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To cite this article: Daniel Sidney Fussy (2018) Policy directions for promoting university research in Tanzania, *Studies in Higher Education*, 43:9, 1573-1585, DOI: [10.1080/03075079.2016.1266611](https://doi.org/10.1080/03075079.2016.1266611)

To link to this article: <https://doi.org/10.1080/03075079.2016.1266611>



Published online: 25 Jan 2017.



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Policy directions for promoting university research in Tanzania

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ABSTRACT

This paper examines the influence of Tanzania's higher education policy (HEP) context on promoting research within Tanzanian universities. It focuses both on the prescribed mission of universities and the way in which the government provides funding for the universities in the country. Data were obtained through document analysis and interviews with national higher education policy-makers, as well as senior university leaders and academic staff members sourced from four leading universities. The findings show that the Tanzanian higher education sector operates under a homogeneous university model, wherein each university is prescribed as a research university. Indeed, direct institutional allocation has remained a dominant method of funding universities in general, and research in particular, since Tanzania gained political independence in 1961. The paper, therefore, recommends a reform of the national HEP to bridge the gap between policy articulations and implementation on the ground.

KEYWORDS

Higher education policy; mission differentiation; research performance-based funding; research-intensive universities; homogeneous university model

Introduction

The cornerstone of a successful higher education system, seeking both to produce ground-breaking knowledge and provide quality education, and in turn, foster the socio-economic growth of a nation, is research. As a result, research increasingly sits at the top of global, regional and national policy agendas, and now constitutes a high-stake undertaking for universities (Leathwood and Read 2013; Cloete, Bunting, and Maassen 2015; Hladchenko, de Boer, and Westerheijden 2016).

Research receives much emphasis and attention in global, regional and national policy agendas and reforms, because it is central to the facilitation of the effective engagement with the teaching and community service functions usually performed by universities. In fact, research produces and preserves knowledge; teaching transmits this knowledge to develop skilled personnel and community service transfers and applies the knowledge to improve productivity – knowledge valorisation. Thus, for the two functions of teaching and community service to be effectively performed, knowledge must be present; it is the function and duty of research to create or advance this knowledge.

Equally, research is vital for driving socio-economic growth and development, particularly within the present increasingly globalised and competitive knowledge-intensive world. Research, for instance, provides insights and innovative ideas that deepen understandings of various socio-economic phenomena and facilitates the solving of practical problems facing communities (Cloete, Bunting, and Maassen 2015; Pinheiro and Pillay 2016). Recent studies conducted in the United Kingdom, Malawi and South Africa found that university research is essential to supporting innovation and creating a foundation for national economic development and competitiveness

(cf., Kelly, McNicoll, and White 2014; Kruss et al. 2015; Cloete, Bunting, and Maassen 2015; Hermannsson and Lecca 2016).

Furthermore, empirical evidence regarding the role of higher education in bolstering economic development has highlighted the role played by knowledge in the transformation of the so-called 'Asian Tigers' (Singapore, South Korea, Hong Kong and Taiwan) into the fastest growing economies. The Asian Tigers are renowned for their vast production of scientific knowledge and technology, which is then applied within production processes (UNESCO 2015; Pinheiro and Pillay 2016). The implication is that knowledge has now become a fulcrum of other production factors: labour, land and capital. In this regard, research is a cornerstone of a well-functioning and relevant higher education system for socio-economic transformations.

Although research appears central to higher education, some universities – particularly in developing economies – have been minimally involved in research when compared to their counterpart universities in developed economies (Cloete, Bunting, and Maassen 2015; Nguyen and Meek 2016). This results in a lack of adequate skilled human resources and the cutting-edge knowledge and innovation system necessary for strengthening socio-economic development within these developing economies. When compared with other nations and continents, the overall share of the world's research output and researchers that Africa (the focus of the present study), for instance, has produced is generally low. According to UNESCO's (2015) *Science Report: Towards 2030*, Africa produces only 2.6% of the global research output and possesses only 2.9% of the world's researchers, despite accounting for 15% of the global total population.

The overall quantity of researchers and research output produced by Africa – as a continent – is smaller than individual countries within Europe, Asia and America – such as Germany, Japan and Canada, with far smaller population sizes. As per UNESCO's (2015) statistics, Germany shares 7.7% and 4.6% of the world's research output and number of researchers, respectively, with only 1.1% of the world's total population. Japan possesses 5.8% and 8.5% of the global share of research output and researchers respectively, with a global population of only 1.7%. Moreover, Canada whose contribution to world's total population is only 0.5% accounts for 2.1% and 4.3% of the share of the world's research output and researchers, respectively. These statistics suggest that Africa is at the tail-end of the global figures of researchers and research output when compared to its European, Asian and American counterparts.

