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Exploring Collaborative Partnership in Research Data Management: A study of Selected University Libraries in Kenya

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Abstract

The study focuses on research data management, which involves a wide range of data lifecycle-related responsibilities and activities. It intended to assess the appropriate collaborative partnerships and areas of collaboration to enhance RDM tasks such metadata production, analysis, storage, sharing, and reuse. The study employed descriptive quantitative design to collect data from 35 participants purposefully chosen from Egerton and Kenyatta University. The Cronbach Alpha test was used to assess the questionnaire's reliability. A Cronbach Alpha of 0.78 ascertain the instrument reliability. The collected data was analyzed using the statistical package for social sciences. The study findings were presented using tables for understanding. The findings reveal that collaboration among, librarians, researchers, IT professionals, legal experts, research directorates, and academic units could help in achieving a flowless research data management practice. Also, the collaboration areas were identified including defining of data repository criteria, reusing research data, choosing data repositories, exchanging data across disciplines, and data sharing within and outside discipline. However, in data renting period, participant had low perception. The study recommends further research on each collaboration partners to ascertain the duties and responsibility for flowless adoption of research data management practices. Also, an exploration of what should be included in each collaboration areas could help shed light to academic institution libraries on specific aspects for successful implementing/adoption of RDM practices.

Keywords: *Research Data Management, Collaboration,* Metadata

1. Introduction

In the past two decades, research data management has gained increasing importance due to the emerging demand for a broader and higher-quality range of data services to meet patron needs at various points in the research process amidst challenges surrounding collecting, curating, storage, preservation, and research data re-use (Masinde et al., 2021). Research data management is a process that offers possibilities of creating complementary skill interaction and shared understanding (Steel, Thompson, and

Wright ,2019). The some of the benefits associated with research data management cut across researchers and libraries including developing closer relationships between researchers and research community and redefining librarians' role in supporting research activities. (Chity & McRostie, 2016).

Collaboration implies equal terms of contribution fostered by common goals, reverence, and recognition of the partner's contribution, ensuring an optimal outcome, particularly between knowledge managers and teaching units to promote scholarly work, training, research process, and outcome. Amorim et al (2017) observes that stakeholders' involvement impact on research data reuse and takes care of issues relating to legal, selection of data repository platform, renting stored data, and coming up with evaluation criteria for data repository among others. According to De Silva & Vance (2017) collaboration enhances the use of e-research, recognized as the employment of technology to facilitate the development of simulated labs, exhibitions, mockups, forecasts, scrutiny for data, and the unearthing of design. Further, De Silva & Vance (2017) inform that collaboration equipped with technological tools and infrastructure such as data visualization and visual analytic tools influence scholarly practices among departments through better management of research data activities. Steel, Thompson, & Wright (2019) developed a novel university research collaboration group depicted by service units (technical and policy infrastructure to encourage research data management.

Encouraging collaboration between the librarians, I.T. professionals, and research offices foster a cordial working relationship with funding agencies' requirements and university-adopted policies on research data management. Further, the implementation of cutting-edge data repository, expansion of institutional repository capacity, and data visibility is often enhanced through collaboration. Collaboration with researchers leads to wide-university outcomes in metadata contribution and research data discovery through researchers' interface for data deposit and access (Steel, Thompson, and Wright, 2019). However, the information science discipline's long-standing traditions, distinctive character, and struggle for a location to produce its subculture and knowledge, are challenges which curtail collaboration particularly in RDM development and execution, urgently calling for some kind of cooperation (Koltay's, 2016).

1.2 Problem Statement

The institutions of higher learning partnership particularly in the development of RDM suite services and infrastructure facilitate coordinated, seamless general research data management services for researchers (Steel, Thompson, and Wright, 2019). The epistemological boundaries of library and information science are often made stronger by collaboration, generating creative possibilities. Consequently, the technological dynamics and e-research abilities have alleviated potential failure due to differing opinions (Pinfield, 2017). Also, Ng'eno & Mutula (2022) allude that collaboration in research data management is often challenged by different layers of complexity such as confidential information, data variation, contamination of the dataset, varied opinions on the data retention period, and differing views on best practices for RDM. Equally, Cox & Tam (2018) argue that collaboration with other stakeholders in RDM may gradually eliminate professional information distinctiveness and the library's ability to maintain its identity.

