



Participation of Higher Education Institutions (HEIs) in Research Data Management: A Study

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Introduction

- **Data:** “data” are characterized as “facts, numbers, letters, and symbols that describe an object, idea, condition, situation, or other factors” (National Research Council, 1999, p. 15 in Borgman, 2012).
- **Research data:** It can be defined as “the recorded factual material commonly accepted in the scientific community as necessary to validate research findings” (Government Printing Office US, n.d.)
- **Research data management (RDM):** It refers to “the organization, storage, preservation, and sharing of data collected and used in a research project” (Bower, n.d.).

•Government Printing Office US. (n.d.). CHAPTER II-OFFICE OF MANAGEMENT AND BUDGET CIRCULARS AND GUIDANCE (Vol. 13). Retrieved February 12, 2019, from <https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A110/2cfr215-0.pdf>

• Bower, M. (n.d.). LibGuides: Research Data Management @ Pitt: Understanding Research Data Management. Retrieved February 12, 2019, from <https://pitt.libguides.com/managedata/understanding>

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- As RDM has become an **essential component** in research, it motivates us to **explore the current state of the art and practices of Higher Education Institutes (HEIs) in RDM worldwide.**

Objectives:

- To study the current state of HEIs in RDM
- To explore the participation of HEIs in RDM
- To investigate the major features of the repositories and other allied aspects

Approach

- Literature review
- Conducted our own study

Literature Review

Paper	Purpose and Methodology	What studied?	Demographic /Coverage
(Hua, Zhuang, Si, Zhou, & Xing, 2015)	<ul style="list-style-type: none"> • Aims to find the current situation of research data services by academic libraries. • Website investigation 	<ul style="list-style-type: none"> • Studied research data services of 87 university's libraries. 	<ul style="list-style-type: none"> • Top 100 universities listed in the World's Best Universities released by the USA News in October 2012
(Cox, Kennan, Lyon, & Pinfield, 2017)	<ul style="list-style-type: none"> • Survey Method (in the form of questionnaire) 	<ul style="list-style-type: none"> • Reports an international study of research data management (RDM) activities, services, and capabilities in higher education libraries. • 27 questions focusing on RDM policy, funding, services, and managerial issues 	<ul style="list-style-type: none"> • Covering higher education libraries in Australia, Canada, Germany, Ireland, the Netherlands, New Zealand, and the UK.
(Pinfield, Cox, & Smith, 2014)	<ul style="list-style-type: none"> • Semi-structured interviews (interviews of library practitioners in UK) 	<ul style="list-style-type: none"> • Analyses the contribution of academic libraries to research data management (RDM) in the wider institutional context • Examines the roles and relationships involved in RDM, identifies the main components of an RDM programme, evaluates the major drivers for RDM activities, and analyses the key factors influencing the shape of RDM developments. 	<ul style="list-style-type: none"> • Different institutions in the UK

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Paper	Purpose and Methodology	What studied?	Demographic /Coverage
(Cox & Pinfield, 2013)	<ul style="list-style-type: none"> To understand in detail the ways in which libraries are currently involved in research data management. Survey Method 	<ul style="list-style-type: none"> This paper presents data gathered from a survey of UK HEIs detailing the ways in which libraries are involved in RDM 	UK HEIs
(Tenopir, Sandusky, Allard, & Birch, 2014)	<ul style="list-style-type: none"> Survey Method 	<ul style="list-style-type: none"> two studies are reported: librarians' RDS practices in U.S. and Canadian academic research libraries, and the RDS-related library policies in those or similar libraries. 	US and Canadian academic research libraries
(Tripathi, Shukla, & Sonkar, 2017)	<ul style="list-style-type: none"> To study the research data management (RDM) practices adopted by the central universities in India. Survey Method 	<ul style="list-style-type: none"> Practices of RDM in university libraries 	Indian central universities and 20 university at worldwide

Related review gives the following consensus:

✓ it has been explicit that so far there is **no study conducted on assessing and exploring in details the practices and engagements of HEIs in RDM.**

Steps followed in conducting our study

[*Web Investigation Method* (Hua, Zhuang, Si, Zhou, & Xing, 2015)]

- Identification and selection of the institute
- Defining a set of parameters
- Data collection
- Data tabulation
- Data cleaning
- Data analysis
- Data presentation

Datasets

Categorisation of institutions for conducting study						
Have both RDM information and data repository	No RDM information and no data repository	Only have RDM information	Only have data repository	Only have data repository in non-english language	Have both RDM information and data repository in non-english language	Total
39*	3	2	2	3	1	50

- 38* institutions have considered for the study (1 institute found as closed access to their repository)

Perspectives

- Purpose and coverage (what is it for?)
- Repository content (what is in it?)
- Main functions for users (what does it let you do?)
- Other features (what else is there?)

Results

- **RDM Policy and Guidelines: 27 institutions have and 11 institutions don't have** their RDM policy.
- **DMP tool: 34 institutions have and 4 institutions don't have** the data management planning (DMP) tool for managing their RDM requirement.
- **Software: Dspaceⁱ (7)** is found as the leading data management software followed by **Dataverseⁱⁱ (5)** , **Fedoraⁱⁱⁱ (3)**, Samvera^{iv} , Figshare^v , Dash^{vi} , Bepress - Digital Commons^{vii} , CKAN^{viii} , Eprints^{ix} , TIND^x and Mendely^{xi} . For the **12 repositories, the software information is not found.**
- **Metadata: Dublin Core (13)** is found to be the most popular one followed by **DDI (5)**, DataCite, MODS , RIOXX , SDMX and ISA ; for the majority of the repositories (**18**), metadata is **unknown**.