Despite being cognisant of the current state of Africa's research capacity, the body of literature remains sparse and inconclusive in explaining policy initiatives that have been undertaken by individual African countries to develop a culture of research and uplift the status of research in their respective universities. Most of the literature related to the development of university research is based on Europe, Asia and America, for example, by Fenwick (2012) in the United States, Edgar and Geare (2013) in New Zealand, Leathwood and Read (2013) in the United Kingdom, Shin and Lee (2015) in Korea, Nguyen and Meek (2016) in Vietnam, Hladchenko, de Boer, and Westerheijden (2016) in Ukraine and Rungfamai (2016) in Thailand. Although experiences from overseas are an invaluable source of input and inspiration, the findings of such studies may not be directly applied to Africa, whose operational context differs economically, socially and politically. Similarly, nations have different histories of how they have grown and approached building their higher education systems (Jongbloed and Lepori 2015), and Africa in this case has a young and nascent higher education sector (only half a century old), when compared with higher education systems in other parts of the world.

Nonetheless, there exist a few studies in relation to promoting university research and knowledge production within Africa; for example, by Dessie and Mesfin (2013) in Ethiopia, Cloete and Bunting (2013) and Johnson and Louw (2014) in South Africa and Musiige and Maassen (2015) in Uganda. Even then, these studies have predominantly concentrated on Southern and Northern parts of Africa and are largely centred on institutional policy initiatives, avoiding national policy strategies. A combination of national and institutional policy contexts in these previous studies may have established a larger collective picture of policy initiatives advanced to develop research at both the

institutional and national level. Research initiatives established within universities usually bring about positive outcomes when the gap between the national policies and institutional aspirations is bridged (Leathwood and Read 2013; Hladchenko, de Boer, and Westerheijden 2016).

One recent comprehensive study by Cloete, Bunting, and Maassen (2015), which involves leading universities in eight sub-Saharan African countries, has contributed to the understanding of determinants that influence the performance of sub-Saharan African universities regarding research and knowledge production roles. Additionally, the study has provided the foundation for individual higher education institutions and governments in the region to develop more appropriate policies and practices to enhance their performances in knowledge production and national development (Cloete, Bunting, and Maassen 2015). Extending the contemporary debates on university research management and the changing dynamics of higher education in sub-Saharan Africa and its role for national as well as regional development, the present study seeks to shed light on the government policy initiatives instituted to develop research within Tanzanian universities, where from the available literature, this study is the first of its kind to be conducted on Tanzanian soil.

The study is designed to answer the following two research questions: (1) how does the Tanzanian higher education policy (HEP) prescribe the university mission? and, (2) what modality does the government of Tanzania use to allocate research funding? Whilst universities in Tanzania are autonomous, as they legally operate under their respective charters, the government via the Ministry of Education regulates the set pre-determined functions of these universities, whilst also providing funding, especially to public universities. Given that state guidelines and funding are the two main instruments that many governments use to regulate the functions of universities, the focus of the two foregoing questions is deemed relevant in the context of Tanzania and other parts of the world. As such, knowledge and evidence from this study can be used to devise effective policies and practices for the enhancement of research capacities and the development of research cultures in Tanzania and beyond, particularly in countries with similar social, cultural and economic characteristics to the United Republic of Tanzania.

The paper is organised into five major sections. After this Introduction section, the second section reviews relevant literature around policy initiatives used to develop university research across the globe. The third section describes the research design and methodology employed to generate data/findings, followed by the fourth section which presents the study's findings. The final section discusses the findings, offers both theoretical and practical recommendations and concludes the study.

Literature review

Concept of public policy

Generally, a public policy is defined as a purposive course of actions intended to guide and direct the government's decisions and initiatives in managing overriding public concerns, for example, the problems citizens face and the use of public funding to solve them (Dye 2005; Rizvi and Lingard 2010). In other words, a public policy is normative, as it describes both the ends and means aimed at influencing government's behaviour and actions, as well as guiding institutions and professionals in a specified direction. The purposive course of actions within public policy is often manifested in official government statements, regulations and publicly observable government actions and behaviour.

