The role of leaders in building research cultures in sub-Saharan African universities: a six-nation study

Bill Buenar Puplampu, Central University, Ghana
bpuplampu@central.edu.gh

Stella Nkomo, University of Pretoria, South Africa
Stella.Nkomo@up.ac.za

Yvonne du Plessis, North-West University, South Africa
Yvonne.DuPlessis@nwu.ac.za

Jolly Kabagabe Byarugaba, Makerere University Business School, Uganda
jkabagabe@mubs.ac.ug

Evelyn Chiyevo Garwe, Zimbabwe Council on Higher Education, Zimbabwe
ecgarwe@zimche.ac.zw

Juliana Namada, United States International University – Africa, Kenya
jnamada@usiu.ac.ke

Kemi Ogunyemi, Pan-Atlantic University, Nigeria
kogunyemi@lbs.edu.ng

Juliet Thondhlana, University of Nottingham, UK
Juliet.Thondhlana@nottingham.ac.uk

Inusah Abdul-Nasiru, University of Ghana, Ghana
iabdul-nasiru@ug.edu.gh

Añuli Agina, Pan-Atlantic University, Nigeria
aagina@pau.edu.ng

Kwesi Amponsah-Tawiah, University of Ghana
kamposah-tawiah@ug.edu.gh

Rosemary Danesi, University of Lagos, Nigeria
rdanesi@unilag.edu.ng

Justice Djokoto, Central University, Ghana
jdjokoto@central.edu.gh

Denise Duncan, Central University, Ghana
dduncan@central.edu.gh

Joseph Lekunze, North-West University, South Africa
Joseph.Lekunze@nwu.ac.za

Simon McGrath, University of Nottingham, UK
Simon.McGrath@nottingham.ac.uk

Joyce Ndegwa, United States International University-Africa, Kenya
jwndegwa@usiu.ac.ke

Nancy Ngowa, Pwani University, Kenya
n.ngowa@pu.ac.ke

Michael Ofori Ntow, Central University, Ghana

mofori.ntow@central.edu.gh

Emily Ondondo, Jaramogi Oginga Odinga University of Science and Technology, Kenya
eondondo@jooust.ac.ke

Ravinder Rena, North-West University, South Africa
ravinder.rena@nwu.ac.za

Maxwell Sandada, University of Zimbabwe, Zimbabwe
msandada@commerce.uz.ac.zw

Abstract

Existing research attributes the problem of weak research productivity of academics in African universities primarily to institutional resource poverty and inadequate research skills. However, there has been little attention to research cultures and the role of leaders in fostering productive ones. Drawing from the literature on organizational culture, this study examines the role of university leaders in developing research cultures. The study explores how institution leaders do this within the higher education contexts in their countries. The empirical work is based on qualitative interviews with senior and mid-level university leaders in six sub-Saharan countries. While all of the leaders espoused clear views about the elements of a productive research culture, results indicate a significant gap remains between espoused values for research and the actual research culture. Theoretically, the research extends the concept of research cultures by demonstrating the complex dynamics between research cultures, culture embedding mechanisms, and leader behavior within contextual constraints.

Keywords: research culture, organization culture, leadership, African universities

1. Introduction

Compared to the rest of the world, Africa lags in research productivity. Although Africa's share of world research articles almost doubled from 1.2 percent to 2.3 percent during the period 1996-2012, more recent data indicate that despite the continued growth in the continent's research production, it generates less than 1 percent of global research (Duermeijer, et al., 2018; Schemm, 2013). The scientific impact for most African countries remains below that of the world average (Confraria & Godinho, 2015). Furthermore, the bulk of Africa's research productivity originates from only a few countries: Algeria, Egypt, Kenya, Morocco, Nigeria, South Africa, and Tunisia (Duermeijer et al., 2018). Researchers use 'productivity' in a broad generic sense to refer to the overall research outcomes of universities which promote the production, use, and dissemination of knowledge to the benefit of society as well as the local and international standing of the university (e.g. Gibbons et al., 1994; Vasileiadou & Vliegenthart, 2009).

The continued low research productivity has several consequences for the continent. Some studies suggest that Africa's development challenge may in part be linked to its low research productivity (Cloete et al., 2015). Another consequence of low research productivity is the lack of indigenous theories and over-reliance on knowledge produced in the global North (Mamdani, 2011; Ndlovu-Gatsheni, 2013; Nkomo, 2015). In other words, knowledge derived from scholarly activities in countries within Africa would likely assist in the development of context relevant solutions for socio-economic development.

The default explanation for the poor state of research and scholarship in various countries in Africa is that academic and other research-oriented knowledge workers operate in a resource-poor environment. Studies point to inadequate research infrastructures, limited access to library resources, funding constraints, poor technology systems and equipment, and the excessive teaching demands placed upon academic staff (Cloete et al., 2015; Kazeroony et

al., 2016; Mouton, 2010; Ngobeni, 2010; Sawyerr, 2004). The second body of research points to insufficient research capacity and skills among academic staff (e.g. Habib & Morrow, 2006; Nkomo, 2015).

