



## East African Journal of Education Studies

[eajes.eanso.org](http://eajes.eanso.org)

Volume 7, Issue 4, 2024

Print ISSN: 2707-3939 | Online ISSN: 2707-3947

Title DOI: <https://doi.org/10.37284/2707-3947>



Original Article

### Institutional Mechanisms for Enhancing Production of Doctoral Research Outputs at Makerere University

Florence Deboru<sup>1</sup>\* & Irene Etomaru, PhD<sup>1</sup>

<sup>1</sup> Makerere University, P. O. Box 7062, Kampala - Uganda.

\* Author for Correspondence Email: [fdeboru@gmail.com](mailto:fdeboru@gmail.com)

Article DOI: <https://doi.org/10.37284/eajes.7.4.2259>

Date Published: **ABSTRACT**

01 October 2024

#### Keywords:

*Research Production,  
Doctoral Education,  
Institutional Mechanisms,  
Research Uptake and Use,  
Beyond Academia.*

In the contemporary knowledge society, research production is being repurposed in terms of not just its academic value, but also its wider societal value. As such, doctoral research ought to be produced in the context of application. Therefore, universities have a responsibility to enhance the uptake and use of doctoral research outputs. This necessitates institutional mechanisms for enhancing the production of doctoral research outputs for uptake and use beyond academia. We examined the institutional mechanisms for enhancing production of doctoral research outputs at Makerere University using the research knowledge infrastructure (RKI) framework as the analytical lens. This was in light of the dismal uptake and use of research produced at Makerere University by students and staff. We used qualitative single case study research design. We collected data through interviewing and review of documents. We interviewed 10 doctoral program coordinators, three managers of research and graduate training and 13 PhD students we selected purposively. We reviewed seven institutional documents pertaining graduate training at Makerere University: two plans, three policies, one framework and one guideline. We used thematic data analysis to make sense of the data. The findings revealed that due to policy-practice gaps and funding constraints, mechanisms to enhance doctoral research production to facilitate uptake and use of doctoral research outputs beyond the academia were not adequately integrated into doctoral research training. This was shown by the lack of mechanisms to enhance doctoral research commissioning and execution, and gaps in priority setting. Opportunities for productive interactions between doctoral researchers and potential users were missed. As such, doctoral research outputs largely remained within the scholarly community. We recommend that the university should establish interface structures and co-creation spaces to leverage doctoral research commissioning, execution and priority setting to facilitate the uptake and use of doctoral research outputs beyond the scientific community.

#### APA CITATION

Deboru, F. & Etomaru, I. (2024). Institutional Mechanisms for Enhancing Production of Doctoral Research Outputs at Makerere University. *East African Journal of Education Studies*, 7(4), 128-140. <https://doi.org/10.37284/eajes.7.4.2259>

#### CHICAGO CITATION

Deboru, Florence and Irene Etomaru. 2024. "Institutional Mechanisms for Enhancing Production of Doctoral Research Outputs at Makerere University". *East African Journal of Education Studies* 7 (4), 128-140. <https://doi.org/10.37284/eajes.7.4.2259>

**HARVARD CITATION**

Deboru, F. & Etomaru, I. (2024) "Institutional Mechanisms for Enhancing Production of Doctoral Research Outputs at Makerere University", *East African Journal of Education Studies*, 7(4), pp. 128-140. doi: 10.37284/eajes.7.4.2259.

**IEEE CITATION**

E. Deboru & I. Etomaru "Institutional Mechanisms for Enhancing Production of Doctoral Research Outputs at Makerere University" *EAJES*, vol. 7, no. 4, pp. 128-140, Oct. 2024. doi: 10.37284/eajes.7.4.2259.

**MLA CITATION**

Deboru, Florence & Irene Etomaru. "Institutional Mechanisms for Enhancing Production of Doctoral Research Outputs at Makerere University". *East African Journal of Education Studies*, Vol. 7, no. 4, Oct. 2024, pp. 128-140, doi:10.37284/eajes.7.4.2259

**INTRODUCTION**

Higher education institutions are the main seat of research and development activity, as such doctoral research has become a crucial part of knowledge production for development and the transfer of knowledge into the broader society (Ruano-Borbalan, 2022, Taylor, 2023). Across the globe, initiatives are being undertaken to transform doctoral research training to enhance research uptake. For example, Japan founded centers of excellence between 2002 and 2007, and established the Leading Graduate Schools program between 2011 and 2019. Similarly, China launched the 985 program and the more recent Double First - Class Initiative. In Europe, many policies have been introduced, such as the excellence programs in Germany and France. National research management and development agencies support these efforts through grants or contracts prioritizing the need to respond to societal development problems, emphasizing innovation, public-private partnerships and international cooperation to enhance uptake and use of doctoral research outputs (Ruano-Borbalan, 2022).

Grobbelaar and Harber (2016) found out that, although universities in Africa are alert to the importance of managing research, the awareness of the strategies and mechanisms for explicit support for research uptake is inadequate, as well as the ability to monitor and assess the effectiveness and impact of uptake of research. Africa has not been able to fully participate in the knowledge society due to very low capacity for knowledge production and uptake (Jowi, 2021). As such the continent has been regarded as a consumer rather than a producer of scientific research and publications (Omoya et al., 2023). South Africa has been the largest producer of scientific research and doctorates, producing

approximately 30,000 PhD degrees since 1899 (Herman, 2017). South African researchers have made efforts to develop a better understanding of the uptake, use and impact of their research (Botha & Vilyte, 2021). With a comparatively advanced national research system, South Africa, has implemented several initiatives to enable institutions to align their research to address the national development agenda (Jowi, 2021).

