarly literature of recent years shows a flurry of academic case studies on RE issues, usually within the context of evaluating university research performance, excellence-promoting policies within public science systems or the surge of centres of excellence. This contemporary review draws from the following 11 academic studies, all published in the international scientific literature: Laudel and Gläser 2014; Sørensen et al. 2015; D’Este et al. 2016; Ofir et al. 2016; Carli et al. 2018; Confraria et al. 2018; Ferretti et al. 2018; Fudickar and Hottenrott 2018; Moher 2018; Schmidt & Graversen 2018; and Tijssen & Kraemer-Mbula 2018. These studies address many of today’s issues – often framed in science assessment and research evaluation settings – and provide several valuable new insights on topics of conceptualisation and operationalisation. The study by Tijssen & Kraemer-Mbula is specifically targeted at the situation in Africa.

With regard to Merton’s question as to ‘what qualities of a seeming achievement are to be judged?’, Laudel and Gläser (2014) stress the value of peer review to assess RE:

The properties used to characterise exceptional research (‘major discovery’, ‘creativity’, ‘breakthrough’) are extremely vague, and are not operationalised for empirical identification either. This is why the major studies addressing conditions for that research let the scientific communities decide which of its research was exceptional and then studied conditions for this research. (Laudel and Gläser 2014: 1205)

However, some studies also highlight features of RE that are measurable, such as:

The results of a number of previous studies which focused on the relation between expert panel assessments and quantitative assessments, such as bibliometric outcomes of research units, reveal that assessments of expert panels are positively related to publication and citation indicators. (Schmidt & Graversen 2018: 359)

An alternative to using counts and rankings of awards and prizes, which we pursue in this study, is to identify awarded (or funded) scientists as a comparison group and then to use their publication records and project description content for science evaluations. This approach provides us with an external ‘reference point’ or knowledge frontier, to which we can compare other scientists. (Fudickar and Hottenrott 2018: 6)

Other studies emphasise the importance of teamwork and cooperation to achieve excellence:

Excellent knowledge embedded in researchers and research teams can also be measured through research grants. The most prominent (high value and prestige) research grants, such as that of the European Research Council (ERC) or the National Science Foundation (NSF) of the United States are awarded based on demonstrated outstanding past performance of research teams on the one hand, and on expected outstanding performance on the other hand. Receiving such a grant can therefore be at the same time a proxy for recent excellence and ‘excellence in the making’. (Sørensen et al. 2015: 229)

[I]n this study, we assumed that any co-author of a highly cited paper made a significant contribution to that paper. However, it has been suggested that researchers in lower-income contexts are rarely leading authors in international publications and that their role is often still primarily limited to collecting data and linking up with domestic policy debates. (Confraria et al. 2018: 230)

According to the views of surveyed SGC research coordinators, current legal frameworks still constitute a developmental challenge since they do not explicitly foster the pursuit of research quality involving research collaboration networks (national and international, among

researchers and with users/stakeholders). As a result, a 'sil mentality' often prevails in African research performance, which is seen as a major deterrent to achieve RE. (Tijssen & Kraemer-Mbula 2018: 402)

While, finally, several authors perceive the research environment and user communities as major determinants:

Overall, our results showed that individual features influenced research excellence, but that context also played a fundamental role. [...] Contextual variables reinforced individual performance: if an academic works in an environment to which other excellent scholars are affiliated, a general research enhancement occurs, which is also sustained by the heterogeneity of the research setting. Conversely, if the work context is populated by academics with poor publication experiences, that would result in lower research standards. Finally, the quality of the research context moderated individual ability, in that an academic without a robust past research experience strongly benefited from a well-developed work setting that offered outstanding publication exposure. (Carli et al. 2018: 13)

[T]he importance and value to key intended users of the knowledge and understanding generated by the research, in terms of the perceived relevance of research processes and products to the needs and priorities of potential users, and the contribution of the research to theory and/or practice. (Ofir et al. 2016: 10–11)

What counts as excellence is entertained by the imagination of some about what 'excellent research' is; but what political, social, and ethical commitments are built into the adopted notion and the choice of what needs to be quantified? (Ferretti et al. 2018: 733)

The above ideas, suggestions and observations not only acknowledge a multitude of views and analytical approaches, but also reiterate that RE – a normative concept at its very core – is very much an integral part of complex social systems that require a much better understanding in order to design appropriate models and tailored assessment systems of scientific performance and RE.