1.3 Research Objective

1. To establish the appropriate collaborative partnerships for effective research data management
2. To explore the areas of collaborative aspects research data management

2. Literature Review

Andrikopoulou, Rowley & Walton (2021) inform that globally libraries are actively involved to support teaching and learning impacting floor space re-arrangement to accommodate growing scholarly activities. Therefore, the platform in which academic libraries operate has been expanded to feature created space, structure, partnership, and strategy instrumental in the implementation of RDM services. Concurring with (Steel, Thompson, and Wright, 2019), Ng'eno and Mutula (2022) pointed out that it is necessary for institutions to share data widely to create and sustain public-private partnerships among organizations and associates. According to Chiware & Mathe (2016) RDM is an extension of academic libraries' traditional activity, and a collaborative endeavor driven by rapid technological change and a competitive environment can contribute to both library and institution prestige. Also, the study informs that RMD activities require joint efforts such as consenting agreements, actions to share resources, and support services. Further, successful implementation of RDM requires stakeholders to have common interests and professional skills in information literacy training and repository management exemplified by individuals' ability to effectively carry out collection development role metadata management, and resource discovery to accomplish mutual goals and promote broader interest for community benefit.

In a collaborative partnership, there is a wide distribution of obligations, extensive cooperation, communication, and interpersonal context. Ng'eno and Mutula (2022) affirms that collaboration reduces effort duplication and data loss, as evidenced in the developed countries' enriched research data repositories. International agencies, including the National Science Foundation in the United States and Australia National data Services, advocate for collaboration with concerned partners as research data is pervasive and potentially long-term lived assets for society. However, Ng'eno and Mutula (2022) cited challenges that hinder collaboration in research data management, including different layers of complexity such as confidential information, data variation, contamination of the dataset, varied opinions on the data retention period, and differing views on best practices for RDM.

Consequently, Ng'eno and Mutula (2022) proposed solutions that may arise from collaboration, such as the development of a common research portal for secure access and the implementation of a data management plan. A data management plan enables widespread access, reuse, and longevity of research data due to different measures employed to address legal and regulatory control for data generated by a research project. A data management plan, as put into perspective by Ng'eno and Mutula (2022), helps to minimize challenges by providing guidelines to define appropriate quality and metadata standards. Also, data plan helps in data sharing procedures, restrictions, ethical and legal issues, copyright, intellectual property, and ownership, storage, backup and security, preservation, sharing, and access, roles and responsibility for RDM, and cost implication for RDM activities. Ng'eno & Mutula (2022) inform that collaboration within an institution, particularly between the library and IT department, helps in role and responsibility allocation leading to well-structured and synchronized research data services.

The IT department support RDM by providing technical assistance related to metadata standards and data management plan, authors support, and other complex issues which may arise such as deselecting data, preparing data sets, and metadata production. Further, Ng'eno and Mutula (2022) illuminate that the development and implementation of RDM policies require multiple collaboration actors, including researchers, librarians,

and IT specialists. However, Cox & Tam (2018) study done in the USA observe that though collaboration with other stakeholders in RDM could positively impact an institution of higher learning, the approach may gradually eliminate professional information distinctiveness and the library's ability to maintain its identity. Every step of the RDM process requires the development of policies and laws that address data curation, quality, and security in addition to ethical considerations, human resource capacity, technical infrastructure, and cooperative collaborations (Ng'eno and Mutula, 2022).