While these structural explanations are important, they tend to overlook behavioral factors that include the role of leaders and research cultures. Specifically, there has been very little attention to research cultures and the role of leaders in fostering them in African universities. The sparse research conducted suffers from two limitations. First, the concept of research culture is underspecified and its definition is implicit rather than explicit. Second, the existing research conducted in Africa focuses on how academic staff perceives research cultures rather than the role of leaders in shaping them (e.g. Musiige & Maassen, 2015; North et al., 2011). Consequently, very little is known about how leaders of African universities perceive and enact their roles in fostering productive research cultures within the unique context of the continent.

We address this gap by studying how leaders understand their roles in facilitating and influencing research cultures in African universities. The research reported in this paper constitutes Phase I of the Organizational and Research Culture of African Universities (ORCA), a multi-phase research project focused on organizational and research cultures in sub-Saharan Africa.

The structure of universities in sub-Saharan Africa reflects colonial legacies and present post-colonial challenges. Hence, the overall project adopted a relational approach that incorporates the importance of the macro-national level context for understanding the mesa-organizational level practices (i.e. research culture) and micro-level perceptions and behaviors. Phase I of the project collected data from senior and mid-level university leaders through semi-structured interviews to ascertain: (a) challenges to developing research cultures; (b) the values and practices of a productive research culture; and (c) the role of leaders in fostering productive

research cultures. We also gathered archival data on the national higher education context and academic staff profile of each country.

The research in this paper makes three important contributions to understanding research cultures in African universities. First, it reveals the challenges leaders face in building strong research cultures within difficult national contexts. Second, it identifies the values, behaviors, and practices that leaders believe to be important in facilitating research productivity. Third, the study offers a clearer definition of the concept of research culture and the embedding mechanisms available to leaders for building research cultures.

2. Theoretical Foundation

Organization culture theory provided the theoretical foundation for exploring the role of leadership in building research cultures in African universities. Organizational culture has been a revolutionizing concept in the management and organizational behavior sciences since the early 1980s when pioneering scholar Edgar Schein theorized its nature and manifestations within organizations (Schein, 1985).

Schein (2010, p.18) defined organization culture as "*a pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.*" According to Schein (2010), culture manifests itself in organizations through three fundamental layers: artifacts, espoused values, and basic underlying assumptions. While artifacts and espoused values are observable (e.g. symbols, rituals, practices, structures, processes, language, values, mission and vision statements), basic assumptions are unobservable but are core to an organization's culture as they shape how members think and act (Ostroff et al., 2012; Scheinder et al., 2013).

Tsui et al., (2006), drawing on other scholars, argue that organizational culture derives from the history of an organization, is socially created, and is about the beliefs and behaviors of members of an organization (Ashkanasy et al., 2000; Giorgi et al., 2015). Schein (2010) positioned leaders as the primary agents in the defining and shaping of organizational cultures. A growing body of literature has shown that organizational and member outcomes are closely linked to the enabling characteristics of organization culture, its leadership, and its internal procedural mechanisms. A substantial body of research confirms the impact of organizational culture on the lived experiences of organizational members (e.g. Gregory et al., 2009; Erdogan et al., 2006; Hartnell et al., 2011; Ogbonna & Harris, 2000; van den Berg & Wilderom, 2004); firm-level performance (Kim & Chang, 2019; Prajogo & McDermott, 2011; Tsui et al., 2006) and innovation (e.g. Hogan & Coote, 2014).

Despite the extant literature demonstrating the relationship between organizational culture and important outcomes, there has been some debate and hesitation about extending these understandings to universities. Some of the pioneering work on organizational culture and higher education was done by Clark (1983). Clark (1983) proposed three levels of culture in higher education: the culture of the discipline, the culture of the enterprise (i.e. organizational culture), and the culture of the academic profession and/or national system. Clarke's (1983) conceptualization spurred research on the role of administrators and managers in organizational culture (Dill, 2012). These studies included analyses of how the specific behaviors of institutional leaders may help embed or transmit organizational culture and how strategies, practices, and processes characteristic of the general management literature may influence organizational culture and adaptation in higher education (Dill, 2012).

3. Conceptual Framework

While organizational culture refers to the culture of the entire organization, scholars acknowledge the existence of sub-cultures which are manifestations of varied forms and norms

within the larger whole, (Giorgi et al., 2015; Lumby, 2012; Scheinder et al., 2013). Thus, the research culture of a university can be conceptualized as a subset of the broader organizational culture. Drawing from Schein's (2010) seminal work on organization culture, Evans (2007, p.2) defined a research culture as "*shared values, assumptions, beliefs, rituals and other forms of behavior whose central focus is the acceptance and recognition of research practices and output as a valued, worthwhile and preeminent activity.*" However, she did not fully theorize how leaders can embed research cultures within universities. We extend Evans' (2007) definition by conceptualizing the linkage between organization culture, research culture, and leader behavior by applying Schein's (2010) identification of the primary and secondary embedding mechanisms leaders can employ to create, communicate, and manage culture.