ⁱ <https://duraspace.org/dspace/>

ⁱⁱ <https://dataverse.org/>

ⁱⁱⁱ <https://duraspace.org/fedora/>

^{iv} <https://samvera.org/>

^v <https://figshare.com/>

^{vi} <https://dash.ucop.edu/stash>

^{vii} <https://www.bepress.com/products/digital-commons/>

^{viii} <https://ckan.org/>

^{ix} <https://www.eprints.org/uk/index.php/eprints-software/>

^x <https://tind.io/>

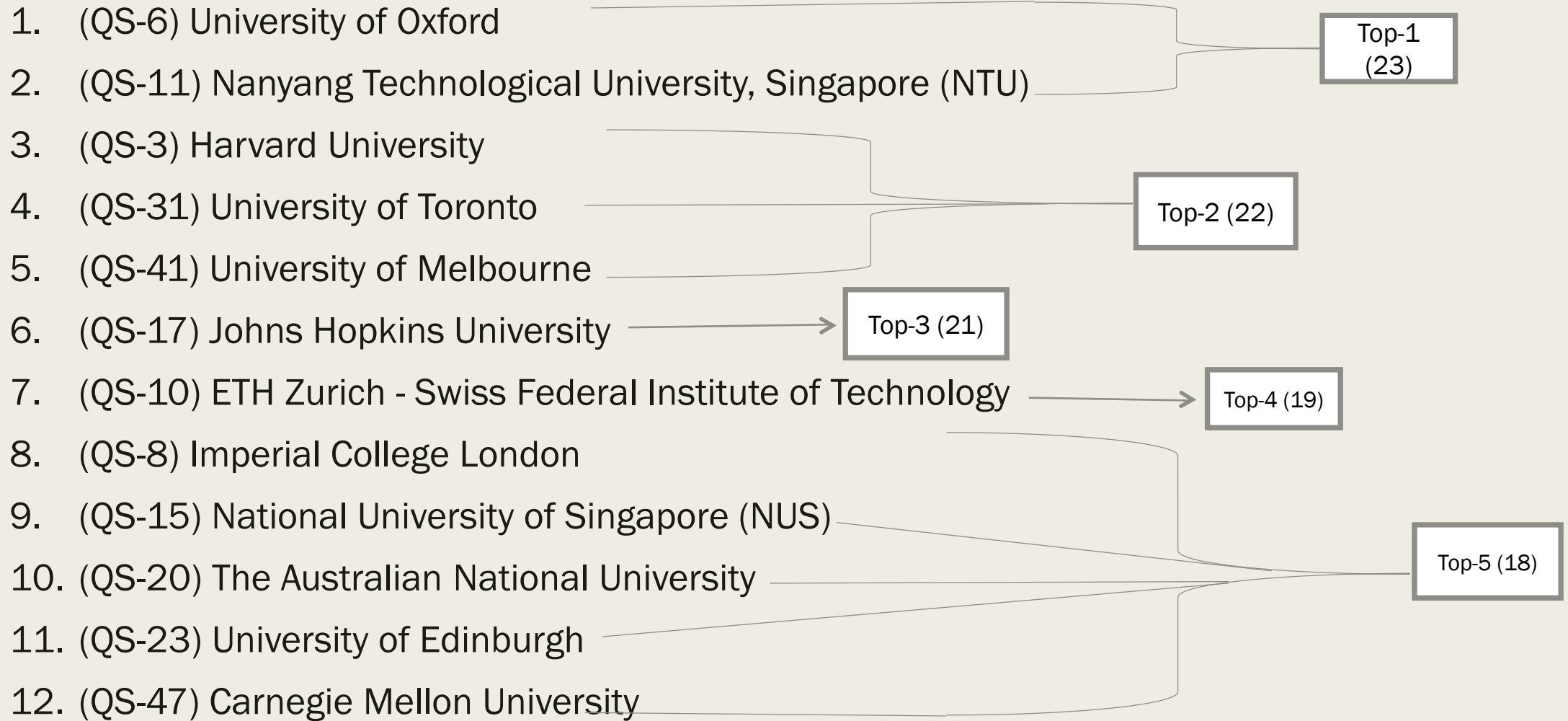
^{xi} <https://data.mendeley.com/>

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- **Stakeholders: Library is one of the major stakeholders.** Some others stakeholders are **Office of Research**, **IT Service**, **Research Operation Office**, etc.
- **Identifiers: “DOI” (27)** is found to be used more followed by **“handle” (8)**, **“ark”**, **“URI”**, **“Purl”** and **4 repositories don’t have any identifier.**
- **Citation download/export: 12 repositories have** and **26 repositories don’t have citation download/export facility.**
- **Open/closed access: 34 repositories are open**
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Top Institutions in RDM as per the study



Conclusion

- This study reveals the current state of engagement and RDM practices of HEIs.
- A significant number of institutes are involved in RDM.
- The result of the study may lead to the development of the RDM best practices for HEIs.
- As expected, library is found to be the one of the leading stakeholder in RDM.
- We plan to extend this study by extending the datasets and adding the additional list of parameters.

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THANK YOU!