In other African countries, low numbers of locally trained PhD graduates, dependence on international funding for research and unstable university research environments have been shown to be significant challenges threatening the sustainability of research uptake for development and improved innovation capacities (Lutomiah et al., 2022). The Department for International Development (DFID) together with Development Research Uptake in Sub-Saharan Africa (DRUSSA) gave support to Sub-Saharan Africa countries such as Nigeria, Ghana, Cameroon, Ethiopia, Kenya, Tanzania, Uganda, Rwanda, Malawi, Zimbabwe, Zambia, Botswana, and South Africa to implement research uptake (Grobbelaar & Harber, 2016). Key outputs among the support programs was the training of a critical mass of university staff to provide strategic and operational leadership and expertise to ensure uptake of their university's research; and strengthening relationships in the region to sustain universities' capacity for research uptake (DRUSSA, 2016). In Kenya, with support from DFID and DRUSSA, a national audit office was established, the office includes research uptake in its audits of universities, and has developed indicators that link research uptake with socio-economic change. The University of Nairobi established a directorate of research and extension governing research uptake policy and undertakes trainings related to research uptake (DRUSSA, 2016).

Equally, with the help of DRUSSA and DFID, the University of Calabar in Nigeria established ties with the Calabar chamber of commerce to hold regular meetings on university research outputs. At the University of Ibadan in Nigeria, a research links office that identifies private sector research needs was established. The National University of Science and Technology in Zimbabwe established a research uptake management unit within its research and innovation office, while the University of Fort Hare in South Africa established a public-facing magazine to communicate research activity to public stakeholders (DRUSSA, 2016). Despite these efforts, uptake of research in Africa continues to be low. Wallis et al., (2017) found that, although African countries dedicated to spend at least 1% of their gross domestic product on research and development by 2010, only Kenya, Malawi and South Africa have managed to approach this target, while Mozambique, Senegal and Uganda all have greater than 40% of their research and development financed from abroad. As such, the research environments in these countries are not conducive enough to facilitate research uptake (Andoh, 2017).

In Makerere University, with support from DRUSSA, tremendous growth and interest in research uptake was registered, the University introduced cross-cutting courses for PhD students and researchers in research management, scholarly writing and communication skills (DRUSSA, 2016). However, the extent of institutional mechanisms for enhancing production of doctoral research outputs at Makerere University has not been fully explored. We examined the institutional mechanisms for enhancing production of doctoral research outputs in Makerere University using the Research Knowledge Infrastructure (RKI) framework developed by Ellen et al., (2011) as the analytical lens. We contend that in order to enhance research production the University should develop mechanisms for engaging potential users in industry or the policy and practice context in priority setting in doctoral research production as well as put in place interface structures to facilitate commissioning of doctoral research by the industry, government ministries and departments, and other sectors. We sought to examine institutional mechanisms for enhancing production of doctoral research outputs at Makerere

University in order to contribute to the understanding of mechanisms to enhance production of doctoral research outputs for uptake and use beyond the academia.

### **Statement of the Problem**

Uptake of research leads to the justification and contextualization of research for use (Phipps et al., 2016). Doctoral research is a source of knowledge capabilities for boosting domestic research and innovation capacity of countries (Nerad, 2020). According to UNESCO Institute for Statistics (UNESCO-UIS), research carried out at universities by students at the PhD level “should be counted, whenever possible, as a part of R&D” (UNESCO-UIS, 2014, p.12). Thus, doctoral research outputs ought to be readily accessible both within and outside academia (Tella et al., 2016). The current strategic direction of Makerere University of becoming research-led (Makerere University, 2020), entails increasing enrolments at the doctoral level and increased production of doctoral research. However, there is generally low uptake of research produced at Makerere University by students and staff (Makerere University, 2021). Makerere University has come up with policies and guidelines to support and streamline graduate education and training, and to enhance innovations and knowledge transfer partnerships (Makerere University, 2020), in spite of these efforts, doctoral research outputs rarely go beyond the PhD public defenses and the University repository. This scenario may deter Makerere University’s progress towards becoming research led to contribute to global and national development more directly through research and innovations. It is against this back ground that we examined the institutional mechanisms at Makerere University for enhancing production of doctoral research outputs for uptake and use beyond the scientific community.

### **Research Question**

What are the institutional mechanisms at Makerere University for enhancing the production of doctoral research outputs for uptake and use beyond the academia?

