Academic Staff Research Orientations in Uganda: A Study of Makerere University

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Abstract

Academic staff research orientations have become subject to growing interest in the context of research-led universities. Whereas a number of studies have explored research orientations in higher education, research literature on the subject deals typically with the topic in the context of European and American universities. As such, studies delving in the way academics conceptualize research orientations across disciplinary fields remain few, at least in the context of Sub-Saharan African research-led Universities. This paper uses the institutional theory as the guiding theory to explore the conceptualization of academic research orientations at Makerere University. With the help of semi-structured interviews with 12 participants from 4 academic disciplines, the interpretive paradigm was preferred for this paper because the study phenomena are interpretive. As such, I chose to use qualitative methods, in which things are studied in their natural settings and to make sense of, or interpret, phenomena in terms of meanings people bring to them. The study results revealed that although academics engage in basic, policy-relevant, community-oriented, and entrepreneurial research, they as well seem to strongly understand research in terms of donor rules that exert conformance pressures and expectations. Based on the study findings, the conclusion is that research at Makerere University is largely conceptualized in terms of the donor-driven orientation. Among others, I recommend that the University should selectively collaborate with donors to ensure that locally generated research agendas are not overridden by the interests of the donors.

Keywords: academic research, research orientations, disciplinary fields

The central concern of this article is to explore the conceptualisation of academic staff research orientations across disciplinary fields at Makerere University. Academic research is widely recognized as a source of competitive advantage and as such, an increasing number of universities are involved in it as a core strategy to enhance their competitiveness (Castels, 2004). Through research which is largely carried out in universities, countries are able to participate in the global economy. Accordingly, the importance of the potential contribution of academic research to societies cannot be overstated (Hill, Capers & Flink, 2014; Ferguson, 2015; Musiige and Maassen, 2015). As a strategic source of competitive advantage, academic research has been affected by

significant changes happening in the environments of universities (Lechuga & Lechuga, 2012). These changes that have been occasioned by, among others, the enhanced industry-university collaboration (Laursen, Reichstein & Salter, 2008), a heightened emphasis on the social relevance of academic research (Reddy, 2011; Cherney, Head, Povey, Boreham & Ferguson, 2013), and the need for academic research to catalyze the innovation process (Pamfie, Guisca & Bumba, 2014; Pearson, 2002) have triggered various academic research orientations.

Academic research orientations are frequently described in terms of the broad groupings derived from Etzkowitz (2003) and Gibbons, et al. (1994) who posited that academic research is either basic or applied in orientation. Their typology classifies research orientations according to research audiences, motive and goals guiding researchers, the funding agencies, origin of the research problem and the type and actual use of research. They argue that the basic research orientation is associated with Mode 1 knowledge production or the "first academic revolution" where the aim of research is to produce new knowledge for its sake (Etzkowitz, 2003; Ylijoki, 2003; Merton, 1973). In this orientation, knowledge is also considered to be theoretical and researchers' main motive is to achieve recognition within the scientific community (Hakala & Ylijoki, 2001; Leisyte, 2007; Musiige, 2014). In addition, traditional academic values and norms, such as academic freedom and a curiosity-driven choice of research topics are upheld (Anderson, 2010) and publication in refereed journals is highly valued because it is on the basis of these publications that the researchers' reputations and career prospects are founded (Slaughter & Leslie, 1997).

The applied research orientation has however been conceptualized in terms of the commercial value of research with emphasis on the "entrepreneurial paradigm" that stresses knowledge capitalization (Hakala, 2009). This orientation is analogous to Mode 2 science or the second academic revolution (Jacob, 2009).The nature of knowledge is commercial and the research targets potential customers (companies and consumers) whose needs the researchers aim to satisfy. Accordingly, it is the market forces that in the end determine the quality of the research (Ylijoki, Lyytinen and Marttila, 2011).

Despite the plethora of studies that have investigated academic research orientations in higher education literature, there has been very little systematic study reporting on this issue in the context of SSA universities. Yet an understanding of how academic research orientations are conceptualised remains an imperative if research uptake in SSA flagship universities is to be enhanced. Besides, this would not only speed up the innovation process, it would also help these universities transform into truly research-led universities that are responsive to national and global needs as well as ensuring that research and teaching are mutually reinforcing (Makerere Strategic Plan 2008/2009 – 2018/2019). An awareness of how academic research orientations are conceptualised would further be helpful, and even in some cases essential, to the conduct of research and the development of research policy in higher education.

Problem

Makerere University is positioning itself as a research led institution that seeks to advance relevant research for economic and social development (Mamdani, 2011; Musiige, 2014). As such, it has invested heavily in driving stakeholders to this strategic direction through strategic plans, attendant policies, and supportive institutional structures. In spite of these developments that are, among others, meant to help the University adopt a balanced approach to knowledge production, academic research seems to be more understood or articulated in terms of journal articles and publications (Bailey et al., 2011; Nankinga et al., 2011; Makerere Self-Assessment Report, 2013; Mugimu et al., 2013; Makerere University Annual Report, 2014; Kasozi, 2015). Apparently, it is the number of journal articles that provides the index of research output in various disciplinary fields (Makerere University Self-Assessment Report, 2013). This suggests that the research orientation could be much more academic or basic hence affecting the realization of research-led University. The purpose of this paper is to ascertain whether academic research is understood beyond the basic research orientation. It is envisaged that the findings would inform the University's strategic aspirations of being truly research-led in order to holistically contribute to the knowledge economy. The paper covered the period 2008 to 2016 because the current 2008/09-2018/19 Makerere University strategic plan and related research policies that highlight research as one of the key pillars of the University were operational during this period. Besides, this is the period when the University espoused the strategy of being research-led.