In our conceptual framework, the three main influences on research culture are the larger organizational culture, institutional responses to the higher education context, and the role of leaders (See Figure 1). A research culture takes its roots from the organization's culture.   Drawing from Schein (2010), the three levels of a research culture are the artifacts or visible institutionalized processes, practices, and structures for research, the espoused values and beliefs related to research, and the basic assumptions which are the taken-for-granted beliefs about research revealed through the actual research behavior of academic staff.   Research behavior refers to the specific activities that a faculty member engages in in the pursuit of research and scholarly effort. This may include but is not limited to: choosing to spend time on research, identifying research projects, seeking research funding, supervising student research, finding research collaborators, participating in opportunities to improve relevant skills, pursuing quality work rather than quantity towards promotion, and obtaining doctorates, etc.
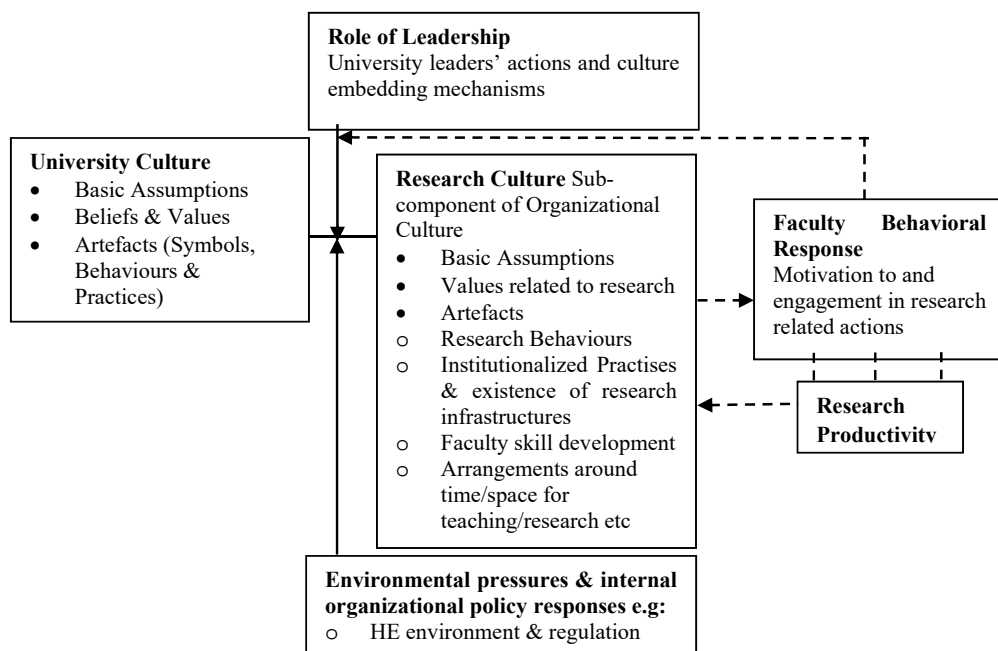
Role of Leadership
University leaders' actions and culture embedding mechanisms

University Culture
- Basic Assumptions
- Beliefs & Values
- Artefacts (Symbols, Behaviours & Practices)

Research Culture Sub-component of Organizational Culture
- Basic Assumptions
- Values related to research
- Artefacts
o Research Behaviours
o Institutionalized Practises & existence of research infrastructures
o Faculty skill development
o Arrangements around time/space for teaching/research etc

Faculty Behavioral Response
Motivation to and engagement in research related actions

Research Productivity

Environmental pressures & internal organizational policy responses e.g:
o HE environment & regulation

Fig. 1 Conceptual framework: building research culture (drawing on Pratt et al 1999; Evans 2007; Schein 2010 & Puplampu 2015)

Schein (2010:3) positioned leaders as the main architects of an organization's culture and argued that it is ultimately created, embedded, and manipulated by them. As shown in Figure 1, a prerequisite for performing this architectural role in building research cultures is an understanding of the macro-national context (i.e. higher education environment and regulations) in which the university functions. Leader culture creation actions and academic staff behavioral responses feedback into the institution's research culture process. We use broken feedback lines because of the nature of academic staff response. Feedback and reciprocal impacts are far from linear or directly predictable.

Schein (2010:236) identified ten mechanisms leaders can leverage in their efforts to shape organization cultures (See Table 1). Primary mechanisms are the most influential and consist of: (1) what leaders pay attention to, measure, and control; (2) how leaders react to critical incidents or crises; (3) deliberate role modeling of values by leaders; (4) criteria leaders use for allocating rewards and status allocation; and (5) the criteria for recruitment, selection,

promotion, retirement, and termination of members. Secondary mechanisms are (1) organization's design and structure; (2) organizational systems and procedures; (3) design of physical space, facades, and buildings; (4) stories, legends, and myths about important events and people; and (5) formal statements of organizational philosophy, values, and mission. We translate these mechanisms to the research culture creation process (See Table 1). For example, what leaders pay attention to may translate into the metrics they use to measure the status of research at the university as well as the relative emphasis placed on quantity versus quality of scholarly work.

Table 1 Culture- Embedding Mechanisms Available to Leaders

Primary Mechanisms for fostering cultures in organizations	Primary Mechanisms for fostering research cultures
What leaders pay attention to, measure, and control on a regular basis	What are the metrics used to measure the status of research at the university? What is the relative emphasis placed on quantity versus quality? Does the status of research performance feature in communications from leaders?
How leaders react to critical incidents and organisational crises	How do leaders respond to research underperformance?
How leaders allocate resources	What direct and indirect resources provided to faculty to do research and how these resources are allocated?
Deliberate role modelling, teaching, and coaching	Do leaders role model, teach or coach the importance of research?
How leaders allocate rewards and status	What do leaders reward? Who are the valued faculty members?
How leaders recruit, select, promote, compensate and excommunicate organizational members	How does research feature in faculty appointments, promotions, development and terminations? Does research form a key aspect of HRM decisions?
Secondary Mechanisms	**Secondary Mechanisms for fostering Research Cultures**
Organisation design and structure	What levels do research structures occupy within the university structure? What are the reporting lines for leaders charged with driving research?