## RELATED LITERATURE

### Theoretical Review

This study was guided by the Research Knowledge Infrastructure (RKI) framework developed by Ellen et al., (2011). Ellen et al. proposed four possible organizational-level support components for enhancing research knowledge infrastructure: (1) enhancing the climate for research use through clear organizational vision, mission and values placed on the use of research evidence in decision making, structures or positions to aid in accountability for using research evidence in decision making, points of contacts within organizations regarding where to turn to obtain research evidence, formal and informal relationships with people outside the organization who can assist in obtaining the appropriate research evidence, the recruitment and retention strategies that reflect the value of the use of research evidence in decision making as well as the recognition of employees who use research evidence within the organization. (2) enhancing research production through regular priority-setting processes for the research evidence needed to meet managerial and policy-making needs and ensuring that the appropriate research commissioning capacity is in place to commission or execute research if it is deemed as high priority. (3) Activities to link research to action divided into three parts; push efforts by university researchers such as packaging to disseminate research findings both within and outside the scholarly community; pull efforts by the industry to access and use research evidence in decision making, training and continuing education; exchange efforts through regular stakeholder meetings that highlight relevant research. (4) Research evaluation through interactive workshops that focus on the use of research in decision-making and development of indicators to evaluate research. Much as the framework was specific to healthcare systems, it was quite relevant and useful in studying the support mechanisms for enhancing uptake of doctoral research outputs because it is broad and highly applicable in higher education context. This article is based on the element of enhancing research production.

### Empirical Review

There has been a drive to widen the diversity of doctoral research production globally. Governments increasingly recognise the value of highly educated doctoral graduates and their research outputs to their national economies as drivers of innovation and source of competitive advantage. As such, doctoral programmes will have to change to meet the new demands for research uptake (Duke & Denicolo, 2017). Facilitating research uptake ought to be embedded in research production through regular priority-setting for research evidence that meets managerial and policy-making needs, and ensuring that appropriate research commissioning capacity is in place to commission or execute the research if it is deemed high priority (Ellen et al., 2011). According to Ellen et al. research commissioning involves research projects carried out in a university under a commission contract with a client where the university is legally obliged to charge fees for commissioned research. It provides for productive dialogue between research commissioners, researchers and potential users. Research commissioning aims to meet the needs of research users rather than the aspirations of researchers, as such it provides funding opportunities and guarantees uptake and use of research.

However, Damba et al., (2023a) note that funds allocated for doctoral research production and dissemination of research findings is often not adequate. They point to the need for robust funding mechanisms to support knowledge production and dissemination. Universities need to set realistic goals, as well as initiatives to integrate research uptake activities specifically into knowledge production, moderated through the policy direction adopted by the university (Grobelaar & Harber, 2016). Gichuhi and Bituka (2020) found out that in order for universities to increase their contribution to development through the production and dissemination of knowledge, they need to transform themselves into developmental institutions of higher learning by taking up new responsibilities and engaging in partnerships with knowledge producers and users. For doctoral research production in particular, creating knowledge co-creation spaces to facilitate interaction between knowledge producers



and users becomes crucial (Etomaru et al., 2024; 2022; Jowi, 2021). However, Damba et al., (2023b) assert that doctoral research work which is innovative and ground-breaking often largely remain in university libraries and journals with very little being accessed by policymakers. This could be attributed to gaps in priority setting and commissioning during doctoral research production.

Compared to the other regions of the world, Africa’s knowledge production has been quite low, thus rendering Africa not able to fully participate in the knowledge society (Ndejjo et al., 2022). Ndejjo et al. note that Africa has fewer PhDs per capita, only 198 researchers per million people compared with the global average of 1150, and the over 4500 per million people in the UK and USA, as a result, the continent contributes least to generating new scientific knowledge in comparison to the rest of the world. They further note that Africa’s continental research output measured by the amount of peer-reviewed research is less than 1% despite having 16% of the world’s population. Thus, in order to achieve the world average for the number of researchers per capita, the continent needs another million PhDs to develop home grown solutions. According to Grobbelaar and Harber (2016) there is need for the establishment of capacity for the co-production of knowledge between researchers and stakeholders, and more specifically from a university’s point of view, the development of stakeholder engagement and communication skills among researchers is key in research production for enhancing research uptake. However, not much is known about the institutional mechanisms for enhancing doctoral research production for uptake and use beyond the scientific community, a gap we

sought to bridge by examining mechanisms for enhancing doctoral research production in the context of Makerere University.

**METHODOLOGY**

We employed a qualitative single case study research design. We collected data through interviewing and documents review. We interviewed a total of 26 participants. We used stratified sampling and purposive sampling strategies. The choice enabled the identification and selection of participants who had rich experiences on issues of production of doctoral research outputs, we stratified Makerere University according to Biglan’s classification of academic disciplines (Biglan, 1973). We stratified the University into colleges and combined them into categories as pure applied, pure hard, soft applied and soft pure to ensure all-inclusive coverage of the University. We used purposive sampling strategy to select participants with specific characteristics or experiences relevant to the research focus (Hiram., 2023). Therefore, we selected 10 doctoral program coordinators purposively because strategies are implemented through colleges, coordinators were thus best placed to provide evidence on institutional mechanisms for enhancing production of doctoral research outputs at Makerere University. We selected three managers in the Directorate of Research and Graduate Training because of positions of authority they hold and unique knowledge they possess in relation to management of research and graduate training in the University. The sample included 13 PhD students based on the inclusion criteria of being at the level of data collection, gender and academic discipline

as summarized below.