Conceptualization of terms

In this study, three key concepts need to be understood. These are academic research, research orientations, and academic disciplines/disciplinary fields. Vast literature has explored the contemporary understanding of the term academic research (Anderson, 2010; Bunting, Cloete and Van Schalkwyk, 2014; Leisyte, 2007). Scholars have used terms such as knowledge production (Musiige and Maassen, 2014), scientific research (Bhattacherjee), academic knowledge (Cherney et al, 2015) and academic science (Leisyte, 2007) as alternative expressions of the term academic research. Mouton (2010) defines academic research as the type of research done by individuals or groups of individuals within universities and associated research institutes. Academic research is also understood to be either basic (pure) or applied. Basic research involves the production of knowledge for recognition within the scientific community (Etzkiwitz, 2003; Hakala and Ylijoki, 2001). On the other hand, applied research refers to knowledge produced as a solution to a problem identified (Ylijoki et al., 2011). In this paper, I adapt Leisyte's conceptualization of academic research to mean research practices of academics leading to the advancement of basic and applied knowledge in certain academic disciplinary fields via scholarly inquiry that aims to extend the knowledge base. In this article, I focus on academic research done within universities.

The term "research orientation" historically focused on the dichotomy between basic and applied research with scholars using different terms to describe them. For instance Gibbons, Limoges, Nowotny, Schwartzman, Scott and Trow (1994) coined the phrases "mode 1 knowledge production" and "mode 2 knowledge production" to refer to basic and applied research orientations respectively. Jensen (1995) and Ziman (2000) employed the phrase utilitarian knowledge" to refer to the applied research orientation. Lam (2010) used the terms "ivory tower traditionalists" and "entrepreneurial scientists" to refer to academics' leaning of their research towards basic and applied research orientations respectively. Hakala and Ylijoki (2001) defined research orientations in terms of four primary reference groups or research audiences namely; the academic, civil society, state-government and entrepreneurial audiences. Horvath, Weber and Wicki (2000) defined research orientation in terms of the extent to which academic research reflects internationalism. Accordingly, the term "international orientation of research" reflecting the role of foreign scientists in universities' research was coined.

However scholars such as Jacob (2009), Lam (2010), and Ylijoki et al (2011) argue that research orientations are tailored towards satisfying four research markets each of which is characterized by its own values, rationality, basic objective and research outcome. These are the: academic, corporate, policy, and public market. In line with these views, the term research orientation in this paper is understood according to research focus, audience and intended market. Hakala and Ylijiki (2001) and Ylijoki et al. (2011) identified the scientific community, business and industry, civil society, and state-government as the major research audiences (markets) that correspond with the four research orientations namely: the academic/basic; entrepreneurial; civil society; and state-government research orientations. The term research orientation is also used to mean research domain and/or research direction.

It is important also to define the term academic discipline/disciplinary field. The term academic discipline has been variously defined by different scholars. Kockelmans (1979) defined it as a field of study characterized by a body of inter-subjectively acceptable knowledge, pertaining to a well-defined realm of entities, systematically established on the basis of generally accepted principles with the help of methodical rules or procedures. Robles (1998) looked at it as a recognized classification of knowledge within rational learning with certain generally agreed upon canons or standards. According to the Oxford English Dictionary, an academic discipline is a branch of learning or scholarly instruction. To Del Favero (2003) it is defined as a structure of knowledge in which faculty members are trained and socialized to carryout tasks of teaching, research, and administration and to produce research and educational output while Becher and Trowler (2001) perceive it in terms of the hard-applied, hard-pure, soft-applied and soft-pure nature of knowledge. This paper adopts Del Favero's definition of academic discipline because it includes as a key component the production of knowledge, which is the core focus of this paper.

Recent Conceptualisations of Research Orientations in Universities

Literature reviewed shows that academic research can be understood from different orientations. For instance Cherney et al., (2013) and Reddy (2011) considered its social relevance. Pamfilie et al., (2014) and Pearson (2002) looked at it as catalyst for the innovation process. Laursen et al., (2008) conceptualized it as a means to enhance industry-university collaboration. Yet to Ijeoma, Ibegbulam and Eze (2016), it is understood in terms of professional development of academic staff and satisfaction of the scientific community. Similarly, studies about changes in knowledge production have aroused intense debates about research orientations with scholars such as Gibbons et al., (1994), Etzkowitz and Leydesdorff (2000), and Nowotny, Scott and Gibbons (2001) popularizing the claim that academic research is taking on a more applied, entrepreneurial orientation, adapted to technological application and people's social demands.