Organisational systems and procedures	What are the management systems and procedures in place for research? How much funding and resources do they manage?
Organizational rites and rituals	How are research achievements celebrated? Who gets celebrated?
Design of physical space, facades, and buildings	What is the physical infrastructure for research (e.g. library, laboratories, research hubs)
Stories about events and people	What stories do leaders tell about research and researchers?
Formal statements of organisational philosophy, creeds and charters	Is research visible in the mission statement, in internal and external communication? Is there a formal statement of research strategy, research values?

Source: Adapted from Schein (2010, p. 236).

Based on this conceptual framework, we investigated (a) how leaders in African universities perceive the challenges to building research cultures; (b) the important values and practices relating to research efforts in their respective institutions; and (c) their roles in fostering strong research cultures.

5. Methodology

5.1 Research Design

We used an interpretive phenomenological approach (IPA) for the study. IPA seeks to explore participants' self-understandings and sense-making processes, rather than measuring objective constructs (Creswell & Creswell, 2017; 2009; Gephart, 2004). It aims to capture and qualitatively understand the meanings and interpretations that actors subjectively attach to phenomena to describe and explain their behavior (Gephart, 2004). IPA approach is often used to develop insights into unexplored phenomena (Gephart, 2004).

The existing literature on low research outputs in Africa shows that studies have not learned directly from university leaders how they perceive research cultures and how they enact their roles in building such cultures. A substantial body of research has long established a

relationship between perceptions and behaviors. That is, the organizational cues, rules, and scripts that individuals make sense of daily ultimately drive behavioral responses (e.g. Czarniawska-Joerges 1992; Katz & Kahn, 1978; Weick, 1995). These rules and scripts reside in the culture and are evident through a series of tangible and intangible cues that dispose organization members to act in specific, discernable, and observable ways (Franklin & Pagan 2006). Our research approach is also congruent with Schein's (2010:3) assertion that leaders are the main architects of cultures in organizations.

5.2 Sample and Data Collection

Since our goal was to gain access to participants willing to provide in-depth, rich information about their self-understandings of research cultures, we adopted a two-tier sampling approach to access those responsible for leading research in their universities. Recognizing that Africa consists of 54 countries and 1,522 universities, we focused on countries within the project's resource constraints where it was possible to locate leaders willing to devote the time to participate in the interviews. Consequently, the research was conducted in six countries: two countries in East Africa (Kenya and Uganda), two in West Africa (Ghana and Nigeria), and two in Southern Africa (South Africa and Zimbabwe). Within each country, we identified a sample of universities using the following criteria: inclusion of both public and private universities; have graduated a minimum of four (4) cohorts of students; an academic staff population of at least 100 and a student population of 5,000 for public universities, and an academic staff population of 50 and a student population of 2,500 for private universities at the time of data collection. Our final sample consisted of 23 universities, 15 public and 8 private who agreed to participate in the research.

Next, we purposively selected interviewees in the 23 universities (Suri, 2011). Participants had to meet the following criteria: (a) hold a leadership position in the governance structure of the university (e.g. Vice-Chancellor, President, Pro-Vice-Chancellor,

Provost, Research Head/Director, Dean, and Head of Department) and (b) agree to the time requirements to participate in the study. Our final sample consisted of 57 leaders.

The primary data collection method was semi-structured interviews supplemented with archival data.   Interviews lasted 1 to 1.5 hours and were taped and transcribed except in cases where notes were preferred by interviewees. The interview protocol focused on: a) challenges to building research cultures; (b) values and practices of a research culture; and (c) the role of leaders in building research cultures. Follow-up questions were used to clarify responses. Participants were promised anonymity.

Interpretivism also stresses the importance of understanding the historical and social context in which participants are embedded (Creswell & Creswell, 2017). To contextualize the data collected on participants' self-understandings of building research cultures, we also collected archival data on the colonial and higher education history, governance and funding structures for higher education, national population, number of universities, student population, key national higher education challenges, and national academic staff profile of the six countries. Finally, we reviewed relevant university documents shared by participants (e.g. vision statements, research missions, research policy documents, etc.). Hence, the combination of interview and archival data allowed us to triangulate insights into how leaders perceive and enact their roles to build research cultures.

5.3 National Higher Education Context

Higher education during colonialism did not serve the interests of African societies but those of the colonizers (Abrokwaa, 2017). The six countries experienced heterogeneous forms of colonial rule although Britain was the main colonizer (Lange, 2004; Odukoya, 2018). Three of the countries, Ghana, Nigeria, and Uganda, were subjected to indirect rule (Lange, 2004). Kenya, South Africa, and Zimbabwe (formerly Rhodesia) were subjected to various forms of settler colonialism (Odukoya, 2018).

Under indirect rule, the traditional elite (i.e. chiefs) and indigenous institutions retained some administrative and legal power under the supervision of imperial governors (Lange, 2004).   In contrast, under settler colonialism, the colonizers came to stay and imposed a new political order for themselves that replaced indigenous political power (Odukoya, 2018). In the case of Kenya, there was an exodus of European settlers post-independence compared to the permanent settlement of the British in Zimbabwe and both the British and Dutch in South Africa.