The present study applies this definition, as it relates public policies to goal-oriented endeavours designed to solve an overriding problem rather than make unsystematic attempts. Indeed, the examination of Tanzania's HEP in this study was motivated by the fact that policies have implications for nearly everything that happens 'on the ground' (Dye 2005; Rizvi and Lingard 2010), and higher education policies, in particular, represent official declarations and plans of which examination is likely to illuminate on the significance attached to university academic core functions, one of which is research (Cloete and Bunting 2013; Leathwood and Read 2013). To this end, this study has examined

a list of HEP documents and official government statements and regulations to determine the government initiatives and commitment to fostering research in Tanzania.

Policy initiatives in developing university research

Four major policy initiatives, including mission differentiation, deregulation of governance, criterion-referenced faculty recruitment and research performance-based funding system (Altbach 2013; Shin and Lee 2015), are central to many governments' endeavours to develop university research. Mission differentiation involves selecting a small number of universities, usually the best or flagship within a nation and develop them to become research-based institutions which focus largely on knowledge production and application (valorisation), and designate the others as teaching-based institutions which focus more on teaching and less on research.

Research-intensive universities often receive more research-specific funding, employ active research academics, enrol talented students and minimise the teaching workload. Countries such as Australia, the United Kingdom, Germany, the United States, China, Japan, Korea and Hong Kong practise mission differentiation within their higher education systems, which in turn enables these countries to develop successful universities that significantly contribute to national and regional development processes (Pinheiro et al. 2015; Hladchenko, de Boer, and Westerheijden 2016).

However, mission differentiation is not without its criticisms. Some consider it as a way of promoting elitism and discouraging competition among universities, as selected institutions may continue to remain at the top of academia, as they receive special attention from the government and the wider community (Shin and Lee 2015; Hladchenko, de Boer, and Westerheijden 2016). As a way of addressing these shortcomings, some governments, such as those of South Korea, China and Germany, have expanded the number of universities in their lists of research-based institutions, and safeguarded the entrance to be merit-based – such that universities are evaluated after every five years and the outcome of the evaluation can lead to relegation for underperforming institutions or promotion for excellent performing institutions.

Deregulation of governance, as a policy initiative, implies entrusting universities with the autonomy to recruit staff, select university leaders and manage institutional finance and core activities with no or little government interference. Some governments in Europe and Asia have transformed their flagship universities from national organisations into independent public corporations. For instance, South Korea transformed its national university – Seoul National University – into a corporate entity in 2010, Taiwan in 2008, Singapore in 2006, Japan in 2004 and China in 1998. As such, corporate entity universities tend to be more autonomous and more productive regarding research, and have contributed effectively to the economic transformations of their countries (Shin and Lee 2015; Pinheiro et al. 2015; Hladchenko, de Boer, and Westerheijden 2016).

Furthermore, most governments observe merit on the hiring and promotion of academic staff members, as they factor in employees' ability, qualification and quality of performance within research, teaching and public service functions. Likewise, some governments have diversified their modes of funding universities to include both block funding – a lump sum payment – and performance-based funding, which is often based on the evaluation of the research performance of an institution – for example, publications, doctoral student outputs, patents, royalties and spin-offs (Jongbloed and Lepori 2015; Pinheiro et al. 2015).

The United Kingdom in 1986, for instance, introduced the Research Assessment Exercise and has since introduced the Research Excellence Framework; South Africa founded the Research Outputs Policy in 2003 and revised the policy in 2015; New Zealand in 2002 instituted the Performance Based Research Funding exercise and Hong Kong in 1993 founded the Hong Kong University Grants Committee to evaluate the research productivity of universities within Hong Kong. The research performance-based funding policy in these countries requires universities to submit their research outputs for assessment to a peer-review panel at least annually, and in some countries,

every four years. The assessment results form the basis for the allocation of research funds to universities by higher education funding councils.

Similar to the mission differentiation policy, the research performance-based funding policy is also criticised for encouraging elitism and inequalities within universities and among academics (Leathwood and Read 2013; Murphy and Sage 2014). These criticisms levelled against the research performance-based funding policy notwithstanding, linking funding to research performance in universities has strengthened knowledge production and innovation within most countries, including the Netherlands, Australia, South Africa, New Zealand and the United Kingdom, and are being used as templates for other countries around the world (Edgar and Geare 2013; Pinheiro et al. 2015).