It can be argued from the above that academic research has been dichotomized into basic and applied research orientations, each serving its audience and satisfying certain roles. Indeed, Jensen (1995) argues that research orientation toward basic or applied research depends on the motive and goals guiding researchers and the funding agencies, origin of the research problem, type of audience, and type of actual use of research. Efforts to describe the two research orientations have resulted into the coining of phrases like "mode 1" and "mode 2" knowledge production (Gibbons et al., 1994; Ylijoki, 2003) and, the "first" and "second" academic revolutions (Etzkowitz, 2003).

Mode 1 knowledge production is linked to the first academic revolution and it represents the academic research orientation where: the aim of research is to produce new knowledge for its sake (Etzkowitz, 2003; Ylijoki, 2003; Merton, 1973); knowledge is theoretical and researchers' main motive is to achieve recognition within the scientific community (Hakala & Ylijoki, 2001; Leisyte, 2007; Musiige, 2014); traditional academic values and norms, such as academic freedom and a curiosity-driven choice of research topics are upheld (Anderson, 2010); and publication in refereed journals is highly valued because it is on the basis of these publications that the researchers' reputations and career prospects are founded (Slaughter & Leslie, 1997). This orientation is strongest in departments like history, philosophy and anthropology which are less dependent for their existence on external funding (Hakala & Ylijoki, 2001). Public funding for research under this orientation is also virtually none existent because quite often, it is in form of individual projects and driven by the individual scholar's priorities and interests and is ultimately aimed at advancing his or her career (Mouton, 2010). Consequently and by nature of this orientation, research quality is judged by the criteria of the academic discipline in question (Kekale & Lehikoinen, 2000). One of the more obvious consequences of research under this orientation is that it does not have much influence in society (Zeleza, 2002). This resonates with Mouton's (2010) contention that even more serious are the intellectual consequences of this form of research orientation such as

fragmentation of effort as opposed to interdisciplinary research and lack of rigour in methodology.

On the other hand, mode 2 knowledge production is associated with the second academic revolution and is analogous to the entrepreneurial research orientation that emphasizes the commercial value of knowledge production (Jacob, 2009). As a response to the growth of an "entrepreneurial academic paradigm" that stresses knowledge capitalization (Hakala, 2009), this orientation emphasizes the growing intensity of ties between the University and industry that have shaped the work experiences of academic scientists resulting into academic research transformation (Clark, 1998; Etzkowitz & Leydesdorff, 2000; Lam, 2010). Research is carried out in order to gain applicable results, mainly new products for which there is market demand and through which it is possible to make profit, for example by establishing spin-off firms (Clark, 2004; Hakala & Ylijoki, 2003). The nature of knowledge is commercial and the research targets potential customers (companies and consumers) whose needs the researchers aim to satisfy. Accordingly, it is the market forces that in the end determine the quality of the research (Ylijoki et al, 2011). According to Ylijoki et al (2011), the entrepreneurial orientation is mainly associated with hard-applied disciplines such as engineering and technology and largely manifested in University labs. Despite the popularity of this orientation, Ziman (1996) warns that when academic research becomes too entrepreneurial, it becomes secretive and generates private goods instead of producing the common good and publicly available information. In the context of Makerere University, apart from Mamdani (2007), the recent research only rarely pays explicit attention to the dangers of academic entrepreneurship hence a need for this study.

The rise of the triple helix system with a focus on the cooperation between Universities, industry and government and in which the three actors have an equal role in the process of knowledge production (Etzkowitz & Leydesdorff, 2000; Reddy, 2011) has given rise to the state-government research orientation. The state-government orientation to academic research relates to the generation of knowledge mainly for policy-making. The audience for the research is usually governmental for which researchers collect and analyze data concerning some acute societal problems (Hakala & Ylijoki, 2001). This research is mostly applied or problem-oriented and its aim is to produce information for the needs of governance and administration (Ylijoki, 2003). Consequently, research problems in this orientation do not necessarily arise from the researchers' own interests but rather from the needs of financiers. The results are typically published in report series, the quality criteria of which are not academic but emphasize usefulness for political decision-making. In the context of Makerere University, this orientation is manifested most clearly at the Makerere Institute for Social Research (MISR), where research is largely motivated by the need to inform government policy.

Last but not least, the civil society orientation to academic research holds that in addition to carrying out research for academic, commercial, and policy making purposes, there is a need to produce practical knowledge to improve

society and the prevailing practices (Hakala & Ylijoki, 2001). The civil society orientation emphasizes that research should provide instruments for ordinary people to understand society and to better command their lives. The audience for the research is lay people and the core motivational force to do research is to somehow improve society and the prevailing practices. The nature of knowledge is thus practical. This orientation is anchored in the "quadruple helix" model in which civil society constitutes a "fourth partner" for cooperation (in addition to the University, industry and government) and in which the role of the local population and civil society in innovation and economic development is recognized (Etzowitz, 2003).

