

# Research Data Management in Institutions of Higher Education in Uganda: A Neglected Business

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## Abstract

This research examines research data management (RDM) in six Ugandan universities, its awareness, existence, and management, as well as ownership questions among senior staff members. The paper hypothesises that research data management is a new concept in Uganda universities and explores views on potential locations suitable for setting up the system within university structures. The stratified purposive sampling and snowballing methods were used over Google Forms. The key findings are that at least 74.8% of the staff believe it is a new concept and that their universities do not have initiatives to establish it; while 52.6% of the staff believe the ownership of research data should rest with the authors. There are varying views on the roles of various departments and potential host locations for research data management. The research limitation was that much as practices are not properly established in departments within university structures in Uganda, more research could be done to find out how research data is managed by individuals, projects or departments. The practical implication is the need for the establishment of a model research data management centre from which universities, government parastatals as well as organisations can learn. The paper makes a strong case for Ugandan higher education institutions to establish a department for research data management.

**Keyword:** *Research data management; Institutional repository; Library sciences; Data science.*

## Introduction

Research data management (RDM) is a growing field of information management with renewed interest across disciplines in universities (Birkbeck *et al.*, 2022). For some years now, there has been a move globally to make research data, i.e. both research outputs and the underlying research data, more accessible to other researchers (Shelly *et al.*, 2018). Many institutions, especially in developed countries, have implemented RDM services to accelerate research and innovation through e-research but extensive RDM is not very common in developing countries (Mushi *et al.*, 2020). Curating data such that it can

be made available for reuse requires significant planning and investment of effort throughout the data life cycle (Yu *et al.*, 2017). The emergence of the area of RDM in the space of library and information services is one that has sparked interest as well as concerns (Brochu & Burns, 2019). In some universities, the library is expected to champion RDM. Amidst concerns over its definition, the role of the library or librarian in RDM management, engagement and development is part of their routine (Brochu & Burns 2019). However, this is not the same across universities always. It is more common to find that RDM is a responsibility of project leaders and researchers.

The milestones achieved in information and communication technologies (ICTs) have staggeringly redefined the research landscape. This has spurred both palatable and unpalatable consequences, namely an upswing in open access/open science publishing (Anyaoku *et al.*, 2019; Pinfield *et al.*, 2020; Sayre & Riegelman, 2019; Wilson *et al.*, 2020; Chawinga & Zinn 2021). Originally, the focus was on open access publishing so that research publications could be freed from the constraints of copyright restrictions imposed by commercial publishers of journals. This focus led to an increase in accessibility to research publications through open access journals which do not require a subscription and are available via open access repositories or archives. These repositories are often managed by university libraries. The focus of open access has now moved to open access to research data and many open data repositories (Shelly *et al.*, 2018).

The debate on where to locate RDM services are far from over in higher education institutions in Uganda although academic libraries have a long history of supporting research activities by maintaining and disseminating scholarly information in universities (Corrall *et al.*, 2013; Searle *et al.*, 2015; Andrikopoulou, 2015). The argument runs that as data has been compiled or collected *at* the public expense, it is a “public good” and should, therefore, merit preservation (Moss, 2014). In higher education institutions in Uganda, there is concern regarding who should be responsible for research data management. The protagonists include relatives of deceased scholars, who often ask for lecture notes, incomplete manuscripts and research data produced by their loved ones (Moss, 2014); while there are various organs and departments of a university that have been associated with such research. Some schools of thought believe that RDM should be the responsibility of the researcher rather than the library, while others believe that RDM services should be located in the departments in the faculties where research supervision activities take place. Research data is now seen as a special resource, especially as an alternative financial source together with generated research data from projects, and libraries appear not to be in charge of research data management (Shelly & Jackson, 2018). There is a challenge regarding who should own intellectual property derived from inventions as well as share the financial benefits accruing from research and innovations generated from research data management. There is, therefore, significant lack of consistency in the conceptualisation and implementation of RDM practices across universities (Birkbeck *et al.*, 2022).

## Research Objectives

This paper explores opinions of senior members of staff across public and private universities in Uganda to:

1. Establish the implementation process of research data management functions of universities in Uganda.
2. Examine ownership and management questions of research data management in universities in Uganda.

## Related Literature

The implementation of RDM varies across universities globally. At Bielefeld University, for instance, it is considered as a cross-cutting task among central facilities and research groups at the faculties (Schirrwagen *et al.*, 2019). In many universities, university libraries are being actively involved from the early stages of establishing RDM by conducting the needs assessment of the academic research

community (Corrall *et al.*, 2013); by participating in the creation of an RDM policy that includes both funders and institutional requirements; through advocacy; by creating awareness; by providing support through training and consultation services; and by developing data repositories and creating metadata for research data (Tenopir *et al.*, 2012; Jones *et al.*, 2013; Pinfield *et al.*, 2014; Chiware & Mathe, 2016). At the University of East London, for example, the Research Committee provides general oversight of RDM and it includes representation from among senior academics and services departments, including the library, information technology (IT), and research development support (Chigwada *et al.*, 2017).