Higher education in Tanzania

Tanzania's higher education sector began with the establishment of the University College of Tanganyika in 1961 (before Tanganyika forged a union with the Zanzibar Archipelago to become the United Republic of Tanzania in 1964), which was the affiliate college of the University of London. Universities in Tanzania have grown from 1 in 1961 to 2 in 1990 and up to 47 in 2016. Before 1996, the provision of higher education in the country was the sole responsibility of the public sector. Private universities in Tanzania began officially to operate in 2000, following an education policy shift from state-only to state-private partnership ushered in 1995. The key characteristics that differentiate public from private universities in Tanzania are funding and management. The Tanzanian government provides funding for public universities, and civil servants oversee these institutions. Conversely, private universities are managed and financed by their individual proprietors, although their students may have recourse to public funding through student loans.

The Tanzanian Ministry of Education and Vocational Training (MoEVT) manages the higher education sector, under the aegis of the Directorate of Higher Education (DHE). In relation to university research, the major functions of the DHE are to promote and facilitate research activities in universities and raise public awareness of the functions and roles of higher education in the country. Three other agencies – the Tanzania Commission for Universities (TCU), the Tanzania Education Authority (TEA) and the Higher Education Students' Loans Board (HESLB) – were instituted to support the functions of this directorate. The TCU was established in 2005 to supersede the Higher Education Accreditation Council, which had been in operation since 1995, to regulate the provision of higher education and foster a harmonised higher education system in Tanzania. Although universities in Tanzania are autonomous, as they legally operate under their respective charters, the TCU controls, approves and ensures that all of the country's universities both public and private comply with the set pre-determined functions and standards.

The TEA was established in 2001 to facilitate the provision of grants – in the form of textbooks and laboratory equipment – and soft loans – in the form of cash – to support the supply of educational resources as well as the development of infrastructure and human resources in Tanzanian schools, colleges and universities. The HESLB was established in 2004 to oversee the provision of loans to low-income Tanzanian higher education students and educational loan recovery from graduates. The loan also extends – on a limited scale – to postgraduate students at both Master and PhD levels, specifically to those who pursue education programmes and work as academic staff in either public or private universities in the country. In light of the functions vested in the DHE and its agencies, the question regarding how they have been influential in promoting and facilitating research activities in Tanzanian universities is set to be answered in the subsequent sections.

Research design and methodology

This study involved six research sites, including the MoEVT where the DHE is based, the TCU and four universities within Tanzania. The researcher accessed only the headquarters' offices from which the DHE and the TCU make all key decisions and issue directives. The four universities involved in the

study were the University of Dar es Salaam (UDSM), Mzumbe University, Tumaini University Makumira and Saint Augustine University of Tanzania. Three sets of criteria were used to select these four universities: accreditation status, nature of ownership and geographical location. Tanzania follows a two-stage of university accreditation: provisional registration, normally for fledgling universities, and full accreditation for established universities with the required qualities. All of the four institutions under review were TCU-accredited, indicating that they are fully functioning universities. Moreover, the four universities were located within different regions (provinces) of Tanzania, and were evenly distributed between publicly owned and privately owned institutions.

A sample of 36 participants, made up of 1 National Director of Higher Education (DHE), 2 senior TCU accreditation officers, 2 Deputy Vice-Chancellors (DVCs), 3 Directors of Research, 10 Faculty Deans or College Principals and 18 academic staff members, informed the data collection process. These participants were selected using both purposive and stratified sampling methods. Purposive sampling was used to select the DHE, senior accreditation officers, DVCs, Directors of Research and the Faculty Deans or College Principals, as they were the only people in those positions and were strategically placed to provide the required information.

Stratified sampling, on the other hand, was deployed to draw members of academic staff based on the faculty, gender and educational level. In each university under review, two to three Faculties or Colleges were included in the study, representing both natural sciences and social sciences. Likewise, the educational level criterion was based on Master and doctoral degree holders, therefore, 8 PhDs and 10 Master's holders took part in the study. On the whole, except for uncontrollable circumstances such as the participant leadership position, an equal representation of gender and settings was considered in the sample.

Other than human informants, the study collected data from policy and strategic documents such as the Tanzania HEP, the National Research and Development Policy, university prospectuses, directives and circulars, institutional research policies, university research and publication reports and guidelines for the assessment of academic staff performance and promotion. Some of the documents were requested from the institutions under study whereas others such as the Tanzania HEP, university prospectuses and university research policies were accessed from the respective institutional websites. In order to collect rich and informative data, the policy documents analysed were those created since 1961, when the first university was established in the country.