In the context of SSA, the analysis of research orientations however remains incomplete without recognising the role of donors in shaping the research direction of SSA universities (Musoke and Landoy, 2016; Ishengoma, 2016). To further emphasise the role of the donors, Ishengoma (2016, p.152) argues in his discourse "neocolonialism and the asymmetries of power" that, because North-South research collaborations function within a broader framework of neocolonial structures and relationships, the Northern countries still maintain their hegemony over the South and as such, an inability to adequately fund academic research compels Southern countries to depend on the North to finance their research agendas. Ishingoma's submission resonates well with Jowi and Obamba's (2010) contention that the funding of research and innovation programs remains a major challenge for SSA countries and universities. For instance, whereas government research and development expenditure in Uganda increased from 0.31% in 2008 (Ushs. 61.1 billion) to 0.39% in 2009 (Ushs. 79.7 billion), this was still below the AU (African Union) recommended 1% of GDP expenditure on research for African countries (UNCST, 2011). This restricted funding base implies that research and innovation systems in SSA face acute financial deficits and lack the capacity to formulate and drive their own domestic research agendas and this could remain the same for foreseeable future unless particularly drastic measures are taken (Jowi and Obamba, 2010).

Given the above situation, there is over dependence on the North by researchers from the South for research funding as demonstrated by a recent study by CREST (2008) of the role of international funding in SADC countries. This study that evoked responses from 600 academics indicates how dependent academics in the region are on donor funding. Results show that a very substantial 42% of all respondents from SADC countries (RSA excluded) indicated that they source between 70 and 90% of their research funding from overseas. The responses very clearly show the reliance of African scientists on international funding for their research; and contrariwise how little domestic funding is available for research.

Donor-driven research is mission oriented, strategic and conducted within the frameworks of international donor agencies such as SIDA/Sarec, NORAD, DANIDA, DAAD, the Dutch, French and British governments, American foundations most notably Ford, Rockefeller, Carnegie, the Bill and

Melinda foundation as well as the IDRC in Canada. It is typically Mode 2 science and thus largely applied and entrepreneurial, but to some extent policy relevant and problem oriented in nature. Seen in this light, the donor-driven orientation is motivated by concerns of application and innovation, and has its agendas, in most cases set in the North because they provide the funding. State funding of research in SSA is the exception rather than the rule. The majority of scientists in the region depend for their research funding on international donors. Because of the dangers associated with a donor-driven research orientation, there is the need to: selectively collaborate with partners from the North to ensure that locally generated research agendas are not whitewashed and overridden by donor interests (Dean, Njelesani, Smith, and Bates, 2015); continue lobbying SSA governments to at least allocate a certain percentage of their GDP to higher education research (Musiige, 2014); to encourage national policy makers and university leadership to work in closer partnership and to prioritize the strategic importance of research and innovation in national economic growth by investing more significantly in strengthening research capacity and research opportunities in universities (Jowi and Obamba, 2010). A mixture of the above interventions could enhance the research autonomy of these universities.

The dangers of the donor-driven research orientation that is characterized by North-South research collaborations where Northern universities and researchers depend heavily on bilateral, multilateral and international donor organisations, foundations and governments to fund North–South research collaborations have been articulated in literature. According to Ishingoma (2016), in most cases, North–South research collaborations apply to projects of limited duration. The synchronisation of effort between various project donors and actors is also worryingly inadequate and this impacts on the sustainability of research programs and their potential to build research capacity (AFRODAD 2007). Yet, in spite of the above dangers, many contend that the donor-driven research orientation, at least in the SSA context, is indispensable for research capacity building, as well as for knowledge exchange. Seen in this light, Nakabugo, Barrett, McEvoy, and Munk (2010), cited the Irish–African higher education partnership model as one of those that has enabled some Southern universities to build capacity. Dean et al. (2015) also identified a UK–Africa programme as a genuine North–South collaboration between researchers. It's in this spirit that Ishingoma (2016) proposed that effective and impactful North–South research collaborations should be characterized by: shared ownership of research agendas through processes of joint and collaborative agenda setting; empowering research frameworks which enable Southern universities to initiate and design research projects on the basis of felt needs, and invite Northern collaborators (and possibly funders) to co-manage expenditure and collaborate in the research process; and strong institutional monitoring and evaluation mechanisms, which ensure that abuse of funds and benefits is minimised and financial transparency is guaranteed.

Institutional Theory

The institutional theory that is advanced by DiMaggio (1983) and Meyer and Zuker (1989) was adopted as the interpretive framework for this article. The theory is underpinned by the idea that institutions such as universities operate in a highly institutionalized environment suggesting that an institution's behavior is governed by rules that are not necessarily generated by the institution itself but rather by those originating from the wider societal system. Institutions such as the donor community, the state, regulatory structures, governmental agencies, interest groups, public opinion, laws, courts, professions, industry and other societal and cultural practices exert conformance pressures and expectations which strongly affect the (research) situation of Universities (DiMaggio & Powell, 1983).

An important feature of the theory is that organisations exist in fields of other similar organisations (DiMaggio & Powel, 1983). Within these fields, organisations become homogeneous because they conform to the same institutional pressures and adhere to similar external rules and norms. This process of homogenization otherwise referred to as institutional isomorphism by DiMaggio and Powell (1983) becomes a constraining process that forces similar organisations to: model themselves on others (mimetic isomorphism); follow the professional norms of the field (normative isomorphism); and to conform to the formal and informal political pressures exerted by other organisations (coercive isomorphism). The concept of institutional isomorphism is thus a useful tool for appreciating that institutions vie not only for resources and customers, but for political power and institutional legitimacy as well. Another important feature of the theory is that as organisations conform to their institutional environment, they tend to perform certain strategic actions (Oliver, 1991). Strategic actions open to leaders include imitation, compliance (conformity), avoidance, defiance, bargaining, co-option, manipulation and compromise.

