

Perception of Researchers & Academicians of Parul University towards Research Data Management System & Role of Library: A Study

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ABSTRACT

Research data management is a system that helps in archiving and retrieving of research data to reuse and preserving them for long term use. Many universities in developed countries have already started providing RDM services to their researchers and academicians. In India, it is still in the initial stage. The purpose of the present study is to investigate the perceptions of researchers and academicians of Parul University on research data management and research data sharing. It also explores the ways the researchers preserved their research data for future use. It also explores the ways the library can take initiatives to encourage and extend support to the researchers and academicians to the organisation, preservation, and sharing of research data. To investigate and study the problem 100 questionnaires were distributed. There are 88 responses we received out of 100. The study revealed that the majority of respondents were agreeing about the research data sharing and free accessibility of research data to browse and reuse. Researchers are very much interested and agreed in the library's involvement in organizing and preservation of research data. Researchers and faculty members are more concerned about their intellectual property rights while sharing the data on the public domain.

Keywords: Research data management system; RDM; RDM services; University; Libraries; Research data sharing; Data management plan.

1. INTRODUCTION

Information Communication and Technology have brought revolutionary changes in every aspect of human society. The scholarly world is also not exempted from this. The influence of Information Communication Technologies in research generates a massive amount of research data. This has become one of the factors for increasing sharing and collaborative research. Data constitute a significant fragment in the knowledge society. It has become a valuable resource.

Research data constitutes any physical and digital materials that are generated, created and collected during research activity. The purpose of the research data is to analyse, produce the original results and helps the researcher to prove the credibility of his or her work. Research data can be numerical, descriptive and visual depends on the purposes and processes they generate.

Research data includes text, images, audiotapes, videotapes, laboratory notebook, photographs, field notebooks, and primary research data, questionnaires, models, photographs, films, and test responses. The life span of research data is quite longer than the research project. Even after funding ceased or the completion of research, the same data can be used for any other project by researchers. The followup research project may reanalyse or add new data in an already existing dataset to produce or generate new research. The same data can be reused by other researchers

for further research. Data sharing allow the authenticity, accuracy, and integrity of the research. Research data sharing helps in the validation of the final results, increases the efficiency of the research, minimises the risk of losing data, saves the time of others and also gives the opportunity of the recognition to the original authors. As most of the research is publicly funded, the funding agency also has demand free accessibility and availability of research data and result in the public domain for fair us Many of the funding agency requires that recipients must create a data management plan for long-term preservation of research data and sharing of some or all research data with the public. The funding agency responded more quickly to the recipients who included managing and sharing of research for long-term preservation in their plan²⁰. The concept of research data management arrives here.

2. RESEARCH DATA MANAGEMENT

Research data management is also known as research data curation, data curation, and data management. Research data management concerns with the organisation of research data and provides service and support researchers throughout the research cycle, from its entry to the dissemination and archiving of valuable results¹. The RDMS aims at making the research process as efficient as possible and fulfilling the research funding agency's standards and specifications. In response to the changing scientific research landscape, RDM services are being established and supported by the existence of cyber infrastructures, data sharing mandates from funding

agencies and researchers committed to open science, which advocates open verification and reproduction of research data. Research data management services support the entire research lifecycle, including data management preparation, electronic curation, development and transfer of metadata. This helps to ensure that findings are checked accurately and enables new and innovative works based on existing data. Research data management explains how the data has been collected and how the same data is structured, stored, maintained and exchanged in a research project. This includes the day-to-day handling of research data in a research project's lifespan. It also requires recommendations on how to maintain and share data after the completion of the project.

Research data management in every research institution worldwide has become a pressing issue. Research Council mandates researchers to draw data management plans for research to secure funding for their research projects. Funding agency in developed countries such The National Science Foundation in the United States of America (USA), the Australian National Data Service in Australia, and the United Kingdom's e-Science Core Program (UK) have all been involved in enforcing mandates and advocating national data retention legislative instruments and frameworks for responsible research conduct⁹.

3. LIBRARIES AND RESEARCH DATA MANAGEMENT SERVICES

The library is always known as the core of any institution. Libraries and librarians can play an important role in the development of Research Data Management services as libraries are traditionally engaged in organisation, preservation, and access of information.