Codd's (1988) framework, entitled *The Construction and Deconstruction of Educational Policy Documents*, has guided the examination of Tanzania's HEP documents in this study. Codd argues that policy documents do not contain only one authoritative meaning, nor do they articulate a set of government's unequivocal intentions. Rather, Codd argues, they have been created within a specific political and historical context, which calls for policy critics to unravel that context and supplement the findings by primary data from various stakeholders affected directly by the policy. In light of Codd's framework and the study's research questions, the analysis of Tanzania's HEP – document analysis – began with the search of documents through accessing the websites and offices of the institutions under review, followed by critical reading, analysis and evaluation of the meaning of the findings.

Similarly, the primary data obtained through interviews with the higher education stakeholders involved in the study supplemented the data generated through document analysis. Data were then subjected to Braun and Clarke's thematic analysis, which involves six major stages: *familiarisation with data, generating initial codes, searching for themes, reviewing themes, defining and naming themes* and *producing the report* (Braun and Clarke 2006, 87). The thematic analysis process identified two major themes: homogeneous university model and direct institutional funding, which were then used to present and analyse the findings.

In order to ensure that the study was conducted ethically, a research permit was obtained from the UDSM, which is responsible for granting research permits for its staff and research students. The research permit facilitated access to the management of the research sites and participants. The invitation to participants was conducted verbally and in some cases was confirmed in writing. The participants were informed about the voluntary nature of their participation and they were assured of

anonymity and confidentiality when reporting the findings as their identity would not be associated with any of the information they provided. To mask the identity of the participants and institutions under review, the researcher used codes instead of real names to refer to the six research sites involved in this study. These are coded as RS1, RS2, RS3, RS4, RS5 and RS6, whereby RS stands for Research Site.

Results

Homogeneous university model

The primary research question sought to determine how Tanzania's HEP context prescribes the mission of universities in the country, in relation to research (knowledge production), teaching (knowledge transmission) and community/public service (knowledge valorisation). The study found that research constitutes a core element of the mission of higher education, as all universities operating in Tanzania – both public and private – are legally bound to include research in their prescribed core university functions, in addition to teaching and public service functions.

Higher education stakeholders involved in the study and key policy documents reviewed, such as the *2014 General Guidelines and Minimum Standards for Provision of University Education in Tanzania* (TCU 2014) and the *National Higher Education Development Programme for the period 2010–2015* (the United Republic of Tanzania – URT 2010a), all attest to the legal obligation for universities to undertake research as one of their core functions, as the following statements explain:

All universities must conduct research in different areas. This entails putting in place a research policy for the institution. Research conducted by institutions should be relevant to the development agenda of the country [Tanzania]. (TCU 2014, 18)

In the context of the liberalisation of the provision of services under current public service reforms, institutions will need to reappraise their core functions and align their resources accordingly. Higher education institutions need to focus more on teaching, research, consultancy and public service. (URT 2010a, 14)

Right from the time this nation [Tanzania] decided to establish the first university, teaching, research and public service were the core functions and then in the subsequent years when [more new] universities were coming up, each university definitely attempted to focus on those core functions. The role of the department of higher education is to ensure that these core activities are performed by all universities. (Higher Education Officer: RS1)

Our university since its establishment encourages people to do research and publish. There is no way you are going to progress from one academic position to another without publishing and that's why those people who have not done that over the years have either retired without being promoted or they have been re-categorised. (Academic Staff: RS3)

Equally, a review of prospectuses and websites of the four universities under study indicated that their core functions include teaching, research and public service, although in practice there can be differences in emphasis on the three tasks between one university and another. The general implication is, however, that the higher education system within Tanzania operates under the homogeneous university model, wherein all of its higher education institutions can be referred to as research universities in contrast to Canada, the United Kingdom, China, Hong Kong, Korea, Thailand and Malaysia, where the bifurcation university model of research universities and teaching-only universities is evident.

Direct institutional allocation

The modality of university funding – particularly research funding – used by the Tanzanian government was also central to the analysis of Tanzania's HEP in this study. The government of Tanzania, as established in the study's findings, uses mainly a block funding method, wherein a lump sum payment is given to the country's public universities based on the number of students enrolled:

multiplying a student unit cost by the total number of students within a given university. Under this block funding or direct institutional allocation, there are two types of funds allocated to universities by the Tanzanian government: development and recurrent. The development fund is allocated for investment in physical infrastructure, for instance, buying a new piece of land and/or the construction or rehabilitation of existing buildings, classrooms, laboratories and libraries to facilitate the smooth provision of university services. This type of funding is strictly directed to be used for such development purposes only.

