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The Nature of and Motive for Academic Research in Higher Education: A sub-Saharan African Perspective

Muhamadi Kaweesi, Ronald Bisaso and Betty Akullu Ezati

Abstract

While research-led universities emphasise the importance of knowledge production in diverse fields, there is a paucity of research on the nature of scientific knowledge and researchers' motives in research-led sub-Saharan African universities. This empirical study drew on lead researchers' perspectives and documentary evidence to examine the nature of and motive for academic research across disciplinary fields in Uganda's Makerere University. Data were collected using semi-structured interviews and triangulated with document checks. Thematic analysis was used to analyse the data and Hakala and Ylijoki's knowledge production framework was employed as an analytical lens. The findings show that, despite the fact that researchers at Makerere University are generating knowledge that is useful to policymakers, civil society, the corporate sector and society at large, the emphasis is on scientific research that can be published in refereed journals so as to earn promotion. Furthermore, knowledge production takes place in a highly institutionalised and resource-constrained environment, resulting in the donor community setting the research agenda. Based on these findings, it is recommended that universities rethink the promotional assessment model, diversify research funding and apply more selective criteria in collaborating with donors.

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Key words: knowledge production, academic research, research-led university, research orientation

Alors que les universités qui se concentrent sur la recherche mettent en avant l'importance de la production de savoirs dans divers domaines, on observe une pénurie de recherche sur la nature du savoir scientifique et sur les motivations des chercheurs et chercheuses dans les universités d'Afrique sub-Saharienne tournées vers la recherche. Cette étude empirique s'est fondée sur les perspectives de chercheurs principaux et des preuves documentaires pour examiner la nature et les motivations pour la recherche académique dans tous les champs disciplinaires de l'Université Makere en Ouganda. Des données ont été récupérées en utilisant des entretiens semi-guidés et ces données ont été recoupées avec des vérifications de documents. Une analyse thématique a été utilisée pour analyser les données et le cadre de production de savoirs développé par les chercheuses Hakala et Ylijoki a servi de grille d'analyse. Les résultats démontrent que, malgré le fait que les chercheurs et chercheuses à l'Université Makere produisent des savoirs utiles pour les législateurs, la société civile, le secteur des entreprises et la société dans son ensemble, l'emphase est mise sur la recherche scientifique qui peut être publiée dans des revues scientifiques dotées d'un comité de lecture, dans une perspective d'avancement de carrière. En outre, la production de savoirs a lieu dans un environnement hautement institutionnalisé et contraint par les ressources disponibles, ayant pour conséquence un programme de recherche établi par la communauté des donateurs. A partir de ces résultats, il est recommandé que les universités repensent le modèle d'évaluation promotionnel, qu'elles diversifient les financements de la recherche et qu'elles mettent au point des critères plus sélectifs dans la collaboration avec les donateurs.

1. Introduction

Academic research is widely recognised as a source of competitive advantage, prompting many universities to adopt it as a core strategy (Castells, 2004). However, research is influenced by the wider environment in which it occurs (Lechuga and Lechuga, 2012). Recent changes that have impacted on academic research and researchers' motives for engaging in it include enhanced industry-university collaboration (Laursen, Reichstein and Salter, 2008), heightened emphasis on the social relevance of academic research (Cherney, Head, Povey, Boreham and Ferguson, 2013), and the need for research to promote innovation (Pamfie, Guisca and Bumba, 2014).

2. The Research Gap

Several studies have explored the nature of and motive for research in Higher Education (HE) (Pamfie et al., 2014; Cherney et al., 2013; Reddy,

2011; Ylijoki et al., 2011; Laursen et al., 2008; Hakala and Ylijoki, 2001; Nowotny, Scott, and Gibbons, 2001). These works conceptualise such research in terms of its social relevance and as a catalyst for innovation. They also note that academic research yields knowledge that informs policy making and that it promotes the professional development of academic staff. However, they were conducted in Europe and the US where Higher Education Institutions (HEIs) and the research they conduct are better endowed by government than those in developing countries.

The funding challenges confronting sub-Saharan African universities are likely to impact on the nature of and motive for undertaking academic research, resulting in different orientations from those of Western universities. Furthermore, most studies on academic research in sub-Saharan African universities tend to focus on donor approaches to research funding, collaboration, capacity building, productivity, and the broader challenges relating to research capacity (Blom, Lan, and Adil, 2016; Kasozi, 2016; Musiige, 2014; Altbach, 2013; Mouton, 2010). A research gap thus exists in relation to how resource dependence may shape the nature of and motive for the research conducted at such institutions. This study sought to fill this gap by focusing on Makerere University.

3. Analytical Framework

Hakala and Ylijoki's (2001) knowledge production framework was adopted as the analytical framework to holistically explore the nature of and motive for academic research at Makerere University. The framework focuses on the intentions and audience of academic research. Its elements were articulated as sub-themes to aid analysis and interpretation of the findings. The framework is presented in Table 1 below.

Table 1. Analytical Framework

Research Orientation (Nature of Knowledge)	Target Market	Audience (Motive for research)
Academic/basic (Theoretical)	Academic market	Scientific community (Gaining reputation)
Civil society (Practical)	Public market	Ordinary people (Improving practices)
State-government (Instrumental)	Policy market	Decision-makers (Supplying information)
Entrepreneurial (Making profit)	Corporate market	Market forces (Commercial)

Source: Derived from Hakala and Ylijoki (2001)

The framework illustrates the parameters of academic research such as the nature of the knowledge produced, the target market, the research audience, and its motive. The academic research orientation highlights the theoretical nature of knowledge that is produced to satisfy the academic market (scientific community). The civil society research orientation entails the production of practical knowledge to satisfy the public market (ordinary citizens) by improving prevailing practices. The state-government research orientation satisfies the policy market by supplying information for decision-makers. The entrepreneurial research orientation involves the generation of knowledge for commercial purposes (corporate market). The framework enabled us to interpret the unique subjective accounts provided by each participant based on their lived experiences of the phenomenon of knowledge production.

4. Literature Review

The nature of academic research has been the subject of intense debate among scholars. Etzkowitz and Leydesdorff (2000) assert that academic research is taking on a more applied, market-oriented entrepreneurial orientation in response to technological advancements and social demands. Other scholars contend that basic research remains important in all disciplinary fields (Wernli and Darbellay, 2016; Ylijoki et al., 2011). Academic research has thus been dichotomised into two broad research orientations, academic (basic) and applied, each serving its audience and satisfying certain needs. Within the academic research orientation (mode 1 knowledge production), research satisfies the needs of the academic market. The knowledge that is produced is theoretical and researchers' main motive is to achieve recognition within the scientific community (Hakala and Ylijoki, 2001). The outcomes of this orientation are journal articles in top-ranked journals, scientific monographs and edited books (Ylijoki et al., 2011). Despite the importance of basic research, universities are under enormous pressure from governments and donors to justify the relevance of their research (Cherney et al., 2015). Commercially-oriented, policy-relevant, and community-oriented research has thus gained traction.

Commercially-oriented research is associated with the commercial value of scientific knowledge and the growing intensity of university-industry ties (Bisaso, 2011). It aims to develop new products for which there is market demand. Such research targets the corporate market and its quality is determined by market forces (Ylijoki et al., 2011). The growing commercialisation of scientific knowledge is regarded as a long-awaited opportunity to break free from the academic/basic research orientation in order to enhance the relevance of academic research (Etzkowitz and Leydesdorff, 1997). However, Slaughter and Leslie (1997) contend that, replacing basic

research with market-driven research implies that academic research increasingly resembles industrial research that does not produce publicly available knowledge and serves the interests of those disciplines that are close to the market, particularly the fields characterised as 'technoscience'.

The studies reviewed above focus on Western universities. Furthermore, as noted by Boggio, Ballabeni, and Hemenway (2016), most relied on data sourced from scientists in multiple institutions and fields (Lam, 2010; Albert, 2003; Ylijoki, 2003). We focus on a single sub-Saharan African research-led flagship institution, Makerere University.

The state-government research orientation relates to generation of knowledge for the main purpose of policy-making (Hakala and Ylijoki, 2001). The growing importance of policy-relevant research rests on recognition that scientific knowledge serves as an instrument for problem-solving, has a direct impact on the choice of a solution to a specific policy problem, serves both a policy substantiating and a policy legitimising role, and, can serve as an agenda-setter when scientific discovery unveils conditions that inform salient policy issues (Gornitzka and Sverdrup, 2010). This study extended the body of knowledge in this area by examining the actual experiences of lead researchers at Makerere University to determine the extent to which their research is motivated by the need to inform policy.

The motivation for engaging in research that benefits civil society is to demonstrate societal relevance by producing practical knowledge to improve society and prevailing practices (Ylijoki et al., 2011). In this respect, civil society constitutes a 'fourth partner' (in addition to the university, industry, and government) and the role of the local population in economic development is recognised (Etzowitz, 2003). Reduced public funding of university research from the 1990s onwards meant that academics were called on to demonstrate the social relevance of their research (Bornmann, 2012). Today, the need for relevant knowledge is theorised in concepts such as 'mode 2 knowledge production', or the 'triple helix' and it is at the centre of universities' strategic direction (Alun and Liam, 2014).

5. Methods

The study was conducted in line with the social constructivism philosophy that posits that reality is socially constructed and given meaning by people. Ontologically, we believe that there are multiple realities (Guba and Lincoln, 2005). Epistemologically, we hold that truth and meaning are created by subjects interacting with the world; hence, multiple accounts of the world can exist (Gray, 2004). We thus focused on interpreting the participants' different subjective accounts of the nature of and motive for academic research. Social constructivism was deemed appropriate to understand the nature of and motive for academic research because knowledge is produced

through emergent social processes, implying that the focus should be on what people are thinking, feeling, and understanding, and explaining their diverse experiences rather than searching for fundamental laws to explain behaviour.

Congruent with the social constructivism philosophy, we employed qualitative methods and rooted the study in the interpretive paradigm which assumes that social life is shaped by people's experiences and social contexts (Creswell, 2007). An intrinsic case study design was used to gain a better understanding of the nature of and motive for research at Makerere University. The academic disciplines were studied as sub-units, with the aim of converging the data to gain a holistic understanding of the nature of and motive for academic research.

We stratified the University into colleges and these became analogous to combined disciplinary fields along the hard-soft and pure-applied dimensions. The selection of disciplinary fields was based on Biglan's (1973) classification of disciplines. While we ultimately selected 12 participants, as advised by Saunders, Sim, Kingstone, Baker, Waterfield, Bartlam, Burroughs, and, Jinks (2017), the focus was not on "whether data saturation had occurred" but rather on "how much saturation was enough". Hence, in line with Jassim and Whitform (2017), data was collected from more than 12 participants in order to confirm or validate earlier data and to guarantee that no new themes were emerging. After the 12th interview, no new themes were generated from the interviews and it was deemed that saturation had occurred. Thus, the sample size was emergent and determined posteriori but not a priori.

The 12 participants were selected from the target population as set out in Table 2 below.

Table 2. Population by Staff Rank, Disciplinary Field, Actual Sample, and Sampling Technique

Rank	Disciplinary Field	Population	Actual Sample	Sampling Technique
Full Profs	Hard-applied	41	01	Purposive
Assoc. Profs	Hard-applied	66	02	Purposive
Full Profs	Hard-pure	08	01	Purposive
Assoc. Profs	Hard-pure	15	02	Purposive
Full Profs	Soft-applied	10	01	Purposive
Assoc. Profs	Soft-applied	11	02	Purposive
Full Profs	Soft-pure	16	01	Purposive
Assoc. Profs	Soft-pure	28	02	purposive

Source: Makerere University Annual Report, 2017

Eight of the selected participants were Associate Professors and four were Full Professors employed in four disciplinary fields, namely, hard-applied (medicine, engineering, and agriculture); hard-pure (chemistry, botany, and zoology); soft-applied (law, education, and economics); and soft-pure (sociology, philosophy, and anthropology). All participants that are labelled Lead Researchers were purposively selected based on their prolific contribution to knowledge production in terms of the number of publications, PhDs graduated, and grants awarded. For instance, all the Full Professors that were selected had been awarded more than ten research grants, were engaged in research projects with high levels of external funding from donors, had supervised at least ten PhD students and 20 Master's candidates and had surpassed the mandatory 21 recognised publications required by the university for promotion to Full Professor. Indeed, each had published a minimum of 50 peer-reviewed journal articles, at least two book chapters, and one book. Similarly, Associate Professors selected for this study were considered to be among the best in their field in terms of knowledge production.

Face-to-face audio recorded semi-structured interviews were conducted from March to August 2017. The questions centred on the nature of research at the university, the major focus of the institution's research agenda and research-related policies, support for research, and the reasons for their colleges' and their own engagement in research. The interviews were manually transcribed immediately after they were conducted in order to familiarise ourselves with the data set. Given that the intention was to explore conceptualisations of the nature of and motive for academic research so as to interpret, explain and develop understanding rather than to generate theory, we used basic qualitative description and interpretation by providing straightforward accounts of the participants' understanding of academic research.

Document analysis was employed to enable triangulation and improve the validity of the findings (Yin, 2011). Document checks of the university's current strategic plan, annual reports, human resource manuals, research agendas, and research policies were based on the interview themes. The documents were obtained through website searches. Each was checked to identify the core issues related to knowledge production. This provided a context to interpret the interview data. Yin (2011) points out that "the most important use of documents is to corroborate and augment evidence from other sources" (p. 80).

During data analysis, we read the dataset carefully to generate initial codes. Inductive (in vivo) and deductive codes were used in the coding phase. In vivo codes, that are developed by directly examining the data (Yin, 2011), enabled us to discover patterns or the main ideas emerging from

the data set. The actual language used by the participants was employed to generate them. On the other hand, deductive coding enabled us to use a phrase or an a priori sub-theme to represent or merge a particular chunk of data with in vivo codes. This enabled the findings to emerge while at the same time easing interpretation.

The merging of codes into categories and clustering them under a priori sub-themes was based on Bryman's (2012) observation that the researcher's own interpretations are important in qualitative research. As such, we also allowed our prior understanding of the nature of and motive for academic research based on Hakala and Ylijoki's (2001) knowledge production framework, the literature, and our own experiences to influence our interpretation. Inductive analysis was conducted based on the raw data (in vivo codes) to capture the participants' words, while the deductive analysis was based on the a priori sub-themes derived from the analytical framework, the literature, and our prior experience. This approach aligns well with the interpretive paradigm that recognises that identified patterned responses (themes) are socially produced and that prior knowledge is important in aiding interpretation (Reiner, 2012).

To ensure confidentiality and anonymity we assigned each participant a pseudonym. Based on academic ranks, FP denotes Full Professor and AP Associate Professor. For the disciplinary categorisation, HP denotes Hard Pure, HA-Hard Applied, SP-Soft Pure, and SA-Soft Applied. In the end, the following pseudonyms were used for the Full Professorial category: FPHP, FPHA, FPSP, and FPSA. For the category of Associate Professors, the Pseudonyms were: APHP1, APHP2, APHA1, APHA2, APSP1, APSP2, APSA1 and APSA2.

6. Findings

The presentation of the findings was guided by elements derived from Hakala and Ylijoki's (2001) knowledge production framework. They revealed that, across disciplinary fields, academic research mirrors elements that are akin to the academic, entrepreneurial, state-government and civil society research orientations. Such research has both theoretical and applied elements, suggesting that lead researchers are motivated to engage in knowledge production to satisfy the academic, corporate, policy, and public markets. Furthermore, the findings showed that, due to dependence on donor funding, the donor-driven research orientation remains dominant.

6.1 The Theoretical Nature of Research (Academic Research Orientation)

Participants across disciplinary fields conceded that the nature of knowledge that is produced by academics that are still climbing the promotion

ladder is largely theoretical and is motivated by the desire to publish in refereed journals so as to earn promotion. They also revealed that academics that are already Full Professors are motivated to produce theoretical knowledge because they seek to continuously extend the frontiers of knowledge so as to achieve more recognition within the scientific community. Full professors shared that:

> We carry out research in order to generate new knowledge, some of which is for the purpose of getting promotion. Promotion has always been one of the major motivations for engaging in knowledge production in the College of Natural Sciences (FPHP).
>
> When people are coming up with research proposals, they are not mindful that their research proposal must have an academic track, a problematic track, and a practice track and that they are going to be measured by those parameters. People are busy trying to surprise you with publications because it is all about promotion (FPSP).

Associate professors concurred:

> The university rewards people for their innovativeness in research via promotion. The only way you can be promoted is through research and publication. My general impression is that many people have published, but this has not actually been transformed into impacting policymaking because the main aim of doing research is to publish and be promoted through the various ranks of the university (APSA1).
>
> Promotion is a major driving factor for doing research. A person will know that in order for me to become an Associate Professor, I need five publications. So the aim will be to get the five publications, whether the outcomes from the research to these publications have application or not, he [sic] does not mind. His [sic] interest is in the promotion (APHA1).

It is evident that the majority of the academics across disciplinary fields are primarily motivated to engage in knowledge production in order to climb the promotion ladder and enjoy the benefits that come with promotion such as salary increments. Codes that supported this included 'salary increment', 'invited to conferences', 'earning income', 'increase your pay as you get the promotion', and 'earn the professorial rank'. A perusal of the Human Resource Manual (Makerere University, 2009a) and the amended policy on appointment and promotion of academic staff (Makerere University, 2009b) revealed that staff promotions were heavily dependent on publications in peer-reviewed journals and teaching.

Participants across disciplinary fields also described academic research as a tool to extend the frontiers of knowledge and achieve recognition within the scientific community. As such, the scientific community is an important market for university research results:

> Besides promotion, we engage in research and publication to generate new knowledge some of which is for extending the frontiers of knowledge. We feel proud to extend the frontiers of knowledge, to contribute to the fund of knowledge (FPHP).
>
> We engage in research and publication to produce knowledge that is relevant to the global scientific fraternity to advance the frontiers of knowledge. That is why we have many collaborations and linkages with universities. These collaborations help us to have research that informs the global scientific community (APHA1).
>
> When we publish, we contribute to new knowledge in the world. We get self-fulfilment and happiness when our work is cited. We become visible. We contribute to the growth of knowledge. Then we become renowned scholars and we ... receive invitations to ... share our findings with the international community (APSA2).
>
> I now have ... 14 articles and books [in the pipeline]. So, I am now looking beyond promotion. For now, I want to extend the frontiers of knowledge. I want to be recognised internationally (APSP1).

However, some participants expressed misgivings about such an approach. For example, APSP2 remarked:

> Our research largely targets the academic audience yet our motto is 'We build for the future!' Because of our elitist thinking, we are still confined to what we call the ivory tower yet we are supposed to serve society. You get very few professors who become public yet they are supposed to be public. So generally speaking, our professors are confined to the university, to the scientific community. It is unfortunate! (APSP2).

This participant highlighted the fact that confining research to the scientific community promotes elitism and produces discipline centred knowledge that largely remains in the academic domain. While it secures the institution's position in terms of university rankings, it limits knowledge dissemination (Makerere University, 2016).

6.2 The Commercial Nature of Academic Research (Entrepreneurial Research Orientation)

The findings also indicated that research at Makerere University is motivated by the desire to produce new products with commercial value so as to satisfy the corporate market, promote innovation and create intellectual property (IP). This implies that academic research has to some extent been conceptualised in terms of the entrepreneurial research orientation. It was clearly evident in hard-applied fields such as engineering and agriculture. By their nature, these disciplines have easy access to this market with enormous funding prospects. The following extracts support these findings:

> Our research on sanitation is helping us to come up with new products. In the course of solving the problem of the use of sewage, we are getting manure and biomass out of sewage which we use in cooking and for lighting. We are doing research for electricity distribution by designing transformers which are suitable for use by small-scale enterprises. So, we are doing a lot of applied research (APHA1).
>
> Of course, at the back of every research we do, we are looking at innovation. Can you come up with new knowledge, something new that is going to be of useful intellectual property? Our practical orientation defines who we are. So, you expect excellence, quality and diversity and innovation. Everything that we do is done in a unique way, including research (FPHA).

Institutional support for research leading to the generation of new products with commercial value is explicit in Makerere University's policies and frameworks. For instance, the University Research Agenda (2013-2018) notes that capacity for knowledge transformation and innovation should be built by, among other things, promoting commercialisation of innovations (Makerere University, 2013a, p.2). The Intellectual Property Management Policy also promises support for commercialisation and innovation. However, these policies have yet to be fully operationalised.

The participants cited some challenges in relation to the entrepreneurial nature of university research. APHA1 remarked that:

> Our research answers questions that have been posed by private companies. We work on their problems, give back the results and they apply them. But not all people are receptive to these researched interventions. There is [a] general belief that our technology is still uncivilized and does not work. So that mentality is still a challenge to us. Although many embrace our technology, we still have some that do not embrace it (APHA1).

According to FPSP, APHA1, and APHA2, one of the ways to improve acceptability is to ensure that the non-academic audience is included in problem identification. The findings also showed that the weak linkages between the university, industry, government and research institutes are a major barrier to entrepreneurial research at Makerere University:

> We need to improve the linkage with the sectors that utilise our research. Different ministries and organisations should be encouraged to set up research and development offices. These should be manned by people who are competent. There should be constant interaction between the university and the communities (APSA2).
>
> The university-industry partnership is weak. There is this thing, they call the triple helix where you have the university, government and the private sector. If we can strengthen this kind of linkage, the university

> will become more innovative and will contribute to development by ensuring that the knowledge that it creates is fully utilised (APHA1).

Some participants added that entrepreneurial research is stymied by weak IP regimes that tend to limit opportunities for commercial exploitation of knowledge generated through research:

> The reason for the few innovations is that people are now redoing what other people have done but in a slightly different way. There is no originality. You are using the same methods to do a similar thing but you are only changing the environment a little bit. One wonders if our Intellectual Property management policy works (APHP1).

> My general impression is that many people have published, but this work has not actually been patented. If somebody is doing work in environmental economics, he [sic] is not connected with, for example, NEMA [National Environment Management Authority]. This limits opportunities for commercial exploitation of knowledge generated through research (APSA1).

6.3 Policy-Relevant Research (State-Government Research Orientation)

The majority of the respondents stated that a substantial amount of knowledge is generated to inform policy to guide governance and administration. For example, FPSA noted that:

> A lot of the research done in the Law School has wide-ranging policy implications for those engaged in dispute resolution and those trying to project the future of Uganda (FPSA).

FPHA also remarked that research in his disciplinary field has always informed policy-making in the Ministry of Health:

> Our malaria research answers questions that are relevant to the Ministry of Health. We have a Memorandum of Understanding with the ministry and this has helped us to answer questions that are relevant to malaria control. So, during local dissemination meetings, we share research which has policy implications. Our programme dies if our research is not immediately applicable to policy (PPHA).

APSA1 and APHP1 concurred that they engage in academic research to generate new knowledge that is useful for policy formulation:

> As economists, we blend theory with practice. You can never be a good economist without links with the policymakers ... in key ministries.... Once you choose a topic to do research, the first question is: how is this area of research ... helping policy? How is it applicable to the policy world? (APSA1).

> We generate knowledge that [informs] policy. However, the biggest problem is that ... you need funding so that you can follow up by disseminating the information. We have done a lot of work that informs

> policy, but we rarely disseminate it. If we don't bring this work to implementers, our research cycle stops because that extra funding required to disseminate the information is never given (APHP1).

This participant is evidently of the view that Makerere University has made some progress in as far as the generation of policy-relevant research is concerned. However, he feels that there is room for improvement with regard to funding research dissemination. This was the position held by the majority of the participants (FPHA, APHA1, APHA2, APHP1, APHP2, APSA1, and FPSP) who attributed low levels of dissemination to resource constraints and preoccupation with promotion. These findings are in sync with the Research and Innovations Policy that requires "staff to publish research findings in form of policy briefs for use by policymakers" (Makerere University, 2008b, p.8).

6.4 Scientific Knowledge to Improve Society (Civil Society Research Orientation)

The findings showed that, across disciplinary fields, knowledge is produced with the aim of improving society. The Makerere University Strategic Plan 2008/9-2018/19 (Makerere University, 2008a) states that the strategic repositioning of the institution as a research-driven university aims to enable it to focus more on the production of knowledge to improve society, support evidence-based decision-making, and drive the growth of Uganda's economy (Makerere University, 2008a, p. 13). Indeed, the majority of the participants were of the view that socially-relevant academic research is the ultimate measure of a research-led flagship university. As such, the civil society research orientation can be seen in all disciplinary groups within the university:

> We are engaged in research on oil exploration because the discussion about oil is mainly on econometrics and alludes to implications for economic growth. Our concern is: what is the link between oil exploration and local communities and their lives? What are the legal issues...? We want people to discuss these issues freely. [These] are [the] questions which we need to ask as legal researchers, especially if we are concerned about the majority of the communities (FPSA).