## Research Data Management Process (RDM)

RDM is a basic principle of scientific method through reproducibility and validation, leading to more trusted research (Chawinga & Zinn, 2021). It is expected that librarians are equipped with necessary RDM skills to proficiently and professionally support researchers in the whole data life cycle. These competencies are many but some of the most popular include data planning, documenting, sharing and preserving (Ahmad *et al.*, 2019; Chawinga & Zinn, 2020; Federer *et al.*, 2020; Heidorn, 2011; Howie & Kara, 2020; Kalusopa *et al.*, 2020; Koltay, 2019; Sayre & Riegelman, 2019). However, there is considerable literature from not only academic libraries and their staff but also from projects (Shelly *et al.*, 2018; Yu *et al.*, 2017), and university departmental staff are also increasingly involved in the RDM practices and processes in their universities (Andrikopoulou *et al.*, 2021). Integrated RDM support services across the entire research life cycle can effectively assist researchers in complying with requirements from funding agencies and journal publishers (Yu *et al.*, 2017). Many scholars have varying views about RDM processes and practice (Latif *et al.*, 2019; Towe *et al.*, 2020; Chigwada *et al.*, 2020). However, most agree on the imperative to adhere to research processes: idea development, funding, proposal development, conducting research (Mushi *et al.*, 2020) and disseminating research findings. RDM at Bielefeld University is considered as a cross-cutting task among central facilities and research groups at the faculties. It is established in departments that house policies, technical infrastructure and support structures (Schirrwagen *et al.*, 2019). The University of Dodoma in Tanzania identified institutional RDM policy and strategy, data management planning, managing active data, data preservation selection, data catalogues, data repositories, and supporting RDM from the library as important processes to consider (Mushi *et al.*, 2020). There are numerous RDM models proposed by different scholars (Yu *et al.*, 2017). However, the most widely adopted models are based on the research life cycle. One such model proposed by Vaughan *et al.*, (2013) lists five stages: idea development, funding, proposal development, conducting and disseminating research findings (Vaughan *et al.*, 2013). The Findability, Accessibility, Interoperability and Reusability – FAIR – model was proposed with the primary desirable dataset properties, which are that the data should be findable, accessible, interoperable and reusable. Through the FAIR model, the data integration and indexing system (DiiS) initiated addressed the challenges of data sources, data integration and different types of users (Deshpande *et al.*, 2019). The Generic Research Data Infrastructure (GeRDI) model is such a research data management initiative which targets long tail content that stems from research communities belonging to different domain and research practices. It provides a generic and open software which connects research data infrastructures of communities to enable the investigation of multidisciplinary research questions (Latif *et al.*, 2019).

GeRDI is an impressive model presented by Eidgenössische Technische Hochschule, Zürich (ETH Zurich University) whereby requirements are governed by institutional guidelines for research integrity, funders, regulations and legal obligations (Töwe & Barillari, 2020). It is based on three distinct phases along the research data life cycle, too. The first includes data management planning, active research data management, data publication and preservation. Secondly, there are two departments involving scientific IT services and these departments provide support services to different aspects of these phases and the third phase is dissemination of research data (Töwe & Barillari, 2020). Library support systems in each of these stages were then categorised, where it was found that there were only four RDM-related activities: locating data sources; preparing data management plans (DMPs); describing data; and navigating repository options (Yu *et al.*, 2017). However, if RDM is an activity of departments or projects within university structures, it will raise questions of sustainability and human resource requirements.

## Synthesis of RDM Process Model

### Phase I: Generation of primary research data

As observed in the literature, the basic process of RDM comprises idea development, funding, proposal development, conducting research and carrying out dissemination of findings (Mushi *et al.*, 2020; Schirrwagen *et al.* 2019). This constitutes primary research with original data. The purpose of research data management is, therefore, to provide preservation, conservation, access and dissemination of this scientific data which would otherwise be disposed of after the first research study is completed. This will enable the scientific enquiry to move to phase II using secondary data for purposes of reproducibility, as well as validating of earlier hypothesis and findings (Chawinga & Zinn, 2021).

### Phase II: Use of secondary research data

The research process can offer multiple sources of uncertainty about the occurrence of a phenomenon which may result in an incorrect conclusion (Beven, 2016). The sources of uncertainty include epistemic lack of knowledge about the data or the response data with which model outputs can be evaluated; epistemic disinformation (uncertainties in either system representation of data that is known to be inconsistent or wrong, linguistic uncertainty about what statements or quantities in the relevant domain actually mean, and ontological uncertainty associated with different belief systems) (Beven, 2016). For these reasons, different approaches to the analysis of the same scenario are imperative in drawing concrete assumptions. RDM provides an opportunity to test, verify and validate hypothesis. Hypotheses, according to Popper, should stand up to the most severe tests (Godfrey-Smith, 2016). The degree to which a hypothesis stands up to severe tests, constitutes the validation of the worth of the hypothesis and also the degree of evidence which confirms a theory (Godfrey-Smith, 2016; Helfenbein & DeSalle, 2005).