The propositions of the institutional theory have direct implications for academic research orientations. First, Oliver's (1991) taxonomy of strategic actions offers insights for academic research adaptation strategies that Makerere University lead researchers may employ during their interface with key stakeholders. Similarly, the three mechanisms of Institutional Isomorphic change (coercive, normative, and mimetic isomorphism) speak to the key institutional forces that Makerere University should respond to in the course of knowledge production. For instance, coercive isomorphism speaks to the existence of, and the need to comply with external rules set by key stakeholders such as the donors. On the other hand, normative isomorphism reminds research actors to ensure that academic research within the different disciplinary fields complies with the professional norms (cultures) and rules of their respective disciplinary fields and their academic community. Finally, the aspect of mimetic isomorphism speaks to the tendency of adapting similar patterns (of doing research) that may not be necessarily evident in the inherent cultures of their disciplines (e.g., engaging in interdisciplinary research).

Issuing from the above, it can be seen that in accordance with the institutional theory, academic research has to meet and should be understood in terms of the demands (rules and norms) of the institutional environment such as development partners (donor's research orientation), the private sector (entrepreneurial research orientation), the communities (civil society research orientation), and the policy makers (state-government research orientation). However, the assumption that the university with its research units must conform to rules not necessarily generated by the university itself but rather by those originating from the wider societal system implies that institutional autonomy and academic freedom are eroded in favour of external constituents. In this study, it is acknowledged that whereas conformance to institutional pressures for academic research units is almost inevitable especially in the SSA context where external stakeholders participate heavily in setting the research agendas of universities, universities should seek for increased institutional autonomy in the determination of their research agendas. Although the theory is criticized for insinuating organizational passivity in the wake of environmental demands (Oliver, 1991) and denying research actors the autonomy of making their own choices (Leisyte, 2007), it offers a theoretical lens on which to base our arguments.

Methods

The interpretive paradigm was preferred for this paper because the study phenomena are interpretive. As such, I chose to use qualitative methods, which involves an attempt to "study things in their natural settings and to make sense of, or interpret, phenomena in terms of meanings people bring to them" (Denzim and Lincoln 1994, p.2). To obtain data on academic research orientations, the study employed semi-structured interviews with 12 participants working in 4 colleges representing different academic disciplines: education, law, and economics (Soft-applied); sociology, philosophy, and anthropology (soft-pure); agriculture, engineering, and medicine (hard-applied); and chemistry, biology, and zoology (hard-pure). Those interviewed were at professorial ranks; four of whom were Full Professors and eight were Associate Professors. These were purposively selected on basis of their prolific contribution to academic research. Using the inductive approach where themes identified are strongly linked to the data themselves, the thematic analysis method for identifying, analysing, and reporting patterns (themes) within data was employed to analyse interview data from this intrinsic case study. Thematic analysis of interview data was based on the repetitive occurrence of a specific theme. Face-to-face interviews lasting up to fifty minutes were undertaken with each participant. With the participants' permission, the interviews were tape recorded and later transcribed using Microsoft Word. Field notes were also taken.

Results

Findings offer material to scrutinize the conceptualisation of academic staff research orientations across disciplinary fields at Makerere University. In

this article, I explore the question through sub-themes that are based on the Hakaka and Ylijoki (2001) framework and beyond this scope which enables us to operationalise research orientations from different angles: academic/basic, civil society, state-government, and entrepreneurial research orientations.

Majority of the study participants across disciplinary fields considered doing research for career growth and recognition within the scientific community focal. The abundance of these elements across disciplinary fields suggests that academic research has been conceptualised in terms of the academic/basic research orientation. This is in line with the Makerere University Strategic Plan (2008/9 -2018/19) which focuses on advancing basic research. Respondents contacted during study had varying views. For instance, one respondent said that:

> Of course promotion should not be over emphasized. It is another 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 does not mind. His interest is in the promotion (APHA1, an Associate Professor from the hard-applied field, School of Engineering).

Another respondent revealed that:

> One of the benefits of publishing is that you are contributing to new knowledge in the world. And the excitement you get by somebody saying this new knowledge was developed by so and so in Uganda is very enormous. Like you go for a music show to get happiness, even us in academics, when our work is cited, we get happiness and self-fulfilment. We are visible. We are contributing to the growth of knowledge. Then we become renowned scholars and we just receive invitations to go and talk about our work. I think it is so fulfilling to be able to get to another world to share your findings with the international community. Then you will get a lot of networks (APSA2, an Associate Professor from the soft-applied field, College of Education).

Although the academic/basic research orientation was found to exist in all disciplinary categories, it appeared to be especially vital for hard-pure and soft-pure fields in which the funding, topic choice, partners, audiences and publications are more strongly related to the international scientific community than in other disciplinary groups.