Settler colonialism resulted in an earlier establishment of universities in South Africa compared to the other five countries (e.g. Stellenbosch University was established in 1685). These universities were generally constructed for the settlers, not the native population. Universities in Ghana, Kenya, Uganda, Nigeria, and Zimbabwe were established much later and were tethered to institutions in Britain (Woldegiorgis & Doevenspeck, 2013).   Despite heterogeneity in modes of colonial rule, the net effect was homogenous—higher education systems designed to advance the interests of the colonial powers (Odukoya, 2018; Rodney, 1974). Thus, universities were built on colonial principles and European models of higher education.   The curriculum was Eurocentric and did not serve the needs of African societies. University education was not available to the general population but used to produce a limited number of elite Africans to serve colonial administration (Rodney, 1974).

In the post-colonial era, universities in the six countries function in very difficult circumstances because of the social, economic, and political problems facing their countries. According to the archival data, the countries share some key challenges reflective of the continuing struggle to overcome the legacies of colonial higher education. The archival data provided details about the origins of universities in each of the six countries and changes over the years. Post-independence all of the countries experienced growth in the number of universities. For example, Ghana went from one university in 1960 to more than eight public

universities and over 50 private universities by the time of this research. Governmental pressure to meet the demands for education has given priority to teaching rather than research. However, government funding for higher education remains inadequate. The archival data on faculty numbers and pay structures revealed that all of the countries struggle with inadequate levels to meet student demand and increasing the percentage with doctoral degrees.

5.4 Interview Data Analysis

The interview data were analyzed according to the stages of thematic analysis (King & Brooks, 2018). Each country team was responsible for transcribing and familiarizing themselves with the content of the interviews. A coding guide was developed during a meeting of the ORCA Project Team. During the meeting, teams independently applied the coding to a sample of the interview transcriptions. A discussion was then held about the appropriateness of the codes which led to the refinement and finalization of a coding guide. For example, the key codes included leader behaviors, faculty behaviors, research culture, research policies, research impact, research resources, leadership challenges, and motivation to engage. Thereafter, each country team used the coding guide to code their respective interviews. Moving from open coding to second-order coding, each team identified themes in the interview data for each country while ensuring interrater reliability.

To facilitate comparison across countries, each country team prepared a summary of the interview themes as well as key aspects of the national higher education context from the archival data. Thereafter, two members of the Project Team aggregated and consolidated the themes from the interview data into a final set of themes. The consolidated themes were sent to all team members for further refinement and confirmation. Table 2 provides an example of the final data structure resulting from this analysis aggregation. This process allowed us to identify key themes across all of the interview data.

6. Findings

Overall, the analysis of the interview data indicates consistency among the dominant themes that emerged from the data. The few differences we found were largely associated with the participant's leadership rank. Perceptions of leaders at the Dean and Head of Department (HOD) levels were more directed towards challenges at the operational level (i.e. teaching workloads and administrative burdens).

6.1 Challenges to Creating a Research Culture

Six themes were dominant in how leaders perceived the challenges impeding the development of strong research cultures.

Undervaluation of research. The main challenge perceived was a lack of appreciation of the importance of research in a university, although several participants indicated that this was less of a problem within science disciplines. Participants expressed this challenge in different ways. A Vice-Chancellor described the research as being 'raw', "*The culture at our university right now is a teaching culture. Research is not emphasized as is expected in universities. Whereas if you look at the number of academic staff which we have, and the output of research, it is not comparable. Right now, we just want to teach, and research is very raw.*" A Head of Department (HOD) stated the challenge in these words, "*It has been difficult to get academic staff and students to realize the importance of science and the role of philosophical arguments in the conduct of quality research.*"

Leaders attributed this challenge to the legacy of teaching as the primary role of universities. As noted by this quote from a Vice-Chancellor, many of the universities started as teaching institutions and the effects of this reality linger today, "*It started as a teaching-centered university rather than a research-centered university. Academic staff members probably felt that the job was only to do the teaching and there was very poor support in terms of senior academics who could come and start to supervise. So, even if someone wanted to do*

the research, they did not have a mentor." As the archival data revealed, all the countries were experiencing a huge demand for university education because of the growing youth population. The continent has one of the highest youth populations in the world and this places a significant demand on ensuring access to universities (World Economic Forum, 2019). It is also important to note that compared to universities in the global North, many of the universities in the sample would be considered relatively young institutions. Historically, due to colonialism, there were few universities for the general population as the focus was on educating a small number of elite locals to support colonial ends. The archival data revealed that the growth in African universities occurred in most instances after independence. In the case of South Africa, the surge in university enrollments reflects the increase in access for the majority Black population after the end of apartheid in 1994.

A consequence of the under-appreciation of research was the pursuit of quantity versus quality by academic staff. In addition to the tension between teaching and research, leaders pointed to how incentive systems exacerbate the under-appreciation of research as captured from a Dean, *"The higher education system just incentivizes output and this creates a sausage machine . . . a production line of research outputs."* In several of the universities, there were monetary incentives for research quantity and the number of articles published played a significant role in the promotion to a higher academic rank. Consequently, it was perceived that academic staff holds an instrumental view of research as summed up by this quote, *"Because of the pressure to get promoted, people write mushroom papers that do not meet required standards for publication."*

Often, promotion criteria are explicit about the number of articles required. For example, a Pro-Vice Chancellor shared the following criteria used by her university, *"If someone acquires a Ph.D. degree, he/she is automatically promoted to Senior Lecturer Grade, and those with a Ph.D. joining the university from outside are permanently appointed if they*

have at least five publications. We also have an open policy where those with 21 publications

are promoted to Associate Professorship and a full Professor Grade requires 35 publications."