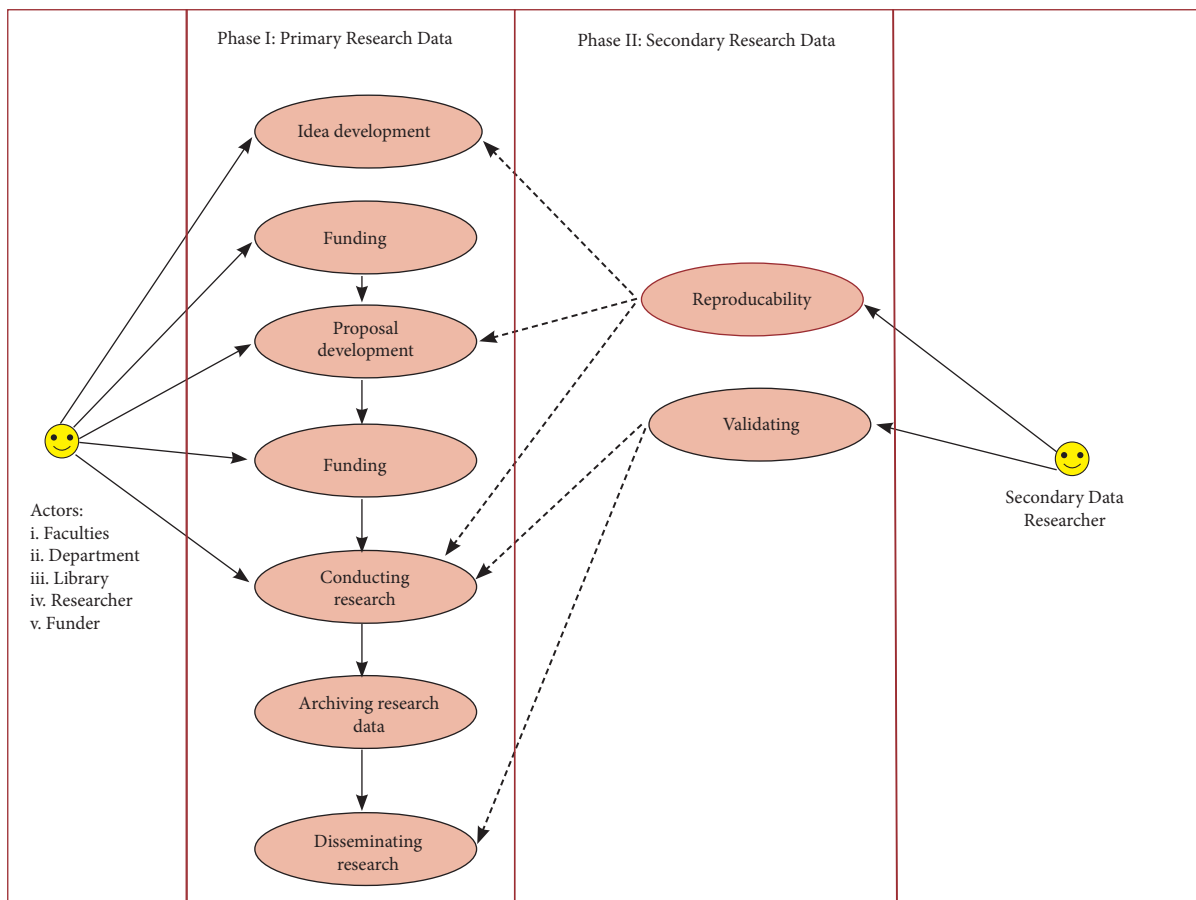


Figure 1: Synthesis of research data management process model

Apart from validating the hypothesis and reproducibility of a research output, RDM lowers the cost of research significantly since data does not have to be collected all over again. RDM should, therefore, be an integral part of the research process, as stipulated by national and international research funders (Biernacka *et al.*, 2021; Yu *et al.*, 2017; Latif *et al.*, 2019; Töwe & Barillari 2020).

## Methodology

The study used the deductive approach, relying on the quantitative method and data collected through survey design. Stratified purposive sampling was used. This is because the research sought to investigate staff with substantial experience, i.e. working experience of more than five years. The stratification was segmented first by level of education, i.e. undergraduate, master and PhD, secondly by years of service in a university setting (6–10 years, 11–15 years, 16–20 years, 21–25 years, 26–30, 31 above years). Further, segmentation was done in terms of managerial level (head of department, dean, academic registrar, project leader, principal investigator, administrators [accountants, support staff], university librarian, deputy vice chancellor, vice chancellor). The questionnaires were circulated and collected through the snowballing method using online Google Forms to minimise the challenge of costs involved in travelling and to allow peer scholars to forward the questionnaires across the staff of both public and private universities in Uganda, namely Gulu University, Makerere University, Busitema University, Mbarara University of Science and Technology (MUST), Uganda Christian University (UCU) and Uganda Martyrs University. Multiple submissions were guarded against by first guiding principal contacts to fill in the forms once and to select specific categories as stated above. The universities were selected based on involvement in research by those who filled in the Google Forms. The target population of the study was 40 staff across the universities, of whom 39 responded. This is sufficient because all the six universities were represented. Literature was reviewed to establish the basics of RDM work processes and procedures.

Another questionnaire was structured to capture knowledge of the existence of RDM importance, the department established, reasons for not practising RDM, possible location in the university structure, assessment perception of the value of RDM, ownership, responsibility for design, and the roles of faculties and libraries in RDM. Their socio-demographic data was captured for quality assurance, so that only senior managers of the universities were able to answer the questions because experience in a university system is key to understanding research data management. Secondly, although the default ownership of research data resides with the researcher, there is growing demand from other stakeholders to take control and ownership of research data since it has become a new source of currency for research institutions and funders (Downs & Li, 2021). To explore this, a question that sought opinion on who owns the research data of universities in Uganda was included. Thirdly, although in the past decade academic libraries have viewed themselves as playing a vital role in managing research data (Brown *et al.*, 2015; Cox & Pinfield, 2014; Tenopir *et al.*, 2017), there is need to know the views of university staff when establishing RDM functions in a university setting.

## Findings

### Socio-demographic characteristics of respondents

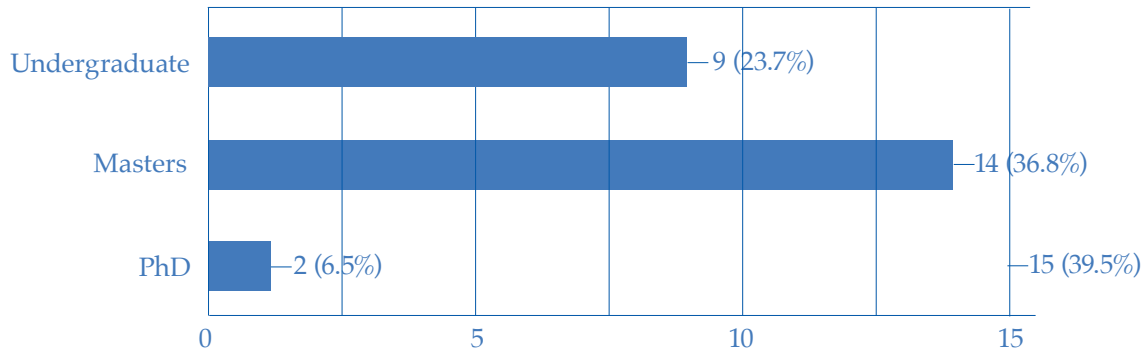
The socio-demographic characteristics used in this study include level of education, length of service in a university setting and managerial level.

#### Level of education

Out of the expected 40 participants expected for the study, 39 responded to the questionnaire. The majority of the respondents (76.6%) were senior managers at the level of PhD (39.5%) and master's fellows (36.8%), while those with first degrees were 23.7% of the respondents (see Figure 2 below).