2.1 Conceptual Framework

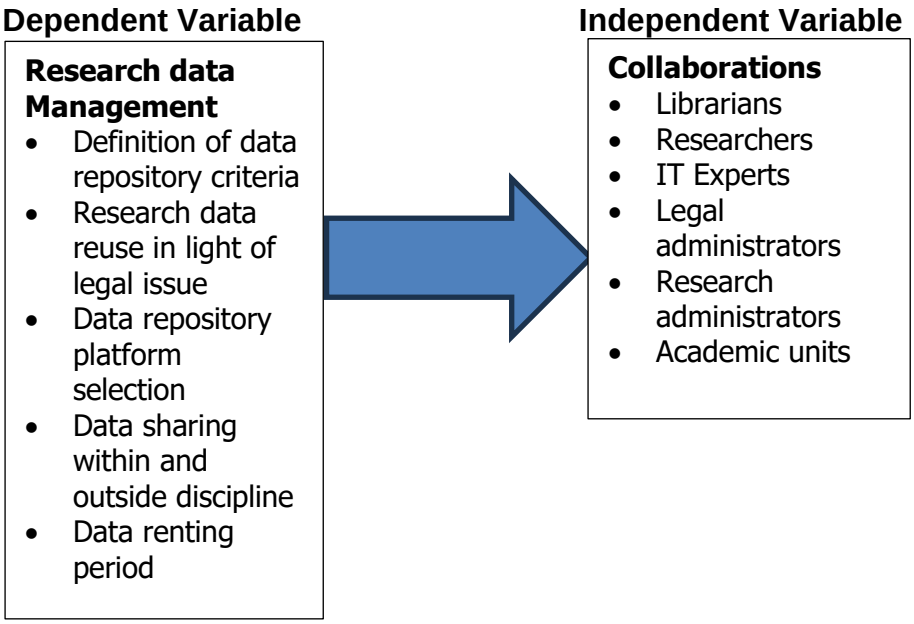

Figure 1.1: Illustrating the conceptual framework.

Source: Authors, 2024**.**

3. Methodology

The study used descriptive quantitative design as it allowed gathering of numeric data from a substantial number of participates. Also, the design enhanced use of questionnaires, to gather data from 35 participants purposefully selected. The questionnaires were ad mistered and collected and a Cronbach Alpha test done to assess the questionnaire's reliability. A Cronbach Alpha of 0.78 was realized proving the questionnaire reliability. The collected data was analyzed using the statistical package for social sciences. The finding was presented using tables and chart for understanding.

4. Results and Discussion

The table shows the cooperative research data management agreements between several categories of staff. The categories are Librarians, Researchers, IT Professionals, Legal Experts, Research Administrators, and Academic Units into which the collaborations fall.

Table 1: Illustrating Collaborative Partnership

Category	Collaborative research data management Partnership											
	Librarians		Researchers		IT Professionals		Legal Experts		Research Administrators		Academic Units	
Chief Librarian K	1	3.3%	1	3.8%	1	4.3%	0	0.0%	0	0.0%	1	5.9%
Chief Librarian E	1	3.3%	1	3.8%	1	4.3%	1	6.7%	1	5.9%	1	5.9%
Deputy Librarian K	1	3.3%	1	3.8%	1	4.3%	0	0.0%	0	0.0%	0	0.0%
Deputy Librarian E	1	3.3%	1	3.8%	0	0.0%	0	0.0%	1	5.9%	1	5.9%
Section Heads K	5	16.7%	4	15.4%	4	17.4%	0	0.0%	4	23.5%	1	5.9%
Section Heads E	6	20.0%	5	19.2%	4	17.4%	4	26.7%	4	23.5%	4	23.5%
Senior Library Assistant K	5	16.7%	3	11.5%	3	13.0%	3	20.0%	2	11.8%	3	17.6%
Senior Library Assistant E	4	13.3%	4	15.4%	4	17.4%	4	26.7%	3	17.6%	3	17.6%
Research Directorate Staff E	3	10.0%	3	11.5%	3	13.0%	2	13.3%	2	11.8%	2	11.8%
Graduate School Staff E	3	10.0%	3	11.5%	2	8.7%	1	6.7%	0	0.0%	1	5.9%
Total	30	100.0%	26	100.0%	23	100.0%	15	100.0%	17	100.0%	17	100.0 %

Source: Author, 2023.