The recurrent fund, on the other hand, is allocated for carrying out teaching, research and public service. In other words, the recurrent fund should facilitate the payment of bills, teaching activities, staff development, research and the knowledge transfer or valorisation activities. This implies that research is not allotted a special fund or grant of its own from the government budget, as explained in the following statements:

The university does not receive any special money from the government for research, rather research money is included in the OCs [operational costs]. Of course, the government does not tell you what to do with the OCs and we just use it for administrative operational activities. So even preparing research proposals is also one of the administrative operational activities. (DVC Research: RS3)

The [Tanzanian] government is not directly sponsoring research, what the government does is just to support research institutions, probably in terms of building labs, but they don't sponsor research projects. (College Principal: RS3)

Research funding is a problem in Tanzania, and the situation is worse in private universities. It's not like in other countries when you do more research you get more funding. Here it is the opposite: when you do more research you don't get funding. The government should set aside research funding both for public and private universities. The knowledge generated from research benefits all staff and students [and citizens] regardless of their institutional affiliation. (Faculty Dean: RS5)

Normally, the [Tanzanian] government provides two types of funds in universities, one is development and another is recurrent [operational funding]. We are directed to use the development funding for institutional renovation and recurrent funding for facilitating teaching, research and other related activities. (Director of Research: RS4)

In this way, research funding is included in the group of expenditures such as electricity bills, water bills, teaching and learning materials and staff training. The implication is that the decision on whether to fund research has been left in the hands of senior university leaders. In the face of limited and dwindling funding for Other Charges or recurrent expenditure, Tanzania's public universities are hard-pressed to spread thinly the financial resources available, which often results in the undermining of research activities.

On the other hand, private universities are not included in the equation of research funding from the government. Research funding for private universities is not mentioned in the government subventions provided to Tanzanian private universities in the form of tax relief on educational materials and loans for student and staff development and training remitted through the TEA and the HESLB (URT 2014).

Nevertheless, the government of Tanzania has been inconsistently spending around 0.3% of its Gross Domestic Product (GDP) on research and development (R&D) (URT 2010b, 2014; UNESCO 2015). One of the provisions regarding how to allocate such a research/project funding states that it should cater for all of the country's independent research institutions and universities, both public and private (URT 2010b, 21). Participants involved in this study maintained that 0.3% of the GDP is too small to meet the research needs of the country. Even then, this project funding is not a direct allocation (block grant), where every university could have a chance of securing a portion of the overall amount; rather, it is available on a competitive basis, meaning that all of the country's university and non-university research institutions are forced to compete for the limited funds available. Additionally, the project funding is an unreliable source of funding, as it is announced only when

the fund is available, something which creates uncertainty regarding its sustainability, as clarified in the following statements by participants:

The government remits a small amount of research fund to universities via COSTECH [the national co-ordinating agency of R&D activities]. When the fund is available, COSTECH calls for research proposals based on thematic areas ... it is very competitive as both universities and non-university research institutions invited to apply. (Director of Research: RS6)

Previously, there was no clear way of how research at universities should be funded. I can remember that from 2010 to 2011 that's when the government started to allocate a specific fund for research to higher education institutions. Basing on the national thematic priorities, universities were directed to develop their research proposals and apply for that fund. (Higher Education Officer: RS1)

The research funding in this university and many other universities [in Tanzania] depends greatly on donors. The government in 2009 promised to allocate one percent of the GDP for research in universities and research institutions. But that has not happened yet. We need to implement that one percent policy for improving research productivity in our Tanzanian universities. (Director of Research: RS3)

The complaints surrounding the inconsistency of the research and development (project) funding provided by the government of Tanzania, as shown in the foregoing statements, were supported by a recent visit to the National Commission for Science and Technology's (COSTECH) website. The commission website indicated that the most recent date that COSTECH issued a last call for research institutions in the country to solicit the project funding from the government was in 2013 (COSTECH 2016). The implication is that a direct funding allocation (block funding) has remained the common funding method that the Tanzanian government employs to fund its universities in general and research in particular.