Towards a better understanding

To achieve more clarity, preferably with solid empirical underpinnings, one should start by accepting that a consensual, working definition of RE is not likely to emerge very soon; as one solicits a wider range of inputs and views in a consultation process, a multitude of fundamental differences in ideas and perceptions will come to the fore. However, some degree of consensus on practical issues should be attainable. The collective intelligence from experts, as exemplified in the quotes above, offers valuable insights and concrete suggestions on how to move forward further operationalisation, categorisation and measurement of RE dimensions.

Young (2015) introduces a helpful distinction between ‘zero-sum excellence’ and ‘threshold excellence’. Where the former, narrow definition rests on the assumption that excellence is a limited resource distributed among researchers by competitive means, the latter broader definition is based on the assumption that excellence is unlimited and is defined by inherent qualit(y)(ies). The zero-sum case follows a winners-take-all logic that most of the funding instruments still apply: evaluation of proposals leads to a ranked list, for which a selection cut-off point is chosen. Only those who meet this threshold are funded and rewarded; the others lose. The rise of global RE, coupled with decreasing odds of success, creates stratification and selection processes where funding decisions favour the leading, established researchers and their vested interests. In such regimes, the rewards for attaining RE tend to be concentrated in top performers, despite the fact that differences between this first-tier ‘elite’ and lower tiers can be small and/or difficult to judge. In contrast, threshold excellence could have a success rate of 100%, provided the standards or criteria that

the judges define as excellent are met, or 0% if all submitted cases are considered to be of insufficient merit or quality. Even the incumbent elite may fail to comply with the set criteria.

Where many RE assessment systems and practices still tend to favour distributions according to zero-sum excellence, the science granting systems of the Global South are better served by threshold excellence approaches. Applying a threshold criterion introduces a stable performance target, which is compatible with distributive justice arguments. Once the primary selection criterion has been met, it opens the door to legitimately include additional considerations, or targeted selection criteria (such as the UN Sustainable Development Goals), to guide final decision-making on funding.

The International Development Research Centre (IDRC) conducted a study on how to evaluate research excellence, particularly of applied interdisciplinary research for development, to make the case for research that goes beyond generating new knowledge for the local or global scientific community (Ofir and Schwandt 2012). This study led to the Research Quality Plus (RQ+) model, developed by the IDRC, as a more holistic, practice-oriented approach to research evaluation (Ofir et al. 2016; Lebel and McLean 2018).

Indeed, from a stakeholder-based view, RE should be framed more explicitly in terms of research topics and capacities that address societal needs and collective interests. RE then becomes intertwined with relevance for, and impacts on, non-scholarly audiences and other user communities. The authors argue that RE is desirable in any type of research, but the stakes are higher when the outcomes are meant to influence decisions that affect people's lives, the environment, governance or other areas of development. Defining such 'local standards of excellence' in the resource-poor research environments of many LMICs, such calls for 'RE for development outcomes' should take into account local and domestic logistics and operational problems (funding, instrumental facilities, data capturing, software development, etc.). Implementing a stronger emphasis on local research issues and scholarship is essential to creating credibility of research outputs and impacts.

Towards operationalisation: Guiding principles and practical recommendations

Appropriate measurement of RE dimensions may improve the quality and effectiveness of research assessments and decision-making. But what is appropriate, and who determines that? How to pick the right kind of qualitative indicators or quantitative measures? The metrics marketplace is a confusing arena, with its variety of models and analytical tools. Applying indicators based on citation impact counts as a measure of impact in the global scientific community seems an obvious place to start, but there are many options available. Too often we are swayed by the availability of comparative quantitative data, such as the free online information in Google Scholar, rather than conducting a careful fit-for-purpose assessment of its analytical value. We tend to value what we can easily measure, rather than collecting empirical information on what is actually needed to characterise RE.

General guidelines to select and apply the most appropriate assessment toolkit have become necessary, especially with regard to use-oriented, applied research (McLean & Sen 2018). Fears that bibliometric indicators (i.e. performance measures based on publication output and/or citation impact) are being misused or misinterpreted, and are even damaging the system of research that they are designed to assess and improve, led to the publication of the *Leiden Manifesto for Research Metrics* (Hicks et al. 2015). The ten principles of this manifesto are: (1) quantitative evaluation should support qualitative, expert assessment; (2) measure performance against the research missions of the institution, group or researcher; (3) protect excellence in locally relevant research; (4) keep data collection and analytical processes open, transparent and simple; (5) allow those evaluated to verify data and analysis; (6) account for variation by field in publication and citation practices; (7) base assessment of individual researchers on a qualitative judgement of their portfolio; (8) avoid misplaced concreteness and false precision; (9) recognise the systemic effects of assessment and indicators; (10) scrutinise indicators regularly and update them.