The finding from chief librarian's K/E inform their perception concerning who should be involved in research data management including librarians at 3.3%, researchers at 3.8, IT professionals at 4.3%, and academic unit at 5.9%. However, this category of respondent refuted the importance of research administrators and legal expert in assuming an active role the total in research data management. Deputy Librarian K/E from both categories K and E share similar perception on the important role played by the collaborators in supporting RDM practice including librarian at 3.3%, researchers 3.8, IT professionals 4.3%, legal experts 6.7%, research administrators 5.9%, and academic unit at 5.9 respectively.

Section heads K/E result reveals a greater understanding of collaborators in RDM practices including librarians 16.7%, 20.0% researcher 15.4, 19.2%, IT 17.4%, 26.7 research administrators 23.4% 23.4%, and academic unit at 5.9% and 23.5%. However, the category from K refuted on legal expert role in research data management whereas participants from E approved legal experts' active involvement in RDM practice. Senior Library Assistant K/E likewise approves of collaboration in RDM practice including librarians 16.7%, 13.3%, researchers 11.5%, 15.4%, IT 13.0%, 17.4%, legal expert 20.0%, 26.7%, research administrators and academic units at 17.6% and 11.8%respectively. Research Directorate Staff category participant responses were gathered from E which indicates a positive perception on role played by different collaborators in RDM including librarians 10.0%, researchers 11.5%, IT 13.0%, legal experts 13.3%, research administrators and academic unit at 11.8% respectively.

4.1 Interpretation

Librarians, including Chief Librarians, Deputy Librarians, Section Heads, Senior Library Assistants, Research Directorate Staff, and Graduate School Staff, collaborate with each other, with Chief Librarians E showing the highest percentage (20.0%). Ng'eno and Mutula (2022) support the above findings by illuminating that the development and implementation of RDM policies require multiple collaboration actors, including researchers, librarians, and IT specialists Collaboration with researchers is common in

all areas. The greatest percentages are shown by Section Heads E and Senior Library Assistant E, showing active involvement with researchers. Collaboration with IT Professionals differs by category though the percentage are commendable. Section Heads E and Senior Library Assistant E have larger percentages than others, indicating a demand for IT skills in research data management projects. The findings are supported by Ng'eno & Mutula (2022) who inform that collaboration within an institution, particularly between the library and IT department, helps in role and responsibility allocation leading to well-structured and synchronized research data services.

Collaboration with Legal Experts is moderate, with larger percentages among Chief Librarians E and Section Heads E. Legal counsel is being sought to handle the legal implications of research data management. Also, the results are supported by Ng'eno & Mutula (2022) by advocating for legal experts in RDM to help in addressing legal and regulatory issues for data generated by a research project. Collaboration with Legal Experts highlights the significance of addressing legal and ethical issues in research data management. Institutions should ensure that their employees are well-versed in legal obligations (Ng'eno & Mutula, 2022). Collaboration with Research Administrators is widespread across categories, with Section Heads E and Senior Library Assistant E having the highest percentages. Administrative parts of research data are managed by research administrators. Collaboration with Academic Units is common across categories, highlighting the need of involving multiple academic departments. The highest percentage is found in Section Heads E, showing active engagement with academic units. Steel, Thompson, & Wrigh, (2019), affirms the necessity for institutions to share data widely to create and sustain public-private partnerships among organizations and associates through collaboration among departments.

4.2 *Areas of Collaboration to Support Research Data Management and Collaboration Drivers*

The findings reflect participants' reactions to crucial areas of collaboration in the context of university libraries' readiness to implement research data management (RDM). Collaboration drivers include areas such as definition of RDM data repository criteria, research data reuse with legal considerations, data repository platform selection, data sharing inside and beyond disciplines, and data rental duration.