> Much of our research is community-oriented. It focuses on conservation of biodiversity, restoration of polluted habitats, and looking for biological agents that can be helpful to human beings. In our discipline, we treasure research that engages communities (FPHP).

> Our research in the humanities is community-based and it's is directed at solving societal problems. We have the advantage that we are naturally more connected with the political, social, and economic aspects of society. So, in the course of doing research, we engage stakehold-

> ers and also try to solve problems out there. Somehow, communities benefit (FPSP).

However, it was established that community-oriented research has low absorptive capacity because of weak linkages between the university and user communities. It also lacks a definite funding base, resulting in passive dissemination of research outputs. As such, research results are presented to peers in the scientific community, potential users are rarely engaged, and opportunities for uptake and use in society are not optimised. In this regard, APSA2 suggested that:

> We need to improve the linkage between the university and the sectors that utilise our research. Different ministries and organisations should be encouraged to set up research and development offices that should be manned by people who are competent. There should be constant interaction between the university and the communities (APSA2).

6.5 Academic Research Skewed to Donor Interests (Donor-Driven Research)

There was consensus among the participants that academic research is increasingly driven by donor interests:

> Our research is donor-funded meaning that there is a disconnect between the research agenda and the research practice. It is difficult to talk about the university research agenda because you are neither funding it nor directing it. It is very difficult to even think that the research portfolio and the research practice at Makerere University can directly contribute to what is professed in the institutional research agenda (FPSP).

> There is no money to fund university research.... donors give us... money. [Thus,] in a way, the research agenda will be drawn from the global perspective such as environmental protection, now sustainable development goals, and gender equality. We are forced to do that because the donor needs it (APHP2).

Furthermore, numerous participants (APSP2, APHA2, APHP1, APSA1, FPHP and APSA2) indicated that, in undertaking research, they are conscious of donors' presence and that university research caters for the interests of donors. APSA1 said that:

> In many cases, we are doing research [on]... what the donor is interested in. For example, we are doing an economic analysis of technical and vocational education, the impact after ... project intervention. We are ... in that area because that is where the resources are (APSA1).

According to FPSP, the problem lies in the fact that:

> The higher education sector lacks a robust research agenda to which researchers can respond. This is because the government does not fund

> research. [It] makes it difficult for the university research agenda to contribute to what is actually professed in it. Our research agenda ends up answering to the interests of donors because they fund research (FPSP).

Importantly, some participants (APHP1 and APHA2) noted that because university research is donor-driven, the research agenda does not effectively guide researchers in the desired direction and as such, it is somewhat irrelevant. They noted that:

> When donors come here, they have already decided on what they want. They are interested in people who think like them. Professors that work with them are not bringing their innovations [to] the work, but are just fitting into the donors' research agenda. If you are working with donor funds, you are working within the project funders' objectives (APHP1).

> I have written many proposals where the donors don't seem to be interested in what I am presenting because it does not fit their interests. So if you are to get donors' funds, you must align yourself to their interests and fit into the objectives of the call (APHA2).

It can thus be inferred that there is over-dependence on donor funding for the university research endeavour and that despite increased prestige and access to resources, conforming with donor requirements has had negative consequences such as undermining scholarly autonomy. In turn, this has promoted a degree of passivity. The findings also point to differences among disciplinary groups with departments in applied areas (such as engineering, medicine and economics) receiving more substantial donor funding to engage in contract research than pure areas (such as zoology, philosophy, and anthropology). The obvious benefits of generous donor funding include closer contact with the outside world; additional earnings to improve departmental resources and academics being able to significantly improve their material welfare.

The university's 2017 Annual Report (Makerere University, 2017) which documents all running projects undertaken by college and funding agencies shows that the major funders during the year under review included the US-based National Institutes of Health (NIH) that contributed US$4.86 million; the Royal Government of Sweden (US$4.43 million); NORAD/ NORHED (US$2.87 million; the Wellcome Trust (US$2.87 million); Master Card Foundation (US$1.70 million); DFID-UK (US$1.55 million); the European Union (US$1.54 million: and Grand Challenges - Canada (US$1.13 million). While the Government of Uganda is supposed to fund university research, its subvention seems to be more focused on enhancing staff salaries. Moreover, a decline in internally generated resources was reported due to a drop in the number of privately sponsored students enrolling at the university (Makerere University, 2016, p.61). Thus, although the claim that

research funds emanate from a variety of sources is somewhat valid, donor funding outstrips other sources.

While the findings suggest that donor-driven research undertakings may not be aligned to the university's research priorities, it is worth noting that, generally, sub-Saharan African universities' research partnerships with the traditional North are governed by legal frameworks determined at the national level to promote alignment of the research agenda with national priorities. It is therefore not surprising that some donor-funded research and collaborative research arrangements between the university and donors fit well with the institution's research priorities.

Efforts to align donor-driven research with the university's research priorities are ongoing. According to Makerere University's Strategic Plan 2008/9 -2018/19 (Makerere University, 2008a) and the Intellectual Property Management Policy (Makerere University, 2008c), the institution has been repositioned as a research-led university with a research portfolio that is underpinned by broader national, regional and global development frameworks and trends such as Uganda Vision 2040; the National Development Plan (NDPI and II); the National Science, Technology and Innovation Policy (2009); and the Poverty Eradication Action Plan (PEAP), among others. The university has established research coordination and management structures, and research related policies to ensure that its research agenda achieves these objectives.

The Government of Uganda has also called on HEIs, particularly universities, to produce relevant knowledge that will enable the country to compete in the knowledge economy (Government of Uganda, 2015; 2013, 2010). The university's research agenda thus emphasises the need for multidisciplinary research in areas of national importance such as health, agricultural transformation, natural resources management, and climate change, education, governance, and science and technology. With support from, among others, the Swedish International Development Cooperation Agency (Sida/SAREC), the Norwegian Agency for Development Cooperation (NORAD) and the Makerere University Walter Reed Project (MUWRP), its academics have undertaken several research projects in areas that are considered to be relevant to national development such as livestock nutrition and husbandry; malaria, HIV-AIDS, degenerative diseases such as cancer, and reproductive health; water quality management; and sustainable energy in rural development (Makerere University 2017 Annual Report).

7. Discussion

The study's findings demonstrate that the nature of and motives for academic research at Makerere University are varied as lead researchers are involved in knowledge production to satisfy different research markets. The

results thus demonstrate the validity of Hakala and Ylijoki's (2001) framework. This implies that the transformation thesis of academic research from mode 1 to mode 2 knowledge production proposed by scholars such as Massy (2009), Crespo and Dridi (2007), and, Etzkowitz and Leydesdorff (1997) needs to be revisited.

7.1 The Theoretical Nature of Research (Academic Research Orientation)

The following propositions are not empirically supported by the study's findings: (1) that basic research (the mode 1 form of knowledge production) has been wholly replaced by applied and market-driven research (Gibbons, Limoges, Nowotny, Schwartzman, Scott, and Trow, 1994); (2) that there is a radical discontinuity and break between the traditional mode of knowledge production and the mode 2 form of knowledge production (Massy, 2009; Crespo and Dridi, 2007); and (3) that basic research (mode 1 knowledge) has been displaced and the fundamental norms and values have been turned upside down (Feldman and Desrochers, 2004).

Instead, the study found that basic research continues to be produced at Makerere University and that it co-exists with applied research orientations. This is in line with the university's current strategic plan (Makerere University, 2008a). The institution's 2017 Annual Report also recognises that in addition to targeting national development needs, knowledge production has targeted publication in peer-reviewed journals (Makerere University, 2017). This finding coheres with Wernli and Darbellay's (2016) observation that research-led universities are unlikely to adopt the notion that basic research should be entirely abandoned in the foreseeable future.

7.2 The Commercial Nature of Academic Research (Entrepreneurial Research Orientation)

Participants in applied fields acknowledged that they engage in entrepreneurial research with the aim of producing products with commercial value so as to satisfy the corporate market. They also conceded that their engagement in research is partly motivated by the desire to come up with useful IP (patents). Indeed, efforts towards commercialisation of academic research in the form of cutting-edge innovations by individual academics and the establishment of interface structures have been reported (Bisaso, 2013; Cloete, Bailey, Pillay, Bunting, and, Maassen, 2011).

These results concur with those of Clark (1998) and Slaughter and Leslie (1997) who concluded that universities are becoming more involved in the commercialisation of research as a knowledge transfer mechanism. However, despite the articulation of institutional commitments and aspirations towards commercialisation of research outputs in Makerere University's research-related policies and the institution's strategic plan,

the study found that commercialisation in the form of break-through innovations and discoveries has yet to be fully achieved. This has been attributed to the lack of research funds and failure to synchronise research outputs with the needs of industry.

7.3 Policy-Relevant Research (State-Government Research Orientation)

The results showed that research produced at Makerere University impacts policy through its focus on social justice, human rights, and governance. This is line with the 2010 Sida Review by Freeman, Johansson, and Thorvaldsson (2010) that noted that academics at the institution had engaged in policy-informing research over the years. Similarly, the university's 2017 Annual Report shows that a number of research projects were undertaken that impacted policy, including studies on Access to Justice for Women Incarcerated with Children in Uganda; Promoting Disability Rights through Legal Education; Land Justice and Governance in Uganda; and research on animal health that focused on animal disease and public health interventions.

However, the pace at which university research filters into policy processes remains slow and the emphasis on the publication of scientific papers in peer-reviewed journals is working against the policy impact of research. It can, therefore, be concluded that the tendency to lock knowledge within the expensive confines of journals makes it inaccessible to those who would use it in policy and practice.

Previous research also found that policymakers and practitioners are generally unaware of such academic works, seldom read them, and find journal articles difficult to comprehend (Katy et al., 2016; Barwick et al., 2014). There is, therefore, a need to ensure that the knowledge disseminated in journal articles is summarised, contextualised, and transformed so that it is presented to policymakers and practitioners in a comprehensible manner (Gagnon, 2016). Simplification of knowledge for easy uptake could be enhanced by the use of policy briefs, newsletters, policy advice, posters, magazines, stickers, booklets, and technical reports. Publishing research findings in peer-reviewed journals should, therefore, be seen as a means to an end, the end being further development of knowledge through transforming it so that what is contained in journal articles is turned into functional knowledge for use in policy and practice.

7.4 Academic Research to Improve Society (Civil Society Research Orientation)

The study participants reported that engagement in community-oriented research across disciplinary fields was among the strategies adopted to enhance research uptake. Different disciplinary fields were producing

knowledge with social impact (Makerere University Annual Report, 2013b). Nurius and Kemp (2014) note that contemporary research models are becoming transdisciplinary, multi-level, and community-connected, suggesting a shift from mode 1 to mode 2 knowledge creation as espoused by Gibbons et al. (1994).

Nonetheless, community-oriented research continues to be weak and vulnerable at Makerere University, perhaps because, as indicated by Ylijoki et al. (2011), this type of research lacks a secure funding base, resulting in passive dissemination of its results. Potential users are rarely engaged and opportunities for research uptake and use in society are not optimised. Passive dissemination strategies increase awareness of the existence of research but may not have a substantial impact on societal practice (Orem et al., 2012). Dependence on typical scholarly strategies of dissemination such as journal publications, conferences, seminars, and workshops slows uptake (Gagnon, 2016).

7.5 Academic Research Skewed to Donor Interests (Donor-Driven Research)

The findings showed that knowledge production at the university has been largely motivated by the desire to access donor funding. The participants conceded that the institution's research agenda mirrors donors' interests as they fund research through academic partnerships and links that are constructed as key strategies for capacity building and international cooperation. According to the university's 2017 Annual Report (Makerere University, 2017), research funding from donors continues to enhance its research capacity. Although numerous donors have come on board, including NUFU - Norway; the African Academy of Sciences - Nairobi; UNESCO - Paris; FFEM - France; NORAD - Norway; DANIDA, UNAIDS, NORHED, WHO-GPA, and UNDP, of late SIDA-Sweden is the biggest funder of university research. University management regards such partnerships as crucial and maintains a full directorate to liaise with donors. It also recognises the role they play in the internationalisation of the institution.

While the underlying assumption is that donors strengthen the university's research agenda through capacity building, staff development and mutually beneficial, durable and empowering partnerships, in reality, the majority of these partnerships are not based on mutual negotiations between equal partners. Gaillard (1994) observes that one of the main problems encountered in the implementation of collaborative research programmes is the asymmetry of the collaboration and the dominance of Northern partners. Nevertheless, Makerere University's research profile continues to improve due to its collaboration with genuine research part-

ners such as the Sida Collaborative Research programme and Carnegie Corporation of New York.

8. Conclusions

Although basic research is popular at Makerere University, engagement in applied research was also reported. Thus, basic research may not be the primary preoccupation of university staff. Across disciplinary fields, academic research is understood in terms of basic/academic, policy-relevant, community-oriented and commercially focused research. These findings validate Hakala and Ylijoki's (2001) study which identified four motives for engaging in research, i.e., to satisfy the needs of the academic, policy, public, and corporate markets. Academics at Makerere University are therefore involved in both mode 1 and mode 2 knowledge production.

Despite the participants' varied understanding of the nature of and motive for academic research, the study showed that basic research continues to enjoy a firm base across academic disciplines and to co-exist alongside applied research. Thus, the transformation thesis of academic research suggested by scholars such as Smith-Doer and Verdi (2015), Etzkowitz et al. (2000), and Slaughter and Leslie (1997) from mode 1 to mode 2 needs to be revisited in the context of Makerere University. This conclusion supports Clark's (1998) finding that increasing entrepreneurial activities in research do not contradict traditional academic values.

The study revealed that some researchers in applied disciplines at Makerere University feel constrained in producing research outputs that they consider would have high impact due to pressure to publish in highly-rated journals. Despite being encouraged to disseminate their research to non-academic audiences, pressure to publish for an academic audience persists, perhaps, as argued by Hakala and Ylijoki (2001), due to the desire to improve their academic credentials. The popularity of scientific papers is also explained by the fact that at Makerere University dissemination to non-academic users is unsupported and unrewarded and is largely endorsed by rhetoric.

Understanding the nature of and motive for academic research at Makerere University requires an understanding of the broader institutional environment. Seen in this light, Hakala and Ylijoki's (2001) knowledge production framework is inadequate in explaining the nature of and motive for academic research at Makerere University. This study fills this gap by extending the analytical framework to include the donor market. It was established that engagement in policy-relevant, community-oriented, and commercially-focused research has, in part, been occasioned by the fact that the donors are demanding research which has practical outcomes. Moreover, scientific papers produced by lead researchers are published in

highly-rated journals that are sponsored by donors and Northern research institutions. Thus, academic research at Makerere University is somewhat of a mirror image of the donor-driven research orientation. As such, the research arm of the university operates within a highly institutionalised environment.

9. Recommendations

The study's results show that both basic and applied research are conducted across disciplinary fields at Makerere University; knowledge production is mainly for career progression and largely targets the scientific community; academic research is largely donor-dependent and such external influence poses a major challenge to the concept of being a truly research-led university; and that, due to resource-dependence, scholarly autonomy across disciplinary fields has been greatly diminished. In light of these findings it is recommended that the university's promotional assessment model be reviewed. Assessment for academic promotion should be based on broader criteria, including, among other things, the number of publications and contribution to policy and the community. This will require increased autonomy so that academic research caters more for local interests than donor interests. To achieve this, the university should, among other things, only collaborate with genuine partners from the North; continue to lobby government to allocate a sizeable percentage of GDP to HE research; and establish stronger linkages with the small but growing private sector so that it increases its investment in research.

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Effectiveness of University Research Policy in Promoting Research Engagement among Accounting Academics in Public Universities in KwaZulu-Natal

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Abstract

Previous studies have shown that, until recently, few accounting academics have engaged actively in research. This study aimed to determine the effectiveness of a university research policy in promoting such engagement, with specific reference to public universities in KwaZulu-Natal, South Africa. It targeted all accounting academic staff members and was descriptive, cross-sectional and quantitative in nature. Quantitative data was gathered from 82 respondents and the data were analysed using descriptive and inferential statistics. The study found that the strategies set out in university research policies are effective in encouraging accounting academics to engage in research.

Key words: university research policy, accounting academic staff, research engagement

Des études précédentes ont montré que, jusqu'à récemment, peu d'universitaires en comptabilité se sont tournés activement vers la recherche. Cette étude tendait à déterminer l'efficacité d'une politique de recherche menée par les universités, qui viserait à promouvoir une telle évolution, avec une référence spécifique aux universités publiques de KwaZulu-Natal en Afrique du Sud. Cette étude descriptive, transversale

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et quantitative a inclus tous les membres du personnel universitaire en comptabilité. Des données quantitatives ont été regroupées à partir des 82 membres du personnel universitaire en comptabilité et les données ont été analysées en utilisant des statistiques descriptives et déductives. L'étude a conclu que les stratégies mises en oeuvre dans les politiques de recherche menées par les universités sont efficaces pour encourager les universitaires en comptabilité à se tourner vers la recherche.

Introduction

Universities' main responsibilities are to build knowledge and develop society through teaching, research and community engagement (Thomas, 2011; McIntyre, 2017; MacIntyre, 2009, p. 349; Thomas, 2009, p. 27). However, Terblanche (2014, p. 66) notes that many South African universities lack an effective university research policy (URP) that encourages academics to engage in research. This could explain the low levels of research produced by accounting academics in the country (Goldman, 2011, p. 38).

Cathrynne (2018, pp. 3-4) notes that, in general, research outputs in the accounting field are lower than those in disciplines such as health sciences and engineering. This raises the question of whether URP takes cognizance of the culture of accounting. University research policy has been widely recognised as one of the most effective strategies to build knowledge and skills through research (UNDP, 2006, p. 267). Nguyeni (2015, p. i) suggests that universities with a weak research culture have a responsibility to formulate or refine their research strategies in order to improve research productivity. Higher Education South Africa (HESA) (2014, p. 6) maintains that the success of URP depends on employing experienced academic staff with PhDs, which remains problematic for public universities in South Africa.

According to Bhatti (2011, pp. 53-54), most universities succeed in URP design but fail in implementation. Singh (2011, p. 1191) observes that executive management tends to leave implementation to HODs, who receive little support from top leadership. The literature identifies several strategies to render URP more effective (Toolsee, 2011, pp. 50-51), including aligning it with the teaching and learning strategy; developing strong customer-driven strategies as well as core competencies; establishing strong competitive priorities; designing innovative projects, and providing strong management support. Ofori and Atiogbe (2012, pp. 68-71) add that it is important to identify core strategic research units within the institution and individual departments such as accounting. Bhatti (2011, pp. 53-54) recommends that accountancy academics should build professional relationships with stakeholders in industry and with professional bodies, in order to produce relevant research that addresses the practical issues confronting the local and global

economies (Toolsee, 2011, pp. 49-51). Kumar and Obono (2013, p. 34) notes that URP needs to constantly adapt to changing environments, while Mbaka and Mugambi (2014, p. 63) advise that top management should conduct ongoing quality assurance to monitor research ethics, research equipment, and the administration of government research subsidies. North-West University (2010, p. 6) highlights the need for public universities to adopt research policies that promote specialised research. These should be supported by effective structures, processes, and administrative arrangements (Cerniauskiene, 2014, p. 21). Salimian, Khalili, Nazemi, and Alborz (2012, p. 12018) and Cerniauskiene (2014, pp. 20-21) observe that the effectiveness of URP depends on the level of available human and material resources and technological development, as well as well-conceived strategic initiatives, measures and targets, and effective leadership.

It is against this background that the study investigated the effectiveness of URP in promoting research engagement among accounting academics at universities in KwaZulu-Natal (KZN), South Africa.

Problem Statement

In general, few South African accounting academics participate actively in research (HESA, 2014; Sambumbu, 2013; Myers, 2012). Indeed, the South African Institute of Chartered Accountants (SAICA) expressed the view that time devoted to research would be better spent developing accounting textbooks (de Villiers and Venter, 2010).

Objective

The study's objective was to determine whether URP is effective in encouraging accounting academics to engage in research in selected public universities in KZN.

Literature Review

For too long, accounting academics have "remained embedded in their institutional environments as 'taken for-granted' actors who could not cognitively conceive alternative arrangements" (Lubbe, 2015, p. 1085). As a result, chartered accountants (CAs) are perceived to lack a research culture. Furthermore, their teaching loads prevent many South African accounting academics from pursuing doctoral studies (Lubbe, 2015). However, de Jager et al. (2016) point to a recent, positive shift in the CA institutional culture in academic organisations.

Given that, "... accountancy is a human creation – just like language. [It is] a way ... of understanding the world ... and giving it purpose" (Lawrence, 2014, p. 39), it is essential to build a culture of research and innovation in this discipline.

Relevance of Research to Accounting

Historically, accounting played a major role in the development of cities and trade, concepts of wealth and numbers, and in the development of money and banking systems (Anderson-Gough, Grey and Robinson, 1998; Angus, 2014). Historians such as Keistar (1965) and Chatfield (1977) note that, initially, accounting systems were designed to strengthen debit and credit transactions. There was little need for financial statements because owners had direct knowledge of their businesses and could therefore, rely on basic bookkeeping procedures for information (Anderson-Gough, Grey and Robinson, 1998). However, the number of corporations rapidly increased post-1820, and managers required cost and production reports, financial statements, and operating ratios, which are more complex than simple recording procedures (Cathrynne, 2018, p. 4). This resulted in bookkeeping expanding into accounting (Mohamud and Hikmat, 2013).

Nonetheless, some scholars still regard accounting as an application rather than a potential field for research (Nowican, 2018; de Villiers and Venter, 2010). Furthermore, as noted earlier, SAICA stated that time devoted to research would be better used to develop new textbooks (de Villiers and Venter, 2010). In contrast, Syed and Veronica (2015) assert that research is important in order to share accounting information at a standardised level that will promote knowledge development, community engagement and innovation. In this regard, accountants from around the world, including academics, practitioners, and professionals collaborated to amalgamate the best of the Generally Accepted Accounting Practice (GAAP) statements into a single global set of GAAP, or the International Financial Reporting Standards (IFRS). This called for much research (Cathrynne, 2018, p. 4), demonstrating its relevance to this discipline. The current study thus also investigated whether KZN accounting academics' engagement in research would enhance their institution's global competitiveness.

South Africa's Global Research Collaboration Policy Framework

Mbaka and Mugambi (2014) note that, collaboration with researchers from other countries promotes a nation's global competitiveness, enhances research quality, and benefits society. The Department of Higher Education and Training (DHET) (2017) has formulated a national policy to promote such collaboration and South Africa offers a variety of research opportunities to international researchers. Indeed, Randall, Rickard and Vella-Brodrick (2014) observe that South Africa is a gateway to Africa for researchers from other countries and is also a gateway for African researchers to move around the globe. Regional policies have also been formulated to promote South African institutions as preferred partners for research and innovation.

The South African policy framework is not intended as a treatise or a handbook on internationalisation, but aims to promote internationalisation and innovation in Higher Education (Government Gazette, 2017). The country's public universities are required to align their internationalisation policies and strategies with the framework. Randall et al. (2014) note that it is inclusive in that it aims to bring all stakeholders on broad, including Higher Education Institutions, government departments, students, staff, national authorities and councils, and professional and voluntary associations.

The policy framework recognises that some historically disadvantaged universities have not yet achieved the desired levels of international research collaboration (Rosentreter, 2012) which builds academics' knowledge and skills, including intercultural skills, and helps to attract talented and highly qualified people to South African universities to enhance their human capital (Government Gazette, 2017; Centre for Leadership in Research Development, 2012).

Challenges Confronting Global Research Collaboration in South Africa

The Centre for Leadership in Research Development (2012) observes that South African public universities, especially those that were previously marginalised, lack innovation and global exposure. Todtling (2014) notes that global ranking in terms of international exposure and collaboration is based on several criteria, including the quality and quantity of academic research, staff research ratings and academic reputation. South African tertiary institutions suffered an overall decline in global ratings in 2016 and 2017, suggesting that many are unable to meet these criteria (Darroux, Jonathan, Massele and Thibeli, 2013; Government Gazette, 2017).