## SOCIO-DEMOGRAPHIC INFORMATION a) Level of Education

38 responses

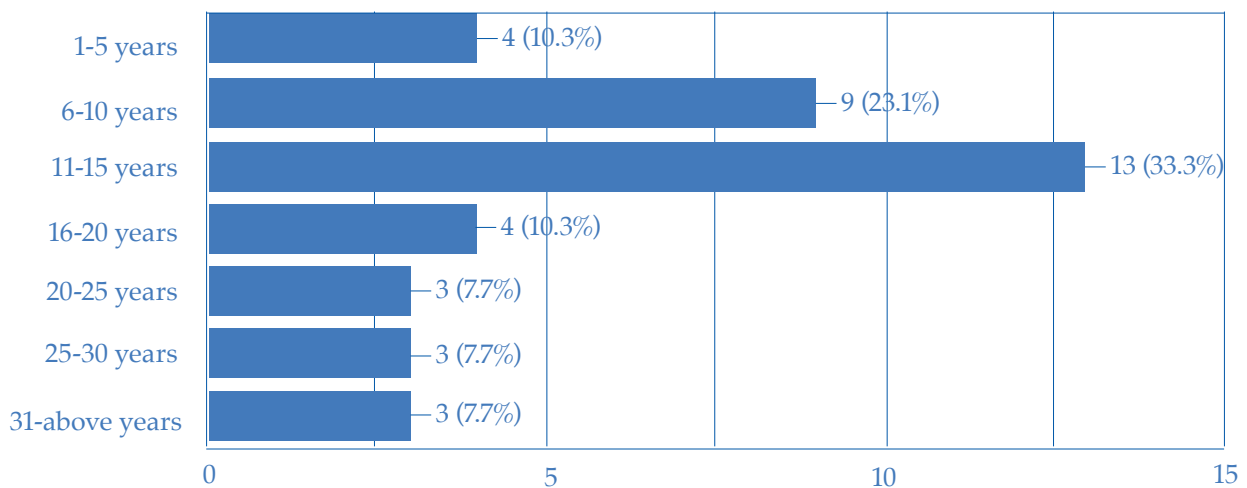


**Figure 2:** Educational level of respondents

The high participation of senior managers reflects confidence in the reliability of results. Staff having the qualifications of master's degrees and PhD are assumed to have requisite experience of the functional structures of their respective universities.

### Participants' length of service in a university

The length of service in a university environment is a crucial characteristic because such staff also have the requisite experience to conceptualise the functional structures of a university system. In Figure 3 below, we observe that all the respondents had worked in a university environment for a long time. Those who had worked in a university environment between 1–5 years constituted 10.5% of the respondents. The staff who had worked in a university environment between 6–10 years comprised 23.7% of the respondents. The majority of the respondents (33.3%) had worked in a university environment between 11 and 15 years; while staff who worked in a university environment between 16–20 years comprised 10.3% of the respondents. The staff who had been working in a university setting between 20–25, 26–30 and more than 30 years comprised 23.7%, with each category having accounting for 7.9% of the respondents.



**Figure 3:** Length of service of respondents in a university environment

As observed above, most of the respondents had worked in a university environment for a long time, with the majority (66.7%) having worked for over 10 years. This implies that they very much knew how the functional structures of a university operates and, therefore, could advise on how new initiatives could be embraced.

### Participants' managerial level

To ensure that we were confident of the respondents' managerial level, the respondents were asked their titles, which would be deemed indicative of their managerial levels. **Figure 4** shows that 23.1% of the respondents were heads of department, 7.7% were deans, 7.7% were project leaders and another 7.7% were principal investigators in various projects.

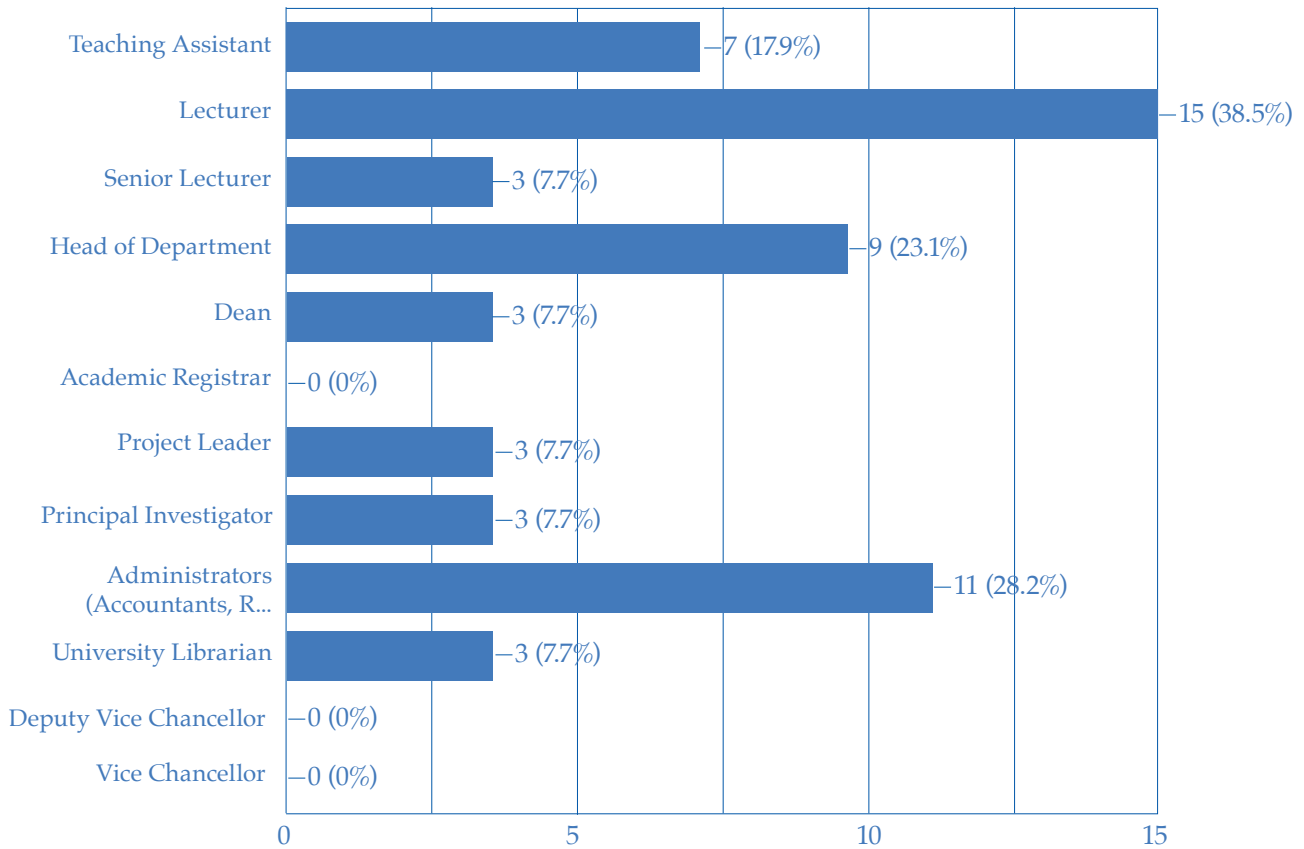


Figure 4: Participants’ managerial level in a university setting.