      Resource limitations. The second main challenge was the inadequacy of research

funds as well as a lack of infrastructure to conduct high-quality research. Infrastructure

support inadequacies ranged from laboratory equipment to statistical support services and

language assistance. For example, a Dean shared the following reality, "*Our laboratories are*

under-equipped. When you talk about applied sciences, the materials that are needed to carry

out experiments are hard to come by." The lack of resources restricts the type of research

academic staff can conduct. The words of a HOD summed up the perceptions about the

effect of inadequate resources on the type of research produced, "*Most people [academics]*

tend to do research within the resources that they can individually attract."

      Glocal tensions. Another significant challenge is reconciling the tension between

producing research with local versus global relevance. All the leaders, regardless of rank,

shared the on-going dilemma about what kind of research African universities should

produce. A dominant view was the need for local relevance to be prioritized as reflected in

this quote from a Vice-Chancellor, "*We have our own agendas. We have our own mandates,*

and the idea we are pushing is a culture where we accept and tolerate the broader academic

community, but at the end of the day, remaining highly relevant to our local needs." Yet, the

data also indicate this priority has not been fully achieved as captured in the words of a Dean,

"*Our research is not really contextualized . . . on true African dilemmas. What will research*

look like if it is decolonized?" The emphasis placed on Africanization of knowledge

resonates with its post-independence emergence and the most recent calls to decolonize

African universities (e.g. Mamdani, 2016; Nyamnjoh, 2012).

      Heavy Workloads. Heavy workloads and administrative burdens were also prominent

themes in how they described leadership challenges. These challenges were more likely to be

shared by HODs and Deans. Two quotes exemplify these challenges. "*The one thing that gets me down as Dean is the creeping managerialism. Documents have to be completed for everything. We do not get time to focus on the core business — which is research.*" It was expressed this way by a HOD, "*Most of our academics spend most of the time teaching, marking scripts, releasing results, having meetings about results, supervising their students in such a way that they do not have time for their own capacity development which is research.*"

       Anti-Research Behaviors. Leaders also shared challenges related to the attitudes and behaviors of academic staff. Although leaders described academic staff who strove to do good research despite inadequate funds and infrastructure and heavy teaching loads, they also pointed to what we refer to as anti-research behaviors by academic staff. For example, academic staff who did not engage in research with the resources available were described as "unmotivated" or comfortable if they could get promoted by pursuing "low hanging fruit" (i.e. achieving quantity by pursuing low-quality journals). Such faculty did not seem to care much about the quality of their research as long as they had the quantity. Leaders attributed this behavior to a lack of work commitment as captured in the following quote, "*Some of our colleagues are just interested in coming, teaching, and going away. . . They say they have done their job without putting back anything into the system, which is not ideal for the idea [of being an] academic.*"

       There was also general perception related to status differences between senior and junior level academics and how this sometimes translated into behaviors detrimental to research performance, "*A lot of our senior colleagues don't teach*", "*... there are our colleagues who as soon as they become professors don't go to any class again. They send their junior colleagues to go and teach ...*" and "*... if your junior sees that you don't go to the library to work on your paper, they would go that way too . . .* "*university academics do not value collaborations and hence it leads to lack of mentorship between senior and junior*

academic staff." We were surprised at the bluntness in which the leaders described counterproductive academic staff research behaviors as captured by the following phrases, *"People just want to have a pretense of doing"; "doing fake research'; "not driven to do research"; "people are just lazy."*

Poor Research Skills. The final challenge was the lack of adequate research skills of academic staff. First, was a large number of academic staff working on doctorates as noted by a Dean, "*We have too many young academics who are on staff development undertaking their Ph.D. I think three-quarters of our members of staff are doing their doctorates.*" The archival data revealed an overall low percentage of academic staff with doctorates with the average national percentages ranging from a low of 11 percent in Uganda to a high of 46 percent in South Africa. Second, participants also believed that the lack of research skills creates low self-efficacy and confidence among academic staff to engage in research as summed up by this quote from a Registrar, "*When people don't have these skills, they are likely to not want to do a lot of research because they may feel that they are exposing themselves."*

6.2 Role of Leaders in Building a Research Culture

Despite the significant challenges leaders shared, they had very clear views about the practices of a research culture in a university as well as their roles in creating and sustaining a strong one. Several of the leaders were actively engaged in efforts to change the research cultures of their institutions. The practices and roles they described reflect classic elements of an enabling research culture that would be found in universities in the global North and other developed regions of the world. The roles they described clustered into four themes: clarifying research expectations and prioritizing the type of research; creating an enabling environment by providing resources; building the research capacity (skills and qualifications of academic staff); and role modeling expected research behaviors.