Darroux et al. (2013) assert that innovative initiatives in public universities depend heavily on staff knowledge, expertise, and commitment. South African Higher Education Institutions have struggle to attract and retain highly qualified and experienced academics (Kumar and Eyono Obono, 2013), in part due to the fact that they lack resources to offer attractive remuneration packages to staff from abroad (Darroux et al., 2013). Todtling (2014) and the Centre for Leadership in Research Development (2012) point out that, this results in narrow and localised research perspectives. Rosentreter (2012) observes that, innovation is one of the most powerful mechanisms to transfer new knowledge to industry and the broader society. However, it requires new education and training approaches, more funding, new technologies and infrastructure and other relevant tools (Albu and Toader, 2012). Ravhudzulo and Runhare (2014) are of the view that government can play a significant role in supporting public universities to achieve innovation.

The DHET (2012) and HESA (2014) assert that South Africa was 'deprived' of innovation during the apartheid era. For instance, universities designated for African people aimed to produce passive leaders to administer ethnic political institutions. However, they gave birth to vibrant resistance movements. While the post-1994 democratic government expects that public universities will promote economic and socio-political transformation, deep-seated apartheid legacies, the state's macro-economic policies, and the constraints imposed by globalisation have led to two opposing tendencies (Ravhudzulo and Runhare, 2014; Reddy, 2003).

On the one hand, public universities are expected to perform as viable "corporate enterprises", producing graduates to help steer South Africa into a competitive global economy. On the other, they are mandated to serve the common good and produce critical citizens for a vibrant democratic society (Ravhudzulo and Runhare, 2014). Higher Education South Africa observes that, in order to ensure transformation, universities must build a culture of innovation that calls for the design of new curricula.

Further Challenges Include:

Priority Focus

The policy on internationalisation of university research in South African Higher Education Institutions seeks to prioritise South Africa's wellbeing followed by, where possible and relevant, that of South African Development Community members; the rest of the African continent; the global South and emerging economies; and finally, the world (Government Gazette, 2017). This could result in foreign researchers feeling unsure about collaborating with South African public universities. Furthermore, the unavailability of research funding for foreign researchers in South Africa is of great international concern (Rey and Bawa, 2017). According to HESA (2014), South Africa does not aim to side-line foreign researchers, but to redress imbalances imposed on the education system by colonialism and apartheid.

Legal Compliance

Internationalisation of universities must comply with the South African Higher Education Act and other legislation as well as national priorities in foreign relations, as determined by the South African government (CHE, 2016). These requirements might also discourage foreign researchers. For example, the DHET produces a list of approved research publications and only articles that are published in these publications will be subsidised by the state. Furthermore, the department reserves the right to recover the funds where a university has claimed and been paid such subsidies in error (Research Grant for Universities, 2016, p. 11). Chan (2015) notes that lan-

guage barriers could also discourage foreign researchers, especially those from non-English speaking countries, while Wallace (2013, p. 105) found that some foreign residents feel that South Africa's laws discriminate against them.

Research Complementarity and Value Creation

Complementarity exists when research at both partner universities improves due to collaboration (HESA, 2014). According to the Council on Higher Education (CHE) (2017), activities related to the internationalisation of Higher Education aim to create value for the parties involved, including development of knowledge and capacity, as well as cultural enrichment. However, historically disadvantaged South African universities with few resources might struggle to compete with those abroad.

Activities related to the internationalisation of university research must meet high quality standards (CHE, 2016). Once again, this requires sufficient resources (The South African Government News Agency, 2017).

The survival of universities depends on their capabilities which are a reflection of their ability to take full advantage of the resources available (Adeagbo, 2016). This calls for South African universities to be competitive in terms of their curriculum design; professional accreditation of their programmes; staff skills; knowledge; innovation; investment, including the infrastructure and size of the university; research output and quality; and student enrolment and throughputs (DHET, 2012). Thus, historically advantaged universities have a competitive edge (Hurley, 2013).

Institutional Research Policy Approaches in Public Universities

Numerous scholars note that, employee attitudes influence the policy approaches adopted by an organisation. Policy can be planned or deliberate; emergent; opportunistic; imposed; and realised or unrealised (CHE, 2016; Singh, 2011; Andrews, 1979).

A planned policy approach is a top-down one. Information is gathered, scrutinised and analysed, with predictions made, after which senior management decides on value adding operations (De Boer and Goedegebuure, 2007; Toma, 2007; Martinet, 2010). Defined targets, timeframes and allocation of tasks are set out in writing.

Emergent policy is often informal and is not always written down. It occurs at different times as part of the university culture and can take the form of a top-down or bottom-up decision (Papagiannakis, Voudouris and Lioukas, 2013; Martinet, 2010). This policy approach is rare in public universities, where research policies are generally formal and documented (Johannes et al., 2012; Lok, Rhodes and Cheng, 2010).

Opportunistic policy can result in public universities making significant

gains (Lok et al., 2010). Due to rapid change at the global level, public universities are compelled to modify their international research policy to take into account new skills, technologies, and related infrastructure (Singh, 2011). However, Victoria University (2009) and Li and Hu (2008) are of the view that only well-resourced public universities can adopt an opportunistic research policy approach as it requires new skills and fresh technologies. The CHE (2017) notes that, one notable policy that management has imposed on academic staff is that they must be research productive without revisiting old academic workloads, especially at universities of technology where research was not previously part of the academic workload.

A successful policy is referred to as realised, whereas a failed one is unrealised (Andrews, 1979; CHE, 2017). The many reasons for unrealised policy include failure to consider influential factors depending on the university structure, nature, size, and resources (Lok et al., 2010). This study aimed to fill the gap pertaining to the extent to which international research policy is realised among accounting academic staff at KZN public universities (Ngibe, 2015; Mohamed, 2014).

Characteristics of Effective URP

Johannes et al. (2012) note that URP aims to leverage and shape research and innovation in a university. It seeks to promote research among a broad range of disciplines. Effective URP is important not only for academics, but for industry. Lubbe (2013) states that academic research does not aim to change accounting principles in industry, but to improve practitioner understanding of accounting applications. Guthrie, Burritt and Elaine (2011) assert that the ultimate purpose is to improve accounting practice, rather than to simply describe, understand or comment on it. The South African Institution of Chartered Accountants notes that, the accounting profession is made up of two major parts, namely, policy and practice (Singleton-Green 2010 cited by Institute of Chartered Accountants in Australia, 2011). Thus, research should seek to standardise accounting treatment (English, Guthrie, Broadbent and Laughlin, 2012; Angus, 2014).

According to Deegan and Unerman (2006) there is also a link between research and community engagement. Hopwood (2009); Guthrie, Burritt and Elaine (2011); and Bricker and Previts (1990) observe that, while universities are known for teaching jargon, URP has the potential to bridge knowledge gaps between universities and communities. Mouton (1996, cited by van der Schyf, 2008) is of the view that URP promotes the advancement of applied knowledge, which will enhance a country's socio-economic development. Finally, scholars (Oxford University, 2017; Ofori and Atiogbe, 2012) note that sound URP will generate financial resources to sustain a university's global research infrastructure and other research activities.

The University of Johannesburg (2016) observes that researchers benefit from research subsidies and grants, including research awards. However, Toolsee (2011) highlights that research investment is not purely financial, but includes nurturing postgraduate students to become the next generation of research and innovation leaders.

Chan (2015) states that URP should prioritise research on key global themes and subject areas of long-term worth. Northcott and Linacre (2013) propose that such policies should inspire academics to engage in ambitious projects, thus increasing the quality and extent of research collaborations. According to Cornelia and Christian (2013), URP should provide strategic support to academic departments by focusing on areas where the need is greatest as well as those that promote the university's strategic goals.

The DHET (2015, pp. 17-27) is of the view that URP should promote original, significant, and rigorous research. The University of South Africa (Unisa) (2017) adds that it should enhance academics' creative autonomy in order to enable them to claim their place on the global research stage. The researcher or research group should decide on projects (Gopalkrishna, 2010).

Methodology

The study targeted all accounting academic staff members in KZN public universities and was descriptive, cross-sectional and quantitative in nature, with a non-probability sample.

Sample

The respondents consisted of 82 accounting academics from the four public universities in KZN as shown in Table 1 below.

Table 1. Universities at which the Respondents were Employed

		Frequency	Percent
Valid	DUT	40	48,8
	MUT	8	9,8
	UKZN	27	32,9
	UNIZULU	7	8,5
	Total	82	100,0

The table shows that, 40 (48.8%) of the 82 respondents were from Durban University of Technology (DUT), 27 (32.9%) were from the University of KwaZulu-Natal (UKZN), 8 (9.8%) were from Mangosuthu

University of Technology (MUT), and 7 (8.5%) were from the University of Zululand (UNIZULU). Thus, DUT and UKZN have the highest number of accountancy academic staff, and MUT and UNIZULU have the fewest. Both UNIZULU and MUT are experiencing numerous challenges relating to staff capacity and development, while DUT and UKZN are the product of mergers, and thus have more staff (DUT, 2018; UKZN, 2018).

Research Instrument and Data Collection

Data were collected by means of a questionnaire, with an email sent to the respondents containing a link to the survey. It included a section on biographical data and one on the challenges confronting URP implementation in the accounting academic departments. The variables in the latter section were measured using a 5-point Likert scale. The survey was sent to 98 accounting academics and 82 responded, representing a response rate of 84%. An online survey method was also used for the pilot study and the five respondents were given five days to comment on the questionnaire. The pilot study identified unclear and vaguely formulated statements.

Data Analysis

The data were analysed using descriptive statistics and chi square goodness of fit test (at a level of significance p= 0.05). This enabled the researchers to determine how the variables related to one another and whether there were any differences between them.

Research Results

Reliability and Validity

The reliability tests performed were conclusive for all the questionnaire items (Cronbach's alpha >0.5). Reliability tests were performed with a confidence level of 0.950; thus, the reliability of the study was acceptable. All the statements in the questionnaire were tested through a pilot study for face validity and ambiguous statements were corrected.

Biographical Information

The biographical information includes the respondents' work experience and academic qualifications.

Figure 1. Work Experience

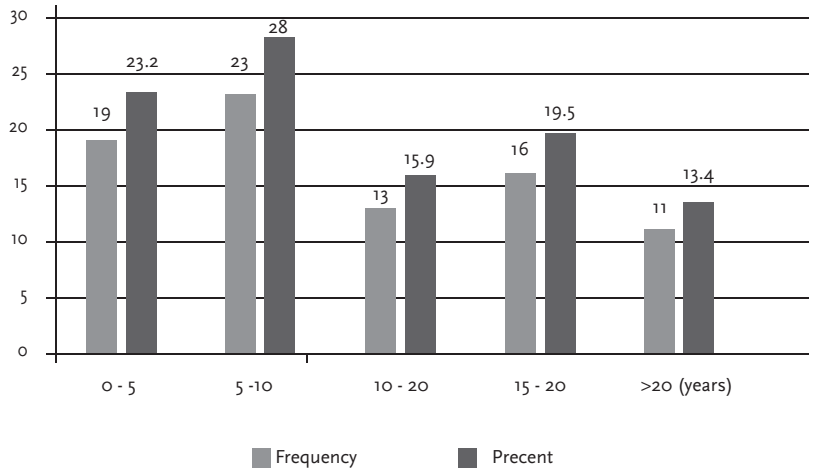

Figure 1 shows that, 23 of the 82 respondents (28%) had between 5 and 10 years' experience, 19 (23.2%) had 0-5 years, 16 (19.5%) had 15-20 years, 13 (15.9%) had 10-15 years, and 11 (13.4%) had 20 and more years' experience.

Figure 2. Qualifications

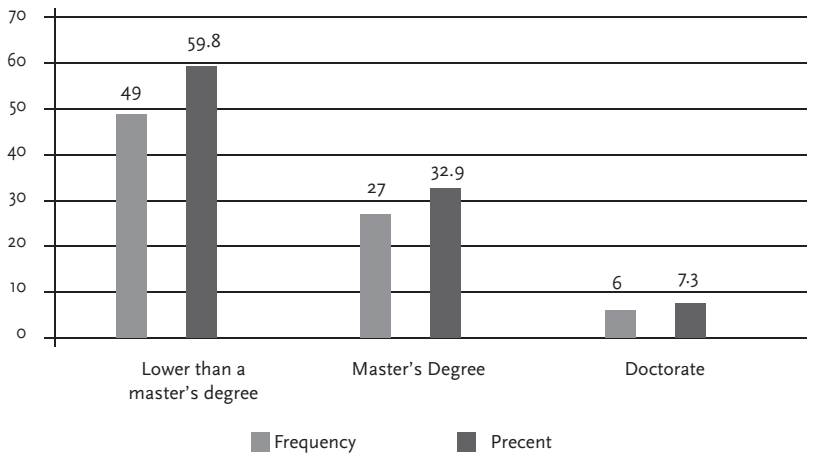

Figure 2 reveals that, of the 82 respondents, 49 (59.8%) held a degree at a lower level than a master's qualification, 27 (32.9%) had a master's degree, and 6 (7.3%) had a PhD.

Effectiveness of URP

The findings on the perceived effectiveness of URP in promoting research among accounting academics are shown in Table 2. This is followed by a summary of the most significant findings.

A mean group comparison test was performed to determine if there are significant differences in the effectiveness of URP. The mean result for statement 4, 'URP delivers innovative research to industry' is 2.89, which is close to 3, meaning that most of the respondents remained neutral in relation to this issue. This suggests that there is poor research collaboration between the accounting academics and industry.

Most of the respondents agreed with the remaining statements. These results suggest that URP strategies are effective in promoting accounting academics' engagement in research and that the policy is motivational and user friendly.

Furthermore, all the statements are significant for the effectiveness of URP at Sig.0.000.

Table 2. Effectiveness of URP

Questionnaire Atatement (QS)	QS Number	Mean	Chi-Square	Df	Asymp. Sig.
URP allows me to engage in research.	1	2.05	22.78	3	0.000
URP promotes global research that is recognised by accounting professions.	2	2.2	27.827	4	0.000
URP advances research in accounting education.	3	1.89	53.732	4	0.000
URP delivers innovative research to industry.	4	2.89	9.098	4	0.059
URP delivers innovative solutions to our partners in the wider community.	5	2.79	8.732	4	0.068
URP builds the financial strength of my department.	6	2.11	38.976	4	0.000
URP promotes a departmental culture that recognises and supports the development of the widest possible range of high-quality research.	7	1.93	71.78	4	0.000
URP helps accounting academics to establish themselves as key partners of choice for research collaborations at a global level.	8	2.02	45.927	4	0.000
URP provides for continuous improvement of staff research profile.	9	1.79	41.805	3	0.000
URP nurtures postgraduate researchers to become the next generation of accounting researchers and innovation leaders.	10	1.8	71.293	4	0.000
URP attracts a talented workforce to service the department and the School of Accountancy.	11	2.07	42.39	4	0.000
URP attracts a diverse workforce to service the accounting department.	12	2.01	60.073	4	0.000
URP helps my department to be productive in its core academic activities.	13	2.18	30.561	4	0.000
URP promotes a more unified and shared educational experience among accounting academics.	14	2	42.756	4	0.000
URP increases the quality and extent of research collaboration in the university's research focus areas.	15	1.98	22	3	0.000
URP seeks to enrich individual academics.	16	1.99	48.366	4	0.000
URP enables a research training environment by blending research, teaching and service.	17	1.96	55.073	4	0.000
URP has the potential to provide my department with access to world-class research infrastructure.	18	2.22	25.317	4	0.000
URP builds research leadership in my department.	19	2.1	44.22	4	0.000

Note: 1=Strongly Agree, 2=Agree, 3=Neutral 4= Disagree, 5= Strongly Disagree

Table 3. Effectiveness of URP

Rotated Component Matrix[a]			
Questionnaire Statement Number	Component		
	1	2	3
1	-0.074	0.091	0.783
2	0.246	0.092	0.696
3	0.421	-0.042	0.673
4	-0.111	0.028	0.738
5	-0.319	0.269	0.651
6	0.182	0.795	0.144
7	0.663	0.620	0.061
8	0.424	0.691	0.178
9	0.643	0.521	0.222
10	0.541	0.691	0.070
11	0.795	0.276	0.209
12	0.669	0.371	0.019
13	0.870	0.188	-0.044
14	0.853	0.200	0.144
15	0.870	0.130	-0.024
16	0.761	0.397	-0.118
17	0.862	0.136	0.028
18	0.707	0.243	-0.131
19	0.850	0.320	-0.006

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization
a. Rotation converged in six iterations

Factor analysis was used to establish whether the statements in each theme measured the same thing. As shown in Table 3 above, the variables were split along 1, 2 and 3 components and were combined to create new themes. The questions that loaded highly on factor 1 all seem to relate to using URP to promote a research culture in the university. Therefore, this factor could be labelled *research culture*. The Kaiser-Meyer-Olkin (KMO) values of factor 1 sub-variables, 'talented workforce', and 'enriching individual academics' and 'access to world-class research infrastructure' are 0.795, 0.761 and 0.707, respectively. Thus, the effect of research culture is strong and significant in promoting accounting academics' engagement in research. All the questions that loaded highly on factor 2 relate

to different strategies to make researchers globally competitive; therefore, this factor could be labelled *globally competitive research*. The KMO values of factor 2 sub-variables, 'financial strength', 'research collaborations', and nurturing 'postgraduate researchers to become the next generation of accounting researchers and innovation leaders' are 0.795, 0.691 and 0.691, respectively. This means that globally competitive research has a significant effect in promoting accounting academics' engagement in research. The five questions that loaded highly on factor 3 all relate to applied research; therefore, this factor could be labelled *applied accounting research*. The KMO values of factor 3 sub-variables, 'engage in research, 'research recognised by accounting professions', 'research in accounting education', 'delivers innovative research to industry', and 'delivers innovative solutions to the community' are 0.783, 0.696, 0.673, 0.738 and 0.651, respectively. This implies that the respondents consider applied research as the most important factor in promoting accounting academics' engagement in research.

Conclusion

University research policies set strategic goals for research conducted under the auspices of Higher Education Institutions. This article examined the effectiveness of URP in promoting engagement in research among accounting academics in public universities in KZN. The data were gathered by means of a survey of accounting academics at four public universities in the province. Most of the respondents chose to remain neutral in response to the statement that URP delivers innovative research to industry. Despite this, they were hopeful that URP would assist them in participating in research projects that will improve their relationship with industry. It was also found that the respondents perceived URP as an instrument to promote globally recognised research that delivers innovative solutions to the wider community, while fostering a departmental culture that recognises and supports development of the widest possible range of high-quality research. The results show that all statements are significant for the effectiveness of URP at Sig.0.000. It is recommended that the KZN public universities should periodically assess URP's effectiveness in promoting engagement in research among accounting academics. Furthermore, they should undertake an on-going strategic accounting research planning process that defines quantifiable targets and establishes clearly stated tasks and responsibilities. Identified problems should be addressed and necessary adjustments should be made. Further research is also recommended on URP design and implementation challenges in the accounting cluster in public universities.

Limitations of the Study

This study was confined to accounting academic departments in KZN public universities. Expanding its scope with larger samples and different methodologies would offer a more holistic picture of URP.

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University-Community Engagement: Current Tensions and Future Trends

Olajumoke F. Ogunsanya and Ivan G. Govender

Abstract

Community engagement has become a key pillar of Higher Education that is intricately linked to the traditional academic roles of teaching and research. Meaningful collaboration with relevant external stakeholders that addresses critical socio-economic and developmental challenges in society is of strategic interest to many Higher Education Institutions. However, building significant and sustainable relationships between universities and external stakeholders is a complex task that is fraught with tensions that impede the achievement of set goals. A desktop documentary analysis was conducted using a literature review to examine these tensions with the objective of shedding light on how they impede institutionalisation of community engagement within universities. The article also identifies likely future trends in community engagement in the Higher Education sector, with particular emphasis on the impact of technology.

Key words: community engagement, higher education, university-community engagement, community partnership, community-engaged scholarship, monitoring and evaluation

L'engagement communautaire est devenu un pilier central de l'Enseignement Supérieur qui est intrinsèquement lié aux rôles académiques traditionnels d'enseignement et de recherche. Une collaboration riche de sens avec des acteurs externes pertinents, qui se concentre sur les défis socio-économiques et développementaux critiques dans la société représente un intérêt stratégique pour beaucoup d'institutions d'Enseignement Supérieur. Toutefois, construire des relations significa-

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tives et durables constitute une tâche complexe dont le processus est semé de tensions qui entravent l'atteinte des objectifs fixés. Une analyse documentaire a été conduite en utilisant une lecture critique de la littérature disponible pour examiner ces tensions, avec pour objectif de mettre en avant comment elles ralentissent l'institutionnalisation de l'engagement communautaire au sein des universités. L'article identifie aussi de futures tendances dans l'engagement communautaire dans le secteur de l'enseignement supérieur, avec une focalisation particulière sur l'impact de la technologie.

Introduction

The character of Higher Education (HE) has shifted in line with evolving conceptualisations of the role of universities in society. Many universities' mission statements now include the development of close relationships with external stakeholders in order to address societal problems. Such efforts are linked to their other academic functions of teaching and research. Higher Education Institutions (HEIs) are under pressure to promote societal well-being by addressing socio-economic, developmental and environmental needs in their immediate communities (Dempsey, 2010; Morris et al., 2011). These pressures stem from shifts in local and global political and socio-economic trends as well as broad expectations among key stakeholders that they will link their traditional academic roles with practical real world issues (Boyer, 1996, 1990; Fitzgerald et al., 2012; Welch, 2016).

The Carnegie Foundation (2006) describes community engagement (CE) as fostering mutually beneficial relationships between HEIs and external stakeholders or communities in a context of cooperation and exchange of resources. Such interaction can occur at local, national, regional or global level. 'Communities' include businesses, industry, schools, government, non-governmental organisations (NGOs), or social communities. Community engagement is regarded as a way of expanding teaching and research to involve those outside of academia who are equipped with skills, acumen, and experiences that can contribute to the quality of universities' scholarly agenda in ways that produce solutions to societal problems. Engagement is aimed at achieving mutually beneficial goals. However, the relationship between universities and their diverse communities is multifaceted and tensions often arise due to inherent differences in stakeholders' ethos, principles and expectations. This article examines such tensions and how they can be managed to ensure a sustainable future for university-community engagement (U-CE). Given the demands placed on HE by the impending fourth industrial revolution (4IR), it also focuses on the role of technology in future CE trends.

An exploratory approach was adopted and a literature review and desktop

documentary analysis of books, journal articles and policy reports were employed to review current tensions in U-CE and their impact on its institutionalisation in HEIs. The HE sector is experiencing on-going transformation and documentary analysis was deemed appropriate to examine a range of perspectives and offer insight into the possible future focus of HE CE. Search keywords associated with the subject matter were used to locate appropriate and relevant literature. They included community engagement; higher education; higher education community engagement; university-community engagement; community partnership; community-engaged scholarship; community engagement challenges; community engagement tensions; and monitoring and evaluation. The keywords were combined to form search phrases which were applied to database searches. The criteria for selection of the literature included publications in the English language since the year 2000 as robust research has been conducted on CE in HE since that date. Another criterion was publications that contain at least one keyword in their title or abstract. Books, peer-reviewed journal articles, government publications and policy reports were reviewed. The analysis presented in this article is part of a broader study supported by the National Research Foundation to advance knowledge around CE in South African HEIs.

Literature Review

Given the complex nature of the challenges that CE seeks to address, systems theory was an appropriate theoretical framework. The functioning of the complex whole, that is, a system, is influenced by its parts and the interaction between those parts (Jackson, 2003). Senge (1990) asserts that systems theory offers a means of addressing, using and understand the whole while taking into account the networks of relationships between the parts and how these relationships give rise to and sustain the existence of the entity that is the whole. The theory of system dynamics in systems theory posits that numerous variables exist in systems (Jackson, 2003). Jackson adds that causal relationships exist among these variables that arise from interactions and feedback mechanisms connecting one variable to another, thereby shaping the complex and dynamic characteristics which systems use to evolve over time. According to Witter et al. (2013), a systems approach seeks to understand the underlying causes of observed changes (or the reasons why change has not transpired), as well as the manner and context in which observed changes occur.

In applying the systems perspective to CE, the analysis is widened to take into account the contextual factors underpinning complex problems. The institutional infrastructure (such as institutional policies, dedicated campus engagement offices/units, human resources, funding, rewards

and remuneration systems, and monitoring and evaluation systems) in place in a university to support CE creates a platform from which CE initiatives, projects or programmes can run efficiently. The notion of a platform embodies the concept of a system which is a cluster of interrelated activities, resources and individuals that interact within an entity (Welch, 2016). Thus, the analysis looks beyond individual parties to understand how tensions in one part can affect the functioning of the entire relationship.