Non-teaching managers comprised 28.2% and 7.7% were university librarians. There were no responses from vice chancellors and deputy vice chancellors.

With the high level of education of the respondents, their long period of service in a university setting and the senior managerial levels exhibited from the responses, we can assume that they can advise correctly about the functional structures, locations for new initiatives like research data management as well as the conceptualisation of research and innovations that take place within a university environment.

### Awareness of RDM Activities in Respective Universities

As pointed out, RDM appears to be a new concept being embraced not only by research institutions, but by universities across the world (Fitschen *et al.*, 2005; Henderson *et al.*, 2015). However, in Ugandan universities, RDM is not yet properly embraced, as can be seen from the responses in Figure 5 below. We can observe that 78.4% of the respondents acknowledged that the practice did not exist in their universities.

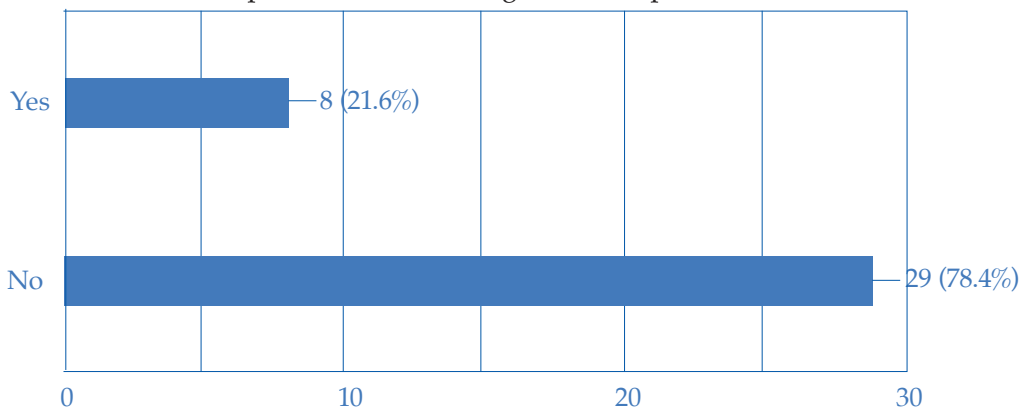


Figure 5: Staff responses about existence of RDM practices in their respective universities

Only 21.6% of the respondents acknowledged that the RDM practices existed in their universities.

The respondents justified why their respective universities were not involved in research data management (see Figure 6). While 29% of the respondents expressed the belief that RDM is a new concept, thus the reason their respective universities were not yet involved, 74.2% acknowledged awareness of the existence of RDM but admitted that no initiatives had yet been taken to establish a dedicated department responsible for RDM practices. The skill set requirement for establishing RDM was also found to be a challenge across the universities, with 6.5% of the respondents believing that their universities did not have the requisite skills for RDM.

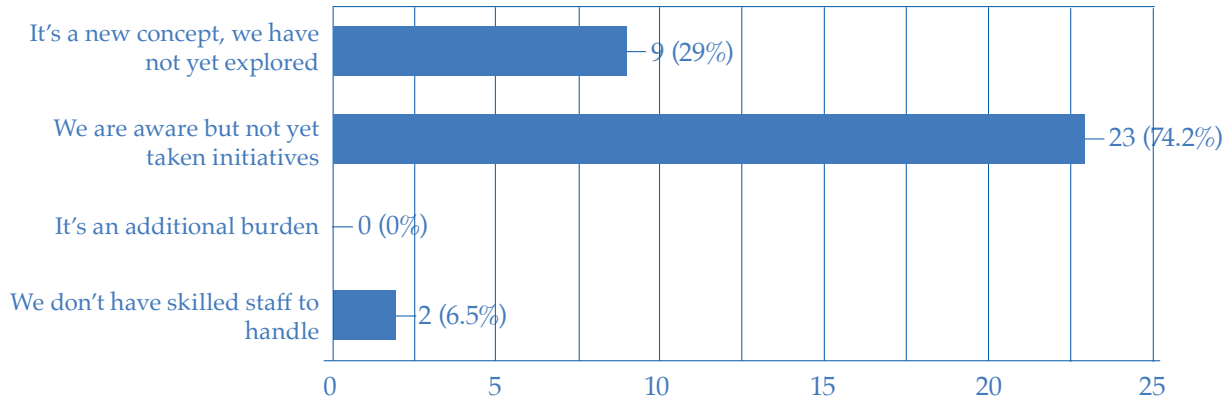


Figure 6: Reasons for universities not engaging in RDM practices in Uganda

### Research Data Management Process

The respondents were asked: "At what stage of research is research data management important?" All the 39 respondents answered the multiple-choice questions. Regarding research idea development, 61.5% of the respondents expressed the belief that RDM is critical. The number dropped to 35.9% of respondents when it came to the importance of decisions on funding RDM. Regarding proposal development, 76.9% expressed the view that RDM should be in place, showing the importance attached to it. With respect to conducting research, 69.2% of the respondents indicated that they attached great importance to RDM practices. Those who believed that RDM is important during the dissemination of research findings stood at 53.8%. Finally, 56.4% of the respondents emphasised that RDM is important even after research.