Based on the findings, academics at Makerere University were as well found to be involved in the production of knowledge that satisfies the public market. Most study participants expressed the view that some knowledge is produced to provide instruments for ordinary people to understand society and to better command their lives. This was the view across disciplines, with many indicating that societal relevance of academic research is the ultimate measure of

a research-led University. The understanding of academic research in terms of its relevance to society points to the conceptualisation of academic research in terms of the civil society research orientation. The understanding of academic research in terms of this orientation becomes apparent in the following quotes:

> The research we are now engaged in has to do with oil exploration. The reason why we got engaged in it is that we were concerned that the discussion about oil is mainly in econometrics mainly alluding to implications to GDP. Our concern is: what is the link between oil exploration and local communities and their lives? What are the legal issues there? Again land comes in. We can talk about the right to freedom of expression and health rights. Are people discussing these issues freely? So there are all these questions which we need to ask as legal researchers especially if we are concerned about the majority of the communities (FPSA, a Full Professor from the soft-applied field, School of Law).

> Of course at the back of every research we do in the school of medicine, we are looking for practical innovations. Can you come up with new knowledge, new ideas, something new that is going to be of practical value to society? That is very important for us (FPHA, a Full Professor from the hard-applied field, School of Medicine).

From the interviews, participants refer to this research orientation as the weakest and most vulnerable by expressing fear regarding the extent at which this type of research trickles into society. Ylijoki et al. (2011) also observes that this orientation lacks a definite funding base because the public market does not provide substantial resources for academic research. The most valued publications in the civil society research orientation are essays and newspaper articles aiming to contribute to societal discussion and to the popularization of research results. Indeed some University academics have always published their researched results in newspapers and engaged in public lectures and debates in which they have highlighted societal problems and suggested solutions. Such publications are however not included in the Makerere University promotional guidelines and this further weakens the civil society research orientation.

The third research orientation noticed on the basis of the study results is called the state-government research orientation that is akin to the policy market. Its reference group is composed of a variety of public administration bodies operating chiefly at the national, regional and local levels, such as ministries, regional development organisations and local governments (Ylijoki et al., 2011). In this orientation, policy-relevant knowledge is produced to attend to the needs of societal planning and decision- making, and the implementation and evaluation of policy measures. According to Ylijoki et al. (2011), regular publications in the policy market are reports in the publication series of the funding agency implying that the results are made public but the reports do not necessarily meet the same rigorous quality criteria than academic peer-reviewed publications.

Academics at Makerere University consider policy-relevant research important perhaps because they are aware that the premier higher education institution status of the University implies accountability and that their actions should have impact on communities and national development. Hakala and Ylijoki (2001) contend that although policy-relevant research is restricted in scope, it offers opportunities especially for social sciences and medicine which have more funding from ministries and government agencies than other disciplinary groups. It is for this reason that these two disciplinary fields at Makerere seem to be more involved in the production of policy-relevant knowledge compared to other fields as evident in the following quote:

> In our malaria research, we have tried so much to answer questions that are relevant to 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. Of course not all of them, some of them are very basic science. They are not immediately relevant. But some of them are relevant. So during local dissemination meetings, we share research which has policy implications. Our program dies if our research is not immediately applicable to policy. So for research which has policy implications, we try to disseminate because of the need (FPHA, a Full Professor from the hard-applied field, School of Medicine).

Although policy-relevant research is popular, majority of participants indicated that the low levels of dissemination of research findings seem to thwart the pace at which produced knowledge filters into society and then into policy. They cited resource constraints and the preoccupation with promotion as key bottlenecks to dissemination.

I also explored whether academics at Makerere University engage in research that is meant to satisfy the corporate market through the production of new products with a commercial value and coming up with inventions with useful intellectual property. Interview results speak for the existence of the above elements suggesting that to a reasonable degree, academic research has been understood in terms of the entrepreneurial research orientation. Indeed, some participants acknowledged that they engage in research to produce knowledge that has commercial benefit for companies, meaning that the economic relevance of academic research is of vital importance. According to Ylijoki et al (2011), the most valued outcomes of entrepreneurial research are patents. However, this goal is rarely attained among University academics because companies do not want to distribute the results to their competitors before capitalizing on the potential economic advantage included in them.

As mentioned in the literature review (Clark, 2004; Etzkowitz & Leydesdorff, 2000; Hakala, 2009; Hakala & Ylijoki, 2003; Jacob, 2009; Lam, 2010; Ylijoki, 2011), at Makerere University the entrepreneurial orientation is dominated by the hard-applied field especially engineering and technological

disciplines that have closer links with companies in terms of funding, topic selection, collaboration and target audience. By contrast, the entrepreneurial orientation appears to be exclusive of the soft fields, since they do not have any linkages with companies. By their nature, hard fields have an easy access to the corporate market although according to the participants, their close involvement in entrepreneurial research entails problems, as is manifested by the following quote:

> Much of the research we do answers questions that have been posed by private companies such as Airtel that always bring problems to us. We work on their problems, get solutions, give back the results and they apply them… But not all people are receptive to these researched interventions… There is that general belief that our technologies are still uncivilized. So they say: This technology from Makerere University 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, an Associate Professor from the hard-applied field, School of Engineering).