Institutional Complexities

Several authors have highlighted the factors that impose pressure on HE systems. These include massification through which expanded access has been achieved (De Villiers and Nieuwoudt, 2010). Fuelled by new technological developments, globalisation has enabled large scale interconnectedness, and rapid information diffusion and has created new platforms for formal and non-formal learning (Stromquist and Monkman, 2014; Lorenzo and Gallon, 2015). However, universities are confronted by financial constraints due to rising costs as well as changes in the sources and levels of income (Fielden, 2008). High dropout rates and the poor skills complement of graduates remain a challenge (Higher Education South Africa (HESA), 2009). The introduction of new public management (NPM) principles in HE has led to demands for increased accountability (Benneworth, 2013). Furthermore, while it is regarded as a core function, CE is perceived to dilute both the academic culture and common purpose of HE (Van Schalkwyk, 2015).

Current issues confronting South African HE include demands for free education, the need for demographic diversity in the staff and student complement, and violent student protests. Furthermore, the sector continues to grapple with apartheid legacies, including poor infrastructure in previously disadvantaged universities, Eurocentric curriculum content and epistemological traditions, and a substandard schooling system, leading to student under-preparedness for HE (Govender, 2018; Heleta, 2016; Letsekha, 2013; Subotzky and Prinsloo, 2011). Against this backdrop, crafting strategies to engage with and meet the expectations of external stakeholders is a delicate balancing act.

One of the ways universities are responding to pressure to change is the adoption of new governance and leadership models (Gayle et al., 2003) such as NPM from the public sector, which has resulted in traditional collegial governance practices being replaced by business-oriented leadership and management styles (Enders et al., 2013; Tahar and Boutellier, 2013; Bleiklie and Lange 2010). This has had a major impact on the coordination of HE and institutional functions (Reihlen and Wenzlaff, 2014). New public management in HE emphasises key elements such as marketisation

where funding is concerned; an entrepreneurial disposition; a client-oriented HE system (or student-centredness); measurement of outputs and performance; quality assurance measures; academic audits; institutional rankings; strategic planning; and increased accountability to stakeholders such as policy-makers and the public (Reihlen and Wenzlaff, 2014; Musselin, 2013; Bleiklie and Lange 2010; Ferlie et al., 2008). However, some scholars (Alonderiene and Majauskaite, 2016; Ferlie et al., 2008; Winter, 2009) have raised doubts about NPM's suitability for this sector. They contend that corporate management models create complexities for HE policy makers, university management, and academic and administrative staff, as well as students. Critics also argue that imposing models that were not designed for academia creates tension between scholarly academic work and the administrative aspects of the institution. In terms of the effect of NPM's managerial approach on CE, the authors argue that universities may be required to justify the value gained from efforts and resources deployed in CE initiatives.

Zomer and Benneworth (2011) assert that U-CE contributes directly to the growing complexity of contemporary universities' organisational form. Universities are traditionally described as hierarchical, loosely-coupled systems characterised by decentralised internal authority, semi-independent sub-units, and a high level of institutional autonomy from external interests (Bleiklie et al., 2017; Pinheiro and Stensaker, 2014). Freedom to engage in creative intellectual discourse and the autonomy of different academic disciplines are said to be the rationale for such vertically-oriented structures (Keeling et al., 2007). However, growth, reforms and diversification in HE continue to challenge HEIs' traditional organisational peculiarities. Effective CE requires multi-disciplinary cooperation or integration where expertise and knowledge from various disciplinary fields are harnessed to identify solutions to societal problems (Hoy and Johnson, 2013). Boyer (1996, 1990) highlights the scholarship of integration where inter- and trans-disciplinary cooperation promote the discovery, interpretation and use of knowledge across different disciplines and wider contexts. Rigid separation of academic disciplines which gives rise to inward-looking, silo thinking is a challenge when semi-independent disciplinary communities – colleges or faculties, schools, departments – under one institutional umbrella operate along parallel lines (Hoy and Johnson, 2013; Fitzgerald et al., 2012; Fitzgerald and Simon, 2012; Johnson et al., 2010). This is compounded by competition amongst disciplines for intellectual superiority and innovation rather than learning from one another to achieve the same goal (Clifford and Petrescu, 2012). Alongside decentralisation of governance and responsibility, revised funding models in many institutions have resulted in competition for scarce resources. The implication is

that academic disciplines will naturally focus on pursuing their own goals, objectives and interests rather than those of a collective involving others in the greater university community (Clifford and Petrescu, 2012).

In order to break down barriers, significant consideration must be given to organisational structures, management, and budgetary allocations which constrain academics who seek to undertake inter-disciplinary inquiry towards engagement (Weerts and Sandmann, 2008). Tensions between institutional elements generate and sustain complexities within universities. Moreover, there are different types of universities and each exists in its unique context which may be public, rural, urban, research-oriented, university of technology, comprehensive university or other typologies. A university's context influences how its CE is operationalised (Holland, 2005). The extent of this effect is an area for further research.

Conceptual Ambiguities

Debate continues on the meanings and definitions of key concepts in CE. 'Community' is central and significant to the concept and practice of CE because its characteristic feature is intentional collaboration between HEIs and their community stakeholders. The literature offers diverse interpretations and perspectives of CE, raising important questions as to who constitutes the community in CE. Defining community is imperative for HEIs to determine who their community/communities is/are, and how they need to engage with them. It is also important for these institutions to consider where their community starts and ends. In the absence of such clarity, the engagement will be unfocussed and therefore less effective.

Strier (2014) notes that different depictions of the community will influence the ways CE is defined and structured. Tumiel-Berhalter et al. (2005) observe that communities are comprised of multiple, dynamic layers. They are non-homogeneous and different members or stakeholders have different interests and opinions on the required course of action as well as expectations of engagement outcomes. Acknowledging communities' diversity provides an opportunity to examine and understand, amongst others, the critical socio-economic, political, cultural, environmental and technological influences that shape them and concomitantly shape university-community partnerships (Tumiel-Berhalter et al., 2005) as well as the politics involved in identifying and representing community interests (Dempsey, 2010). Failure to recognise such differences may result in apathetic involvement, a false sense of unanimity, and the stifling of valuable dialogue and exchanges.

Different HEIs as well as their stakeholders interpret CE differently. In part due to the national and institutional contexts guiding universities' conceptual frameworks, (Slamat, 2010), several terms are used to describe

university activities under the umbrella of 'engagement'. The use of multiple terminologies also reflects debates and contestations around the term (Kruss, 2012) that are reflected in universities' commitment and approach to CE as well as their choices of development projects or CE activities. Some institutions still perceive communities as needy entities, resulting in a more philanthropic notion of engagement rather than regarding CE as a means of creating and sharing knowledge. Such a perception is responsible for universities making assumptions about what communities need without consulting them. The discussion around definitions centres on the key issues of the purpose, role and responsibility of the university (Favish and Simpson, 2016).

In South Africa (SA), the highly differentiated HE sector results in different forms of U-CE. According to Higher Education South Africa (2009, p.8), SA's institutional diversity is "a system of progressive self-differentiation based on varying institutional visions and missions accompanied by policies and processes that enable institutions to make meaningful progress in their distinctive developmental trajectories". The global continuum of conceptual expressions of CE shows that CE is highly contextual. This impacts universities' CE processes, choice of stakeholder associations, and the outcomes of engagement (Archer-Kuhn and Grant, 2014).

Campus-Community Boundaries

Community engagement draws attention to physical and social boundaries between universities and the world around them. Indeed, it has been argued that U-CE's defining feature – cooperation between universities and the larger community – contributes to the divide between academia and communities. According to Dempsey (2010), such delineations establish boundaries around the university, thereby regarding community as extraneous. Consequently, "discussions of community engagement reinforce a strict campus-community divide that treats the university and the community as occupying distinctly different spheres and results in several problematic assumptions" (p.364). Dempsey adds that universities are complex institutions that have "various overlapping historical, political, and economic relationships with their surrounding communities" (p.364). Therefore, CE should consider such boundaries and be conscious of their influence on universities' ability to establish significant partnerships. Other factors that reinforce campus-community borders include a lack of understanding among some levels of university leadership with regard to the best way to achieve CE with communities (Weerts and Sandmann, 2010). Corrigan (2000) adds that a narrow focus on research and teaching may cast community partners as passive participants, rather than partners in knowledge creation.

In contrast to Dempsey, Giles (2012) is of the view that the emergence of CE on the HE landscape as a third function of universities has contributed to a more porous border. As the norms and practices of research and teaching shift beyond the university, the reconfigured landscape provokes questions about the role and identity of academics in an environment where interaction across borders is transforming the core functions of academia. Tensions arise as they attempt to navigate new identities, roles and an expanded scope of work when the university interacts more with the outside world. The research inquiry is no longer detached and confined to a few fellow scholars (Giles, 2012). It is also important to ensure that legitimacy, academic freedom, neutrality and the integrity of work with community stakeholders are sustained.

Lam (2010) identifies four orientations that actively shape campus-community boundaries. At one end of the spectrum are traditionalists who strongly believe that academia and industry should be separate. They restrict their work to the academic space and avoid engaging with business or contest the legitimacy of work carried out by other academics with industry. At the other end are entrepreneurial academics who believe that the "importance of science-business collaboration for knowledge application and commercial exploitation" means that campus-community boundaries should be highly permeable (Lam, 2010, p.317). Between these two extremes are hybrid orientations which combine the characteristics of both. According to Lam, traditional hybrids believe in distinct boundaries between the university and industry, but also understand the advantages of linkages in order to broaden knowledge. Finally, entrepreneurial hybrids hold a strong belief in the traditional norms and values of the university, but blend this with an entrepreneurial orientation. They regard access to the university and industry as a means for shared knowledge production and application.

To resolve the tensions arising from the campus-community divide, Weerts and Sandmann (2010) propose the concept of 'boundary spanning', a multifaceted range of activities at individual and institutional levels aimed at building bridges between the university and community. At the individual level, boundary spanning involves individuals from within the university or community whose main responsibility is engaging stakeholders; negotiating power dynamics and consonance between the university and its external constituency to ensure shared goals are achieved; and ensuring that both sides' perceptions, expectations, and ideas are adequately represented or communicated (Sandmann et al., 2014). Holland (2005) notes that the university's mission, history and physical location are significant factors with regard to institutional boundary spanning. It thus takes into account the multi-layered, multipurpose relationships that universities have with their community partners, reflecting these in broad approaches to engagement.

Boundary spanners from the university use their research, and teaching and learning roles to advance shared understanding between academe and the external community.

Warren et al. (2016) and Netshandama and Mahlomaholo (2010) consider participatory research to be strategic and useful in bridging the campus-community divide. Community-based participatory research privileges those being researched in the entire research process, thereby sharing ownership of knowledge production with participants (Bergold and Thomas, 2012). Important outcomes include knowledge co-building and co-learning which can be directly advantageous to the stakeholders involved, while simultaneously shifting the typical power subtleties prevailing in the research process. In addition, efforts to resolve the tensions associated with campus-community borders should include broader lines of on-going communication between the university and communities to their mutual advantage.

Power Relations

The campus-community divide provides some insight into the power relations between universities and communities, and the effect thereof on communities' sense of belonging in collaborations. "Inter-relational power dynamics are (closely) connected to the success of any relationship and are especially critical in developing and sustaining mutually beneficial, reciprocal, engaged partnerships" (Sandmann and Kliewer, 2012, p.1). It is important to unveil the power relationships in U-CE in order to understand the inherent dynamics and influence of power in different partnership formations; the partners' relative power in terms of resource capacity and what they bring to the shared forum; and the extent to which they are obligated or agree to be bound to partnership outcomes (Benneworth, 2013; Clifford and Petrescu, 2012; Strier, 2014). The phenomenological element of Freire's theory cited in Kliewer et al. (2010) posits that power is intrinsically involved in the generation of different constructs of knowledge. Striking a balance between knowledge from academia and that from communities is a major challenge of CE. Buys and Burnsnall (2007) cite two reasons for academia's disregard for knowledge that is available within communities. The first is that community members are regarded as subjects to be studied as opposed to being partners in research. The second is the perception that research with community members as research partners may lack the required rigour. On the other hand, communities may be reluctant to work with academics due to perceptions that they conduct research that is irrelevant to issues affecting communities, and exhibit attitudes that are condescending, manipulative and secretive towards communities (Ahmed et al., 2004). The clash between academics' 'expert's mindset' (Bernardo et

al., 2014, p.115) and the community's experiential knowledge often causes tensions.

Power differentials between academia and communities are a major source of tension because they tend to impede collaboration and introduce conflicts which can potentially undermine CE objectives (Sandmann and Kliewer, 2012; Archer-Kuhn and Grant, 2014; Dempsey, 2010; Maurrasse, 2001). Since the power balance is often tilted in favour of academia, the inference is that universities are positioned to drive the agenda of community partnerships. As a result, they tend to derive more benefit from community partnerships than communities, which creates resentment and mistrust between the partners (Strier, 2011).

According to Wiewel and Knaap (2005), the unequal power relations noted in U-CE reflect the social imbalances in society at large because many partnerships are made up of representatives from different social segments. Strier (2014, p.159) asserts that "the institutional and societal hierarchies in which participants are embedded are transferred into the university-community partnership". Notions of power inequalities, real or presumed, exist between universities and their community partners around physical space, professional stature, knowledge and skills, and resources and privilege. This can deter or invalidate the objectives of CE. Community engagement promotes a paradigm of reciprocity and mutuality which if adopted by universities, aims to contribute to more balanced power relations with communities. Using a relational engagement framework, Freire (2000, cited in Kliewer et al., 2010) makes a case for U-CE partners to acknowledge that knowledge does not solely reside in academia, and that communities are valid co-creators and consumers of knowledge. Therefore, in promoting shared learning platforms towards developing informed perspectives on social issues, U-CE partnerships will not be one-sided and reciprocity can be achieved. Fitzgerald et al. (2017) state that communities' active involvement confers realism and authenticity on knowledge. Preece (2016) and Hart et al. (2013) thus suggest that dialogue, respect for a diversity of views and a consultative leadership approach can be employed to redress power imbalances. Two-way exchange facilitates cooperation between academics and communities to explore, discover and learn. Bringle and Hatcher (2000) recommend that universities adopt flexible governance structures that will enable them to adapt to different situations, as well as institutional structures that are accessible to communities.

Transformational Leadership

Clark (2017), Bernado et al. (2014), Driscoll (2008), Miller (2008) and Winter et al. (2006) note that leadership is crucial in promoting institutional commitment to CE. According to Weerts and Sandmann (2008),

leadership is able to influence and facilitate U-CE due to two factors. The first is management's role in championing and communicating the value of engagement internally within the university environment and externally with all community stakeholders. Secondly, leadership has the requisite authority to incorporate CE into institutional policy and structures, as well as to allocate resources to promote engagement. This implies that leadership legitimises CE as an academic activity, and is instrumental in strengthening an institution's identity and image as an engaged institution. Fitzgerald et al. (2017) cite policy making, resource support and leading by example as ways in which leadership can inspire faculty to promote social justice and responsibility in their teaching and research. Bernado et al. (2012, p.191) found that leadership is key if CE is to be "elevated from a set of practices of doing things, towards a philosophical belief of the university's reason for being".

However, leadership can be a source of tension in CE when university leadership and management show reluctance, disinterest, or a lack of understanding of how the institution will engage with its diverse external communities. It is necessary to address key issues such as outlining specific and appropriate roles for leadership and academic staff in partnership or engagement initiatives; identifying those best-positioned in the institution to advocate for CE internally and externally; and delineating the extent to which university representatives act in the interests of the institution or community in the engagement partnership (Weerts and Sandmann, 2010). Leadership must have the acumen to strategically and appropriately balance an institution's capacity, responsibilities and interests with society's needs (Bernardo et al., 2012). The end goal of engagement is to reposition universities from simply getting things done to being wholly transformed in terms of institutional philosophy, staff, students, and communities. This line of thought influences Jacoby's (2014) proposition that transformational leadership is required to propel academe to a heightened sense of responsibility in making a difference in communities. Likewise, Govender (2018) advances that transformational leadership is essential in order to inspire academia to combat social injustice and inequalities where the university champions the development of intellect and knowledge for improving society.

In post-apartheid SA, U-CE can be said to be development-driven in view of the African National Congress (ANC) government's prioritisation of HE as a major means of economic development (Edigheji, 2010; Routley, 2014; Subban and Vyas-Doorgapersad, 2014). In a bid to link economic imperatives to the social challenges faced by the majority of the population, CE-informed teaching and research is intended to provide useful solutions to industry, government, and society (Winberg, 2006). South Africa con-

fronts the major socio-economic challenges of entrenched inequality, high levels of unemployment, persistent poverty, food insecurity, and the HIV and AIDS pandemic, amongst others. McNall et al. (2015, p.1) describe these as "complex dynamic systems of problems that interact and reinforce each other over time". McNall et al. add that such problems elude simple solutions due to the complexity of the system in which they are embedded such that an attempt to resolve one element of the problem is lost and ineffective in the intricate dynamics of the complex system. The nature of the problems demands an approach that draws on capacity and experiences from various disciplines. This will advance collaboration across domains and result in varied perspectives of professional, social and cultural knowledge and experiences (Ramaley, 2014). Community engagement requires proficient academics who, on the one hand, are able to tackle problems with current knowledge, and on the other, engage in transdisciplinary teamwork to develop new solutions to entrenched problems. Universities confront this challenge at the interconnection between teaching and learning to educate students, research to generate knowledge and CE with issues relevant to society's well-being (Ramaley, 2014).

Fitzgerald et al. (2017, p.49) maintain that "confronting problems within the context of community-university interplay can facilitate the development of conceptual and quantitative models designed to assess the relation between programmatic interventions and the complex systems one is attempting to change". We argue that CE enables HEIs to mobilise new ways of educating in view of the changing roles of HE as well as the complex problems confronting society. Various elements of inquiry and action need to coalesce in order to develop new thinking about the interconnected challenges. Fresh understanding of the problems confronting society and improved solutions require a broad spectrum of stakeholders to own and take responsibility for shared strategies and processes. The changing world of academia requires committed leadership that is able to connect academia to the experiences and knowledge obtainable in the broader community in order to create a co-dependent ecosystem of engaged scholarship, teaching and learning.

Monitoring and Evaluation

In CE, it is logical to expect that initiatives and collaboration will yield outcomes which lead to some level of change (Coetzee, 2012). Measuring the change due to specific interventions is important in order to improve planning, performance and learning within the organisation (Estrella, 2000). Monitoring and evaluation (M&E) systems appraise performance to establish the outputs, outcomes and results of a project, programme or intervention (Frankel and Gage, 2016). The purpose is to determine

how well a programme, initiative or strategy is working and to identify the causes of success or failure (Naidoo, 2011).

M&E in U-CE is also a means of building accountability measures into CE practices. We argue that accountability is an integral element that can improve the quality of processes as well as the outcomes of U-CE in all its expressions. Accountability, organisational learning and effectiveness remain difficult to determine in CE due to a dearth of established and effective M&E systems. Contributory factors include CE's marginal status in many universities as well as a very fragmented, silo approach to practice, and a lack of focus on outcomes (Dempsey, 2010; Jongbloed and Benneworth, 2013; Hatcher, 2011). The evaluative element in CE is insufficient as basic tracking and documentation of engagement activities, project performance and results are not comprehensive (Driscoll, 2009). Although M&E tools are being developed, they differ considerably in terms of focus, intent, and scope among others (Hart and Northmore, 2011; Furco and Miller, 2009; Weerts and Sandmann, 2008). This leads to inconsistency in measurement indicators. Unlike in research and teaching and learning, there are no universal codes or practices to determine the quality of CE.

Reaching consensus on best practices in South African U-CE has been problematic because HEIs are not required to document and report on their CE activities. There is thus no national database on such activities (Favish and Simpson, 2016). M&E is critical for good governance, quality assurance and sustainable management and to ensure that CE practices achieve the objectives of both universities and communities. As U-CE expands and is integrated into the academic core of institutions, it will become even more crucial to articulate and assess the clarity of direction of these efforts. We thus propose that M&E systems should be designed to provide some commonality on what to monitor and evaluate to ensure compliance.

Technology

The influence of technology in CE is pertinent in view of rapid developments in digital, information and communication technology. The 4IR is expected to radically transform societies through the emergence of new exponential technologies and processes (Penprase, 2018). Realities emanating from the 4IR include the integration of physical, biological and digital technologies and the compounding effects such as big data analytics, artificial intelligence, cognitive technologies and the Internet of things (Xing and Marwala, 2017). These technologies are instrumental in the creation of interconnected, interdependent digital enterprise systems or cyber-physical systems that are capable of extensive, informed and intelligence-based decision-making (Xing and Marwala, 2017). Schwab (2016) notes that the key features of the 4IR are speed, as the evolution of newer

and more capable technology occurs at an exponential rather than a linear pace; its breadth and depth due to the combination of multiple technologies resulting in unprecedented paradigm shifts in the "what" and the "how" of doing things as well as "who" we are; and the multifaceted impact on systems where entire systems, across and within countries, economies, businesses, industries and society as a whole are transformed. The impact of the 4IR will largely depend on how people elect to use the new technologies, and HE can be instrumental in the adjustments students, academics and society have to make (Gleason, 2018). In terms of CE, future trends may depend on how technological advancements can be used to further U-CE activities in improving communities' quality of life.

It is envisaged that the 4IR will reshape society and subsequently affect how humans live and relate to one another. According to Xing et al. (2018), its effects will include benefits (value creation and efficiency) as well as challenges (social/socio-economic, developmental). The tools that the 4IR provides can be used to tackle social issues which humanity stills grapple with, such as equity; inequality; poverty; resource scarcity; inclusivity; gender sensitivity and ethics. Butler-Adam (2018) posits that the challenge to researchers is harnessing the sophistication and utility of 4IR outcomes for society's development, sustainability and benefit.

Community engagement offers an avenue to take advantage of what the 4IR offers society as new communication technologies have implications for CE activities. Dumova (2015) states that digital technologies' most pertinent characteristics are interactivity, asynchronicity, and de-massification. Interactivity is a fundamental feature of new technologies that ensures simultaneous and continuous exchanges to facilitate knowledge sharing (Jenkins, 2006; Metzger, 2009). Asynchronicity enables users of digital communication technologies to exchange communication at convenient times, thereby overcoming time as a barrier to interaction and taking control of interaction (Dumova, 2015). De-massification offers highly individualised new media where personal communication is possible with individuals in a crowd.

Our evaluation of technology in U-CE considers three approaches, namely, communication technology as an agent of social change, community informatics, and the socio-technical approach (Dumova, 2015). Communication technology that is instrumental in social change, emphasises the use of the Internet and other media technologies to stimulate civic involvement (Vicente and Novo, 2014). In a global knowledge economy where information and knowledge exchange is pertinent for economic participation and development, information and communication technologies (ICTs) provide a platform for social and economic inclusion (Gurstein, 2000). Community informatics offers a multidisciplinary angle from which to explore how

socio-cultural factors affect dissemination of new ICTs, and their subsequent effects on community development, regeneration and sustainability (Keeble and Loader, 2001). The convergence of new media and ICTs has advantages which, when harnessed, become catalysts for socio-economic stimulation of communities. In research and practice, a university can use community informatics to connect advancements in ICTs with problems related to socio-economic development, political inclusion and cultural expansion of communities in order to improve their well-being and welfare (Dumova, 2015; Pierson, 2000). Digital technologies are used to connect cyber space to the community place by bridging the digital divide evident in unequal access to technology in different sections of society, or the gross disparities in ICT availability between industrialised and developing countries (Robinson et al., 2015; Pearce and Rice, 2013).

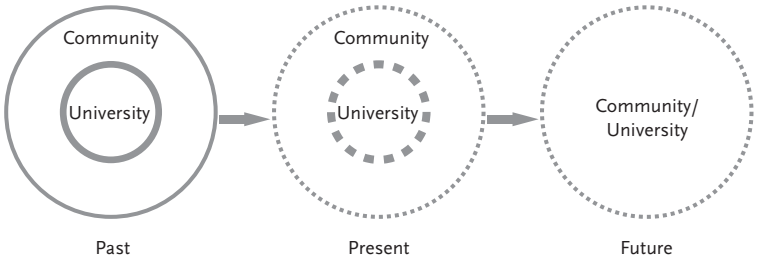
Finally, the socio-technical approach focuses on the characteristics, functions, and advantages that technology brings to the evolution of communication within and between communities to effect social change (Lin and Atkin, 2007; Metzger 2009). Appreciation of the social perspective in which evolving digital technologies can be applied will contribute to the use of technology in U-CE initiatives. Technology can be used as a facilitator of the process of engagement, as an innovation which is the product of knowledge co-development and as a solution deployed to uplift communities.