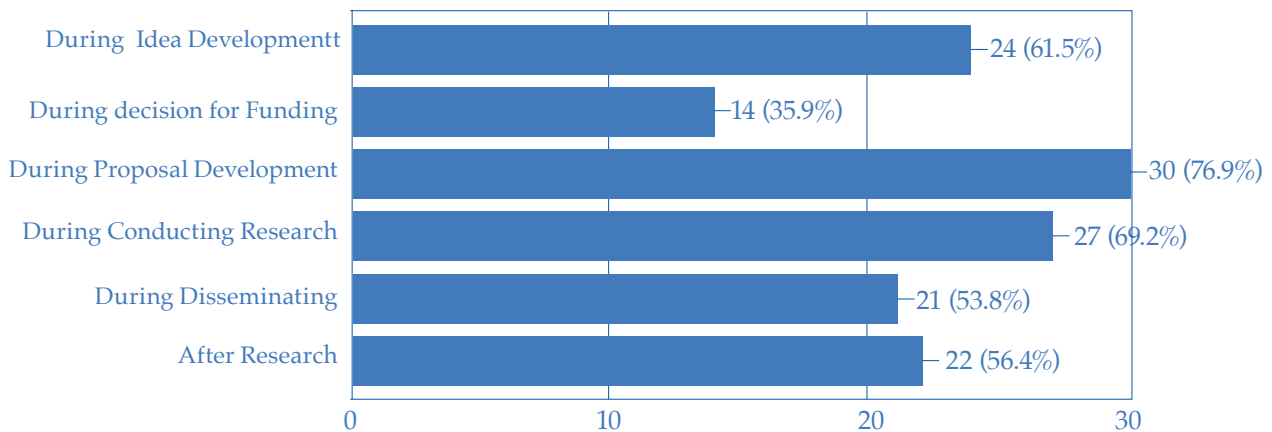
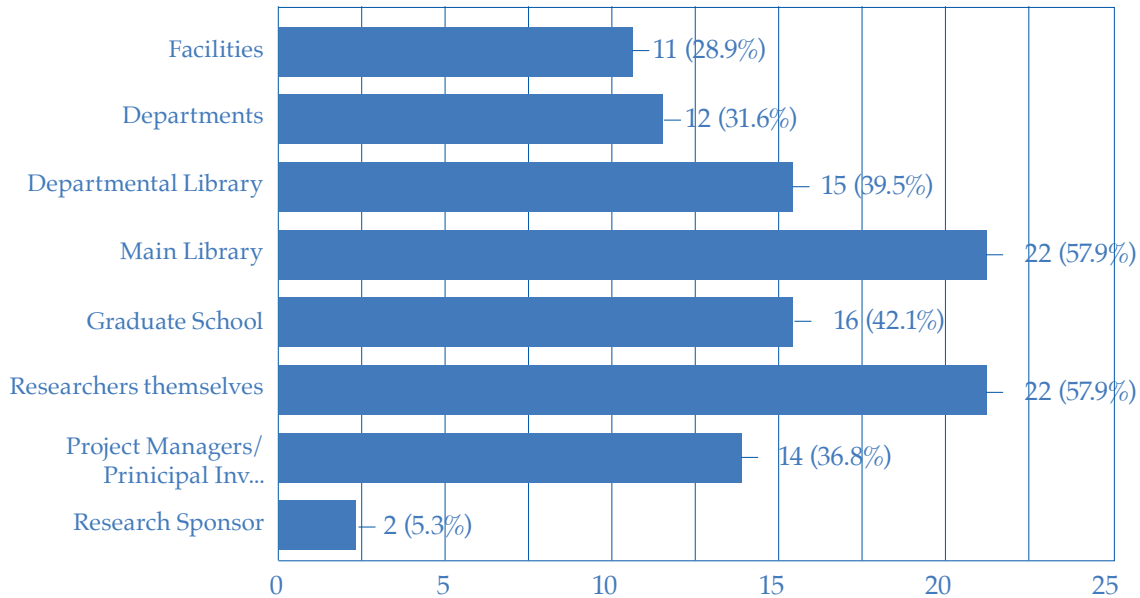


Figure 7: Stages of research when RDM is important

From the observations above, we can deduce that RDM practice is important throughout the life cycle of the research process. There is no single stage where the importance RDM practice is underscored. In designing an RDM establishment, therefore, access to data should be possible at all stages of the research process. Although in the past decade, academic libraries have viewed themselves as playing a vital role in managing research data (Brown *et al.*, 2015; Cox & Pinfield, 2014; Tenopir *et al.*, 2017), there are varying opinions in universities in Uganda. As was observed from the responses in Figures 5 and 6, most universities did not have RDM establishments. This is because it is a new concept and initiative perceived as important but hardly implemented as distinct departments created in the structures of a university setting. In this questionnaire, the views of scholars on where the RDM host department should