Despite Ylijoki's (2011) contention that getting patents as the most valued outcomes of entrepreneurial research is rarely attained among university academics because companies do not want to distribute the results to their competitors before capitalizing on the potential economic advantage included in them, in the interviews some participants shared that they engage in academic research to come up with inventions and discoveries with useful intellectual property as indicated in the following quote:

> Of course at the back of every research we do, we are looking for practical innovations. Can you come up with new knowledge, new ideas, something new that is going to be of useful intellectual property? That is very key. Our practical orientation helps us to develop a culture that defines who we are. So you expect excellence, you expect quality; you expect diversity, and innovation (FPHA, a Full Professor from the hard-applied field, School of Medicine).

Finally, I report that all the participants shared that University research is donor-driven. To this extent, it is fair to say that the donor-driven academic research orientation exists at Makerere University. The withdrawal of government funding as a response to the World Bank induced Structural Adjustment Programs (SAPS) in the 1990s left the University with no other option, but to diversify its income base by, among others, soliciting for donor support to fund its research arm. Because University research is largely donor funded, it somehow mirrors donors' interests as indicated in the following quotes:

> When we develop our proposals for funding, we are conscious of the donors' presence. The donors are demanding research which has practical

> aspects, research that can contribute to the world outside academics. They are also requiring us to do what is called interdisciplinary research so that we don't confine ourselves only in our disciplines (APSP2, an Associate Professor from the soft-pure field, Department of Anthropology).

There is no money to fund the Research Agenda. However the donors have got the money. So we go to the donors and we get the money. Then in a way, the University Research Agenda will be drawn from the donors' perspective such as environmental protection, now sustainable development goals, and gender equality. So when I am applying for donors' research funding, I am forced to align whatever interests I have to those of the donor because the donor needs it not because the University needs it (APHP2, an Associate Professor from the hard-pure field, Department of Zoology).

The above responses denote over dependency on donor funding for the University research arm. They also highlight the ramifications of the donor dependency syndrome such as having a research agenda that is largely on paper resulting into a divergence between the research practice and what the agenda professes. Cognisant of the above, it is clear that donor funding of University research has not come without a price. Although some of the academics highlighted the positive side of donor support, they still had their reservations as well:

> Although many times the donors have interests, we sometimes benefit. For instance we are able to extend the frontiers of knowledge, our students benefit when they are funded to pursue doctoral studies, and the country also benefits from study findings and recommendations. For instance one of my PhD students that was funded by SIDA came up with ways of restoring polluted areas around Kilembe mines. Donors' interest in this case was not selfish. Sometimes it is a win-win situation. However, many times research is in their interests. They take advantage of your collaboration with them to sneak out things. They do industrial espionage. They do not declare their interests all the time (FPHP, a Full Professor from the department of biological sciences).

All in all, findings overwhelmingly suggest that across disciplinary fields at Makerere University, academic research is generally described and conceptualized in terms of: the academic/basic research orientation where issues of career growth and recognition within the scientific community are important; mode 2 science that is emphatic on applied research that is largely commercial (entrepreneurial research orientation) but also policy-relevant (state-government research orientation), and community oriented (civil-society research orientation). The existence of applied research orientations (mode 2 science) is however seen as an offshoot of the donor-driven research orientation that is driven by concerns of application and innovation, and has it agendas, in most cases set in the North because they provide the funding. These findings support the

institutional theory. In line with the theory, the conceptualization of academic research in terms of the academic orientation suggests attempts by the University to conform to the professional norms of the scientific community (normative isomorphism). Similarly, the conceptualization of research along lines of donor interests suggests conformity to the pressures exerted by donors' organizations (coercive isomorphism).

Discussion

Findings demonstrate that academics at Makerere University are involved in the production of knowledge to satisfy different audiences and markets such as: the academic market; the corporate market; the public market, and the policy market. As such, academic research continues to be conceptualised in terms of the basic/academic; entrepreneurial; civil society and state-government research orientations. To this extent, the findings demonstrate the validity of the Hakala-Ylijoki (2001) approach to the study of research orientations. This implies that the transformation thesis of academic research from mode 1 to mode 2 science advocated by scholars such as Crespo and Dridi (2007); Massy (2009); Scott (1997); Gibbons et al (1994); and Etzkowitz and Leydesdorff (1997) needs to be revisited.

The arguments that: basic research (mode 1 science) has been wholly replaced by applied and market-driven research (mode 2 science); there is a pervasive discontinuity and break between mode 1 and mode 2 form of knowledge production; and that the basic/academic research orientation to research has been displaced and the fundamental norms and values turned upside down do not get empirical support from this study. It therefore appears that at Makerere University, the basic/academic research orientation continues to have a firm base and to co-exist alongside applied academic research orientations such as the entrepreneurial, state-government, and civil society research orientations. Indeed continuity rather than rupture expresses the relationship between the basic/academic and applied research orientations and as such the increasing entrepreneurial activities in research do not contradict traditional academic values (Clark, 1998; Lam, 2010; and Slaughter and Leslie, 1998). In fact, the traditional values and research practices such as engagement in basic, curiosity driven research that is directed to the researchers' scientific community are viewed as vital in all academic disciplines at Makerere University. It is important to note that similar results were obtained from related studies done on Finnish Universities (Hakala & Ylijoki, 2001; Ylijoki et al. 2011; Nieminen (2005) and UK Universities (Lam, 2010)

Although the basic/academic research orientation still seems to be strong across disciplinary fields at Makerere University, study findings also point to a growing significance of market-oriented and practical research as evident in the external research funding patterns that emphasize entrepreneurial, community oriented, and policy-relevant research regardless of personal wishes of individual

researchers. This form of market driven research that is largely donor driven entails research that is: entrepreneurial; community-oriented; and policy-relevant.