Discussion

Figure 1 depicts engagement dynamics between universities and their communities as U-CE progresses from the past to an envisioned ideal in the future. The state of U-CE in the past is illustrated by a solid line representing well-defined borders, figurative and physical, between HEIs and local communities. Each occupies a demarcated space with very little room for engagement in the real sense. In line with Benneworth (2013) and Weerts and Sandmann (2008), we argue that the observed demarcation between universities and communities arises from structural divides, institutional issues and the characteristics of both institutions and communities. Structural divides represent visible and invisible barriers that make it difficult for outsiders to engage with the university and vice versa. They include the physical location or layout that cordons off an institution from those beyond its walls, a lack of correlation between the idea of CE and an institution's core mission, or the fact that surrounding communities may not fit into an institution's provisions for engagement. Institutional issues and characteristics include, among others, a lack of coherent CE policies as well as funding and incentives for CE, and a poor fit between CE practices or mechanisms and what is required by communities, as well as certain stances taken by communities which lead them to resist CE overtures from

the university, thus extending their distance. Apartheid policies contributed to the divide between universities and communities in SA, with the former separated from the latter on the basis of race.

Figure 1. University-Community Engagement Dynamics



In the scenario described as the past, HEIs' approach to proffering solutions to the complex social problems confronting society was through a uni-directional model of outreach where knowledge was produced using traditional research methodologies and was disseminated to the community via one-way broadcasts. Community partners had little input into the process of knowledge development and were regarded as consumers of knowledge or recipients of products of knowledge regardless of its suitability to their context.

The present state of HE CE is depicted by the boundary of a dotted line between the university and community rather than a solid one. Although they maintain their distinct and separate existence, the university boundary has become more permeable to allow those within HEIs and the community access to one another's domains. Such accessibility is by invitation and as a result can still be regarded as limited, with CE not yet reaching its potential. This state is further deepened by contemporary university settings where CE is often found in pockets of isolation in discrete domains through the individual work of academics. Nonetheless, universities have been able to develop and maintain different levels of relationships with external stakeholders in areas of shared interest. To this end, they have demonstrated service to society to some degree, notwithstanding the aforementioned tensions.

Going forward, we propose an ideal status of CE where universities are intimately established within their communities such that there is a

seamless link between a university and its local, national, regional and international communities. Likewise, communities have access to and are integrated with HEIs, creating equal and positive partnerships that have a sustainable impact on society. The manner in which a university approaches its educational mission should be such that curriculum design and delivery facilitates learning from both within and without. This will signify true cooperation where U-CE partners create and share knowledge for mutual benefit. As such, the educational environment transcends the typical lecture hall, extending into the community which itself becomes both a classroom and a knowledge site for all to learn at any time, in any setting.

In exploring the future of CE, we also considered the role and impact of technology on U-CE. Digital technologies facilitate communication, creating an expansive space for knowledge exchange. A technology-driven U-CE future thus includes boosting innovation through ready availability of and access to large volumes of real time data and information. Since knowledge transfer is a significant part of many universities' objectives, the role of technology in U-CE is important in disseminating innovative ideas. Propagation of knowledge, information, skills, and technologies in CE can be implemented in various ways. It can also occur at different levels between and amongst the various communities that universities engage with to meet relevant needs in society.

Conclusion

University-community engagement is gradually being accepted as a valuable aspect of the academic function. It is a useful strategy for universities in building mutually beneficial relationships with external stakeholders and advancing transformation. In partnership with other sectors, CE is a means for HE to contribute to public well-being because CE initiatives have the potential to contribute to the transformation and sustainability of both universities and communities. At the same time, there is a need for better understanding of the tensions and challenges involved in these efforts, and how they impact all parties. This article identified and discussed the key sources of tensions in U-CE as well as possible future trends in light of the application of technology in CE initiatives. It is suggested that further research should focus on outcomes on both sides of U-CE.

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Towards Enacting Social Justice in Higher Education: A Case of Postdoctoral Research Fellows

Zvisinei Moyo

Abstract

The purpose of this review was to identify the challenges confronting postdoctoral research fellows who are classified neither as staff nor students and have low socio-economic status. The three central questions were: What are the common themes in the literature and research on postdoctoral research fellows? What social justice issues arise from this research and literature? How can this literature and conceptualisation inform management of postdoctoral research fellows in terms of social justice? A total of 45 publications were reviewed. The full text of the systematically identified studies was stored in a marked folder on a computer desktop and screened by examining topics and abstracts. Each of the studies was analysed to identify six themes which are discussed using the lens of social justice, followed by suggestions for further discussion in the field. The literature portrays a culture that has undermined social justice issues and concerns. The findings challenge universities to imagine new directions for future research, and to become activists and take a pro-justice stance to formulate a culture, practices and procedures that benefit the marginalised. Universities can utilise these suggestions as a guide to evaluate their efforts and programmes.

Key words: postdoctoral research fellow, university, social justice, marginalised, transform, review

Le but de ce compte-rendu était d'identifier les défis posés aux boursiers de recherches post-doctorales qui sont classifiés ni comme personnels, ni

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comme étudiants, et dont le statut socioéconomique est modeste. Les trois questions centrales ont été: quels sont les thèmes communs dans la littérature et la recherche sur les boursiers de recherches post-doctorales? Quels problèmes de justice sociale surgissent de cette recherche et de cette littérature? Comment cette littérature et cette conceptualisation peuvent-elles influer sur la gestion des boursiers de recherches post-doctorales en termes de justice sociale? Un total de 45 publications ont été passées en revue. Le texte entier des études systématiquement identifiées a été conservé dans un dossier sur un bureau d'ordinateur et a été filtré en examinant les thèmes de recherche et les abstracts. Chacune des études a été analysée pour identifier six thèmes qui sont discutés en utilisant la focale de la justice sociale, suivi par des suggestions pour approfondir la discussion dans le domaine. La littérature dresse le portrait d'une culture qui a dévalué les problèmes et les inquiétudes reliées à la justice sociale. Les résultats encouragent ainsi les universités à imaginer de nouvelles directions à adopter pour l'avenir de la recherche, à devenir militantes et à adopter un point de vue pro-justice sociale qui permettrait de formuler une culture, des pratiques et des procédures qui bénéficient aux marginalisés. Les universités peuvent utiliser ces suggestions comme guide pour évaluer leurs efforts et leurs programmes.

1. Introduction

While contemporary universities confront contextual changes due to increased mobility, internationally, issues relating to postdoctoral research fellowships and future career prospects are cause for concern (Akerlind, 2005; Cantwell and Lee, 2010). It has been observed that postdoctoral research fellows (PDRFs) tend to be invisible in academia (McQuaid, Aosved, and Belanger, 2018). Postdoctoral research fellows from diverse cultural, racial and ethnic backgrounds are among those studying aboard (Devine, 2013). Given the historical inequalities in society (North, 2006), this raises social justice issues. While universities are taking advantage of the overflow of PhD candidates and PDRFs to increase their research output and thus improve their position in world rankings (Hallinger, 2016), whether or not they are making efforts to promote social justice has yet to be examined at the global level.

The threats to social justice raised by academic mobility include settling on projects favoured by supervisors; discrimination based on gender, race, ethnicity, economic status, religion, language, and tradition; meritocracy; marginalisation of minority groups; homogeneity that endorses exploitation and the marginalisation of dominated countries; research only positions; and a lack of benefits and a structured support system. Collaborative international research has been harnessed to gain insight into

social justice and human development in a variety of contexts. An example is the recent call to socially transform society through education (Marshall, 2004). While there is a paucity of research on PDRFs in Africa, international studies have been motivated by the marginalisation of the PDRF community at a time when globalisation and international migration have increased the flow of PDRFs (Cantwell and Lee, 2010; Melin, 2005; Zubieta, 2009). The literature shows that while mobility of academics is believed to enhance the quality of scientific research, the current academic flow is to some extent triggered by voluntary factors and worsened by forced migration. The fast pace of globalisation may reinforce dominant cultures, further exacerbating social inequalities and discrimination (Moyo and Perumal, 2018). Cantwell and Lee (2010) observe that Asian PDRFs seek positions in North America and Western Europe where their efforts are better appreciated and remunerated. Likewise, in Africa, which generally does not offer a conducive environment for research and where reforms, funding and policy frameworks have not kept pace with global research trends (Whitworth et al., 2008), PhD holders migrate to South Africa and Europe.

Internationalisation of higher education (HE), particularly at post-doctoral level, has bestowed uneven benefits on different groups and societies (Lee, 2013). While it subscribes to noble goals such as mutual collaboration, skills development, career prospects, and transition to independent research, it can also have negative consequences like exploitation, low levels of remuneration and a lack of benefits, as well as marginalisation of minorities. It would seem that internationalisation reflects the interests of the dominant countries where PDRFs are received. Furthermore, host institutions are using the opportunity to obtain inexpensive contingent labour for research subsidised by external grants instead of establishing long term, expensive faculty positions. This shift does not bode well for PDRFs from abroad, especially developing countries. Scholars in the UK, US, Canada, The Netherlands, Spain, Germany, Australia and Sweden have explored the challenges experienced by international and local PDRFs (e.g., Black and Stephan, 2010; Lee, 2013; McAlpine and Amundsen, 2015; Muller and Kenney, 2014). Their work has highlighted how institutions in economically sound nations are resorting to the use of PDRFs as contingent labour which has created exploitative work conditions and muted PDRFs' voices.

Given the paucity of literature on PDRFs in Africa, the review conducted for this study addressed the following questions:

1. What are the common themes in the literature and research on PRDFs?
2. What social justice issues arise from the PDRF literature?

3. How can this literature and conceptualisation inform management of PDRFs in terms of social justice?

Forty-five publications were reviewed, consisting of 42 journal articles, two book chapters and one conference publication. A research synthesis was employed to describe and analyse the findings, identify the social justice issues confronting PDRFs and determine the implications for PDRFs in African institutions.

This review sheds new light on the challenges faced by PDRFs who are classified neither as staff nor students. It is hoped that it will inspire further research on measures to support this group of academics who have been neglected, especially in Africa, by unveiling the significant role they play on the research front. Studies have noted that PDRFs' contribution to knowledge production is constrained by the fact that their purpose and function remain undefined, a situation which is exacerbated by their invisibility, and inferior and powerless position (Akerlind, 2005; Bodin et al., 2018; Lembani, Teddy, Molosiwa, and Hwabamungu, 2016; McQuaid and McCutcheon, 2018). Furthermore, the literature points to Africa's minimal contribution to the global knowledge economy (Hallinger, 2016). The review is thus located within the global literature on social justice with the aim of transforming the underlying social structures and societal patterns that sustain and perpetuate uneven power relations (North, 2006).

The following sections present the conceptual framework that underpinned the review and the methodology employed. This is followed by a discussion on the six themes identified in the process of data analysis using the lens of social justice. The article concludes with a discussion on the implications of the findings and recommendations for theory, practice and /or policy, as well as for future research.

2. Conceptual Framework

Social justice was selected to frame this review as its conceptual perspectives were appropriate to examine broad social contexts in relation to how contextual changes are affecting PDRFs. Given that social justice stems from social transformation theories, it seeks social transformation of traditional organisational structures, procedures and practices (Mthethwa-Sommers, 2014) and calls for justice for those subjected to injustice through forms of dominance. In this case, it challenges the status quo beyond university boundaries to fight social inequalities (Capper and Young, 2014). Social justice was deemed a useful framework as its principles aim to eliminate inequality, promote inclusiveness and establish environments that are supportive of all. The four principles of social justice discussed below were utilised (Pro Bono Resource Centre, 2011, p. 4).

2.1 Equal Access to Opportunities and Rights

This principle emphasises that all people should have access to life opportunities and other services, regardless of race, gender, sexual orientation and age. Justice is enforced to enable individuals to access goods and services and claim their rights and disadvantaged people are made aware of their rights and capacitated to enforce them.

2.2 A Fair System of Law and Due Process

This value concerns itself with fairness and transparency of decision making in society. It is important to social justice because it provides mechanisms by means of which all members of society are able to access justice, particular those who have less power.

2.3 Ability to Take Up Opportunities and Exercise Rights

This principle advocates for social inclusion and seeks to address situations where a lack of resources denies people the right to choose a life they value.

2.4 Support and Protection of Vulnerable and Disadvantaged People

The final principle acknowledges that there will always be people who require support and assistance, regardless of the services provided. Social and economic structures and arrangements should benefit the disadvantaged and all should have a say in decision making.

Social justice thus calls for greater attention to be paid to unjust social and cultural processes that determine individuals' status and as well as unfair distribution of resources, in this case the low socio-economic status of PDRFs. According to Fraser (2007, p. 27), "This condition precludes institutionalised value patterns that deny some people the status of full partners in interaction – whether by burdening them with excessive ascribed difference or by failing to acknowledge their distinctiveness". Social justice principles are appropriate in the case of the increase in the number of postdoctoral research fellowships, leading to increased commodification of academic work. Stephan, Franzoni and Scellato (2015) note that business values and behaviours are beginning to influence the conduct of academic research, resulting in models oriented towards value for money.

A social justice agenda for HE in democratic societies connects moral and ethical dimensions of leadership to the pedagogy of social justice, in the increasingly pluralistic context of higher education institutions (HEIs). Scholars note the need for multifaceted and responsive leadership practices (e.g., Berkovich, 2014; Capper and Young, 2014; Marshall, 2004; Shields, 2014) which promote social inclusivity to address a wide array of inequalities. Social justice advocates for equal opportunities and prospects for marginalised members of society (Jean-Marie, Normore, and Brooks,

2009; Szeto and Cheng, 2018; Theoharis, 2009). The review thus viewed the structural and cultural disparities within the traditional hierarchy of the organisation and practices of HEIs through a social justice lens.

3. Method

The primary aim of the review was to identify and analyse research findings and evaluate the major themes emerging with the aim of contributing to the PDRF literature. The research was framed within the emancipatory paradigm which values critique and transformation, restitution and emancipation (Guba and Lincoln, 1994). Its key concepts are advocacy and activism centred on the lives and experiences of diverse groups that have traditionally been marginalised, focusing on how their lives are individually or collectively constrained. It seeks to critique and transform social, political, cultural, economic, and ethnic and gender structures that limit human justice and democracy and exploit people (Guba and Lincoln, 1994).

The review adopted an inclusive approach, with empirical studies using qualitative, quantitative or mixed methods considered, as were conceptual / commentary and research reviews. This ensured a more representative sample of the PDRF literature.

3.1 Research Approach and Data Collection

The 45 publications were identified by means of systematic search criteria using search engines Google, Google Scholar, Research Gate, UJoogle and the SCOPUS database. The search criteria included: 1) peer-reviewed English-language journal articles, 2) book chapters, 3) conference papers, 4) available full text, 5) published between 2005 and 2018 and 6) examined postdoctoral research fellowships. Checks of reference lists and hand searches of journals were employed as supplementary approaches to identify further publications. The full text of the identified studies was stored in a marked folder on a desktop computer. The studies were screened through examining topics and abstracts, and at this stage some were excluded because they did not meet the criteria. A total of 45 studies which met the eligibility criteria remained, and they formed the sample.

3.2 Data Analysis

The 45 documents were reviewed according to the research questions. Author name(s), year, topic, publication outlet, methodology, type of paper (empirical, conceptual/ commentary, review), the aims of the study, geographical location and major findings were captured on a Microsoft Excel spreadsheet. Of the 45 documents, 12 utilised a quantitative approach, seven a qualitative methodology, five used mixed methods, 10 were reviews and 10 were conceptual. Themes began to emerge during the research

synthesis, and the individual themes were clustered to form a group of common main themes. This facilitated the organisation of the literature review (Peruzza and Kinsella, 2010).

4. Findings

Postdoctoral research fellows have obtained PhD degrees and are pursuing additional research training to develop skills in pursuit of an academic research or other career (Lee, 2013). They work under the mentorship of faculty or departmental members for a defined period of time. While the traditional understanding of PDRFs is that of PhDs in training for faculty careers, the changing political economy has reshaped their work from apprentices to temporary employees with some remaining PDRFs indefinitely (Cantwell and Lee, 2010). As a result of an oversupply of PhDs, some move from one short-term funded project to another. Bodin et al. (2018) note that the concept of PDRFs continues to evolve and is made up of several submarkets; entry level job, research fellowship, general fellowship and postdoctoral fellowship. The fact that PDRFs are now used as temporary employment results in exploitation (Akerlind, 2005).

4.1 Purpose of Postdoctoral Research Fellowships

4.1.1 Roles and Responsibilities of PDRFs

Six of the reviewed studies explored the roles, responsibilities, purpose and function of PDRFs. McQuaid and McCutcheon (2018) and Silberbogen et al. (2018) note that a postdoctoral research fellowship is different from an entry-level position or internship in that it involves mentored training that develops advanced competencies within a specific focus area. Akerlind (2005) observes that the growth of postdoctoral research fellowships at the international level has resulted in a lack of systematic definition of PDRF positions. This has led to casualisation and PDRFs being undervalued. The marginalisation of PDRFs violates the social justice principle of supporting and protecting vulnerable and disadvantaged groups (Pro Bono Resource Centre, 2011).

4.1.2 Recruitment of PDRFs

While Bodin et al. (2018) reviewed the recruitment and selection of PDRFs in Health Sciences Psychology in the US, their recommendations are applicable to any institution. They include the involvement of training councils, for instance, the Universal Psychological Postdoctoral Directory (UPPD) and larger national organisations to facilitate the appointment of PDRFs. Williams, Sayegh and Sherer's (2018) empirical study concluded that postdoctoral research fellowships had the potential to develop scientist practitioners through developing the relevant knowledge, skills and attitudes.

4.1.3 Skills Development

Postdoctoral research fellowships help incumbents to strengthen their research skills; build a collaborative research agenda; grow intellectually; pursue independent research; advance competency within a focus area; strengthen theoretical and methodological approaches; learn how to apply for research grants; and establish a research niche with manuscripts in different stages. In addition, the requirements of submitting manuscripts to peer-reviewed journals, having an identified mentor, and provision of structured support lead to higher publication rates and development of scholarly skills. Lembani et al.'s (2016) empirical investigation of the usefulness of postdoctoral research fellowships concluded that they offer a range of learning experiences, including teaching and research, academic writing skills and community dialogue. The authors recommended that more institutions in Africa should adopt the system.

While the abovementioned studies were conducted in developed contexts, their findings could offer lessons for African institutions.

4.2 Career Prospects

Overall, eight studies found that PDRFs are required to develop advanced and specialist competencies (Blackford, 2010; Self, Beauvais, Wise, and Molinari, 2018; Stacy, Klee, and Jansen, 2018; Yang and Webber, 2015). Almost all those that participated in these studies expressed the desire to remain in the academic field; however, they were uncertain of their future prospects, especially in the social sciences and humanities. This resulted in reduced job satisfaction (van der Weijden, Teelken, de Boer, and Drost, 2016). Zubieta (2009) employed quantitative methods to study the effect of PDRFs' mobility on academic performance and established that undertaking a postdoctoral fellowship in another country positively influenced their publishing record, as weak institutions maintained ties with those with good reputations. Ghaffarzadegan, Hawley and Desai (2014) analysed the diversification of the national and international research workforce and found that the US government supported PDRFs in biomedical sciences in order to develop a strong domestic research workforce. However, institutions are also taking advantage of vulnerable migrant PDRFs while making their name in global rankings.

The US has adopted policies that favour international PDRFs (Desai, 2014). Stacy et al. (2018) established that PDRFs gained confidence and refined the broad range of professional skills required at entry level. As the concept of postdoctoral research fellowships is evolving, its purpose in professional preparation is becoming more apparent (Self et al., 2018). Yang and Webber's (2015) analysis concluded that completion of such a fellowship makes a positive contribution in securing tenure-track appointments.

Renner and Ayers (2014) used mixed methods to unveil the research and professional activities of PDRFs in small business, highlighting that they gained project management and team building skills, mentoring and positively impacting on companies through supporting the manufacturing sector. While most of these studies were conducted in the health sciences, they have critical implications for policy and practice in Africa, warranting further research.

4.3 Benefits and Opportunities

The literature shows that most PDRFs are involved in full time research, giving them ample time to publish (Renner and Ayers, 2014; Self et al., 2018; Zubieta, 2009). This time is also utilised to engage in research as a stepping stone towards a permanent position. As such, PDRFs gain independence and flexibility in research. They also have opportunities to apply for grants. Akerlind (2005) refers to a postdoctoral research fellowship as, "a unique research opportunity to concentrate on researching and writing for publication in a way impossible at late stages of a career".

The movement of PDRFs beyond national borders due to local deficits (push factors) and desirable conditions (pull factors) coincides with globalisation (Cantwell and Taylor, 2013). Stephan, Franzoni and Scellato's (2015) survey of research scientists in 16 countries established that the major reason why the US is ranked the highest in research outputs is the prestige of its programmes and career prospects, as well as fringe benefits that attract not only PDRFs, but PhD students. Australia, Germany, Switzerland, France and Great Britain are also favoured (Stephan et al., 2016). Lee, Gowers, Ellis and Bellantuonoa's (2010) empirical study reported increased research output as a result of mobility between institutions; these findings were used to develop a programme to address issues within the lower ranks. Streatfield, Allen and Wilson (2010) emphasised the need for research workshops to address inadequate resources. Akerlind (2009) used mixed methods to examine postdoctoral research fellowships as preparation for an academic career, while Davis (2005) showed that both PDRFs and mentors benefited from a structured plan stipulating their respective obligations.

Su's (2009) quantitative study found that postdoctoral research fellowships boosted individual research productivity, especially among PDRFs placed in highly prestigious departments. McQuaid et al. (2018) and Williams et al. (2018) reported that such fellowships increased PDRFs' publication rate as well as that of their supervisors while contributing to the broader scientific community. Since these studies indicated that the success of PDRFs depends on good mentorship, a research review that provides an update on supervision would be timely. Furthermore, given

that most studies have been conducted in the health sciences, empirical research in other disciplines is warranted especially in the humanities.

4.4 Financial Aid and Support

Ahmed, Plotkin, Bao-Li and Kawahara (2015) used quantitative methods to compare funding of the sciences in the US and China. They confirmed that the former leads the way in terms of research production due to its long tradition of recruiting talented PRDFs from around the globe and offering attractive opportunities for PDRFs. Generous funding boosts the number of PDRFs and subsequently impacts on research productivity (Jacob and Lefgren, 2011). Robertson, Klingensmith and Coopersmith's (2007) empirical research employed a quantitative approach and established that PDRFs who dedicated research time during surgical residency obtained funding. Chen, McAlpine and Amundsen (2015) and Dolan and Johnson (2009) concluded that with support, especially with regard to supervision, PDRFs can overcome constraints. However, intra- and inter-institutional mobility provides the context within which PDRFs frame their horizons. and there is a need to structure these positions in a manner that minimises economic and social inequalities. These findings raise the need for empirical research on the funding of PDRFs in Africa. Since most of the studies used a quantitative methodology, future research could apply mixed methods to obtain more in-depth data.

4.5 Gender Issues

Six studies examined gender issues and concluded that gender did not have a significant impact on PDRFs' research output (Bend and Ute, 2012; Borrego, Barrios, Villarroya, and Olle, 2010); rather, institutions should recognise that female PDRFs experience barriers that are universally shared by women in the workplace (Paravina et al., 2010). Bernd and Ute (2012) found that women PDRFs demonstrated superior incentives to conduct research and had more citations. Women with low institutional support and more family responsibilities were less satisfied with their jobs (Felisbrti and Sear, 2014). Another study highlighted gender disparities in the work environment which might hinder PDRFs' career prospects and choices (Martinez et al., 2007). It would seem that gender issues have not been adequately examined; thus, future research should employ qualitative methods to explore female PDRFs' experiences. A research review could also assist in unveiling the dilemmas they confront in the workplace.

4.6 Constraining Factors

The majority of the studies in our database (12) examined the challenges experienced by PDRFs. In terms of mobility and systemic factors and /or

structural constraints, they point to inadequate support; invisibility; limited influence in the processes that shape their professional lives (Camacho and Rhoads, 2015); the difficulty of transferring their knowledge upon completion of the fellowship (Melin, 2005); and different treatment and expectations, as well as cultural stereotypes (Black and Stephan, 2010; Cantwell and Lee, 2010). Exploitation of PDRFs from developing countries; social isolation; verbal insults; harassment and international PDRFs' inability to challenge exploitation were also cited (Lee, 2013). Some institutions were not equipped to support the transition of PDRFs and nurture them to become faculty members (Ahmed et al., 2015). Cantwell and Lee (2010) described how unequal access to opportunities was maintained in what they called academic capitalism. Host institutions benefited from higher levels of knowledge production at very low cost as they paid stipends and offered no professional security (Lee et al., 2010). Lembani et al. (2016) also found that developing countries did not provide committed mentorship; hence PDRFs networked to find employment in developed countries.