- Academic libraries can provide a standard based organisation of information
- Academic libraries are actively involved and interested in supporting the researcher's activities by providing the researchers with various services, such as bibliometric services, library-led publishing services, etc.
- Academic libraries have long been expected to be repositories for research papers and theses created by university scholars and are now being added to local academic research
- Librarian's experience in the organisation of information and making it accessible are the skills needed to provide research data management services
- Librarians can play many roles with a solid basis in data management principles work to bridge the gaps between librarians and researchers
- The library can provide guidelines to the researchers in the submission of their data to national and international subject repositories
- Besides, academic librarians are masterful in designing and delivering educational content tailored to members of different disciplines' research practices, at different levels of expertise. They are fitted with fluency and versatility as teachers to train members
- Given their long experience with information organisation and documentation, librarians are becoming more involved

in the development of principles and best practices for managing digital data for long term use. Services and tools, often managed by libraries, are now becoming more widespread

- The library's safe and trustworthy Image for long-term preservation gives advantage to librarians for providing research data management services effectively among their stakeholders
- Libraries having experience of copyright and intellectual property rights protection. The library can also help in issues related to the protection of the researcher's intellectual rights.

4. LITERATURE REVIEW

A thorough and systematic survey of related literature has been carried out to understand the state-of-art of the research study as well as to get a hold on the previous studies undertaken on "Research Data Management", nationally and internationally.

Stephen Pinfield & A.M. Cox⁶ in 2014 analyses the contribution of academic libraries of North America to research data management in the wider institutional context. The result shows that collaboration of IT services and research support offices are important for providing RDM services in effective way.

Chiwara, E. & Mathe, Z⁷ in 2015, conducted a study on the development of RDM services in Cape Peninsula University of Technology (CPUT) of South Africa. This study reveals that many libraries are in initial stage in providing the frameworks for RDM services. They have also formulated policies for RDM services, set up the required infrastructure, and trained their library staff for the smooth functioning of RDS and conducting awareness campaigns for academic staff and researchers.

Tenopir, C. & Sandusky, R.J.⁸ mentioned in their study in the year of 2014 that libraries are in a planning to provide RDM but many services are in the initial stages. They also suggested that library professionals need to learn more about these services through workshops and professional conferences.

Another study by Cox, A.M. & Pinfield, S.⁹ was carried out in 2016 which explain the challenges and problem faced by librarian for managing and building of research data management services in UK libraries. The study shows that librarians need to include the attributes that help library professionals to deal with problems in managing RDM services.

Surkis & Read¹⁰ in their paper in 2015 stated that management of research data is a service area of increasing interest to libraries. Librarians have begun to provide a range of services in this area and now teach data management to researchers, work with individual researchers to improve their data management practices, create data management subject guides, and assist in supporting funding agency and publisher data requirements.

According to Dora, M. & Anilkumar H.¹² in 2015, research data management is global emerging trends in academic institutes. The paper explore the role of libraries and librarians of academic institutions in offering research data management services and discussed the importance of research data, its preservation, organization, dissemination and critical role in

the research life cycle.

Manorama Tripathi¹⁵ and M. Chand in 2017 studied the researcher's perceptions of the availability of raw data in an open-access environment. The study suggested that libraries can play a key role in extending support for the organisation, archiving and conservation of raw data for future use by researchers. Libraries can establish a university-level system by allowing researchers and faculty members to deposit their raw research data in the institutional databases established by most university libraries.

Yi Shen¹⁶ conducted a study on research data sharing and reuses practices among the faculty of Virginia Tech Data Landscape in 2015 and mentioned that there is a need for widespread activity and community involvement in the open sharing of data which are not yet developed. The study reveals a significant gap between sharing activities that are rather limited indicating that potential data values for future research will be lost immediately after the original work is completed.

One of the studies on data management and data sharing research conducted by Ünal, Y., *et al.*¹⁷ in 2019 shows that open access is still not popular among researchers. The most important considerations for researchers seem to be software security and legal issues. Most researchers did not receive any RDM training such as metadata planning for data management or file naming. Many researchers have agreed for formal training in various aspects of RDM but still, data ethics and legal issues seem to be the researchers many important concerns.

According to Dimple Patel¹³, research data management is globally emerging trends in academic institutes. The paper explores the role of academic institutions, libraries and librarians in providing data management services to researchers. The discussion centred on the importance of information from research, its preservation, organisation, distribution and essential role in the life cycle of research.

Hally, Yu.¹⁹ in 2017 systematically reviewing the current literature, drawing on the results of available surveys on RDS offerings by academic libraries conducted between 2009 and 2014 and examining and further reviewing the websites of these 2013 ARL survey-participating institutions, the author presents the current state of academic library activities in RDS provision, and provides a critical evaluation of the scope and level of services currently being offered in academic libraries, and the opportunities in RDS development, to add to the body of knowledge of RDS provision by academic institutions.