There is indication that University research has societal and policy impact through its focus on social justice, human rights and governance (Research and Innovations Policy, 2008; the University Research Agenda, 2008; SIDA Review Report, 2014). According to the SIDA Review Report (2010), University academics have engaged in policy informing research over the years. The social impacts of research outputs from the different disciplines are equally laudable. For example, research done in CHUSS in 2007 in safe rural water provision increased awareness of community role in safe rural water provision, operation and maintenance. There was also reduced transmission of HIV/AIDS while extending the lifespan of those infected as a result of the "Gender, Poverty and AIDS risk" study that was conducted in CHUSS.

Thus this study's findings support the conclusion by Hessels and van Lente (2008) that Mode 2 type of research takes a variety of forms varying significantly by disciplinary groups as different fields have diverse ties to society. Nevertheless, the entrepreneurial orientation (commercialization of academic research) made top priority in hard-applied fields like engineering where research outputs are directed to the corporate market. Apart from this, the study revealed the presence of the policy-relevant and community-oriented research in all disciplinary fields.

Finally, it was revealed that academic research at Makerere University has been conceptualised in terms of the donor-driven research orientation as well. Participants conceded that because donors fund University research through academic partnerships and links that are constructed as key strategies for capacity building and international cooperation, the research agenda mirrors donor interests. University management considers such partnerships as an integral part and maintains a full directorate to deal with donors and accord them the status and role they deserve in internationalisation of the University. Although the donor-driven research orientation is associated with some benefits such as: students benefitting when they are funded to pursue doctoral studies and strengthening University research through research capacity building, there are some hard realities (Mshoro, Galabawa, Baregu, Chijoriga, Kombe, & Toba, 2007). For example, the majority of partnerships and links are not based on mutual negotiations between equal partners. This coheres with Gaillard's (1994) observation that one of the main problems encountered in the implementation of collaborative research programs relates to asymmetry of the collaboration and the dominance of the partners in the North.

Another striking consequence of the increase in donor funding of University research is that the personnel in academic departments have been split into two groups. There are senior and junior academics. The former have a new responsibility to attract external money on behalf of their junior colleagues irrespective of their own interests. Applying for donor money has become one of the most time-consuming duties of senior academics. This means that the donors'

orientation to academic research places new demands and requirements for them. Somehow, in addition to doing research, designing the content of studies, and keeping their disciplines up to date, they should act like a marketing person (Ylijoki, 2003).

Because universities in SSA have very little to offer to those in the Global North, these partnerships that operate within the donor aid framework are neither reciprocal nor equal because donors exert conformance pressures and expectations (coercive isomorphism) which affect the research situation of the University. Donor dependence of University research is also inimical to academic freedom because of self-censorship among academics to please donors. Seen in this light, Bentley, Habib and Morrow (2006) argued that because of external funding, research agendas are no longer determined by scholars themselves but rather by sponsors. This means academics sell their research skills to the highest bidder, which consequently violates academic freedom.

Conclusions and Recommendations

Academic research at Makerere University is conceptualised in terms of the: basic/academic; state-government; civil society and entrepreneurial research orientations. These findings validate the Hakala andYlijoki (2001) approach to the study of research orientations in higher education in general and Makerere University in particular. This means that University academics are involved in both mode 1 and mode 2 science.

Basing on the institutional theory, I conclude that the emphasis on, and the popularity of, applied research orientations among University researchers has in part been occasioned by the fact that the donors are demanding for practical and innovative research. This means that applied research orientations (state-government, civil society, and entrepreneurial research orientations) are, to some degree, a mirror image of the donor-driven research orientation. This finding leads us to a conclusion that academic research at Makerere University is not only understood in terms of the donor-driven orientation, it also largely answers to the needs of the donors as it operates within an institutionalized environment.

In spite of the popularity of applied research (mode 2 science); the basic/academic research orientation continues to have a firm base across academic disciplines and to co-exist alongside applied academic research orientations. Seen in this light, the transformation thesis of academic research suggested by scholars such as Gibbons et al (1994), Scott (1997), and Ziman (1996) from mode 1 to mode 2 knowledge production needs to be revisited in the context of higher education research.

I therefore recommend that in order to ensure that University research is not overly skewed towards career growth and achieving recognition within the scientific community and therefore making it appear more basic/academic in nature, there is a need to rethink the University promotional assessment model to ensure that academics are assessed for promotion on a broader criterion that, among others, includes: number of publications; contribution to policy; and

contribution to community. There is also a need to selectively collaborate with partners from the North. Like Dean et al. (2015) and Nakabugo et al. (2015) observed, there are some genuine North-South research collaborations that have helped to supplement southern governments' inadequate expenditure and investment in research. The University should intensify efforts of looking for similar North-South collaborations to ensure that locally generated research agendas are not whitewashed and overridden by the interests of the donors.

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