**Table 1 Categories of Interview Participants**

Discipline Category	Participants
Pure hard	College of Veterinary Medicine, Animal Resources and Biosecurity (COVAB)
	• PHC171 Doctoral Program Coordinator
	• PHS220 PhD Student
	College of Natural Sciences (CONAS)
	• PHC203 Doctoral Program Coordinator
	• PHS225 PhD Student
	College of Computing and Information Sciences (COCIS)
	• PHC219 Doctoral Program Coordinator
	• PHS209 PhD Student

Pure Soft	<ul style="list-style-type: none"><li>• PHS221 PhD Student</li></ul>
	College of Humanities and Social Sciences (CHUSS)
	<ul style="list-style-type: none"><li>• PSC179 Doctoral Program Coordinator</li><li>• PHS239 PhD Student</li></ul>
Applied Hard	College of Engineering, Design, Art and Technology (CEDAT)
	<ul style="list-style-type: none"><li>• AHC202 Doctoral Program Coordinator</li><li>• AHS223 PhD Student</li><li>• AHS230 Doctoral Program Coordinator</li></ul>
	College of Health Sciences (CHS)
	<ul style="list-style-type: none"><li>• AHC237 Doctoral Program Coordinator</li><li>• AHS214 PhD Student</li><li>• AHS215 PhD Student</li></ul>
	College of Agricultural and Environmental Sciences (CAES)
	<ul style="list-style-type: none"><li>• AHC206 Doctoral Program Coordinator</li><li>• AHS210 PhD Student</li></ul>
	College of Business and Management Sciences (COBAMS)
	<ul style="list-style-type: none"><li>• ASC231 Doctoral Program Coordinator</li><li>• SAS238 PhD Student</li></ul>
	College of Education and External Studies (CEES)
	<ul style="list-style-type: none"><li>• ASC192 Doctoral Program Coordinator</li><li>• SAS200 PhD Student</li><li>• SAS208 PhD Student</li></ul>
Applied Soft	School of Law (SoL)
	<ul style="list-style-type: none"><li>• ASC218 Doctoral program coordinator</li></ul>
	<b>Managers, Research and Graduate Training</b>
	<b>Directorate of</b>
	<b>Research and</b>
Graduate Training	<ul style="list-style-type: none"><li>• RM232 DRGT</li><li>• RM233 DRGT</li><li>• RM229 DRGT</li></ul>

Table 1 shows that the category of participants we interviewed they were people directly involved in doctoral education and training as students, managers or coordinators covering a wide range of knowledge domains.

FINDINGS

We asked participants to describe their experiences and views about the mechanisms for enhancing doctoral research production to facilitate the uptake of doctoral research at Makerere University. The aim was to examine participants’ understanding and experiences of doctoral research production in regard to priority setting, research commissioning and execution. The dominant views expressed by the participants showed that mechanisms to enhance doctoral research production to facilitate the uptake and use of doctoral research in Makerere University were inadequate. In regard to priority setting and research commissioning, the most common response was that stakeholder involvement in doctoral research production is lacking as shown in this

representative quote from a doctoral programme coordinator: “what is missing is the direct involvement of the University with the policy makers to gain influence and support research production, that is not yet seen”(AHC237). In a similar way, a PhD student from pure hard discipline expressed that:

*It should be the University to look for a particular institution or a particular audience out in the society, tell them do you know what, we have our student who is doing A, B, C, D and we think his finding or her finding can be of help to the University. (PHS225)*

This indicates that mechanisms to engage stakeholders in research priority setting and commissioning were not embedded in doctoral research training. PhD students expect the University to be the one to pursue such avenues, but not individual students.

There was no disciplinary difference in the views participants expressed about priority setting in

doctoral research production. Viewpoints of the participants revealed the absence of clear mechanisms for enhancing doctoral research production to facilitate uptake of doctoral research. Doctoral research production was still traditional, academic discipline based and highly individual. Participants expressed their expectations of what the University could do to enhance priority setting, research commissioning and execution to enhance uptake of doctoral research. A doctoral student from the applied soft discipline had this to say:

*They would ask you to present an abstract, talk about your idea within the University. . . could be other bigger forum like the Annual Social Science and Humanities Conference, but that one is lacking, so the support for research production is not as it should be. (SAS200)*

The doctoral students were not aware of how they could ensure appropriate commissioning of their research and expressed dilemma as illustrated by this quote:

*Some PhD researchers produce policy briefs and also write reports, maybe I can write my report to RIF and give those particular details so that the University management can pick useful information from those reports to change certain things in place.*

Inadequacy of mechanisms for commissioning doctoral research to enhance uptake was equally expressed by doctoral program coordinators as illustrated by this representative data extract:

*We encourage doctoral students to publish their research findings because after the proposal defense one goes to the field, they come up with findings, they are expected to disseminate these findings so that others get to know about what they have been able to come up with, and of course students are encouraged to participate in conferences, seminars and even webinars where they are able to share their knowledge and those who listen to them are able to pick on what they share and carry forward, but there is no commissioning of doctoral research. (ASC192)*

Priority setting in doctoral research production depended on funding sources, where funding from donors and development partners in form of research

grants is available, priority setting in doctoral research depended on the funders interests. A doctoral program coordinator from pure hard discipline indicated that:

*It is very rare for someone to come with his own money. . . for us here many professors have research grants, they advertise them then the students come in, so the priority is within the setting, the students come to fit their work in the priority which has already been set. (PHC171)*

A similar view was held by doctoral program coordinator PHC219 who said; “some of our researchers are funded by development partners, the development partners come in with their priority areas and then the student has to fit in”. However, availability of funding for doctoral research in form of research grants was more prominent in the hard applied disciplines. The views of the doctoral program coordinators and PhD students portray the inadequacy of mechanisms for enhancing doctoral research production through appropriate priority setting, commissioning and execution which presents a challenge to the uptake of doctoral research across the disciplines at the University.