The result reveal similar positive perception of chief librarians in both institutions in defining data repository criteria at 4.5%, research data reuse in light of legal issues 5.3%, and data repository platform selection at 4.3%. However, their perception differs slightly on data sharing within and outside discipline and data renting period with K participants disagreeing. Consequently, the chief librarians in E approves the importance of collaboration establishing how data should be shared within and outside discipline, though also disapproved on data renting period. The deputy librarian K/E had almost similar positive perception on important areas of collaborations including Defining of data repository criteria for RDM 4.5%, research data reuse was approved by K participants at 5.3%, and data repository selection at 5.9%. However, the participants disagreed on data renting period. Equally, the section heads K/E strongly supported collaboration in

defining of repository criteria for RDM 18.2%, research data reuse 5.3%, 26.3%, data repository platform selection 17.6%, 23.5%, data sharing within and outside discipline 17.6%, 23.5% and data renting period at 16.7%, 33.3%. Also, the senior library assistant in K/E strongly approved collaboration in defining of data repository criteria in RDM 13.6%, 18.2%, research data reuse 21.1%, data repository platform selection 17.4, data sharing within and outside discipline 11.8%, 23.5%, and data renting period 16.7% and 33.3%.

Table 2: Illustrating Collaboration Areas

Category	Research Data Management Collaboration Areas									
	Definition of data repository criteria for RDM		Research data reuse in light of legal issues		Data repository platform selection		Data sharing within and outside disciplines		Data renting period	
Chief Librarian K	1	4.5%	1	5.3%	1	4.3%	0	0.0%	0	0.0%
Chief Librarian E	1	4.5%	1	5.3%	1	4.3%	1	5.9%	0	0.0%
Deputy Librarian K	1	4.5%	1	5.3%	1	4.3%	1	5.9%	0	0.0%
Deputy Librarian E	1	4.5%	0	0.0%	0	0.0%	1	5.9%	0	0.0%
Section Heads K	4	18.2%	1	5.3%	3	13.0%	3	17.6%	2	16.7%
Section Heads E	4	18.2%	5	26.3%	5	21.7%	4	23.5%	4	33.3%
Senior Library Assistant K	3	13.6%	4	21.1%	4	17.4%	2	11.8%	2	16.7%
Senior Library Assistant E	4	18.2%	4	21.1%	4	17.4%	4	23.5%	4	33.3%
Research Directorate Staff E	1	4.5%	1	5.3%	3	13.0%	0	0.0%	0	0.0%
Graduate School Staff E	2	9.1%	1	5.3%	1	4.3%	1	5.9%	0	0.0%
Total	22	100.0%	19	100.0%	23	100.0%	17	100.0%	12	100.0%

Source: Author's computation, 2023

4.2.1 Interpretation

The definition of data repository criteria and the selection of an appropriate data repository platform are seen as essential cooperation areas. This implies that there is a shared understanding that setting defined criteria for data repositories and selecting appropriate platforms are essential for good research data management. Ng'eno & Mutula (2022) in support allude that every step of the RDM process requires the development of policies and laws that address data curation, quality, and security in addition to ethical considerations, human resource capacity, technical infrastructure, and cooperative collaborations. Section Heads (E) and Senior Library Assistants (E) place a greater emphasis on research data reuse and sharing within and between disciplines. This could imply a specific awareness or appreciation of the significance of such collaboration as supported by Ng'eno & Mutula (2022) that sharing research data and establishing and maintaining public-private partnerships between research institutes and partners need collaboration both inside and between institutions. Also, RDM full potential won't be realized unless the several parties involved in data generation, management, and use can work together to create shared infrastructure, develop optimal RDM, and put it into practice.

4.3 Discussions

Both institutions' chief librarians are contented on the involvement of particular partners in RDM, such as librarians, researchers, IT experts, and academic units. However, the participants believe that research administrators and legal experts should not play an active part in research data management. Deputy librarians from both universities have comparable positive impressions of the crucial roles played by many collaborators in promoting RDM. They recognize the importance of participation of librarians, researchers, IT experts, legal experts, research administrators, and academic units. Section heads have a better awareness of the role of collaborators in RDM processes than chief librarians. They understand the importance of librarians, researchers, IT experts, research administrators, and academic units. However, there is some debate about the role of legal experts, with individuals from institution K opposing their involvement and those from institution E supporting. Senior library assistants from both institutions also approve of collaboration in RDM procedures and recognize the value of many collaborators, including librarians, researchers, IT specialists, legal experts, research administrators, and academic units. Like other categories, the Research Directorate Staff category participants from institution E have positive sentiments about the various responsibilities that collaborators perform in RDM.