Cantwell and Lee's (2010) study established that, due to economic constraints, universities were likely to rely on less expensive PDRF labour which is subsidised by external grants, instead of faculty positions. They add that reliance on contingent academic labour enabled exploitation of PDRFs from developing countries, leading to uneven expectations and experiences. Universities thus became business enterprises (Camacho and Rhoads, 2015).

McAlpine and Amundsen (2015) and Muller and Kenney (2014) focused on structural and societal factors, including supervision, and found that many PDRFs were not valued by supervisors; refused funding for conferences; not supported to network, and were belittled for efforts to solve the problems. Furthermore, the supervisor role was not officially recognised and they were unable to develop their own research plan while working on supervisors' projects. Focusing on research is also problematic, as PDRFs lack teaching experience. Laudel and Glaser (2008) and Akerlind (2005) note that postdoctoral research fellowships run the risk of deskilling PDRFs because they are not exposed to other academic avenues and their supervisors control their activities. Furthermore, such fellowships are temporary positions, with stipends set lower than tenure-track faculty positions. Those that do not publish in peer-reviewed journals cannot secure tenure-track faculty positions (Mendoza et al., 2013).

Other impediments that prevent PDRFs from taking advantage of this opportunity include uncertainty about their supervisors' responsibilities, inhibiting discussion of career and research prospects (Akerlind, 2005). PDRFs are isolated, making it difficult to collaborate with faculty members other than supervisors. The situation is compounded by the lack of formal

acknowledgement due to the absence of systematic institutional policies and structures for career support (Felisberti and Sear, 2014). McAlpine and Amundsen (2015) established that since PDRFs work under supervisors, this hierarchical structure enables abuse of power. Supervisors mentor as they see fit because their authority is final and not questioned; therefore, PDRFs' experiences depend on the good will of the supervisors; they also get no vacation or sick days, and have to work continuously, until late and during weekends (Camacho and Rhoads, 2015). The academic environment allows a few star professors to determine the employment of PDRFs, leaving them as commodities to be managed (Camacho and Rhoads, 2015). Camacho and Rhoads (2015) add that international PDRFs do not question research projects out of fear of rocking the boat. All these challenges can be addressed through enacting social justice. Although the reviewed studies were conducted in health and science disciplines, rigorous research is required on best practices to overcome these challenges.

5. Discussion

The review revealed that, while PDRFs, mentors and universities benefit from postdoctoral fellowship programmes, the culture in which such programmes occur undermine social justice. Indeed, the system not only marginalises those that are socially, educationally, and professionally disadvantaged due to poverty, race, ethnicity, religion, language, culture, immigrant status or gender, but to a large extent, undermines the voices of those that are fighting for equality and social justice. Individuals, practitioners, scholars and programmes that lobby for the disruption of normative discourses, are often isolated and have limited resources to make their voices heard – hence, the dearth of PDRF literature and research in Africa.

The findings also showed that it is difficult to implement suitable policies and procedures in the absence of explicit acknowledgment of the varying nature of postdoctoral research fellowship positions. One-size-fits-all policies may not be suitable for different contexts. The recent expansion of PDRF ranks could be the result of economic and political factors (Davis, 2005) which have triggered structural changes in the labour market, whereby such fellowships have evolved from being optional to becoming a prerequisite for securing few and far between faculty positions. Felisberti and Sear (2014) point to fierce competition amongst researchers as universities have a large pool of would-be PDRFs to choose from, especially from less developed countries.

The review also revealed that PDRFs are prone to abuse when host countries and institutions focus on building a strong research workforce at minimal cost. Furthermore, the sole focus on research constricts their future job prospects. Postdoctoral research fellows depend on their supervi-

sors for support and some supervisors do not provide financial support for conferences, editing and page fees, yet PDRFs' productivity is measured by publications. Host institutions benefit from international academic labour without providing professional security. The lack of structured systems to address these challenges is a social justice concern. Given that PDRFs are neither classified as students nor staff (Davis, 2005), they have no sense of belonging. Their meagre salaries in the form of stipends are far less than tenure-track faculty positions and many PDRFs have families. The low value placed on PDRFs results in unfavourable working conditions and they work constantly without taking leave. Forces of supply and demand determine their access to opportunities and PDRFs from abroad, especially developing countries, are treated differently from local citizens (Baral et al., 2018).

Social justice may be adopted as a radical change process (Mthethwa-Sommers, 2014) that transforms traditional structures to achieve fairness for PDRFs. While there has been increased focus on social justice and education leadership (e.g., DeMatthews and Mawhinney, 2018; Jean-Marie et al., 2009; Shields, 2014; Theoharis, 2009) since the turn of the 21st century, none of the studies paid attention to HE, as is evident in the silence on the issue in our sample of 45 studies. Social justice should be infused in all aspects of leadership in HE. University leaders must prepare for the complex new social order that comprises a variety of nationalities. While the review shed light on the marginalisation of social justice with regard to PDRFs, further research is required in several areas in order to propose a theory of social justice leadership. However, policies could be crafted to alleviate the current situation of workplace vulnerability; for instance, by proactively addressing the challenges confronted by PDRFs. The paucity of empirical research on the experiences of female PDRFs is also cause for concern.

Social injustice arises when people in society are economically and socially stratified. The experiences of PDRFs highlighted by the review challenged HE leadership to critically reflect on their leadership strategies and mind-set. University leaders must strive to create environments that offer opportunities to all and give everyone a voice (Jayavant, 2016). Building PDRFs' capacity benefits everyone, including universities. Indeed, Jayavant (2016) found that effective leadership for social justice and equity resulted in improved student outcomes.

5.1 Limitations

The first limitation is that the search process for this review was limited to peer-reviewed journal articles, conference papers and book chapters published in English. The omission of publications in other languages as well as unpublished documents such as dissertations could mean that the data-

base was not fully representative of the literature on this issue. However, given that the review relied on systematic search criteria, the identified publications provided insight on the status quo of the PDRF research literature. The second limitation is that most of the reviewed studies were conducted in developed countries and they mainly focus on health and the sciences. The context may differ in developing societies as well as in the social sciences and humanities. Finally, although systematic search criteria were used to identify the studies, Hallinger (2016) emphasises that no single method can be claimed to be 100% effective. Thus, it is possible that some publications were left out. All these limitations could be addressed in future studies.

5.2 Implications and Conclusion

In conclusion, the six themes that emerged from the review, namely, the purpose of postdoctoral research fellowships; career prospects; benefits and opportunities; financial aid and support; gender issues and constraining factors, highlighted the social inequalities associated with the PDRF position. In addressing these issues, university leadership should strive to promote equality and equity among diverse students (Szeto and Cheng, 2018), in this case PDRFs. There is an interplay between university leadership's values in relation to social justice and the effects of the diversity of PDRFs which are intertwined with traditional university mechanisms and the hierarchy of practices (Szeto and Cheng, 2018). These emanate from the structure of the system and deep-rooted perceptions, beliefs and norms. The social justice issues emphasised in relation to contextual changes, practices and procedures ingrained in individual universities, further complicate efforts to achieve equality and equity.

The literature attests to neglect of equity issues in educational leadership (Capper and Young, 2014; DeMatthews and Mawhinney, 2018; Jean-Marie et al., 2009; Shields, 2014; Szeto and Cheng, 2018; Theoharis, 2009) and debate on how such leadership can promote social justice is gaining momentum (Capper, Theoharis and Sebastian, 2006; Jean-Marie et al., 2009; Szeto and Cheng, 2018; Parker et al., 2005; Tillman, Brown, Campbell-Brown, and Gonzalez, 2006; Theoharis, 2009). University leadership is thus called on to disrupt and subvert arrangements that sustain marginalisation and exclusion. It should also be acknowledged that preparing leaders for social justice is a complex and multidimensional task and cannot be confined to a list of 'to do' items.

Higher Education Institutions need to create broader training and opportunities to develop skills that enhance the marketability of PDRFs and also offer career counselling. Indeed, the PDRF programme can be utilised as a powerful resource for development. Review of PDRF training pro-

vides deeper insights and guides theory and practice in areas that require improvement. Given the shortage of faculty positions, research is required on the trends associated with acquiring faculty jobs. In addition, further research is warranted to investigate changing patterns in research work as well as PDRFs' contribution to knowledge production. Changing patterns in research impact PDRFs differently. For instance, migrant PDRFs from developing countries may be vulnerable to exploitation (Cantwell and Lee, 2010; Whitworth et al., 2008). The experiences of long-term PDRFs who have migrated from one institution to another need to be examined to gain an understanding of new patterns of academic labour among different groups.

Given that forced mobility is on the increase, the relationship between identity and academic work cannot be ignored. Pratt-Clarke (2010) warns that subtle acts of oppression, domination and institutionalised practices are often taken for granted as norms, rules, and values because their seeming 'natural' status has remained unchallenged. Therefore, further research should explore the intersection between race, gender and nationality and academic career opportunities in academia. The review highlighted the importance of interrogating how academic job opportunities are sustained by academic capitalism, power hierarchies and globalisation. While employment opportunities have been created for PDRFs, especially those from developing regions, Cantwell and Lee (2010) assert that these are potentially exploitative and are hindering career progression. Host countries continue to benefit from the influx of academics from abroad. Hence, future research should critically examine how academic capitalism creates unequal patterns of opportunities. Since universities are becoming business enterprises, they must protect and support their resources, including PDRFs, not only the few star professors who command high salaries and benefits. Postdoctoral research fellows should be paid reasonable salaries and have access to benefits such as annual and parental leave (Camacho and Rhoads, 2015). Universities also need to establish support structures, especially for international PDRFs, and grievance procedures (Whitworth et al., 2008). Finally, innovative leadership strategies need to be crafted to address social justice issues within specific contexts. African universities cannot solve their problems by borrowing directly from developed settings, but need to come up with solutions that are grounded in their social, economic, cultural and political contexts.

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Critical Analysis of the Applicability of the ISO 9001 Standard in Higher Education Institutions

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Abstract

This article analyses the applicability of the ISO 9001 standard in Higher Education Institutions. Initially developed for application in industry, this standard sets the requirements for implementing a quality management system in an organisation. Over the years, it has been adapted to the Higher Education sector as a quality management standard. The standard is analysed in terms of the relevance of its philosophy to Higher Education; its suitability for this sector; the ease of implementation; its effect on quality assurance and enhancement; and its impact on quality. The mechanisms by which it affects quality management are also presented. The analysis shows that ISO 9001 is based on a philosophy that resonates with general approaches to quality assurance in Higher Education Institutions and that its seven principles provide a sound basis for effective quality management. It can be adapted to the peculiarities of this sector and, although it imposes a considerable workload, it can be applied with ease. There is thus both a theoretical and empirical basis for the ISO 9001 standard to promote quality assurance and enhancement in Higher Education. Academic provision and administrative services can benefit from its adoption and it can promote and strengthen the development of a quality culture, especially

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when staff are deeply engaged in the process. It is thus concluded that the ISO 9001 standard provides a framework for quality management that is applicable to the Higher Education sector.

Key words: ISO 9001, quality assurance, quality management, quality management system, higher education institutions

Cet article analyse l'applicabilité de la norme ISO 9001 dans les Institutions d'Enseignement Supérieur. Initialement développée pour l'industrie, cette norme établit les pré-requis pour mettre en place un système de gestion de la qualité dans une organisation. Au fil des années, il a été adapté au secteur de l'Enseignement Supérieur comme norme de gestion de la qualité. Cette norme est analysée sous plusieurs angles: la pertinence de sa philosophie pour l'Enseignement Supérieur, son aptitude au secteur, la facilité de sa mise en oeuvre, son effet sur le contrôle et l'amélioration de la qualité, et son impact sur la qualité. Les mécanismes avec lesquels la norme produit un effet sur la gestion de la qualité sont aussi présentés. L'analyse montre que ISO 9001 est fondé sur une philosophie non loin des approches globales de contrôle de qualité dans les Institutions d'Enseignement Supérieur et que ces sept principes fournissent une base solide pour une gestion de la qualité efficace. Il peut être adapté aux particularités du secteur et, bien qu'il impose une charge de travail considérable, il peut être mis en place facilement. Il y a ainsi une base à la fois théorique et empirique pour que la norme ISO 9001 optimise le contrôle et l'amélioration de la qualité dans l'Enseignement Supérieur. La prestation universitaire et les services administratifs peuvent bénéficier de son adoption et elle peut promouvoir et renforcer le développement d'une culture de qualité, en particulier quant le personnel est activement impliqué dans le processus.

Introduction

Against the backdrop of an increasingly knowledge-driven society, quality management is gaining momentum in the Higher Education (HE) sector (Pavel, 2012). Several factors, including the need for accountability and the relevance of HE to society have contributed to the emergence of the quality movement in this sector (Manatos et al., 2017). This has led to emergence of quality management systems (QMS) in higher education institutions (HEIs), most of which are imported from industry (Rosa et al., 2012). Quality assurance (QA) has become a global HE phenomenon, with the primary focus of enhancing educational outcomes (Ewell, 2010; Kliot and Bykovskaya, 2011; Yuan, 2010).

While most of the QA models used in HE have been adapted from industry (Niedermeier, 2017), this has not been without its challenges. Some

studies argue that these models are not suitable for HE (Srikanthan and Dalrymple, 2003); however, Becket and Brookes' (2008) review of pertinent case studies found the opposite to be true. More nuanced views have highlighted that some aspects of these models are scale-neutral and can be applied to HE. The main challenge has been both definitional and operational. From a definitional perspective, terms like customer, scientific method, waste and product do not fit well with HE (Rosa et al., 2012). Srikanthan and Dalrymple (2003) highlight the differences between industrial and educational processes, with the latter being more complex and variable than the former. Furthermore, HE has multiple stakeholders with different expectations of its role and perceptions of quality.

The quality management (QM) models used in HE include Total Quality Management (TQM), the ISO 9000 series, the European Foundation for Quality Management Excellence Model (EFQM), Balanced Scorecard (BSC), Malcolm Baldridge award, and SERVQUAL, amongst others (Becket and Brookes, 2008; Niedermeier, 2017). These have solid traction in industry. Total Quality Management is the most common approach at the international level (Niedermeier 2017), while ISO 9001, EFQM and the BSC are also popular in HE (Rosa et al., 2012). Efforts have also been made to develop QA models tailored for HE, with many based on ISO 9000, TQM and Malcolm Baldridge (Neidermeier, 2017). The focus has been on the particularities of the core academic processes of teaching and learning (Becket and Brookes, 2008) as it has been argued that these cannot be equated to industrial processes. Examples include the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) (ENQA et al., 2015; Srikanthan and Dalrymple, 2014), the ISO-based TQM model (Borahan and Ziarati, 2002) and the excellence model (Pires da Rosa et al., 2001, 2003). Srikanthan and Dalrymple's (2014) model is an exception as it is based on educational theories and the ESG is part of the Bologna process in Europe.

The ISO 9001 standard is one of the most well-known QM models in HE (Rosa et al., 2012) and is a popular choice among educational institutions (Thonhauser and Passmore, 2006) despite the fact that some studies have pointed to gaps specific to the field of HE. The standard sets the requirements for implementing a quality management system (QMS) in an organisation. The International Organisation for Standardisation (ISO) (2005) defines a QMS as a system that directs and controls an organisation with respect to quality. The ISO 9001 standard is generic and can be applied by any organisation, irrespective of the products and services it provides, its size or the nature of its operations (ISO, 2005).

Driven by the quality movement and the fact that quality has become a mark of distinction in international HE markets (Blackmore, 2009), in

modern times, many HEIs are seeking ISO certification (Stojanovic, 2015; Chiarini, 2015). The aim is to enhance operational efficiency, build teamwork among departments, and ensure customer satisfaction (Zabadi, 2013; Hussein et al., 2017). According to Mola (2017), some institutions are motivated by the prestige associated with ISO 9001 certification. Isomorphic pressure (Papadimitriou and Westerheijden, 2010) and external pressure from government (Papadimitriou, 2011) have also led to the adoption of this standard. During the 1990s, when the ISO standard first assumed prominence in the HE sector, several reasons were cited for its adoption, including claims that it renders operations more efficient and improves the quality of services and academic provision (Van den Berghe, 1998; Kasperavičiūtė, 2013). Llach et al. (2011) reported that the education sector was ranked 12th out of 39 ISO 9001 certified sectors. Furthermore, between 2004 and 2008, the number of certificates issued to the education sector increased by more than 40% (Kasperavičiūtė, 2012). However, it is difficult to establish how many of these pertain to HEIs (Kasperavičiūtė, 2013).

Empirical and theoretical studies on the use of the ISO 9001 standard in HE include Thonhauser and Passmore (2006); El Abbadi et al. (2014); Martin and Thawabieh (2018); Chiarini (2015); Moturi and Mbithi (2015); Papadimitriou and Westerheijden (2010); Heras-Saizarbitoria and Boiral (2015); and Kasperavičiūtė-Černiauskienė and Serafinas (2018). The results are mixed and it has been difficult to prove causality when it comes to the standard's impact on teaching and learning. Furthermore, its precise effect on QM in HE has not been adequately explained and there has been inadequate focus on the centrality of the standard's philosophy with regard to QM in HE. Finally, theoretical and empirical evaluation is required that takes into account recent experiences in HE. This article focuses on the theoretical aspects of the standard as derived from its provisions and presents an analytical framework that can be used to determine its applicability in HE. Its findings will be useful to QA researchers and practitioners.

Quality Management in Higher Education

Quality management is a holistic management philosophy that focuses on the maintenance and continuous improvement of all the functions within an organisation, with the goal of meeting or exceeding customer and other stakeholder requirements (Kaynak, 2003). In HEIs, it includes quality control, quality assurance, and quality assessment and enhancement (Vlăsceanu et al., 2007; Niedermeier, 2017). While QM is a broader concept than QA (Niedermeier, 2017), these terms are at times used interchangeably, making it difficult to identify a consistent definition (Vlăsceanuet et al., 2007). As stated earlier, the ISO (2005) defines a QMS as a system that directs and controls an organisation with respect to quality.

In an era influenced by the performative and accountability logics of new public management, it is worth noting that at both the state and institutional levels, QA has become a form of governance (Rowlands, 2012). Some scholars have referred to QA as a governance innovation in HE (King, 2007). In the changing relationship between the state and the university, QA is the primary tool used to govern HEIs (Morley, 2003; Filippakou and Tapper, 2008), where it exists as an ecosystem of external (EQA) and internal (IQA). The former refers to supra-institutional policies and practices to assure the quality of HEIs and programmes (Dill, 2007). Its agencies include private and public organisations which operate as government surrogates. National, regional and global EQAs regulate HE in various ways. For example, the ESG for the European Higher Education Area (ENQA et al., 2015) sets standards and guidelines for both EQA and IQA in Europe. An African example is the framework of qualification standards in HE adopted by the Council on Higher Education in South Africa (CHE, 2013). It is important to note that IQA works within the provisions of EQA.

The International Network of Quality Assurance Agencies in Higher Education (INQAAHE) defines IQA as "the process, supported by policies and systems, used by an institution to maintain and enhance the quality of education experienced by its students and of the research undertaken by its staff" (INQAAHE, 2018). It encompasses the QM mechanisms, instruments and systems within an HEI to ensure that the institution and its programmes are meeting their own standards and objectives (Sanyal and Martin, 2007). The essence of IQA is QM, and a QMS provides the processes, tools and instruments for that purpose. As stated earlier, QMSs in HE have been influenced by QM models in industry.

Background to the ISO 9001 Standard in Higher Education

The ISO published the ISO 9001, ISO 9002, and ISO 9003 standards in 1987 that defined the requirements for a QMS (El Abbadi et al., 2014). They were revised in 1994, 2000, 2008 and 2015. In 2000, ISO 9001, ISO 9002 and ISO 9003 were merged to form ISO 9001. The ISO 9000 series has three standards. ISO 9000 covers Fundamentals and Vocabulary and sets out the basic concepts and terms used in the series of the standard. Its latest version is ISO 9000: 2015. ISO 9001 comprises Quality Management Systems – Requirements and its latest version is ISO 9001:2015. Certification is only granted for this standard. ISO 9004 is titled: Managing for the sustained success of an organisation – A quality management approach. The latest version is ISO 9004: 2009.

Higher education institutions, mainly in Europe and later in the US, began to implement the ISO 9000 series of standards around the mid-

1990s (Van den Berghe, 1997). Early adopters encountered numerous challenges (El Abbadi et al., 2014) that mainly arose from the fact that the standard was developed for the manufacturing industry. The HE sector's peculiarities make it different from manufacturing and other service sectors (Kasperavičiūtė, 2013). As such, the ISO 9001 standard requirements needed to be interpreted in the education field (Karapetrovic et al., 1998; Karapetrovic, 2001).

With time, the ISO became aware of these challenges and sought to ameliorate them. It published the first version of the International Workshop Agreement (IWA) 2 in 2003, which was coded IWA 2:2003 - *Quality Management System — Guidelines for the Application of ISO 9001:2000 in Education* (ISO, 2003). It was revised in 2007 (ISO, 2007). The guidelines in IWA 2 did not change the requirements of ISO 9001:2000, but sought to assist educational organisations to implement ISO 9001 (ISO, 2007), with a focus on adapting its clauses to education (Caraman et al., 2008; Roszak, 2009). In this regard, IWA 2 defined four key terms, namely, customer, product, education provider, and educational organisation. The terms 'customer' and 'product' are controversial in HE and need to be tailored to resonate with this sector.

Several criticisms were levelled against the IWA 2 guidelines. One was that they neglected research activities (Rodman and Godnov, 2010) because a product was defined as an educational outcome (El Abbadi et al., 2014), which, taken literally, refers to teaching and learning. Another challenge was that IWA 2 defined a customer as a learner. In HE, a learner is both a customer (receives education) and an actor (contributes to learning) (Becket and Brookes, 2008). Furthermore, the guidelines did not place much emphasis on ethics and corporate social responsibility which are important in HE (El Abbadi et al., 2014).

After the publication of ISO 9001:2008, the IWA 2 working group developed *ISO 9001:2008 Handbook for Educational Organisations — What to Do: Advice from IWA 2 Working Group* (ISO, 2009). The handbook is more detailed than the IWA 2 guidelines and provides supplementary explanations and practical recommendations for the implementation of ISO 9001:2008 in education. It also widens the definition of product to the outputs of all activities undertaken by educational organisations, and includes aspects of financial resources. Both IWA 2 and the ISO 9001:2008 handbook provided guidance and were not intended for certification.

It is thus evident that there have been sustained efforts to enhance the applicability of the ISO 9001 standard to the education sector. A distinctive peculiarity of HE is the process of teaching and learning where contemporary pedagogies emphasise collaborative and interactive practices (Branch et al., 2017). Another example is the shift from the dyadic model of student

supervision to the co-construction of knowledge in group collaborations (Hyatt, 2013). This changes the master-apprentice relationship between teacher and learner. These fundamental concepts should inform application of the standard in HE.

Methods

The study was a qualitative one that was mainly based on content analysis and interpretation. Interpretative analysis was used to situate the ISO 9001 standard within the HE context. The analytical framework employed to provide philosophical explanations and identify key assessment parameters is presented in the following section. The theoretical analysis was based on the requirements of the standard, both in terms of its seven principles and its clauses. It involved interpreting the standard on the basis of its philosophy and clauses using experiences in HE reported in extant literature.

In order to provide a systematic framework for the analysis, the study was organised into the three stages of review suggested by Tranfield et al. (2003) and used by Tari and Dick (2012).

The first stage was planning the analysis. The ISO 9001 standard was divided into two parts: 1) its foundational aspects (seven principles), and 2) the requirements of its clauses (clauses 4 to 10). This formed the analytical framework for the analysis of: (1) consonance of the foundational aspects of the standard with QM in HE, and (2) applicability of the requirements of the clauses to HE.

The analysis was conducted in the second stage, when each of the standard's seven principles was interpreted. The clauses of the standard were analysed for their applicability to the HE sector using the parameters in the analytical framework.

In the third stage, reporting and dissemination, a descriptive and analytical narrative is provided for each parameter in the analytical framework. Figure 1 outlines the schematic representation of the analytical framework. The findings and discussion are based on the parameters in this framework and where possible, tables with qualitative data are presented.