Research managers equally expressed concerns about the inadequacy of mechanisms to enhance doctoral research production to facilitate uptake of doctoral research. Their views showed that gaps exist in research commissioning and execution as illustrated by this representative excerpt:

*we had a policy dialogue not so? . . . for me that policy dialogue was more of presenting results, rather than the policy implications from the results. I would have loved to see a forum come up with, say this is a policy implication from my policy brief, this was not so. (RM233)*

This illustrates inadequacy in research commissioning capacity in doctoral research production at Makerere University.

From review of documents, we found that in the Makerere University Strategic Research Innovation and Commercialization Plan 2021-2030, the Directorate of Research and Graduate Training highlights the need to align research production to influence policy and practice, and for commercialization, and strategies to provide support

in developing research and scholarly activity at the University (Makerere University, 2021, p.24). It is further stated that the DRGT will build on the University's programme of training and support for research activities through the collegiate system, maximising the value to be derived from research and academic units in the provision of graduate education (p.28). However, the viewpoints of the PhD students, doctoral programme coordinators and research managers interviewed show that there is discrepancy between policy frameworks and actual research practices in doctoral research production. This indicates that what is stipulated in such institutional frameworks has not been operationalized and integrated into doctoral research production, or the staff and students are not fully aware of the existence of such frameworks.

The findings we have reported reveal that institutional mechanisms for enhancing doctoral research production to facilitate uptake of doctoral research outputs in Makerere University are inadequate. This is in spite of the aspirations made in the current Makerere University Strategic Plan, further operationalized in the Makerere University Strategic Research Innovation and Commercialization Plan 2021-2030 by the Directorate of Research and Graduate Training, and in various institutional policy frameworks. The findings show gaps in the implementation of the existing institutional frameworks for developing research and graduate training at the University. Two emerging themes were noticeable in the views expressed by the PhD students, doctoral program coordinators and the research managers interviewed: policy-practice gap, and donor funding constraints.

### ***Policy-Practice Gap***

Viewpoints of the PhD students, doctoral program coordinators, research managers, and information obtained from review of documents revealed that stakeholder participation in doctoral research production is lacking. Doctoral students were not aware of any research commissioning mechanisms and expressed dilemma as to how their research could be commissioned. The lack of awareness possibly results from the nature of doctoral programs which were the traditional PhD, offering purely academic, highly individual, discipline-based

research training. Mechanisms to engage stakeholders from the policy or practice context in doctoral research priority setting, research commissioning and execution were not embedded in doctoral research training. This can be seen in this expression by a PhD student from pure soft discipline that; "the research production mechanism, I do not see it happening. RIF should be extended to all PhDs that is maybe when research production will be enhanced, as of now a lot needs to be done" (PSS239). PhD students expect the University to be the one to pursue such avenues, but not individual students. Thus, opportunities for productive dialogue between research commissioners, doctoral researchers and potential users in policy and practice to facilitate uptake of doctoral research were missed.

### ***Funding Constraints***

The views of the PhD students, doctoral program coordinators, research managers, and information obtained from the documents reviewed showed that priority setting in doctoral research production depended on funding sources, where funding from donors and development partners in form of research grants is available, priority setting in doctoral research depended on the funders interests, the development partners come in with their priority areas and then the students come to fit their work in the priority which has already been set by funders. In cases where students were self-financed, priority setting in doctoral research depended on their personal interests, as such mechanisms to facilitate uptake of doctoral research outputs were not integrated in doctoral research production.

Therefore, the findings show that mechanisms to enhance doctoral research production to facilitate uptake of doctoral research outputs were not adequately integrated into doctoral research training as shown by lack of mechanisms to leverage doctoral research commissioning and execution, and gaps in priority setting.

## **DISCUSSION OF FINDINGS**

In the current knowledge society, the purpose of doctoral education has been "re-expressed" in terms of supplying highly educated human capital and research outputs as drivers of innovation and source of competitive advantage (Taylor, 2023, p. 614). As



such, doctoral research production will have to change to meet the new demands for research uptake and use in the wider society (Duke & Denicolo, 2017). According to the RKI framework, mechanisms for facilitating research uptake ought to be embedded in research production through regular priority-setting for research evidence that meets managerial and policy-making needs, and ensuring that appropriate research commissioning capacity is in place to commission or execute the research. Research commissioning involves research projects carried out in a university under a commission contract with a client where the university is legally obliged to charge fees for commissioned research. It provides for productive dialogue between research commissioners, researchers and potential users. Research commissioning aims to meet the needs of research users rather than the aspirations of researchers, it provides funding opportunities and guarantees uptake and use of research outputs (Ellen et al., 2011).

We found out that mechanisms to enhance doctoral research production to facilitate the uptake and use of doctoral research in Makerere University were inadequate. Mechanisms to engage stakeholders or potential users in research priority setting, commissioning and execution were not embedded in doctoral research training. The doctoral students were not aware of how they could ensure appropriate commissioning of their research and expressed dilemma about mechanisms for stakeholder engagement in research priority setting. Priority setting in doctoral research production depended on funding sources, where funding from donors and development partners in form of research grants is available, priority setting in doctoral research depended on the funders interests or that of individual self-financed students. There was a wide policy-practice gap, mechanism to align doctoral research production to the needs of the potential users in industry or policy and practice were non-existent despite the University's aspirations to enhance research uptake.