Clarifying research expectations and prioritizing the type of research. Participants believed that the role of leaders was to demand high-quality research and clarify research expectations. Leaders believed it was important to be unequivocal about research expectations, given the historical priority on teaching and little expectation for high-quality research productivity. Leaders stressed placing a premium on research in promotion decisions by articulating standards related to the quality of research. For example, a Vice-Chancellor stated, "*We changed our promotion culture to focus more on the quality . . . integrity and impact rather than the number of publications.*"

The urgency of this role was reflected in the strong language that participants used to express it. For example, "*We need to **drum it**, to let everybody be aware that without research we cannot progress as an institution*"; "*The research policy is **printed in black and white** for academics to see and feel*'; and "***Driving** high-quality research and collaborating between the private sector and the university and international bodies.*" They also stressed that monetary rewards were not the only way to reward research performance. A Vice-Chancellor stated it this way, "*Recognize people and not just always be about money, but also give them a platform to speak or share their ideas.*"

There was consistency across the data that leaders should stress the importance of locally relevant research in setting performance expectations. The following quote from a Vice-Chancellor illustrates what we generally heard from leaders about this priority, "*Our research is supposed to be pre-offering technological solutions to the problems that the country is facing, be it your farmers, your miners, your manufacturers. That's our immediate preoccupation.*"

Creating an enabling environment and providing resources. This role was clearly articulated by a Pro-Vice Chancellor, "*Leadership needs to provide an enabling environment. We need to provide resources so that we help colleagues who are serious about research.*" Participants emphasized providing tangible resources like research facilities, seed money, and

funding to attend international conferences as key to fulfilling this role. There was less awareness of other environmental factors like reducing teaching loads, sabbaticals, or research assistants, for example.

       Building research capacity and skills of academic staff. Perhaps unique to the African continent compared to Western universities is the emphasis the leaders placed on their roles in developing the research skills of academic staff. This role had two dimensions. The first was putting in place structures and processes for developing the research skills of academic staff, especially the acquisition of quantitative skills.   Second, building capacity required increasing the number of academic staff with the skills to supervise the research of post-graduate students and to also assist academic staff in completing their doctorates.

       Role Modeling Expected Research Behaviors. Modeling expected research behaviors were particularly dominant among Deans and Heads of Departments who stressed the important role of leading by example. The belief was that leaders at their levels needed to be focused and engaged with research. The latter behavior was epitomized by the following quote from a Dean, *"Lead by example is a good practice as it shows interest and with that care of our people. Get commitment through practice"*. Another Dean lamented the lack of time to focus on research, *"The one thing that gets me down as Dean is the creeping managerialism. Documents to be completed for everything. We (Deans) do not get time to focus on the core business which is research."*

7. Discussion

       The research in this paper focused on understanding the role of leaders in fostering enabling research cultures and the challenges associated with their efforts. The vision and/or mission statements of a majority of the universities in our sample contained goals to be world-class, internationally recognized, or a leading university in Africa. Only three universities did not have explicit statements about research

The participants' understandings of the practices of a research culture were generally consistent with empirical findings from other parts of the world (Deem & Lucas, 2007; Dill, 2012; Evans, 2007; Ion & Castro Cicero, 2017). However, our analysis of the historical and national context of the countries in our sample suggests their perceptions should be understood within the historical and post-colonial realities affecting higher education. Inadequate resources were among the challenges identified due to increasing student demand and stagnant government funding. This result corroborates the findings of Sawyerr (2004) and others (Atuahene (2011) which reveal a poor resource environment as a major contributor to poor research performance in various African countries. At the same, the results also suggest that providing resources for research may only be a partial answer to fostering strong research cultures in African universities.

While all of the leaders in the sample, espoused clear views about the elements of a productive research culture, results indicate a significant gap remains between espoused values for research and the actual research culture. As organization culture theory suggests, it is the actual practices and systems in place that influence the behaviors of academic staff rather than the values espoused by leaders. It is these practices and systems that shape "the day-to-day way we do things around here" (Schein, 2010:3). Thus, until leaders can significantly influence "the day-to-day way we do research around here" attitudes and behaviors of academic staff will be difficult to change. A major problem for the leaders in our sample was the appropriate leveraging and alignment of embedding mechanisms.

For example, one of the identified anti-research behaviors of academic staff was the pursuit of quantity versus quality research. Tying promotion to quality research seems like an obvious solution. However, for the most part, the institutions sampled pursued reward and promotion systems which are linked to the number of publications. Given the compounding problem of low salaries of academics and inadequate funding for research, a catch-22 situation

unfolds with some academic staff teaching at several universities to supplement their salaries. The time devoted to extra teaching may inhibit the pursuit of quality research (Wangenge-Ouma et al., 2015). However, leaders in this study acknowledged there are some academics who make great attempts to be productive and do good quality research despite inadequate resources.

8. Conclusions

The results of this research make three important theoretical contributions. First, the findings show that leader influence on the research fortunes of universities is neither linear nor simple. Second, the definitions offered by Schein (2010) on organizational culture and Evans (2007) on research culture while seminal and instructive assume a shared reality which may not necessarily be so. The findings lean more towards a contested reality and to perhaps the existence of 'positive' and 'negative' or commendable and not so commendable elements of the research cultures encountered. The frustration of the leaders in our sample where their interventions do not seem to have the intended effects were palpable. Their efforts to drive increased scholarly productivity may not necessarily rest on achieving a unified or shared set of values, behaviors, and practices, but rather on an acceptance of the presence of a multiplicity of behavioral possibilities.