Discussion and conclusions

This paper has examined the influence of Tanzania's HEP context on promoting research within Tanzanian universities. It has focused both on the prescribed mission of universities, and the way in which the government provides funding for the universities in the country. The findings show that the Tanzanian higher education sector operates under a homogeneous university model, wherein all universities in the country are categorised as research universities, as they are required to perform three major functions: teaching, research and public service. This finding relates to previous research conducted in other sub-Saharan African countries, which found that it is common for universities within the region to function under the homogeneous university model (Johnson and Louw 2014; Cloete, Bunting, and Maassen 2015; Musiige and Maassen 2015).

One prescription, for all universities to operate as research universities, is an essential course of action that Tanzania and other universities within sub-Saharan Africa and elsewhere have opted to take. Research universities have been accepted by many countries as an engine of development, and they are considered crucial for producing not only knowledge, but also a highly critical and educated workforce, particularly at doctoral level, to run both universities and non-university research institutions, which are the hub of the country's knowledge creation and valorisation (Cloete, Bunting, and Maassen 2015; UNESCO 2015). However, it is important to keep in mind that research universities require a heavy investment of fiscal, physical and human resources for their effective operation and sustainability. Taking this cost-effective argument into count, some countries – even those with leading economies – such as Australia, the United Kingdom, Canada, Japan, China, Hong Kong, Korea, Thailand and Malaysia – have opted for a bifurcation university model to accommodate both research and teaching universities. There are, for instance, 9 research universities out of 76 higher education institutions (HEIs) in Thailand, 100 research universities out of 3000 HEIs in China and 25 research universities out of 400 HEIs in the United Kingdom (Altbach 2013; Rungfamai 2016).

The question arises: Is the homogeneous model of a research university currently the most appropriate or suitable model for Tanzania? Despite its good intentions and aspirations towards developing

a research culture within the country to eventually improve the production and application of research-based knowledge, it is inappropriate for a developing country such as Tanzania to show a preference for the research university-only model to the bifurcation model of research and teaching universities, given its present level of development. Tanzania's lack of readiness is demonstrated in the findings reported in this study, to the effect that the Tanzanian government has fared below par in providing sufficient and consistent research funding to universities, consequently forcing most of its institutions to operate primarily as teaching universities. Most of Tanzania's universities do not only lack research funding but also the required infrastructure, machinery and highly trained versatile researchers needed for successfully operating research universities.

Likewise, there is no guarantee that Tanzanian universities will live up to their billing as research universities or aspiring research universities for several other reasons such as a shortage of PhD trained academic staff and the demand to expand access to higher education which creates pressure to produce as many undergraduate students as possible with postgraduate research-based programmes still operating on a limited scale (Ishengoma 2016). This fact is shared by other universities within sub-Saharan Africa, with recent studies revealing that there is a lack of PhDs among academic staff members and the prevalent of massive teaching overload, particularly at the undergraduate level (Johnson and Louw 2014; Musiige and Maassen 2015; Cloete, Bunting, and Maassen 2015). Altbach (2013), Rungfamai (2016), Hladchenko, de Boer, and Westerheijden (2016) and Nguyen and Meek (2016) made similar observations regarding other developing countries, explaining that they did not possess a well-organised system in place that appropriately defines and supports research universities. They recommended that research universities within these countries must be clearly defined and supported in order for them to flourish and grow.

Furthermore, the Tanzanian government, as shown in the findings of this study, primarily uses a direct institutional allocation (block funding method) to allocate funding to the country's public universities based on student per capita. The amount allocated is normally considered insufficient; even then, the limited funding is meant to cater for all of the three core functions: teaching, research and public service – as the country operates a homogeneous university model. Statistics show that 50% of Tanzania's higher education budget goes to the HELSB to facilitate the issuance of student loans, with universities normally receiving only 20–30% of their annual budget request (URT 2014; Ishengoma 2016).

Given the nature of block funding that often 'leave the HEI free to decide on their use within the institution depending on their priorities' (Jongbloed and Lepori 2015, 441), the decision of whether to fund research within Tanzanian universities is usually determined by the senior university leaders' personal affinity to, and prioritisation of, research – and how much funding is not consumed by the more urgent daily operational needs. Even then, sometimes the senior university leaders find that their hands are tied, as the block funding received from the government is simply limited to a small amount.