Makerere University aspires to enhance the uptake and use of research produced by staff and students at the University. The current Makerere University Strategic Plan (Makerere University, 2020), further operationalized in various institutional policy

frameworks, for example, the Makerere University Strategic Research Innovation and Commercialization Plan 2021-2030, highlight the need to align research production to influence policy and practice and for commercialization (Makerere University, 2021, p.24). The findings of this study indicate that what is stipulated in such institutional frameworks has not been operationalized and integrated into doctoral research production, or the staff and students are not fully aware of the existence of such frameworks. As such, doctoral research production was still traditional, academic discipline based and highly individual, doctoral research outputs did not go beyond archives, shelves and repositories in the University.

Traditionally, doctoral research training has been undertaken within a single discipline. This was in line with the traditional purpose of doctoral education where the PhD was narrowly seen as an academic degree that expresses ability to conduct research conforming to academic standards. Doctoral education was used for perpetuation of professional academic bodies (Ruano-Borbalan, 2022), acquiring a doctorate served as a license to teach in a university (Baptista et al., 2015; Hasgall et al., 2019). However, as Taylor (2023, p. 613) put it, "tackling many of the major problems and issues in contemporary research requires cross-fertilisation across and between disciplines". As a result, universities are being strongly encouraged to develop collaborations with industry to solve real world problems. This requires support mechanisms for doctoral students to undertake research projects jointly with partners in industry, policy or practice through appropriate research commissioning and priority setting. But the findings of this study show that such support mechanisms have not been integrated in doctoral research training at Makerere University. This is likely to limit the uptake of doctoral research at the University.

Knowledge produced by academic institutions in collaboration with partners from other sectors is key for the economic growth of a nation. However, in less developed countries diverse barriers hinder this type of cooperation. To reduce the gap between policy and practice, there is need for universities to have joint efforts with other sectors to allow for the creation of knowledge on one side and the provision

of capital and resources on the other side. Such arrangements can enhance the uptake of doctoral research outputs (Rossoni et al., 2024). Many universities have now established support structures such as graduate schools, doctoral colleges, doctoral research schools, doctoral training centres and industry partnerships to meet the demands of contemporary doctoral education, to produce usable knowledge (Hasgall et al., 2019; Kovacevic et al., 2022). However, in Makerere University, findings of this study have shown that support structures for linking doctoral research production to other sectors have not been implemented.

The traditional purpose of research which was the advancement of knowledge for its own sake, primarily for academic purposes is changing rapidly in recent years. Research production is being re-purposed in terms of not just its academic value, but its wider value as well. This re-purposing of research has affected doctoral research production. Whereas previously, supervisors and candidates often determined the scope and direction of doctoral research, in many countries funding has become increasingly linked to projects which are seen to also have a clear potential to generate wider economic, environmental, political and social benefits (Taylor, 2023). However, Damba et al. (2023b) have shown that doctoral research often largely remains in university libraries and journals with very little being accessed by policymakers. Hence, as asserted by Etomaru et al. (2024, 2022) and Jowi (2021), knowledge co-creation spaces ought to be established in doctoral research production to facilitate uptake and use of doctoral research outputs. This requires support mechanisms for appropriate research commissioning and priority setting in doctoral research production. However, findings of this study show that funding constraints impede appropriate research priority setting in doctoral research production.

Studies have shown that academic funding is influenced by, and may influence various aspects of academic work, for instance, funding can influence what is researched, how and by whom, thus leading to diverse levels of connection to outputs (Aagaard, 2021; Thelwall, 2023). Funding arrangements often limit academics and derail them from doing research into what they see as local or national priority areas,

academics are persuaded to work on research that is of interest to the funders (Ishengoma, 2016). Such funding challenges, lack or shortage thereof, hamper the development of doctoral research outputs for uptake (Akuru, 2019). In the context of Makerere University, we found that priority setting in doctoral research production depended on funding sources, development partners come in with their priority areas and then the students fit their work in the priority which has already been set by funders. In cases where students were self-financed, priority setting in doctoral research depended on their personal interests, as such mechanisms to facilitate uptake of doctoral research outputs were not integrated in doctoral research production. Thus, lack of established mechanisms to enhance doctoral research production through appropriate priority setting, research commissioning and execution limited the uptake of doctoral research outputs at Makerere University.

## CONCLUSION

Institutional mechanisms for enhancing production of doctoral research outputs at Makerere University were inadequate. This resulted from policy-practice gaps and funding constraints. Doctoral research production at Makerere University was still traditional, discipline based, and not in collaborative contexts. Mechanisms to engage stakeholders from industry, or the policy and practice context in priority setting, research commissioning and execution were not embedded in doctoral research training. Opportunities for productive interactions between doctoral researchers and potential users in industry, policy and practice to engage with doctoral research outputs, to leverage funding, and for relevant priority setting in doctoral research production were missed. Therefore, doctoral research outputs remained within the scholarly community.