Analytical Framework

The theoretical underpinning of the analytical framework is based on the general tenets of QM. Tari and Dick (2012) state that QM can be viewed as: 1) a philosophy; and 2) a set of practices for the management of an organisation that goes beyond control of quality. Two observations can be made from this interpretation. First, a QM model must have principles that underpin it, and secondly, it must have requirements for its implementation.

The analytical framework is based on the philosophy of the standard (P), and the standard's relevance to HE (R), implementation requirements (I) and outcomes (O). The acronym for the framework is thus PRIO. The reasons for selecting these parameters are set out in Table 1 below, while the framework is presented in Figure 1. The first part of PRIO is made up of the seven principles of the ISO 9001 standard, namely, customer focus; leadership; engagement of people; process approach; improvement; evidence-based decision making; and relationship management (ISO, 2015a). According to the ISO, following these principles will ensure that an organisation or business is able to consistently create value for its customers (ISO, 2015a). The core of the standard is the plan-do-check-act cycle (PDCA).

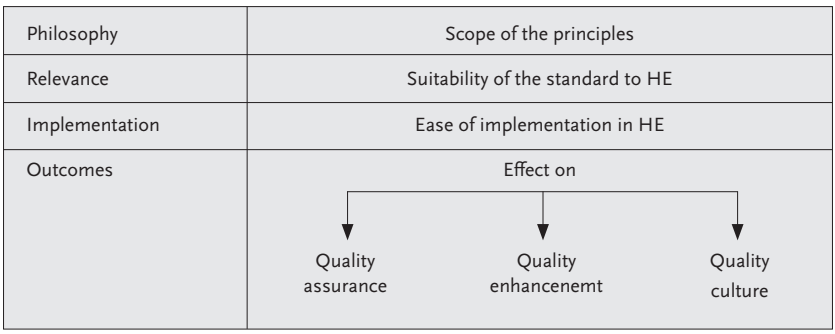
Table 1. Parameters of the Analytical Framework

Parameter	Importance
Philosophy	Sets the principles underpinning the standard This enables understanding of the logic that underpins the standard Allows assessment for its application to HE
Relevance	Measures fitness of purpose of the standard to HE Assesses whether the standard addresses the quality dimensions in HE
Implementation	Measures the relative ease of implementation of the standard Determines the workload imposed on HE staff
Outcomes	Show the outcomes of application of the standard in HE Quality assurance is increasingly becoming outcome-based

The second part of PRIO provides the focus areas for the analysis. Using an adaptation of the framework employed by Rodman and Godnov (2010), the focus is on the following:

1) Suitability
2) Ease of implementation
3) Effect on:
    (a) Quality assurance
    (b) Quality enhancement
    (c) Quality culture

Figure 1. Analytical Framework



Results and Discussion

Philosophy of the Standard

The philosophy of the ISO 9001 standard represented by its seven principles (Table 2) resonate with the major tenets of QM in HE, namely, accountability and improvement (Middlehurst and Woodhouse, 1995). According to a study by UNESCO (2018), 94% of HEIs rated improvement of academic activities as a 'very important' component of IQA. This is confirmed by Tavares et al. (2017) and Ewell (2002) who note that QA systems are expected to 'add value' to academic activities. The standard's seven principles easily apply to HE and can enhance IQA in HEIs. Indeed, it can be argued that they offer a generic philosophy that is applicable to QM in any sector. The issues of stakeholder satisfaction (Argyris, 1999; Razavi et al., 2012; Pateman, 2012), leadership (Bond, 2000), and staff engagement (Pateman, 2012; Tetteh, 2018) focus on educational processes and evidence-based decision making that are central to IQA in HE (Niedermeier, 2017; Blackmore,2009). As such, the ISO 9001 standard presents a QM philosophy that is immutable in HE. It is also worth noting that the PDCA cycle is both the implementation model for the ISO 9001 standard and the foundation of QM in HE (Niedermeier, 2017), where it is commonly known as the quality cycle (plan-act-evaluate-improve).

Interpretation (Table 2) of the seven principles for the HE context shows that, from a philosophical perspective, the ISO 9001 standard resonates with the logic behind IQA in HE. This sector has multiple stakeholders who must be satisfied with educational services and outcomes. Thus, a focus on 'customers' will lead to customer satisfaction. Student, graduate and employer satisfaction are important quality indicators in IQA (UNESCO, 2018). Furthermore, EQAs use these indicators as a measure of the quality of teaching and learning (Spronken-Smith et al., 2013). Another good example in Table 1 is the aspect of 'people engagement'.

Internal quality assurance needs to be implemented with a deep sense of engagement by all staff. Staff support depends on several factors, including their sense of ownership which is influenced by their participation in the implementation of IQA (Cardoso et al., 2018). The remainder of the principles are explained below (Table 2). All resonate with IQA as it exists in HE today. The interpretation of the principles in the table is based on the recommendations of several scholars on adaptation of the ISO standard to HE (Karapetrovic et al., 1998; Karapetrovic, 2001; Roszak, 2009; Rodman and Godnov, 2010; El Abbadi et al., 2014).

Suitability of the Standard

The ISO 9001 standard sets generic requirements for implementing a QMS regardless of the size and activities of an organisation (Rodman and Godnov, 2010; El Abbadi et al., 2014). By implication, this would mean that it can be applied in HE. The fact that academic processes cannot be equated to industrial processes has been a major argument against the standard. However, it has gained traction in HE over time and there is a growing body of literature on its use in this sector, evident in the exponential increase in journal articles from the mid-1990s (Van den Burghe, 1997). Kasperavičiūtė-Černiauskienė and Serafinas (2018) note that a corpus of studies now exists on the ISO standard in HE. One of the first papers was written by Moreland and Clark (1998) and it highlighted the pros and cons of the standard. Karapetrovic et al. (1998), Karapetrovic (2001), Thonhauser and Passmore (2006), Chiarini (2015) and several other scholars have demonstrated how a QMS based on ISO 9001 needs to be adapted in HE. Examples include Karapetrovic et al. (1998), Caraman et al. (2008), Karapetrovic (2001), Roszak (2009), Rodman and Godnov (2010), and El Abbadi et al. (2014).

It has generally been observed that QM models from industry do not recognise the centrality of student learning in HE (Becket and Brooks,2008) and newer versions of the ISO standard have attempted to resolve this issue. Srikanthan and Dalrymple (2003) noted that the quality systems used in industry are process oriented and focus on the needs of the customer (Srikanthan and Dalrymple, 2003). However, teaching and learning cannot be regarded as a relationship between a business provider and 'customer' (Neidermeier, 2017). The ISO 9001 standard can be interpreted in a more nuanced way to address these concerns (Caraman et al., 2008; Roszak, 2009). As stated earlier, definitional issues have been contextualised to HE. A good example is the work of Karapetrovic (2001). It should also be noted that the standard has been found to work well with the service function of HE (Neidermeier, 2017).

Table 2. Interpretation of the Seven Principles of the ISO 9001 Standard for IQA

Principle	ISO interpretation (ISO, 2015a)	HE interpretation
Customer focus	Meeting and exceeding customer needs Attract and retain the confidence of customers Adapt to customers' future needs	Understand the needs and expectations of stakeholders Focus on meeting the needs of users of educational services and outputs Adapt to changing needs for education delivery and credentialing in a digitally disrupted sector to remain relevant
Leadership	A unified direction or mission that comes from strong leadership Ensure that everyone in the organisation understands the organisational goals	Academic and administrative leadership set the tone for IQA Ensure everyone understands the purpose and benefits of IQA
Engagement of people	Create value through competent, empowered and engaged people at all levels of the organisation	Recruit suitably qualified staff for all portfolios Decentralise IQA Engage all levels of staff in IQA development and implementation
Process approach	Understand activities as processes that function as a system Ensure everyone is familiar with the organisation's activities and how they fit together	Understand teaching, learning, research, and administration as processes that form an ecosystem Ensure academic and administrative processes are clearly defined and understood by everyone
Improvement	Successful organisations focus on continuous improvement Reacting to changes in the internal and external environment is necessary to continue to deliver value to customers	Focus on quality enhancement Monitor and react to changes in the environment Consider IQA as a change driver
Evidence-based decision making	Decisions based on analysis and evaluation of data are more likely to produce the desired results	Measure institutional performance using appropriate indicators Decisions should be supported by the results of evaluation
Relationship management	Identify important relationships with interested parties such as suppliers Set out a plan to manage the relationships as this will drive sustained success	Identify relationships with internal and external stakeholders Manage relationships and drive IQA through strong stakeholder relationships

Furthermore, the gap between industry and the academic world is narrowing as a result of the increasing market orientation of HE (Rodman and Godnov, 2010). Marketisation, commodification and privatisation have become common trends and the HE arena has become very competitive and dynamic. Adoption of the ISO 9001 standard can positively impact leadership, operational efficiency, the organisation and the involvement of people, thereby enhancing institutional competitiveness (Bevans-Gonzales et al., 2004).

The latest version, ISO 9001:2015, is less prescriptive and more flexible (Sickinger-Nagorni and Schwanke, 2016). This is positive for HEIs that have tended to resist prescriptive approaches to QA. Extant literature shows evidence of resistance to QA in both its IQA and EQA forms (Stensaker, 2008; Blackmore, 2009; Brown, 2013; Lucas, 2014; Lust et al., 2018), especially when it is seen to be externally driven (Lucas, 2014). The one-size-fits-all approach is not appropriate for QA in HE (Ewell,2002). Flexibility, mainly in terms of inputs and processes, allows for innovation in QM, but with no compromise on the quality of outcomes. Two of the novelties in this revised standard are that process management is gaining importance and risk-based thinking has been introduced. According to Kasperavičiūtė (2013), the main reasons for implementing the ISO 9001 standard in HEIs is the need to improve internal processes and procedures, as well as institutional management, performance and effectiveness. This process approach (both academic and administrative) is central to IQA. The ISO 9001 standard can help to describe process flows (academic and administrative), making implementation easier and enhancing understanding of how they interact.

Ease of Implementation

Challenges in implementing ISO 9001 mainly relate to internal institutional issues (Kasperavičiūtė, 2013). The main factors that determine ease of implementation include people, resources, education and communication (Ab Wahid and Corner, 2009). Implementation requires the involvement and commitment of all staff (Moturi and Mbithi, 2015). Cardoso et al. (2018) note that this might be difficult to achieve, while Singh and Sareen (2006) and Kasperavičiūtė (2013) found that lack of staff motivation was a major hindrance to implementation of the standard. Karapetrovic (2001) observed that the main obstacle is staff's perception that it will restrict their academic freedom and that they will be blamed for identified quality problems. To this can be added the fear of increased bureaucracy and documentation (Karapetrovic, 1998). Studies on the benefits and challenges of implementing the standard have been conducted in Lithuania (Kasperavičiūtė-Černiauskienė and Serafinas, 2018), Lebanon (Hussein, Abou-Nassif et al., 2017), Italy (Chiarini, 2015), Kenya (Moturi and Mbithi,

2015), Oman (Matin and Thawabieh, 2018) and Malaysia (Muslim and Suradi, 2012), amongst others.

Furthermore, staff in HEIs can perceive IQA as an additional form of bureaucracy (Rosa et al., 2016). Indeed, it is often regarded as a form of managerialism (Lange and Kriel, 2017), resulting in IQA not being accepted as an integral component of institutional development. The ISO standard also increases staff's workload as audits and documentation are required (Moturi and Mbithi, 2015). All these challenges raise the need for internalisation of IQA by staff to the point where QA becomes an integral component of workflows. Allur et al. (2014) concluded that a higher level of internalisation yields greater benefits from the adoption of ISO 9001. The standard's principles, particularly leadership, engagement of people and relationship management, can enhance such internalisation.

Implementing the ISO 9001 standard requires time and other resources and should be regarded as an investment. Moturi and Mbithi (2015) and Basir (2012) note that a lack of resources is one of the factors that limit implementation. Furthermore, staff need to invest their time in IQA-related activities and this should not be perceived as 'add-on work'.

Effective education and communication are required for implementation of the ISO 9001 standard. People cannot implement what they do not understand. The need for continuous education and training of staff to enhance their performance is well recognised in HE (King, 2004). The ISO 9001 implementation processes include staff training. Communication with internal and external stakeholders is also a critical success factor. Logical, rational and persuasive communication is particularly useful in industrial relations and organisational change (Choudhary and Rathore, 2013). Higher Education Institutions have complex structures and systems which can hinder effective communication. It is therefore important to ensure well-established communication mechanisms.

Effect on Quality Assurance and Enhancement

The need to continuously improve the quality of academic provision cannot be overemphasised. The ISO 9001 standard will find traction in HE if it is seen to enhance QM. Moturi and Mbithi's (2015) case study provides empirical evidence of the potential impact of ISO 9001 on QA in HE, including improved customer satisfaction (staff, students), facilities, ranking, and staff competencies, and better compliance with EQA requirements.

An analysis of the standard's clauses is useful in explaining its outcomes in terms of quality assurance and enhancement. Clauses 4 to 10 set out the standard's requirements and the mechanisms to assure and enhance quality (Table 3) are based on these.

Table 3. Impact Mechanisms of the ISO 9001 Standard on Quality Assurance and Enhancement

Clause	Impact mechanisms
1. Context of the organisation	Helps the institution to determine internal and external issues The institution understands the needs and expectations of its internal and external stakeholders It is easier to formulate a QMS to meet stakeholder needs and expectations Leads to more stakeholder satisfaction (fit-for-purpose services and products)
2. Leadership	Increases leadership commitment to implementation of QMS Provides the quality policy which sets the quality objectives Quality objectives make clear what the QMS must achieve Roles, responsibilities and accountabilities are clear
3. Planning	Enables actions to implement the QMS Leads to constructive alignment of quality objectives with actions Facilitates allocation of resources
4. Support	Ensures allocation of resources to the QMS Facilitates development of staff competencies for implementation of the QMS Competent staff are more likely to produce the desired results Enhances internal and external communication Builds documented information for evaluation
5. Operation	Helps to define requirements for products and services and helps the institution to ascertain its capacity to deliver them Sets parameters for processes and products, enabling staff to be properly guided External services and products will meet the requirements Measures are put in place to manage deviations from plans
6. Performance evaluation	Ensures there are mechanisms for performance evaluation Performance is evaluated, leading to awareness of performance levels Provides a clear basis for improvement
7. Improvements	Helps to identify cases for improvement Necessitates formulation of improvement plans Leads to continuous improvement

Source: Information adapted from the ISO (2015a)

Table 3 explains the mechanisms by means of which the ISO 9001 standard can positively impact quality assurance and enhancement. In other words, the QMS will be designed and implemented to achieve the institution's quality objectives.

Higher education is fraught with risks and risk management has become an important concern (Times Higher Education, 2015). The concept of risk-based thinking is much more elaborate in the ISO 9001:2015 version. Such thinking helps to determine the factors that can cause institutional processes and the QMS to deviate from planned results (ISO, 2015b). Risks are inherent in many academic processes. For example, staff and student incivilities (Kelly, 2017), resource shortages (Ndirangu and Udoto, 2011; Schneider, 2004; Abend et al., 2006) and other challenges are widely reported in this sector. The risk management tool set out in Clause 6 of the ISO 9001 standard enables the resilience of a QMS (ISO, 2015b).

Effect on Quality Culture

A quality culture (QC) is about developing organisational value systems that result in an environment conducive to the establishment and continual improvement of quality (Njiro, 2016). Srinivasan and Kurey (2014) define a QC in HE as, "an environment where staff and students not only follow quality guidelines but consistently see others talking about quality focused actions, hear others talking about quality and feel quality all around them." A QC is part of organisational culture and Rapp (2011) states that it is an effective and meaningful way to develop QA mechanisms that ensure improved quality at all levels and support change in universities.

ISO 9004 requires quality management in HEIs to create a QC among employees that fosters continuous improvement in all key performance areas (Sickinger-Nagorni and Schwanke, 2016). Although not specifically mentioned, this should be taken into account when implementing the ISO 9001:2015 standard. Since implementation of the standard involves all staff, this can help to create a QC within an institution.

Moturi and Mbithi (2015) found that implementation of the ISO 9001 standard inculcated a QC among both staff and students at the University of Nairobi. Muslim and Suradi (2012) concluded that the implementation of the standard has a positive impact on the work culture and day-to-day task management and a negative impact on emotion. Other studies found that implementation of the standard promoted continuous improvement and a focus on customer satisfaction, enhancing service quality and operational efficiency (Psomas et al., 2013), and streamlining institutional processes (Okibo and Kimani, 2013). Staff engagement, ownership, and relationship management, as espoused by the ISO 9001 standard, can

promote a QC that facilitates implementation of IQA and enhances the likelihood of a positive impact.

Conclusion

It can be concluded that the philosophy of the ISO 9001standard resonates with the tenets of QM in HE and that its requirements provide a QMS that is applicable to HEIs. Thus, the standard can be implemented as a QM model in HEIs and they can embrace its principles to develop and implement their QMS. This article has also argued that HEIs should move beyond the desire for ISO certification to develop a sustained QC. The analysis of the applicability of the standard in terms of suitability, ease of implementation, impact on quality assurance and enhancement, and fostering a QC revealed that the ISO 9001 standard can embolden IQA. Furthermore, its various mechanisms can influence QM in HE. It is thus concluded that the ISO 9001 standard is applicable to HE and can lead to improved educational services and outcomes.

Recommendations

It is recommended that further empirical studies be conducted on the applicability of the ISO 9001 standard in HE across different HEIs, with a focus on its impact in this sector. Ewell (2002) introduced the concept of 'added value' with reference to QA. The essence is that QA must lead to improved institutional performance. Nielsen and Parker's (2012) model is an appropriate one to measure the impact of the ISO 9001 standard. It covers broad aspects of HEIs beyond academic parameters and has been applied to IQA in this sector (Salto, 2017). Future research could use Nielsen and Parker's (2012) model to determine whether the standard enhances HEIs':

a) *Social impact* - This mainly refers to institutional reputation and serving the interests of society. Institutional reputation has become a significant market factor in HE in recent times.
b) *Normative impact* - This concerns the extent to which an HEI is committed to QMS for its own sake or due to moral commitment to assure and improve its performance. In other words, the target should not simply be certification but development of a sustainable QC.
c) *Educational impact* - This covers the standards and quality of educational programmes, teaching and learning, student performance and graduate employability.
d) *Cultural impact* - that refers to the extent to which the standard has fostered a QC in HE. Quality is not limited to measurement and evaluation procedures, but should also be viewed as part of organisational culture.

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The Impact of Ghana's Higher Education Governance and Regulatory Framework on Financial Sustainability

Justice Ray Achoanya Ayam

Abstract
Higher Education governance, legal and regulatory regimes in Ghana are important factors in the complex Higher Education landscape and its attendant funding challenges. Increased global demand for Higher Education highlights the importance of this framework in ensuring sustainable funding of the sector. The study assessed the impact of governance and regulatory variables on financial sustainability using a quantitative research methodology and a well-validated research instrument for correlational analysis. The findings revealed a statistically significant relationship between the combined effect of all eight variables while the variable, institutions undergo accreditation was the only one that was significant in predicting the best fit equation for financial sustainability. The recommendations arising from the findings will assist policy-makers to undertake relevant reform of the current governance, legal and regulatory practices in the country.

Key words: financial sustainability, governance, legal and regulatory framework, Ghana public universities, higher education institutions

Les régimes légaux, de régulation, et de gouvernance de l'Enseignement Supérieur au Ghana sont d'importants facteurs dans le paysage complexe de l'Enseignement Supérieur et ses défis corollaires de financement. L'augmentation de la demande internationale en enseignement supérieur souligne l'importance de ce cadre qui garantit la durabilité du financement pour le secteur. Cette étude évalue l'impact des variables de gouvernance et de régulation sur la viabilité financière en utilisant une méthodologie

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de recherche quantitative et un instrument de recherche bien validé pour l'analyse de corrélation. Les résultats révèlent une relation statistiquement considérable entre l'effet combiné des huit variables tandis que la variable « institutions soumises à l'habilitation » est la seule signifiante pour prédire la meilleure équation en termes de viabilité financière. Les recommandations dégagées à partir des résultats encourageront les acteurs politiques à engager une réforme profonde et pertinente des pratiques actuelles légales, régulatrices et de gouvernance dans le pays.

Background

Higher Education Governance, Legal and Regulatory Frameworks

The Higher Education (HE) governance, legal and regulatory framework is an important factor in ensuring this sector's financial sustainability. Loose oversight of Higher Education Institutions (HEIs) may give rise to poor quality education with minimal return on investment to students, parents and guardians, the general public and the overall economic development of the country (Erkkilä and Piironen, 2014). Furthermore, demands for increased accountability by the state, students, parents, guardians and partners of HEIs have become more pronounced as these institutions continue to look to these stakeholders for funding. It is against this backdrop that the study assessed the impact of Ghana's HE governance and regulatory framework on financial sustainability.

Governance comprises decision-making structures and processes, formulation and implementation of policies to guide the work of institutions, and the rules and processes by means of which universities govern their affairs (Hladchenko, Antonowicz, and de Boer, 2017; Kwiek, 2015; Shattock, 2013). Good governance calls for sound leadership that focuses on academic freedom, participatory governance, accountability and the quest to achieve academic excellence. Effah (2015) identified a number of HE governance models, including the continental (European) model; the British (collegial) model; the American university model; and the Chinese model. A critical review of these models points to the common desire to achieve academic freedom and enhance autonomy, as well as promote research and knowledge acquisition. Williams (2015) and Collins (2014) observe that inappropriate and outdated governance and management practices may result in tertiary institutions not fulfilling their mission, while Teferra (2013) points to flaws in the management and planning capacities of university administrators.

The legal and regulatory framework for HE should thus promote flexibility, autonomy, and accountability. These frameworks vary widely from country to country. Owusu-mensah (2015) notes that regulation enhances competitiveness and management efficiency, enables HEIs to manage

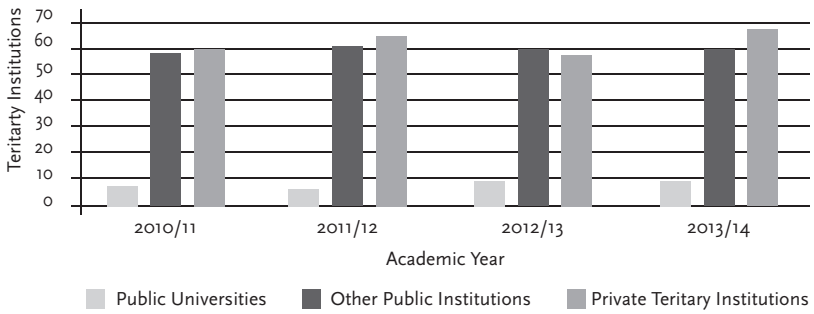
market forces and fosters higher levels of achievement. However, it has the tendency to dampen entrepreneurship and innovation (Jogn and Wittenloostuijn, 2014). Furthermore, Shah (2015) states that private HEIs confront unique legal challenges, including a lack of clarity on the role of the private sector in the education system; complex registration processes; unclear and subjective criteria and standards to qualify for registration; and outdated accreditation criteria. The legal framework also imposes limits on private institutions' ability to charge market-related fees. Finally, Monyoncho (2015) observes that HEIs' scope and ability to moblise, allocate and utilise resources are determined by the prevailing legal and regulatory environment.

Previous studies mainly focused on corporate governance's impact on accountability, integrity, and fairness, rather than financial performance and sustainability. This study sought to fill this gap by examining how Ghana's governance and regulatory framework for HE impacts on public HEIs' financial sustainability.

Higher Education in Ghana

Ghana's HE system has witnessed significant *expansion* leading to astronomic growth in access and participation. The sector is made up of public and private universities and university colleges, professional institutions, colleges of education and agriculture, and nurses' training colleges. The Ministry of Education (2015) notes that the number of HEIs increased from 119 in the 2010/2011 academic year to 128 in the 2013/2014 academic year (see Figure 1 below).