Mannheimer, *et al.*²² in their study in 2019, investigated the collaborative role of data repositories and academic libraries to cope the specific challenges of qualitative research data i.e. obtaining informed consent from participants for data sharing and scholarly reuse; ensuring that qualitative data are legally and ethically shared; and sharing data that cannot be deidentified. According to the authors, data repositories and academic libraries can not provide easy solutions to these three continuing challenges, but they can partner with researchers and connect them with other relevant specialists to examine these challenges. This paper also suggests that data repositories and academic libraries can help researchers address some of the challenges associated with ethical and lawful qualitative data sharing.

Corrall, S., *et al.*²³ Conducted a survey in 2013 on bibliometric and data support activities of 140 librarians in Australia, Newzealand, Ireland and the United Kingdom including current and planned services, target audiences, service constraints, and staff training needs. Many of the respondents were planned for training of bibliometrics, citation reports and impact calculations. The study found that there was lower level of engagement in data management than bibliometrics. Though there were gaps in knowledge, skills and confidence but majority of them anticipated future involvement especially in technology assistance, data deposit and policy development. The study also found that there was need that the librarians should understand the research environment well.

5. OBJECTIVE OF THE STUDY

The aim of the present study is to analyse the perceptions and attitudes towards the research data sharing and research data management systems among researchers and faculty members of Parul University, Vadodara.

The major objectives of the study are:

- To identify the level of awareness towards the research data sharing among research scholars and academicians of Parul University
- To identify the attitudes and perceptions towards Research Data Management System among the researchers and academicians of Parul University
- To study how the research scholars and academicians preserve their data for long term use
- To examine the attitudes of researchers and academicians of sharing of their research data with other researchers
- To interpret the role of libraries in managing Research Data Management System.

6. SCOPE AND LIMITATION OF THE STUDY

The scope of the study is to find out the level of perception of researchers and academicians towards research data sharing and research data management system among research scholars and faculty members of Parul University. The study has covered only Research Scholars and Faculty Members of Parul University.

7. NEED OF THE STUDY

Parul University²⁴ is established under the Gujarat Private University Act 2009, following legislation passed by the Gujarat Government on 26 March 2015 granting Parul Group of Institutes operating under the aegis of the Parul Arogya Seva Mandal Trust University status. Parul University has 34 Institutes offering more than 160 programs in Engineering & Technology, Pharmacy, Physiotherapy, Homoeopathy, Ayurvedic, Architecture, Management, Business Administration, Computer Application, Library Science, Fine Arts, Social Work, Arts, Commerce, Agriculture, Design, Law, Applied Science, Medicine, and Vocational Education at Diploma, Undergraduate, Postgraduate & Doctoral Level. Parul University has developed the Center of Research for Development to provide an interface between students and faculties in technical courses and the industry. Innovative methods in teaching and training in Parul University, for both

Table 1. The designation of respondents

Designation	No. of Respondent	Responses in %
Professor	13	14.77
Reader	1	1.13
Associate Professor	16	14.08
Assistant Professor	43	48.86
Researcher	15	17.04

Table 2. Types of research data generated by researchers and faculty members

Type of Data Generated	No. of Respondent	Responses in %
Experimental data	67	76.13
Textual	64	72.72
Images	51	57.95
Video	16	18.18
Newspaper Articles	14	15.90
Dairies	9	10.22
Audio	9	10.22
Codes	7	7.85
Questionnaires	3	3.40
Letters	3	3.40
Clinical data	1	1.13
Others	1	1.13

*Multiple answers were permitted

Table 3. Types of format used to save research data by researchers and faculty members

Types of format used to save research data	No. of Respondent	Responses in %
PDF	51	57.95
Tables	41	46.59
.docx	40	44.00
.xls	37	45.45
Graph/Images	36	40.90
PPTs	30	34.09
Text Documents	30	34.09
SPSS Spreadsheet	18	20.45
Audio	9	10.22
.csv	6	6.18
Codes	1	1.13
Others	1	1.13

*Multiple answers were permitted

faculty members and students, have given birth to 124 IPRs, just in three years. Parul University is constantly striving to provide knowledge-based technology services to meet the needs of industry and society, thereby helping to build our national technology and research capacity for the country's development. Therefore, the present study is the need of an hour to spread the awareness of research data sharing among university stakeholders.