## RECOMMENDATIONS

To enhance the production of doctoral research outputs to facilitate uptake and use, the University should develop mechanisms for engaging potential users in industry, or the policy and practice context in priority setting in doctoral research production. This can be at the stage of doctoral program development and reviews to enhance the relevance

of doctoral research to potential users. Further, the University should put in place interface structures to facilitate commissioning of doctoral research by the industry, government ministries and departments, and other sectors. This will leverage funding for doctoral research and facilitate the creation of co-creation spaces for production of doctoral research. Such interface structures will enhance interactions between the doctoral researchers and the potential users in other sectors.

### LIMITATIONS OF THE STUDY

Our study was purely qualitative, involving a small number of participants and based only in Makerere University.

### THEORETICAL IMPLICATIONS AND PRACTICAL APPLICATIONS OF THE STUDY

The applicability of the RKI framework in the context of higher education. universities may adapt and use the RKI framework to develop and establish institutional mechanisms for enhancing production of doctoral research outputs. Theoretical modification, institutions should include the element of co-creation spaces in doctoral research training as a facilitator of engagement between doctoral researchers.

### AREAS FOR FURTHER RESEARCH

A mixed methods study could be undertaken to generate both quantitative and qualitative evidence. There is need to undertake case studies of other institutions providing doctoral education in Uganda in line with production of doctoral research outputs. A study that employs a bigger sample size could be undertaken.

### REFERENCES

- Aagaard, K. Mongeon, P. Ramos-Vielba, I. Thomas, D. A. (2021). Getting to the bottom of research funding: Acknowledging the complexity of funding dynamics. *PLoS ONE* 16(5). <https://doi.org/10.1371/journal.pone.0251488>
- Akuru, U. B. (2019). Research funding issues in African universities: Penalties and pathways. *Journal of Sustainable Development Studies*, 12(2) 305-327.
- file:///C:/Users/MY%20PC/Downloads/1911-3609-1-PB%20(2).pdf
- Andoh, H. F. (2017). The uptake of doctoral thesis research in Ghana (Doctoral dissertation, Stellenbosch: Stellenbosch University). <https://scholar.sun.ac.za/server/api/core/bitstreams/c4df1458-3166-4597ae529df7685a3517/content>
- Baptista, A., Frick, L., Holley, K., Remmik, M., Tesch, J., & Åkerlind, G. (2015). The doctorate as an original contribution to knowledge: Considering relationships between originality, creativity, and Innovation. *Frontline Learning Research*, 3(3), 55- 67. <http://dx.doi.org/10.14786/flr.v3i3.147>
- Biglan, A. (1973). Relationships between subject matter characteristics and the structure and output of university departments. *Journal of Applied Psychology*, 57(3), 204–213. <https://doi.org/10.1037/h0034699>
- Botha, J., & Vilyte, G. (2021). Utilization of South African research on higher education: Looking ahead, 313- 318. <https://doi:10.52779/9781991201416/11>
- Damba, F. U., Mtshali, N. G., Chimbari, M. J. (2023a). Factors influencing the utilization of doctoral research findings at a university in KwaZulu-Natal, South Africa: Views of academic leaders.: *Plos one*, 18(8),e0290651. <https://doi.org/10.1371/journal.pone.0290651>
- Damba, F. U., Mtshali, N. G., & Chimbari, M. J. (2023b). Development of a conceptual framework to guide uptake of PhD-generated knowledge by policymakers. *The Open Public Health Journal*, 16(1). <https://doi.org/10.2174/0118749445253763230920043828>
- Development Research Uptake in Sub-Saharan Africa. (2016). *Project Completion Review*. Top sheet October 2011- September 2016.
- Duke, D. C. & Denicolo, P. M. (2017). What supervisors and universities can do to enhance doctoral student experience (and how they can help themselves). *EMS Microbiology Letters*, 364(9), 1 May 2017, fnx090. <https://doi.org/10.1093/femsle/fnx090>.