Figure 1. Tertiary Institutions in Ghana



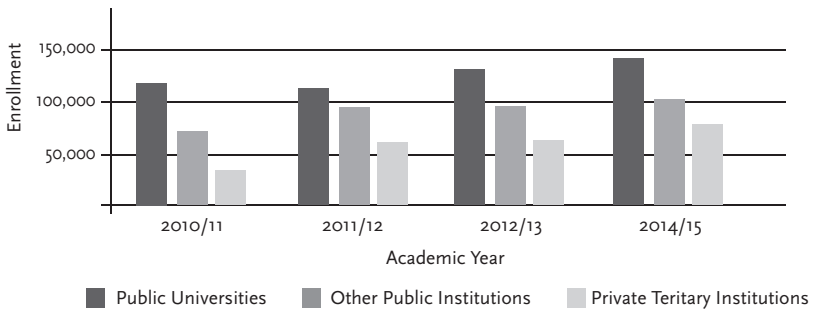
Source: Author's analysis of data from the 2015 Education Sector Performance Report of the Ministry of Education, Ghana

Atuahene and Owusu-ansah (2013) note that, apart from these accredited institutions, several non-accredited organisations offer tertiary courses in Ghana. Expansion has triggered some competition despite growing demand for access to tertiary education. As noted by Yudkevich (2017), access remains a global concern. The government of Ghana's quest to expand access resulted in the establishment of additional universities in the Brong Ahafo and Volta Regions, with a third in the Eastern Region and the conversion of all polytechnics into technical universities. Policy reforms have also created a favourable environment for private sector participation (Collins, 2014).

Enrolment and Participation

Tertiary education in Ghana has recorded tremendous growth in the past decade and by the 2013/2014 academic year, gross enrolment had increased to 313,846 (Ghana MOE, 2015). Enrolment grew by 8% over a ten-year period, compared with an average increase of 6.3% in sub-Saharan Africa (Knight, 2014; UNESCO Institute for Statistics, 2018). This can be attributed to major policy reforms since 1992. Mohamedbhai (2014)"mend eley":{"formattedCitation":"(Mohamedbhai, 2014 notes that these include the reduction in the number of years of secondary schooling from 17 to 12: public-private partnerships which culminated in the opening of private universities and professional institutions; the upgrading of public specialised colleges to degree awarding institutions; the decision to upgrade polytechnics into technical universities; and the establishment of the Ghana Education Trust (GETFund) to fund academic infrastructure and promote research. Figure 2 below traces enrolment trends in tertiary education between the 2010/2011 and 2013/2014 academic years.

Figure 2. Enrollment in Tertiary Institutions

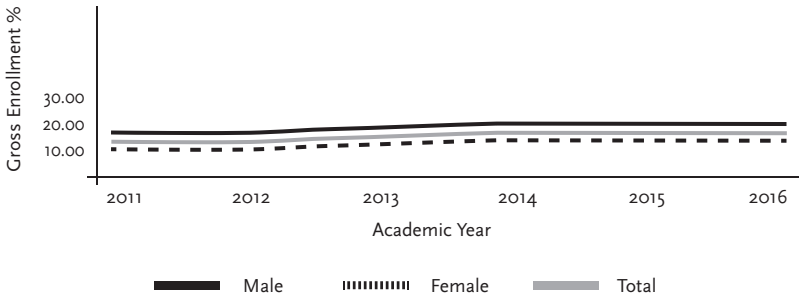


Source: Author's analysis of data from the 2015 Education Sector Performance Report of the Ministry of Education, Ghana

Despite the surge in enrolment, access and participation rates remain low. According to the UNESCO Institute for Statistics (2018a), gross enrolment in tertiary education in the 2015/2016 academic year was 16.07% of Ghana's tertiary school going age population of 2,627,166, resulting in a huge access gap of 83.93%. The gap declined from 87.91% in 2010/2011 to 83.77% in 2014/2015 but recorded a marginal increase of 0.04% in the 2015/2016 academic year. While pre-tertiary level policy reforms led to a significant expansion in senior high school enrolment, corresponding initiatives to expand tertiary institutions' facilities to accommodate the anticipated growth were not forthcoming.

Furthermore, Ghana continues to record low levels of female participation in HE. Figure 3 below provides a breakdown of gross male and female enrolment trends from 2011 to 2016.

Figure 3. Gender Breakdown of Gross Enrolment in HE in Ghana

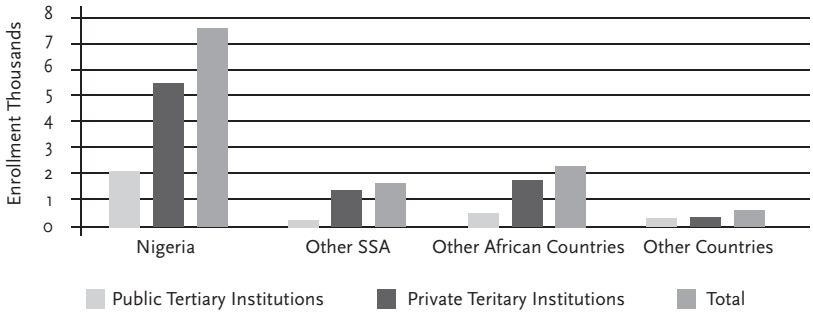


Source: United Nations Education Scientific and Cultural Organisation (UNESCO) Institute for Statistics, 2018

Internationalisation

Teferra (2014) notes that, in a knowledge economy, internationalisation is regarded as having a positive impact on the quality of HE and its research, as well as regionalisation and global integration, and improved human resource capacity. Enrolment of international students, mainly from the West African sub-region, is gradually transforming Ghana's HE landscape. Knight (2014) notes that increased collaboration among national government and regional groupings will trigger growth in student mobility and increased internationalisation. The National Accreditation Board of Ghana noted that 10,788 international students were enrolled at the country's universities and colleges in the 2012/2013 academic year with 69% coming from Nigeria, resulting in significant economic benefits. Figure 4 below presents international students' enrolment in the 2012/2013 academic year.

Figure 4. 2012/2013 International Students' Enrolment in Ghana



Source: Author's analysis based on data from the NAB Tertiary Education Institutional statistical report for the 2012/2013 academic year

Legal and Regulatory Framework

Increased massification of HE and the influence of the knowledge economy (Bezuidenhout, De Jager, and Naidoo, 2013; Ellis and Steyn, 2014; OECD, 2016), among other factors, have prompted countries to strengthen legal and regulatory regimes in this sector. Most centre on minimal government intervention while encouraging increased private participation. The phenomenal growth in the number of private providers across Africa has been influenced by demand for increased access to HE (Hayward and Ncayiyana, 2014). This could result in exploitation of consumers of their services as well as compromise the quality of the programmes on offer. Given that the quality of available human capital is crucial for the economic development of any nation, a level of regulation is required to guide the conduct of HEIs in critical areas, such as the pricing of academic programmes, and the quality of service delivery and academic research. Countries across the globe have promulgated laws and established regulatory institutions (Owusu-mensah, 2015) to develop and implement guidelines to regulate public and private HEIs.

The government of Ghana has engaged stakeholders in dialogue and discussions leading to increased reforms in HE. The country's legal and regulatory framework includes Article 25c of the 1992 Constitution of the Republic of Ghana, which stipulates that HE shall be made accessible through the progressive introduction of free education. The Ministry of Education regulates the provision of HE through the following legislative instruments: the National Council for Tertiary Education (NCTE) Act 454 of 1993: the National Accreditation Board (NAB) Act 754 of 2007: the National Board for Professional and Technical Examinations (NABTEX) Act 492 of 1994: the Council for Technical, Vocational Education (COTVET) Act 718

of 2006; and the Ghana Education Trust Fund Act 479 of 2000 (NCTE, 2012). As in other countries, the regulatory regime seeks to ensure that, HEIs offer quality education, prospective students and the public are not exploited by providers, qualifications are well aligned with national standards, and private institutions comply with national accreditation standards (Ellis and Steyn, 2014).

This article focuses on corporate governance and regulatory practices at public universities in Ghana and their impact on financial sustainability.

Methods

Research Design

The study adopted the positivist research paradigm which was widely used in previous studies (Afriyie, 2015; Cernostana, 2017; Lucianelli and Citro, 2017; Sazonov et al., 2015). As noted by Saunders, Lewis, Thornhill, and Bristow (2015), in this paradigm the researcher assumes the role of an objective analyst who makes detached interpretations of the data collected. Based on the empirical data, this enables generalised predictions to be made (Creswell and Creswell, 2017; Lyon, Mšllering, and Saunders, 2015) as well as quantifiable observations that support statistical analysis.

A quantitative research technique was employed to analyse the relationship and to test the hypothesis between the dependent and independent variables. Previous studies in HE (Bhayat, 2015; Cernostana, 2017; Chatama, 2014; Sazonov et al., 2015) alluded to the relevance of this research technique and the significance of the independent variable's related statements on the governance and regulatory framework to the dependent variable. The research questions and their related hypotheses focused on: (a) the relationship between individual statements on the governance and regulatory framework and financial sustainability; (b) the relationship between the combined statements on the governance and regulatory framework and public universities' financial sustainability; and (c) the combined statements' contribution in achieving the best fit equation model for public universities' financial sustainability. A quantitative survey instrument was employed and emails were sent to experts, mainly Vice-Chancellors or their deputies, and top management in the finance, internal audit and registry departments of the sampled public universities. The first round of the instrument validation was undertaken among 20 subject area experts and feedback received was incorporated in the instrument. The modified instrument was piloted with a second different set of 10 subject area expects, with feedback also incorporated, thus confirming the validity of the research instrument before administration.

A test-retest reliability was undertaken among 10 participants from the sample over a period of seven days to test the consistency of their responses.

The reliability test results produced an acceptable coefficient ($r = .723$), well above the threshold of $r \geq 0.5$ (Creswell and Creswell, 2017).

A five-point Likert-scale web-based survey instrument was employed to organise the participants' options in a symmetrical and balanced scale reflecting the degree of agreement (Simms, Zelazny, Williams, and Bemstein, 2019). The participants were contacted telephonically, followed by an email with a link to the web-based survey instrument. Schoenherr, Ellram, and Tate (2015) note that this approach is more convenient and faster than other means of administering questionnaires. The data analysis comprised descriptive, correlation and multiple regression analysis. The correlation (Lyon, Mšllering, and Saunders, 2015) and the adjusted coefficient of determination R2 computed from the regression analysis measured how well the multiple regression fitted the population sample (Triola, 2017).

MYSQL, SPSS version 25 and Excel were used to store, organise and produce the statistical analysis. The statements employed to analyse the relationship using correlation and multiple regression analysis were based on previous studies which emphasised their significance with regard to financial sustainability in the HE sector (Amir, Auzair, Maelah, and Ahmad, 2016; Erins and Erina, 2017; Marovah, 2015; Moghadam, Jorge, and Pirzade, 2017)this report is another milestone in EUA's work on financial sustainability, in particular, the development of full costing. EUA has since then carried out a variety of studies and held many events which also contributed to a better understanding of the current funding challenges for universities. Following a growing awareness that full costing is an important tool to address these funding challenges and an increased demand for relevant expertise and assistance, EUA began to coordinate the EUIMA cooperation initiative ('European Universities Implementing their Modernisation Agenda'.

Population and Sample Strategy

The study population comprised Vice-Chancellors, pro Vice-Chancellors, registrars, deputy registrars, finance directors, deputy finance directors, directors of internal audit, deputy directors of internal audit, management accountants, budget officers, systems accountants and quality assurance officers from the seven sampled public universities established in or before 1998. The computed target sample size at 95% confidence level was 85 out of the population of 220 experts from the public universities in Ghana. The response rate was 62.35% (53 valid responses). The sample size of 85 thus offered sufficient representation of experts.

Results and Discussion

Demographic Statistics

The demographic characteristics comprised both individual and institutional details. The participants' demographic characteristics included their institution's name, their current position, age group, gender, academic or professional qualifications, and relevant professional experience. The participating institutions' demographic details covered the student population and accreditation status.

The positions held by the participants were skewed towards functional and middle level management. The highest number of responses of $n = 20$ (37.73%) were received from functional level management while the lowest of $n = 14$ (26.42%) were obtained from executive management. The age bracket, 41 to 50, had the largest number of participants of $n = 23$, representing 43.40%, mainly as a result of the level of expertise required of the participants. The participants' gender was significantly skewed towards males with 44 males and nine females. Most of the participants' held academic or professional qualifications that were appropriate for executive management positions. A large number of participants ($n = 33$) representing 62.26% had undergraduate, master's and professional qualifications, 13 (24.53%) had undergraduate and master's qualifications, six (11.32%) had undergraduate, master's and PhD qualifications and one (1.87%) had masters and other qualifications. The participants' professional experience also aligned well with their positions. The majority ($n = 32$) representing 60.38% had 11 or more years' relevant professional experience; three (5.66%) had relevant experience of 6 to 10 years, and 13 and five had 5 years or less and more than 20 years' relevant professional experience, respectively (see Table 4 in Appendix 1).

Descriptive Statistics

The results of the descriptive analysis showed that the statement: legal or regulatory framework promotes quality of admission, academic delivery and examinations, was rated highly significant by the participants ($M = 4.13$, $SD = 0.79$). The mean values of the following statements: legal or regulatory framework promotes recruitment of competent staff and staff training and development; legal or regulatory framework promotes good governance and management efficiency; legal or regulatory framework ensures academic programmes are accredited in accordance with best practices; legal or regulatory framework requires universities to undergo institutional accreditation in accordance with best practices; and the Acts establishing your university promote autonomy and academic freedom, were fairly distributed ($M = 3.92$, $SD = 0.76$), ($M = 4.00$, $SD = 0.57$), ($M = 4.19$, $SD = 0.83$), ($M = 4.08$, $SD = 0.94$) and ($M = 4.00$, $SD = 0.86$), while the

statement, regulatory institutions in Ghana assess university performance against benchmarks and publish their performance rankings regularly (*M* = 2.50, *SD* = 1.42) had the lowest rating among the participants. The variance and range of this statement were significant (*Var* = 2.02, Range = 4.00) and had a dispersion of 0.86 compared to the rest of the statements. The test of skewness between the statements were adequately normal for the purpose of this study. Table 1 provides the details.

Table 1. Participants' overall Response Ratings

Variable	n	M	SD	Var	Range	Skewness
The regulatory framework promotes quality of admission, academic delivery, and examinations.	53	4.13	0.785	0.617	4	-1.478
The regulatory framework promotes recruitment of competent staff and staff training and development.	53	3.92	0.756	0.571	4	-1.262
The regulatory framework promotes good governance and management efficiency.	53	4.00	0.784	0.615	4	-1.490
The regulatory framework ensures academic programmes are accredited in accordance with best practices.	53	4.19	0.833	0.694	4	-1.616
The regulatory framework requires universities to undergo institutional accreditation in accordance with best practices.	53	4.08	0.937	0.879	4	-1.610
The Act(s) establishing your university promote autonomy and academic freedom.	53	4.00	0.855	0.731	4	-1.152
The regulatory institutions in Ghana assess university performance against benchmarks and publish their performance rankings regularly	52	2.50	1.421	2.020	4	0.405

Correlation Analysis

The correlation results showed different levels of positive correlation between the independent variable statements relating to the governance and regulatory framework, and the dependent variable of financial sustainability. The Pearson's rank correlation results showed that five statements: legal or regulatory framework promotes quality of admission, academic delivery and examinations; legal or regulatory framework promotes recruitment of competent staff and staff training and development; legal

or regulatory framework promotes good governance and management efficiency; legal or regulatory framework ensures academic programmes are accredited in accordance with best practices; and legal or regulatory framework requires universities to undergo institutional accreditation in accordance with best practices, showed large positive correlation effects of $r = .586$, $r = .564$, $r = .508$, $r = .545$ and $r = .579$, respectively. For details see Table 2 below.

Table 2. Summary of Correlation Analysis

Variable		1	2	3	4	5	6	7	8	M	SD
1	Financial sustainability	-	0.586	0.564	0.508	0.545	0.579	0.303	0.223	22.77	4.705
2	Quality of admission, academic delivery, and examinations	0.586	-	0.802	0.885	0.899	0.631	0.667	0.299	4.13	0.785
3	Recruitment of competent staff and staff training and development	0.564	0.802	-	0.779	0.730	0.609	0.506	0.325	3.92	0.756
4	Governance and management efficiency	0.508	0.885	0.779	-	0.891	0.686	0.574	0.314	4.00	0.784
5	Academic programmes are accredited in accordance with best practices	0.545	0.899	0.730	0.891	-	0.689	0.627	0.356	4.19	0.833
6	Universities undergo institutional accreditation in accordance with best practices	0.579	0.631	0.609	0.686	0.689	-	0.485	0.287	4.08	0.937
7	The Act(s) establishing your university promote autonomy and academic freedom	0.303	0.667	0.506	0.574	0.627	0.485	-	0.288	4.00	0.855
8	Regulatory institutions assess university performance against benchmarks and publish their performance rankings regularly	0.223	0.299	0.325	0.314	0.356	0.287	0.288	-	2.50	1.421
M		22.77	4.13	3.92	4.00	4.19	4.08	4.00	2.50		
SD		4.705	0.785	0.756	0.784	0.833	0.937	0.855	1.421		

Regression Coefficient

The regression results tested the significance levels of the established factors with the correlation results and enabled a regression equation to be derived for financial sustainability (). The coefficient of determination (R^2) and the p value enabled the best-fit equation to be determined. The multiple regression results yielded a coefficient of $r = .687$, $F(7, 47) = 76.87$, $p = .000$, $R^2 = .472$. From the analysis (see Table 3), only one statement (the legal or regulatory framework requires universities to undergo institutional accreditation in accordance with best practices) was significant in predicting financial sustainability with p values $p = .014$ and beta weights of .406. The remainder of the statements: legal or regulatory framework promotes quality of admission, academic delivery, and examinations ($p = .062$); legal or regulatory framework promotes recruitment of competent staff and staff training and development ($p = .319$); legal or regulatory framework promotes good governance and management efficiency ($p = .173$); legal or regulatory framework ensures academic programmes are accredited in accordance with best practices ($p = .899$); the Acts establishing your university promote autonomy and academic freedom ($p = .165$) and regulatory institutions in Ghana assess university performance against benchmarks and publish their performance rankings regularly ($p = .316$); were not significant and thus could not be considered in determining the best-fit model as their p values were above the threshold of $p < .05$. The results thus showed that there was a significant relationship between the statement, legal or regulatory framework requires universities to undergo institutional accreditation in accordance with best practices relating to the independent variable and the dependent variable (financial sustainability) at $F(7, 47) = 76.87$, $p = .000$, $R^2 = .472$.

Results of the Regression Analysis

The results of the regression analysis showed varied results from the correlation analysis in relation to the statements with significant outcome and the degree of positive correlation. The best fit regression equation for financial sustainability is:

$YFS = \text{a} + \beta GIA$,

Where YFS = financial sustainability (predictor variable),

a = constant value

βGIA = legal or regulatory framework requires universities to undergo institutional accreditation in accordance with best practices (independent variable statement).

Hence the regression equation for $YFS = 7.151 + 0.433\beta GIA$.

The regression analysis determined the best regression equation by including all statements with coefficients higher than zero and *p* values of $p < .05$ significance level and which further supported the rejection of the null hypothesis (H_o): there is no relationship between the combined effect of governance and regulatory framework statements and public universities' financial sustainability.

Table 3. Regression Coefficient

Variable	Coefficient	Std. Error	B	-95% CI	+95% CI	T	P
(Constant)	7.151	3.042		1.020	13.282	2.351	0.023
Promotes quality of admission, academic delivery, and examinations.	3.710	1.935	0.615	-0.190	7.610	1.917	0.062
Promotes recruitment of competent staff and staff training and development.	1.224	1.214	0.197	-1.224	3.671	1.008	0.319
Promotes good governance and management efficiency.	-2.326	1.680	-0.390	-5.711	1.060	-1.385	0.173
Academic programmes are accredited in accordance with best practices.	0.216	1.700	0.038	-3.210	3.642	0.127	0.899
Universities undergo institutional accreditation in accordance with best practices.	2.051	0.802	0.406	0.433	3.668	2.555	0.014
The Act(s) establishing your university promote autonomy and academic freedom.	-1.165	0.825	-0.213	-2.827	0.497	-1.413	0.165
Assess university performance against benchmarks and publish their performance rankings regularly.	0.093	0.398	0.028	-0.709	0.895	0.234	0.816

The results show a statistical relationship between the governance and regulatory variable, the legal or regulatory framework requires universities to undergo institutional accreditation in accordance with best practices, and financial sustainability. Also in line with previous studies (Rowland, 2017; Shah, 2015; Shattock), the correlation results established mainly large positive correlation between the variables of the governance and regulatory framework and public universities' financial sustainability. Further analysis produced results that supported the rejection of the null hypothesis: H_o. The regression results illustrated a significant relationship between the governance and regulatory framework variable, the legal or regulatory framework requires universities to undergo institutional accreditation in accordance with best practices, and financial sustainability as postulated by Owusu-Mensah (2015) and Hall (2012)a Williams College economist, said that people investing in human capital by purchasing higher education do not know what they are buying and they cannot do anything until it is too late to act on it. Underwriters Laboratory (UL, which further enabled the best fit equation to be derived. The weak relationship established between the remaining governance and regulatory framework variables and financial sustainability contradict previous research findings (Collins, 2014; Owusu-Mensah, 2015; Tasopoulou and Tsiotras, 2017; Teferra, 2014).

These findings could assist HEIs, the government, government agencies, regulatory institutions and donor agencies to revisit the governance and regulatory framework with the aim of enhancing sustainable financing of HEIs in Ghana.

Recommendations

Based on the study's findings, it is recommended that:

1) The Ministry of Education review the current legislative framework governing HEIs in Ghana with a view to incorporating best practices drawn from the African system (Ellis and Steyn, 2014) and the UK (Hogan, 2015). The current legal regime does not enable these institutions to independently determine and fix fees for academic programmes, undermining the financial sustainability of such programmes.
2) Regulatory agencies could also revisit current regulatory practices with the aim of enhancing fairness and healthy competition among HEIs as practiced in South Africa (Ellis and Steyn, 2014; Shah, 2015; Famade et al., 2015). Issues relating to affiliations, attaining a charter and institutional and programme accreditation do not seem to be fair, particularly to private universities and university colleges.
3) The study revealed that the GETFund which is criterial for funding of infrastructure projects in HEIs does not promote transparency and

accountability, and is open to political abuse (Kwasi-Agyeman, 2015). It is recommended that the fund and the Ministry of Education conduct a review aimed at developing clear and transparent disbursement criteria for both public and private HEIs that are not-for-profit.

4) The Ministry of Education should direct funding towards addressing skills gaps in science and technology, and research. This may require funding to be allocated based on specific input needs or research outcomes rather than the current discretionary approach (Newman and Duwiejua, 2015). Through the Ministry of Education and the NCTE, the government could develop transparent costing guidelines to guide HEIs in implementing fair and transparent full cost recovery systems for academic programmes and activities similar to those suggested by Estermann and Claeys-Kulik (2013).

Suggestions for Further Research

Relevant areas for further research include:

1) Replicating the study across public and private HEIs in Ghana or sampled HEIs in Africa. This would offer broader insight into the relationship between the variables and financial sustainability.
2) The scope of future studies could be broadened to include experts from the regulatory agencies, the Ministry of Education and HE think tanks.
3) Finally, future studies could employ factor analysis to determine the governance and regulatory framework's variables' relevance to financial sustainability. This could be useful in eliminating factors that are of less importance to HEIs' financial sustainability and focusing on critical factors to further establish their statistical significance.

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Appendix I

Table 4. Participants' Demographic Characteristics

Demographic characteristics	Participating Institutions							*n*
	GIMPA	KNUST	UDS	UCC	UEW	UG	UPSA	
Positions								
Executive Level Management	3	4	2	1	1		3	14
Functional Level Management	2	4	3	3	4	2	2	20
Middle Level Management	3	3	4	3	3	2	1	19
Age Group								
Under 30					1			1
31-40	4	2	1	2	2	1		12
41-50	2	4	6	3	3	1	4	23
51-60	2	5	1	2	2	2	1	15
Over 60			1				1	2
Gender								
Female	3	3	1		1	1		9
Male	5	8	8	7	7	3	6	44
Academic/Professional Qualifications								
Degree and Masters	3	1	3	1	3	0	2	13
Degree, Masters and Professional Qualifications	4	7	5	5	4	4	4	33
Degree, Masters and PhD/ Doctorate	1	2	2				1	6
Degree, Masters and Other Qualifications	1							1
Professional Experience								
1-5 years	1				2			3
6-10 years	4		1	4	2	2		13
11-20 years	3	10	7	2	3	2	5	32
Over 20 years		1	1	1	1		1	5

Note: GIMPA = Ghana Institute of Management and Public Administration
KNUST = Kwame Nkrumah University of Science and Technology
UDS = University for Development Studies
UCC = University of Cape Coast
UEW = University of Education - Winneba
UG = University of Ghana
UPSA = University of Professional Studies