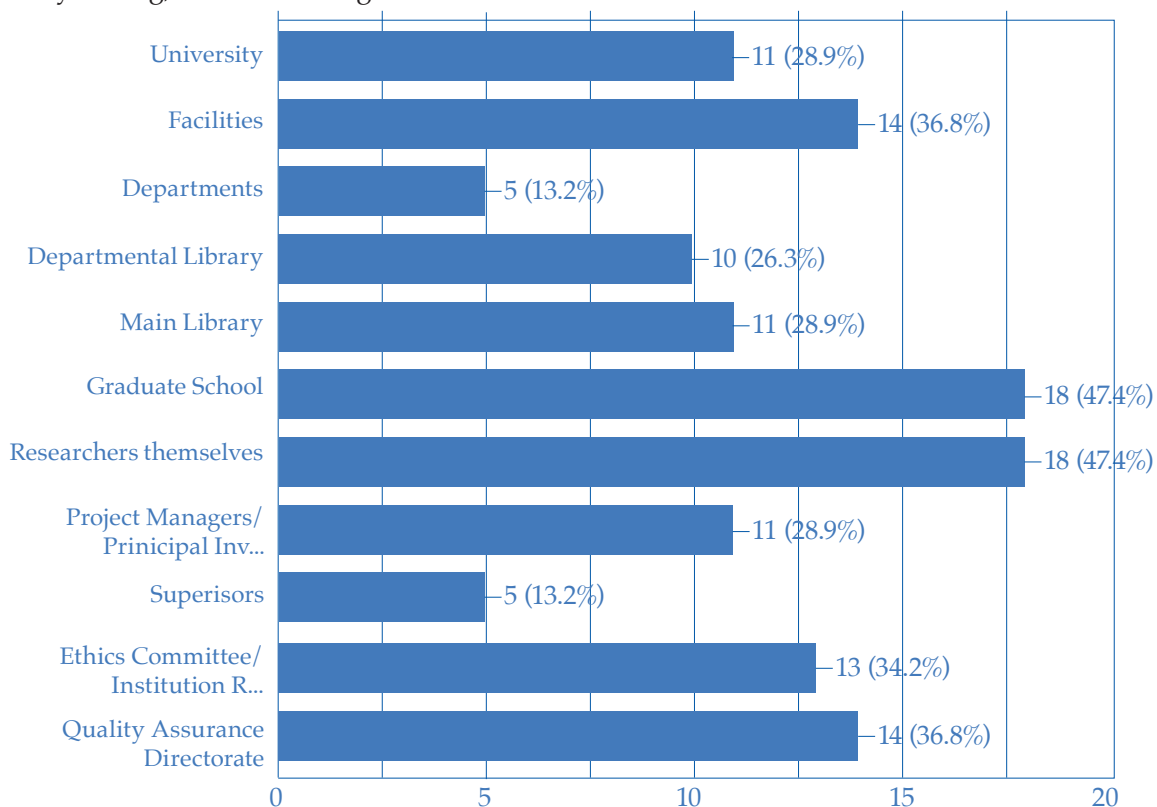


be located were explored, as shown in Figure 8. Opinions varied among the scholars but they expressed the belief that libraries and researchers are the most important actors to manage RDM practices, with 57.9% of the respondents expressing this view. The respondents' opinions spread responsibilities among various structures, with 36.8% placing them with project managers/principal investigators, 31.6% with departments and 28.9% with faculties.



**Figure 8:** Views of university staff about which department should manage RDM functions

We can, therefore, deduce that the scholars did not exclusively agree that one single department should be solely responsible for RDM practices within a university setting. There were also varying opinions about which department should take the responsibility for designing and setting up RDM practices in a university setting, as shown in Figure 9.

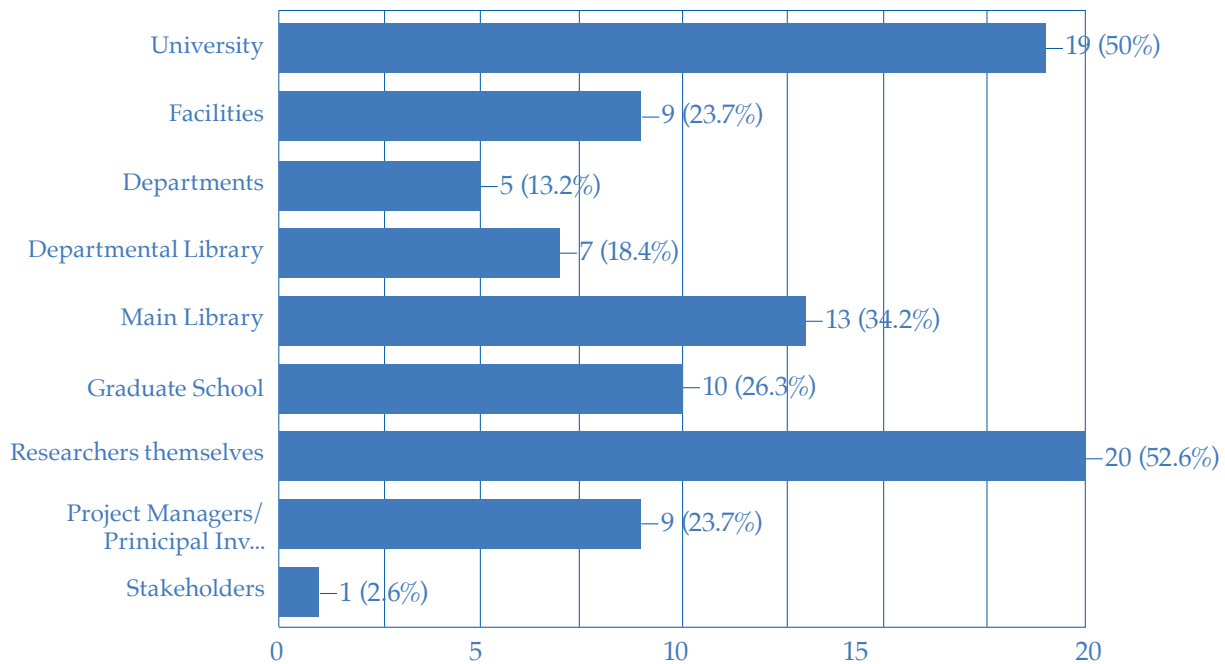


**Figure 9:** University staff views about who should design RDM practices in a university setting

As can be observed above, opinions varied among the staff on who should design RDM processes and practices in a university environment. The majority of the respondents, at 47.4%, proposed that the responsibility should go to graduate schools as well as the researchers themselves; quality assurance received the support of 36.8 % of the respondents; the Ethics Committee, 34.2%; supervisors, 13.2%; the main library, 28.9%; departmental libraries, 26.3%; departments, 13.2%; faculties, 36.8%; and the university as a whole, 28.8%. The role of the libraries in RDM, however, was unanimously supported across the staff, as shown in Figure 10, with responsibilities appearing in all stages of research.

### Ownership of Research Data

In this survey, the staff were asked who they thought should own research data. It was established that the opinions of the respondents equally varied across the spectrum of the functional units of the university, researchers and funders. Out of the 38 responses received, 50% indicated the belief that the university should own research data; 23.7% that the faculties should take ownership; 13.2% that it should be the responsibility of departments; 18.4% that it should be that of departmental libraries; 34.2% attributed ownership to the main libraries; 26.3% recommended graduate school; 52.6% recommended that ownership be left to individual researchers; 23.7% recommended that the research data be owned by project leaders and principal investigators; while 2.6% indicated that other stakeholders, such as the funders, should own the research data.



**Figure 10:** Opinion survey on who should own research data in a university setting

As we can observe, there is, therefore, no consensus among respondents on who should own research data. However, significant recommendations were made for the benefit of the universities and for the individual researchers.