8. METHODOLOGY

An investigator has used an online survey method to study the present problem. The structured questionnaire was prepared and used for the collection of data. A web-based questionnaire was prepared using a google form. An extensive literature review was done for the preparation of the questionnaire. Closed-ended and open-ended questions were used in the questionnaire. The target population comprises the research scholars and academicians of parul university, from different facilities from engineering, management, pharmacy, ayurveda, homeopathy, physiotherapy, computer application, medicine, business administration, arts, law, applied sciences, nursing, architecture and library science. Random sampling has been used to select research scholars and academicians for administering the questionnaire. Participation in the survey was voluntary. A total of 100 questionnaires have been distributed through email to researchers and faculty members. A total of 88 filled and completed questionnaires received. The data were analysed and presented based on the responses we received.

The survey instrument contains 16 research questions (Appendix 1). Research question number 1 – 4 identified the designation, department, specialisation and research interest of the respondents. Question 5-8 identified type of research data generated during the research, type of format respondents used to save their data, organisation, maintenance, and preservation of research data for further use and whether the researcher faces any problem in data storage. Question 9-15 sought to identify the research data sharing tradition and practice that exist in their field and whether they aware of available data repositories of their discipline, and if not, would they like to know about data repositories of their discipline. Question 16 was about the need for support of the central library in managing, storing and retrieving of their research data for future use. The final

Table 4. Storage medium used to preserve research data by researchers and faculty members

Storage medium	No. of Respondent	Responses in %
Personal Computer	74	84.09
USB Flash Drive	57	64.77
Portable Hard Disk	36	40.90
Cloud based storage	31	35.22
Personal Email	31	35.22
Local Computer	10	11.36
Printed Form	10	11.36
CD	5	5.68
DVD	4	4.54

*Multiple answers were permitted

Table 5. Problems in storage of research data by researchers and faculty members

Problems in Storage of Research Data	No. of Respondent	Responses in %
Yes	58	65.90
No	30	34.09

question was invited researchers and faculty members to share their views, comments and concerns about research data sharing and research data management systems.

9. DATA ANALYSIS & INTERPRETATION

9.1 Response Rate

Response rate of the 100 questionnaires distributed, 88 valid responses were completed and returned. Therefore, the response rate in the study was 88 per cent.

9.2 Respondents

Table 1 shows the percentage of responses from the Researchers and Faculty Members of various departments of Parul University. Out of 88 respondents, 15 researchers, 43 Assistant Professors, 16 Associate Professors, 13 Professors, and 1 Reader of different departments of the 34 Institutes of Parul University were represented. Highest number of responses received from Assistant Professors of the University.

10. TYPE OF RAW DATA GENERATED

Table 2 shows that a wide spectrum of data types was generated by researchers and faculty members. More than 76 per cent of the raw research data generated was experimental data following by textual and images data. It was also found out from the study that many of the respondents generating more than one type of data.

11. TYPE OF FORMAT USED TO SAVE DATA

Table 3 shows the different types of formats used by researchers and faculty members to save research data. The researchers and faculty members took notes and retained them for further use in computer storage resources such as CDs, DVDs, portable hard drives and USB Flash drives. They used charts, tables, SPSS spreadsheets, .CSV and. Xls files to maintain their data. The majority of them were using .csv to save their data. Some of them were using more than one type of format to save their data for future use.

12. STORAGE MEDIUM USED TO PRESERVE RESEARCH DATA

Table 4 shows the medium of storage for research data by researchers. To prevent their data for long term use, different storage methods were used. The most important method used was a personal computer, USB Flash drives, and portable hard disk. Other storage methods were cloud storage; email oneself, CD, DVD, Local Computer and print materials .i.e. in hardcopy. Some of them were also preferred printed form to preserve data for further use.

13. PROBLEMS IN STORAGE OF DATA

Table 5 shows the researchers and faculty members faces problems in storage of research data. Out of the 88 respondents, 58 (65 %) said that they did not face any data storage problems while 30 (34 %) said that they faced problems with the storage. The present study reveals that researchers have been more concerned about the storage research data but usually respondents do not face any problems.