Finally the data, as well as evidence from other scholars, suggest that the research environment in universities is informed by many internal and external contextual factors and are evolving realities that can indeed be molded by a recognition of the complex nature of research cultures. This, added to the present reality that the current higher education contexts in the countries sampled reflect colonial and postcolonial challenges that constrain the influence of university leaders (Barnard et al., 2017), suggest that context will be a significant moderator of Schein's (2010) notion of the impact of leaders in shaping culture.

Thus, based on our findings we propose the following definition of research culture: the *mixed range of individual and collective values, behaviors, and institutional practices of a university (or other knowledge-based organization) built up over time within a particular internal and national context which inform the level of research uptake by organization members and have a direct impact on individual and organizational research productivity.* Our definition addresses the following complexities of the concept:

a) The values that underlie research prospects may vary within the institution, thus allowing for the possibility of different levels of research uptake in different parts of the university;

b) Specific behaviors are identifiable which may be deployed differently by different organization members which enable research productivity to be realized;

c) The range of institutionalized practices may enhance or regress research efforts;

d) The efforts of leaders towards improving research productivity require attention to these antecedent culture issues as the responsiveness of academic staff members cannot be deemed into existence but rather skillfully negotiated as part of a culture embedding process over time; and

e) The macro-level (national) context is a significant factor in the influence leaders can exert on research cultures

8.1 Embedding research culture

Our findings have practical implications for university leaders in Africa who want to foster strong research cultures. This study suggests that leaders need to establish the appropriate structures and systems and to engage in intentional culture embedding actions (Table 1). In so doing, leaders need to pay close attention to the alignment of their actions. For example, demanding quality research will not succeed without structural interventions to enable it. Leader actions have to be directed towards influencing the research behaviors of

academic staff. The research behaviors in question include: choosing to spend time doing research rather than engaging in multiple teaching at different universities; responding to opportunities to improve relevant skills;pursuing quality work rather than quantity – which is targeted –towards promotion; working to obtain doctoral or terminal degrees; actively seeking research funding, grants and so on and working on credible research projects, etc. Leaders need to model and align institutional mechanisms towards encouraging such behaviors. For example, leaders may ensure that promotion criteria reward quality research rather than quantity and commend credible, collaborative research projects within universities, as well as across the continent and internationally. Promotion criteria for senior academics should include mentoring and development of junior academics. Efforts should be made to reward research that addresses local needs.

Furthermore, leaders should address issues of poor remuneration of academic staff as a means of reducing the workload resulting from engagement in other activities or jobs outside of the university. Remuneration policies may require some differentiation between disciplines – contentious though this may seem. Adequate remuneration may enable academic staff to concentrate more on research within their primary university affiliation. Of course, the latter will not be easy, given the socio-economic context of many African countries and inadequate government funding for universities. Research capacity development programs for academic staff should, in addition to providing technical support, focus on enhancing self-efficacy and fostering positive attitudes about the importance of research (Griffioen & de Jong, 2015).

We suggest that with attention to these types of embedding mechanisms, it should be possible to enhance the research culture, realign research behaviors and ultimately improve research productivity. We define research productivity as the: *individual and collective build-up of research outcomes which demonstrate that the organizational goals of knowledge creation and dissemination are being addressed by individual faculty members as well as by*

the university institutionally. This is the essence of the conceptual relationships postulated in Figure 1.

We note though that these embedding mechanisms require attention to the contextual factors that limit their potential efficacy. A significant role for university leaders in Africa that did not surface in the interviews is lobbying the government and other national bodies to make the case for the kinds of resources and funding needed to meet the expectations set for the university system.

This is one of the first multi-country studies on the African continent that examines the role of university leaders in influencing research cultures. It is also one of the first to delve into how leaders view the challenges of conducting research in their universities. We argue that it is important to understand how leaders perceive and interpret the challenges to research performance because their perceptions will ultimately inform their leadership behavior to build and lead strong institutional research cultures.

The findings reported in this paper add to the growing body of literature that tackles the problem of weak research productivity of African universities. While Puplampu (2015) proposes an intervention model, our research goes further to address the building of research cultures. Drawing from the seminal work of Schein (2010) on organization culture and Evans (2007) on research culture, we proposed an expanded definition of the concept of research culture along with specific embedding mechanisms. Our work therefore offers both a deeper theoretical consideration of as well as relevant practical insight into research cultures within universities.

9. Limitations and Future Research

No study is without limitations. Two limitations of this study offer opportunities for future research. First, our sample consisted of universities in six Anglophone countries which represents only a small fraction of the continent. Generalizing about a continent as large and

diverse as Africa is difficult. Future research should be extended to other countries and more universities. Second, the study is also limited by its focus on the role of university leaders in building research cultures. Future research should examine how academic staff in African universities perceive research cultures within their respective disciplines and how they negotiate or have reinvented their commitments to research given growing demands for increased research productivity.

At the same time, there is research needed to examine the impact of power and status distance on the strength of research collaborations among academic staff of different ranks, comparing various instances of collaboration and their results, as well as the ease of achieving such results and the time taken. Finally, more research is needed on the perceptions of government leaders and policymakers about their roles, attitudes, and funding decisions for research. Nevertheless, we do believe that the findings complement the current body of literature that has focussed on the structural impediments to research productivity by providing a broader picture of the complex, multi-dimensional challenge of intensifying the knowledge production of African universities.

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