All ten principles apply in full force to empirical studies and assessments of RE. Principal #3 is particularly important in Global South contexts, where high-quality scientific research on local issues or problems tends to be less visible and/or undervalued if it is not published in English or disseminated widely in international academic journals. Science in the Global South is often heavily involved in international research cooperation (Tijssen 2015), and empirical studies clearly show that high-impact research is dominated by trans-continental partnerships (Tijssen and Winnink 2018). Appropriate assessments therefore need to incorporate the contributions and impact of international research cooperation and networks.

Regarding principle #10, narrowly focused indicators are blunt instruments that may induce unfair comparisons of performances. Single-metric indicators, such as citation impact scores, can easily become ‘metrics of mass destruction’ when used in an uncritical, mechanistic fashion and driven by unrealistic performance targets.

The unit of assessment is important. High-level data that aggregate an entire continent, country, university or research institute, are seldom informative. Nor is micro-data information, on individual researchers, appropriate in most cases. The right level of granularity needs to align with how research is actually conducted: in small teams, organisational networks and in dedicated projects or coherent programs within LMICs (McLean and Sen 2018). High-quality ‘responsible’ assessments should target this intermediate level of detail and information content.

The above-mentioned ‘Perspectives on research excellence in the Global South’ policy brief (Tijssen and Kraemer-Mbula 2017; see subsection 1.3) presents ten methodological recommendations (see Box 1) that may help operationalise some of the guidelines into practical considerations and steps towards developing such a responsible RE-oriented assessment system.

Box 1. Recommendations for responsible assessment of research excellence

1. Science funders should be more explicit in their descriptions or definitions of 'research quality' and 'research excellence';
2. Determining 'excellence' is contingent on appropriate performance standards and benchmarks;
3. The appropriateness of a performance indicator depends on its degree of 'usability' and 'user acceptability' in terms of information value, operational value, analytical value, assessment value and stakeholder value;
4. Proper understanding and operationalising requires multiple perspectives (both local and global); it is important to make a clear distinction between common global benchmarks and 'local' customised ones;
5. Experiences within LMICs in adapting concepts of RE and 'research quality' to their local contexts constitute valuable sources of information to establish good practices in assessment and evaluation practices worldwide;
6. Expert opinions from peers should be a prime source of information for value judgements on research quality and excellence;
7. Personal views, usually embedded in implicit scientific norms regarding quality standards or driven by selected showcases of successful research, should be complemented by external empirical information to create 'informed peer-review' assessment and evaluation;
8. The multidimensional nature of research excellence requires an 'indicator scoreboard' approach, where performance indicators may span the entire spectrum from research resources to socio-economic impacts;
9. The choice of performance indicators and/or excellence benchmarks will always be context-dependent and goal-dependent; there is a clear need to incorporate local contextual factors in customised indicators;
10. Frameworks designed to assess research excellence ought to be flexible enough to incorporate changes in the local context and priorities, as well as in the dynamics of the global science system.

Source: Tijssen and Kraemer-Mbula (2017)

Broader perspectives for new approaches

RE assessment and evaluation approaches seem to be moving into a danger zone of ambiguity and unfulfilled potential. The current narrow focus, mainly on quantitative indicators of research outputs

and scholarly impacts, needs a major rethink. A responsible way forward requires a broader scope of achievements and an upgraded analytical framework where research outcomes, societal impacts and user appreciation are key determinants. This upgrade implies mixed-method, multi-stakeholder assessments, based on tailored sets of indicators and a stronger focus on impact processes, while aiming to be as open (i.e. transparent, objective and fair) as possible for those being assessed or evaluated.

The recommendations in the box may help set the stage for (further) developing a set of guiding principles to implement an effective action plan. Consultation and mutual learning processes are an essential part of that development trajectory. We will have to accept that expert opinions and stakeholder consultations will not produce the same result, neither in terms of shared ideas or preferences on what RE entails nor in terms of key performance indicators (either qualitative or quantitative).

Such indicators are crucial for information gathering; collecting opinions is insufficient for high-quality comparative analysis and benchmarking. A thorough process of designing, testing and consolidating those indicators is equally important – to avoid narrowly defined ‘one-dimensional’ quantitative indicators of RE (such as the H-index) that may easily discard many other science-related achievements, or downgrade them to secondary criteria of research quality. Some indicators from the North, such as those applied in world university rankings, may exacerbate the gravitational pull towards homogenisation of research performance assessment, with its set of established metrics, and implicit ‘knowledge hierarchies’ that downplay the relevance of local contexts in which Global South universities and research institutes operate (Ndofirepi, 2017).