Table 6. Practice of data sharing exist in discipline

Practice of Data Sharing exist in discipline	No. of Respondent	Responses in %
Yes	51	57.95
No	37	42.04

Table 7. Freely accessibility of raw data on public domain

Freely accessibility of raw data on public domain	No. of Respondent	Responses in %
Strongly Agree	28	31.81
Agree	28	31.81
Strongly Disagree	8	9.09
Disagree	16	18.18
Can't say	8	9.09

Table 8. Awareness about the existing data repositories of the discipline

Awareness about the existing data repositories of the Discipline	No. of Respondent	Responses in %
Yes	45	51.13
No	43	48.86

14. PRACTICE OF DATA SHARING EXIST IN DISCIPLINE

Table 6 shows the practice and tradition of data sharing exist in their discipline. The majority of them agreed about the culture and practice of raw research data sharing in their subject filed. Out of 88 respondents, 51 researchers said yes while 37 of the researchers said no, there is no culture of sharing data in their fields. In the case of sharing data with other researchers, 42 (47.7 %) of them said yes while 46 (52.27 %) of the researchers said no.

15. FREELY ACCESS OF RAW DATA ON PUBLIC DOMAIN

Table 7 shows the views of respondents regarding the free accessibility of research data on the public domain. Most of the researchers and faculty members i.e. 63 per cent agreed on the need for free access to research data to all. According to the free accessibility of research data leads to improve the research quality and also avoid plagiarism and duplication of research. 28 per cent of researchers disagreed to open access. One of the respondents was concerned about the importance of copyright and confidentiality in their research endeavours. The researchers in Computer Science said in their subject field most of the datasets have copyrights so that they would selectively share their data. One of the respondents said that usually data is shared after the publication of research work. If it's stored in repositories, there should be a guarantee about the secrecy of data. Out of 88 respondents, 28 of them were strongly agreed about the open-access of the research data according to them. The research scholars said that they could share their data after

submitting their Ph.D. dissertations. One of the respondents from the pharmacy said published research dataset of PU faculties in related areas can be pooled. For example, many faculties work on plants in different dimensions, the dataset of this different dimension may give us a broader and clear picture. One of them said these types of activities would be beneficial for students as well as the community. One of the faculty members said that after the research is completed, the research data in any field should be used by all in our society or by future researchers otherwise no use of research. Only 9 per cent of the researchers and faculty have not expressed and their views.

16. AWARENESS ABOUT THE OF DATA REPOSITORIES OF THE DISCIPLINE

Table 8 shows the percentage of awareness about the available data repositories of their discipline. Out of the 88 respondents, 45 i.e. 51 per cent were aware of the specific subject data repositories of their field while 43 (48.86 %) were unaware of the subject-specific data repositories. Only 16 respondents (18.2 %) of them submitted their final data to such repositories. 72 researchers said that so far they have not submitted and archived research data in any repository. Most of them aware of the Shodhganga and Researchgate. Some of them have also uploaded their research data on Shodhganga. One of the faculty member of Ayurveda Institute said that they are generally using the National Library of Ayurved Medicine (NLAM). One of the faculty members said after the research is completed, the research data in any field should be used by all in our society or by future researchers otherwise no use of research.

Table 9. Role of library in managing research data

Role of Library in Managing Research data	No. of Respondent	Responses in %
Yes	80	90.90
No	8	9.09

17. ROLE OF LIBRARY IN RESEARCH DATA MANAGEMENT

Table 9 shows the views of researchers and faculty members to the involvement of the Library for engaging and managing research data during and after research. The majority of Researchers and Faculty Members of Parul University appreciated the idea of the involvement of the Central Library in managing research data. Only 9 per cent of the respondent said they do not need library involvement in managing research data as these are their personal work. 91 per cent of the respondents strongly agreed that the central library should offer some support in managing, storing and archiving research data for future use. One of the researchers believed that it could be a supportive activity for managing and archiving our research data for future use by the central library. Another said it would be a good initiative as the data storage space should be available in institutes for research and seeing forward with positive probabilities. One of them agreed about

the role of the library for managing their data but awareness and training regarding the way of sharing data along with preserving intellectual property rights should be propagated.

18. CONCLUSIONS & RECOMMENDATIONS

Immense research has produced an extensive amount of research data. Advancement of information technology has made quite possible to store research data and can be reused by other researchers. It saves the time of researchers and money of the funding agency. In many countries funding agencies have made mandatory to submit and deposit the research data in repository. A system that manages, preserving, sharing and retrieving research data is known as the Research Data Management System. Many Universities of the world have started RDM in their institutes and libraries are also taking the initiative to provide RDM Services to their educational communities. A library provides guidance, encourage and support their users towards RDM. This present research work was undertaken to study the perception and awareness about the research data sharing among research scholars and faculty members of Parul University, Vadodara. This work highlighted that stakeholders of the university are well aware of research data sharing. The majority of them are fully agreed about freely accessible to browse and use of research data. To develop an efficient and effective research data management, preservation and archiving system in the university, there is the need to continue efforts to spread awareness about open access. On the basis the result of the present study, there is the need for libraries should take initiative and come forward to offered services to expand and support research activities of researchers and faculty members of the university. Overall, we find that there is still much work that needs to be done to help researchers improve data management practices and comply with funder mandates. This information is currently being used to guide the development of the infrastructure required to support data management services that researchers need.