When it comes to creating data repository criteria, research data reuse in light of legal difficulties, and data repository platform selection, chief librarians from both universities have comparable positive impressions. There are, however, minor discrepancies in participants' opinions about data sharing between disciplines and the duration of data rental, with participants from institution K disagreeing. Regarding crucial areas of collaboration including selecting data repositories, creating criteria for data repositories, and reusing research data, deputy librarians from both universities strongly supported. On the duration of the data rental, there is a debate. Section heads from both universities are in favor of working together on RDM-related issues, such as establishing repository standards, reusing research data, choosing data repositories, exchanging data across disciplines, and renting out data for a set amount of time. The percentages show a strong consensus on the significance of cooperation in these areas, especially among section heads from institution E, who show a high degree of support. Both universities' senior library assistants are very supportive of teamwork when it comes to setting repository criteria, reusing research data, choosing data repositories, exchanging data within disciplines, and renting out data for a set amount of time. As with section heads, senior library assistants especially those from institution E highly agree, suggesting that they recognize the value of teamwork in RDM.

5. Conclusions and Recommendations

The study revealed a common view of the significance of collaborative partners in the adoption of research data management. Although there are differences in focus among the categories, there is a basis for cooperative efforts to improve RDM practices in academic libraries. In order to develop a thorough RDM strategy, institutions should strive to promote collaboration across all identified partners. The study informs of a greater emphasis and targeted collaborative efforts for more efficient and customized RDM adoption tactics. Also, comprehensive strategy is needed for the successful

implementation of RDM, including defining of data repository criteria for RDM, research data reuse, data repository platform selection, data sharing within and outside discipline, and data retention period though, some areas should receive more attention than others. Consequently, the study recommends further research on each collaboration partners to ascertain the duties and responsibility for flowless adoption of research data management practices. Also, an exploration of what should be included in each collaboration areas could help shed light to academic institution libraries on specific aspects for successful implementing/adoption of RDM practices.

References

Amorim, R. C., Castro, J. A., Rocha da Silva, J., & Ribeiro, C. (2017). A comparison of research data management platforms: Architecture, flexible metadata and interoperability. *Universal Access in the Information Society*

Andrikopoulou, A., Rowley, J., & Walton, G. (2021). Research Data Management (RDM) and the evolving identity of academic libraries and librarians: a literature review. *New Review of Academic Librarianship*, 1-17.

Chitty, T., & McRostie, D. (2016). Better together: the ESRC in the university research library of the twenty-first century. *The Australian Library Journal*, *65*(3), 157-166.

Chiware, E., & Mathe, Z. (2015). Academic libraries' role in research data management services: a South African perspective. *South African Journal of Libraries and Information Science*, *81*(2), 1-10.

Cox, A. M., & Tam, W. W. T. (2018). A critical analysis of lifecycle models of the research process and research data management. *Aslib Journal of Information Management*.

De Silva, P. U., & Vance, C. K. (2017). Scientific Scholarly Communication: Moving Forward Through Open Discussions. In *Scientific Scholarly Communication* (pp. 1-15). Springer, Cham.

Koltay, T. (2016). Facing the challenge of data-intensive research: Research data services and data literacy in academic libraries. In *Innovation in libraries and information services*. Emerald Group Publishing Limited.

Masinde, J., Chen, J., Wambiri, D., & Mumo, A. (2021). Research Librarians' Experiences of Research Data Management Activities at an Academic Library in a Developing Country. *Data and Information Management*, *5*(4), 412-424.

Ng'eno, E. J., & Mutula, S. M. (2022). Research data management in Kenya's agricultural research institutes. In *Handbook of Research on Academic Libraries as Partners in Data Science Ecosystems* (pp. 334-361). IGI Global.

Pinfield, S., Cox, A. M., & Smith, J. (2014). Research data management and libraries: Relationships, activities, drivers, and influences. *PLoS One*, *9*(12), e114734

Steel, K. M., Thompson, H., & Wright, W. (2019). Opportunities for intra-university collaborations in the new research environment. *Higher Education Research & Development*, *38*(3), 638-652.