- Ellen, M., Lavis, J.N., Ouime, M., Grimshaw, J., & Bedard, P. (2011). Determining research knowledge infrastructure for healthcare systems: A qualitative study: Implementation Science, 6, 60. <https://doi.org/10.1186/1748-5908-6-60>
- Etomaru, I., Bakkabulindi, K. F. E., & Balojja, T. D. (2024). Trajectory of doctoral education and training in Uganda. *Higher Education*, 87(2), 271- 286. <https://doi.org/10.1007/s10734-023-01006-y>
- Etomaru, I., Bisaso, R., & Nakayiwa-Mayega, F. (2022). Fostering knowledge translation in Africa's flagship universities: A case of Makerere University. *Higher Education Research & Development*, 41(4), 1060-1074. <https://doi.org/10.1080/07294360.2021.1887093>
- Gichuhi, Z. W., & Bituka, R. (2020). Institutionalization of knowledge management: A nexus for boosting research uptake and learning in universities in Kenya. *International Journal of Research in Library Science*, 6(2): 92-100. <https://doi.org/10.26761/IJRLS.6.2.2020.1335>
- Grobelaar, S., & Harber, T. (2016). Towards the Institutionalization of Research Uptake Management in Sub-Saharan African Universities. *Journal of Higher Education in Africa*, 14(1), 155–181. <https://www.jstor.org/stable/10.2307/90016104>
- Hasgall, A., Saenen, B., Borrell-Damia, L., Van Deynze, F., Seeber, M. & Huiman, J. (2019). Doctoral Education in Europe Today: Approaches and Institutional Structures. European University Association. <https://eua.eu/downloads/publications/online%20eua%20cde%20survey%2016.01.201.pdf>
- Herman, C. (2017). Looking back at doctoral education in South Africa. *Studies in Higher Education*, 42(8), 1437- 1454. <https://doi.org/10.1080/03075079.2015.1101756>
- Hiram, T., Turner, D., Tan, K. L., Tan, S. R., Wong, M., & Gong, J. (2023). Less is more? Review and recommendations for qualitative sampling strategy using the SCADE approach. *Asian Journal of Business Research*, 13. <https://doi.org/10.12688/f1000research.140810.2>
- Ishengoma, J. M. (2016). North–South research collaborations and their impact on capacity building: A Southern perspective. In: T. Halvorsen and J. Nossun, *North–South knowledge networks: Towards equitable collaboration between academics, donors and Universities (149-186)*. African Minds. Cape Town, South Africa. [https://library.oapen.org/bitstream/handle/20.500.12657/28917/AMT-South-North-Cooperation-Lighting-Source\\_LWed.pdf?sequence=1#page=165](https://library.oapen.org/bitstream/handle/20.500.12657/28917/AMT-South-North-Cooperation-Lighting-Source_LWed.pdf?sequence=1#page=165)
- Jowi, J. O. (2021). Doctoral training in African universities: recent trends, developments and issues. *Journal of the British Academy*, 9(s1), 159-181. <https://doi.org/10.5871/jba/009s1.159>
- Kovacevic, M., Bitusikova, A., & Dagen, T. (2022). Emergence of current European thinking and policies on doctoral education. *European Journal of Education*, 57(3), 381–394. <https://doi.org/10.1111/ejed.12515>
- Lutomiah, A., Blanckenberg, J. P., & Skupien, S. (2022). In between centre and periphery: Kenya as a key scientific nation in East Africa? *Science, Technology and Society*, 27(3), 388–403. <https://doi.org/10.1177/09717218221078229>
- Makerere University (2020). *Makerere University Strategic Plan 2020/2021-2030/31*. Makerere University.
- Makerere University (2021). *Strategic Research, Innovation and Commercialization Plan 2021 - 2030*. Directorate of Research and Graduate Training.
- Ndejjo, R., Ssemugabo, C., Osuret, J., Zziwa, E. B., Fonn, S., Alfven, T., Mukanga, D., Khayesi, M., & Wanyenze, R. K. (2022). Positioning Africa's public health doctoral students to lead societal transformation and development. *BMJ Glob Health*, 7(2). <https://doi.org/10.1136/bmjgh-2021007996>
- Nerad, M. (2020). Doctoral education worldwide: Three decades of change. In M. M. Yudkevich,



- P. G. Altbach & H. de Wit (Eds.), *Trends and issues in doctoral education: A global perspective* (pp.33–50). Sage.  
<https://doi.org/10.4135/9789353885991>
- Omoya, O., Jacob, U. S., Odeyemi, O. A., & Odeyemi, O. A. (2023). A scoping review protocol of the lived experiences of doing a PhD in Africa. *PloS One*, 18(9), <https://doi.org/10.1371/journal.pone.029070>
- Phipps, D., Cummings, J., Pepler, D., Craig, W. & Cardinal, S. (2016). The co-produced pathway to impact describes knowledge mobilization processes. *Journal of Community Engagement and Scholarship*, 9(1), 31-40. <https://doi.org/10.1007/s13398-014-0173-7.2>
- Rossoni, A. L., De Vasconcellos, E. P. G. & De Castilho Rossoni, R. L. (2024). Barriers and facilitators of university-industry collaboration for research, development and innovation: A systematic review. 74, 1841–1877. <https://doi.org/10.1007/s11301-023-00349-1>
- Ruano-Borbalan, J-C. (2022). Doctoral education from its medieval foundations to today's globalisation and standardisation. *European Journal of Education*, 57, 367–380.
- Taylor, S. (2023). The changing landscape of doctoral education: A framework for analysis and introduction to the special issue. *Innovations in Education and Teaching International*, 60 (5), 606- 622. <https://doi.org/10.1080/14703297.2023.2237962>
- Tella, A., Raji, B. W., Akanbi-Ademolake, H. B., & Memudu, S. A. (2016). Perception and use of open access electronic thesis and dissertations by the undergraduate students of University of Ilorin, Nigeria. *Samaru Journal of Information Studies*, 16(2), 88-119.
- Thelwall, M., Simrick, S., Viney, I., & Van den Besselaar, P. (2023). What is research funding, how does it influence research, and how is it recorded? Key dimensions of variation. *Scientometrics*, 128(11), 6085-6106. <https://doi.org/10.1007/s11192-023-04836-w>
- UNESCO Institute for Statistics (2014). Guide to conducting an R&D Survey: For countries starting to measure research and experimental development. <http://dx.doi.org/10.15220/978-929189-151-1-en>
- Wallis, S., Cole, D. C., Gaye, O., Mmbaga, B. T., Mwapasa, V., Tagbor, H., & Bates, I. (2017). Qualitative study to develop processes and tools for the assessment and tracking of African institutions' capacity for operational health research. *BMJ Open*, 7(9), e016660. <https://doi.org/10.1136/bmjopen-2017-016660>