It is worth noting that the problem of limited research funding and higher education funding in general is a worldwide affair (Jongbloed and Lepori 2015), nevertheless, there are variations specific to each country regarding the modality used to allocate research funding in universities, which may accentuate the problem. Thus, the way in which research funding is administered within Tanzania, as part of a lump sum allocated to universities, has placed the country in a (research) funding trap, as universities are rewarded for what they are and not for what they do or how well they perform, particularly in relation to research. In other words, universities within Tanzania receive an equal level of funding regardless of the differences in research performance; that is, some universities are more productive in research-based work than others, and yet they are subjected to similar funding allocation.

Direct institutional allocation is the cheapest system of university funding, and is a good mechanism for encouraging bottom-up input, and additionally is an instrument that can be used for promoting the institutional autonomy of planning for better research competences that an institution may require (Olsson and Cooke 2013; Jongbloed and Lepori 2015). Nonetheless, this type of funding allocation is flawed because it arguably encourages idleness among researchers and institutions, and

disconnects university research from specific societal needs and objectives (Olsson and Cooke 2013; Shin and Lee 2015), which is detrimental for a country such as Tanzania that envisages to advance from 'less developed' country status into a respectable 'middle-income' country by 2025, as per *National Development Vision 2025*.

Some countries such as South Africa, New Zealand, Hong Kong, Australia and the United Kingdom have diversified their modes of funding universities to reward universities for what they are (e.g. block funding) and what they do in relation to research (research performance-based funding), in order to mitigate the limitations brought about by block grants and broaden the financial base of their institutions. Although empirical evidence is less conclusive with regard to which funding model delivers the best performance in research (Jongbloed and Lepori 2015), the logic behind competitive research funding is that researchers and institutions compete with one another in order to secure funding and at the same time become committed to improving their research excellence and performance (Olsson and Cooke 2013; Shin and Lee 2015).

South Africa, for example, has become the leading African country with the most highly regarded universities, researchers and economy, as it is home to one-third of the total contributions that Africa makes in global scientific research outputs. Pinheiro et al. (2015) aptly comment '[t]his leading role in research in Africa is not only a result of the country's strong HEIs (compared to others on the continent) but also the strong role of the state in steering research productivity, mainly through funding mechanisms' (232), which, among others, rewards South African universities for research-based publications and postgraduate student outputs. As such, the continued use of the block funding method to fund research in universities, as is currently used in Tanzania, may continue to undermine the capability of universities to produce and apply knowledge, train critical researchers and quality doctoral graduates and eventually translate nations into making strides in the present knowledge-based economy, in which knowledge production as well as technological innovation has become the most crucial productive forces.

In this regard, this paper recommends a reform of Tanzania's HEP in order to adopt a bifurcation university model whereby two types of higher education institutions can be developed and adequately supported by the authorities. One possible way is to identify the country's flagship universities as research-intensive universities, and designate the rest to the teaching universities. Gradually, the other universities can then mature into research universities as they develop their respective capacities and raise their profile rather than simply possessing the blanket term of 'research university' – even for those ill-qualified to be called so, as they mainly serve as teaching institutions.

Nevertheless, a university in the 'teaching-only' category also ought to incorporate research as one of its functions even on a limited scale to avoid diluting the scope of such entities as established over the ages. Generally, the route to research-intensive university status should be merit-based and competed for by every university. Thus, 'established and up-and-coming institutions will "all rise with the tide" with new attention paid to research and research-based teaching, but weak and profit-oriented "degree mills" with no interest or motivation in developing research capacities will face natural attrition' (Kian-Woon et al. 2010, 53).

Similarly, there is a need to establish a separate basket of research funding that could directly go to financing research within Tanzanian universities. In addition, a research performance-based funding system should also be introduced to encourage competition among universities, researchers and academic staff members and enhance excellence in research, knowledge production and valorisation.

In conclusion, this paper has generally contributed to enriching the body of literature on university research management which by its nature is an emerging area of study. Moreover, knowledge and evidence from this paper can be used to devise effective policies and practices for the enhancement of research capacities and the development of research cultures not only in Tanzania but also in other sub-Saharan African countries as these countries seem to share common histories and challenges of how they have grown and approached building their higher education systems (cf., Musiige and

Maassen 2015; Cloete, Bunting, and Maassen 2015). The findings can also be applicable to other developing nations, particularly those with similar social, cultural and economic characteristics to the United Republic of Tanzania.

Acknowledgements

The author thanks Dr Margery McMahon and Professor Christine Forde for providing guidance during my doctoral studies in education at the University of Glasgow in the United Kingdom. This article is an outcome of this guidance and tutelage.

Disclosure statement

No potential conflict of interest was reported by the author.

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