The variation in opinions is a hindrance to the effective implementation of RDM in universities. Although the curation of information materials is traditionally known to be the mandate of libraries, libraries do not own research data. In the same way, libraries do not own the copyright of materials in the collection.

## Discussion

In Uganda, the object of the Universities and Other Tertiary Institutions Act, 2001 is to establish and develop a system that governs institutions of higher education in order to equate qualifications of the same or similar courses offered by different institutions of higher education while at the same time respecting the autonomy and academic freedom of the institutions, and to widen accessibility to high-

quality institutions to students wishing to pursue higher education courses (Universities and Other Tertiary Institutions Act, 2001). Together with the two sister policies – the Universities and Other Tertiary Institutions (Institutional Standards) Regulations, 2005 and the National Council for Higher Education Quality Assurance Framework for Universities – the licensing process for higher education institutions details the structures for governing universities. However, all the three are silent on RDM as functional departments that every university should establish. This leaves individual universities at liberty to define the development of RDM as a functional unit/department. The importance of RDM has been enumerated by many scholars, as observed in the literature. It is an important by-product of research that is often overlooked, but with the advocacy of patentable products as well as reusability of the same data for further analysis, RDM has emerged as a critical aspect of universities that requires special attention. None of the universities in Uganda under study has an established, functional department for RDM. This important role is, therefore, left to individual researchers, research project administrators or private NGOs partnering with universities. When projects are closed, the research data may be disposed of or taken up by funding agencies. Universities in Uganda are, therefore, losing its hard-won intellectual property which would otherwise be mined from research data storage facilities if there were established units for their long-term storage and preservation. The possible location of RDM in a university structure was explored in this survey. The fact that research data is generated by researchers themselves gives them the right to own the intellectual property related to the data. For this reason, the researchers hold their research data dear but the majority would prefer that their respective departments, in which they are in control, be in charge. The challenge is that long-term preservation and conservation of research data are not tenable by an individual. Only institutionalised preservation can guarantee space, and technology upgrades together with personnel will ensure longevity for research data.

The responsibility for designing the RDM function elicited varied views in this survey. Design should start by universities providing an enabling policy that ensures the establishment of a RDM department in the existing structures. This should be followed by the recruitment of the required qualified staff dedicated to achieving the effective establishment of the unit. The university governing bodies, therefore, have to embrace, plan and budget for the new unit. The enabling policies to be proposed for the RDM functional department need to specify the roles of the various departments and align them to the existing establishments. If the RDM unit is to be incorporated into the existing departments like the library, the policy should state succinctly the roles and mechanisms for evaluation of the performance of the unit.

The reasons for not practising RDM varies, as one of the respondents put it. There would not be significant RDM practices because universities do not have strong research units (at least on the part of private universities). The situation is a little different for public universities with distinguished research projects and research sponsorship through government funding. However, even then, the public universities have not set up an admirable research structure/culture that can be emulated. The best the country can get from such projects is a publication, published in an inaccessible title. This amounts to wastage of both the research results and government/public money. Both the government and the government institutions have not been intentional in developing the research culture in a comprehensive scale. We acknowledge some technological projects that are coming up in public universities. However, the environment within which they mushroom lacks basic underlying platforms like policies to guide the research agenda of the universities. When the Uganda National Council for Science and Technology (UNCST) and others come up with funding, they, too, turn out to lack the kind of strong support structure required to ensure that even public or borrowed money can be utilised in such a way that it results in research and development.

The fact that research builds on existing knowledge means that the absence of the RDM function is a huge oversight on the part of universities. Research data from published work can be reused if well acknowledged. Some data is very expensive to collect from primary sources and, in some cases, data may no longer exist for continued collection. An example is data on extinct species of animals and plants or diseases which no longer exist in a community. RDM becomes a crucial resource for further development, a source of analysis to link the existing information to new research projects as well as to guide literature and establish research gaps. It is an important basis for longitudinal studies and comparative studies

with cost-effective benefits to researchers. RDM would be an establishment that serves as reference support for future research endeavours, thus increasing the integrity of research instruments and helping reduce duplication. Time would be saved through accessing the study instead of reinventing the wheel and validating gaps. RDM can be used as a guide to the researchers in areas which have been heavily researched. This can help in replication and in establishing further research areas, leading to the generation of new knowledge, and can also be used to attract funding. Finally, RDM can be used for training purposes and to write scholarly articles.

## Summary and Conclusion

In Ugandan universities, RDM practices are not yet properly embraced as can be seen from the responses in Figure 5. It is observed that 78.4% of the respondents acknowledged that the practices did not exist in their universities. The universities acknowledged being aware of RDM, but admitted that they had not yet taken initiatives to establish a dedicated department responsible for RDM practices. There was no agreement as to which department should be solely responsible for RDM functions within a university setting. Opinions also varied about which department should take up the responsibility for designing and setting up RDM practices in a university setting. Many of the scholars believe that currently there are limited skills connected to the process of establishing RDM practices as a functional unit with well elaborated business processes within the structures of the universities.

1. We, therefore, conclude that the implementation process of RDM functions of universities in Uganda has not yet been adopted formally in the structures of all the universities under study. There is need to benchmark the practice against other universities practising RDM and to establish policy guidelines for its implementation.
2. On the question of ownership of research data, there was no consensus on who should own data. However, significant recommendations were made by the respondents for the university and the individual researchers. There is need for policy guidelines also to streamline the question of ownership of research data across the universities.

## Recommendations

1. Government should enact policies on RDM to guide implementation. This should be done while ensuring alignment with the mandate of the National Council for Science and Technology (UNCST) together with partner government parastatals in charge of research.
2. At the national level, RDM should be established to absorb research data generated by private organisations /non-governmental organisations that are research-based. There should be an assemblage of research data at a National RDM Centre. Normally when projects end, these NGOs dispose of otherwise valuable research data collected from the citizens.
3. There is, therefore, need for immediate action to consider establishing RDM practices in the various universities that do not have them. Academic libraries across the country should establish RDM practices in their services. The National Library of Uganda and the Consortium of Uganda University Libraries should plan a benchmarking tour to enable them to guide the process.

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## Conflict of Interest

No potential conflict of interest was reported by the authors.

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