Applying RE-specific criteria and performance indicators developed for systems in the Global North is not advisable. Upgrading the research performance of scientists and scholars in the Global South cannot be accomplished within ‘winners-take-most’ funding systems that operate on ‘the best versus the rest’ selection mechanisms. Here we face a dilemma: adopting systems based exclusively on local standards is also not the best solution to create or promote RE in the Global

South. The outcomes of such one-size-fits-all policies and incentives will not always align with economic realities of science funders or their institutional expectations with regard to international excellence. Science funders should therefore take into account heterogeneity in the system and target different groups and contexts with appropriate interventions and customised assessment approaches. Implementing a strategic mix of international-level, zero-sum RE and local-level, threshold RE would avoid further increasing the level of heterogeneity within academic research systems. Developing such new assessment models and approaches will be well worth the effort. As Moher notes:

How we evaluate scientists reflects what we value most and don't in the scientific enterprise and powerfully influences scientists' behaviour. Widening the scope of activities worthy of academic recognition and reward will likely be a slow and iterative process. The principles here could serve as a road map for change. While the collective efforts of funders, journals, and regulators will be critical, individual institutions will ultimately have to be the crucibles of innovation, serving as models for others. Institutions that monitor what they do and the changes that result would be powerful influencers of the shape of our collective scientific future. (Moher 2018: 16)

Returning to our core research question ('Do we need to develop a shared understanding of RE, and if so why?'), the main reason for an affirmative answer is that consensus on RE seems more urgent than ever in view of the emphasis of modern-day science as a major contributor to wealth and welfare in the local society. Tijssen and Kraemer-Mbula state that

excellence is not only seen as a major marker of performance, but also as a driving force for forward-looking policies with high levels of political and organisational ambition. (Tijssen and Kraemer-Mbula 2018: 393)

It is therefore important and necessary that LMICs create their own sustainable research-intensive niches of excellence. What degree of concentration in research funding is optimal to create or sustain such niches? And how many dedicated resources are needed to upscale the ‘stairway to excellence’ to entire universities or research institutes? Both questions are difficult to answer and invite experimentation with research quality assessment systems to determine viable policy options. What is, after all, the point of implementing RE assessment systems if they don’t contribute to responsible decision-making processes, evidence-informed research funding and performance assessments, and, ultimately, to a more beneficial and meaningful science?

Designing and implementing appropriate assessment systems not only requires enlightened mind-sets and a re-valuing of the conceptual framework, but also a rethink of criteria, protocols and procedures. Responding as much as possible to urgent local needs should be the prime consideration and key objective. To reconfigure and optimise such selection environments, funders and stakeholders should be willing and able to engage in experimentation and organisational learning processes. Science in the Global South deserves to have its own toolbox of good practices and performance indicators to support effective, forward-looking assessments of research excellence in all its richness and complexity. Africa needs an excellence culture where high-quality assessments support competent and credible scientific research.

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Notes

- 1 This novel concept of ‘excellence’ is meant to be a derogatory term to capture applications and mentionings of the term ‘excellence’ (or ‘excellent’) – usually in common language or the popular press – that lack any proper underlying definition or description, or grossly misrepresent, the essence of ‘excellence’ as a distinctive general concept.
- 2 Generating international impact may also involve high-profile presentations at academic meetings and forums, but also appearances before public audiences and a noticeable presence in social media.
- 3 The Rome Declaration on Responsible Research and Innovation in Europe states that ‘the benefits of Responsible Research and Innovation go beyond alignment with society: it ensures that research and innovation deliver on the promise of smart, inclusive and sustainable solutions to our societal challenges; it engages new perspectives, new innovators and new talent from across our diverse European society, allowing to identify solutions which would otherwise go unnoticed; it builds trust between citizens, and public and private institutions in supporting research and innovation; and it reassures society about embracing innovative products and services; it assesses the risks and the way these risks should be managed (European Commission 2014).
- 4 ‘Wicked problems’ (Churchman 1967) can never be satisfactorily solved in view of the underlying complexity of adaptive social systems that drive scientific funding and research.
- 5 Merton’s work on scientific norms and his ideas on the nature of scientific production were also influential in the early development of scientometrics and citation indices (see the chapter by Chavarró in this book).

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