The following recommendations have been suggested based on the analysed data:

- Research Cell of University should focus on creating and developing a clear data management policy. The website of the University should include more substantive information concerning research data management resources
- Libraries should organise the hands-on training and workshop on how to upload, make available and access research data for their stakeholders
- Data ethics, copyright, and Intellectual Property Rights are the main concern of researchers and faculty member. It is a very good practice if university libraries frequently organises seminar on how to protect their copyright in the open-access environment in academics
- Intensive training for library professionals is required to establish an efficient Research Data Management Systems. It allows creating Data Services Librarian in Library. Library can arrange in-house training, workshops and also conduct regular meetings with their professionals to cultivate their data management skills to support and serve their academic community effectively.

REFERENCES

1. <https://www2.le.ac.uk/services/research--data/rdm/what-is--rdm>(accessed on 15 October 2019).
2. <http://libguides.library.curtin.edu.au/research-data-management> (accessed on 15 October 2019).
3. Carlson, J. & Garritano, J. E-science, cyberinfrastructure and the changing face of scholarship: Organizing for new models of research support at the Purdue University Libraries. *Libraries Research Publications.*, 2010, **137**. http://docs.lib.purdue.edu/lib_research/137(accessed on 16 October 2019).
4. Davidson, J. & Jones, S. Emerging good practice in managing research data and research information within UK Universities. *Procedia Comput. Sci.*, 2014, **33**, 215–222. <https://www.sciencedirect.com/science/article/pii/S1877050914008254?via%3Dihub>. (accessed on 15 October 2019).
5. Horstmann, W. & Witt, M. Libraries tackle the challenge of research data management, *IFLA Journal.*, 2017, **43**(1), 3-4. doi: 10.1177/0340035216688787.
6. <http://www.dst.gov.in/national-data-sharing-and-accessibility-policy-0> (accessed on 15 October 2019).
7. <http://www.icssrdataservice.in/> (accessed on 15 October 2019).
8. Pinfield, S. & Cox, A.M. Research data management and libraries: Relationships, activities, drivers and influences. *PLoS One.*, 2014, **9**(12), e114743. <https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0114734&type=printable> (accessed on 15 October 2019).
9. Chiwara, E. & Mathe, Z. Academic librarians role in research data management services : A south african perspective. *SA. J. Libr. Inf. Sci.*, 2015, **81**(2), <https://sajlis.journals.ac.za/pub/article/view/1563/1445>(accessed on 16 October 2019).
10. Tenopir, C. & Sandusky, R.J. Research data management services in academic research libraries and perceptions of librarians. *Libr. Info. Sci. Res.*, 2014, **36**(2014), 84-90.
11. Cox, A.M. & Pinfield, S. Moving a brick building: UK libraries coping with research data management as a ‘wicked’ problem. *J. Libr. Inf. Sci.*, 2016, **48**(1), 3-7.
12. Surkis, A & Read, K. Research data management. *J. Med. Libr. Assoc.*, 2015, **103**(3), 154-156.
13. Patel, Dimple. Research data management: A conceptual framework. *Libr. Rev.*, 2016, **65**(4-5), 226-241.
14. Dora, M. & Anilkumar H. Managing research data in academic institutions : A role of libraries. In *10th International CALIBER 2015: Innovative Librarianship: Adapting to Digital Realities*, 12-14 March 2015, Shimla, HP. 2015. Pp. 484-495. <http://ir.inflibnet.ac.in:8080/ir/ViewerJS/> (accessed on 31 October 2019).
15. Triptahi, M. & Chand, M. A brief assessment of researcher’s perceptions towards research data management in India. *IFLA Journal.*, 2017, **43**(1), 22-39. doi: 1177/0340035216686984.
16. Shen, Yi. Research data sharing and reuse practices of academic faculty researchers: A study of the Virginia Tec Data Landscape. *Int. J. Digital Curation.*, 2015, **10**(2), 157-175.
17. Unal, Y.; Chowdhury, G.; Kurbanoglu, S. & Others. Research data management and data sharing behaviour of university researchers. Information research. In *Proceedings of ISIC: The information behaviour conference*, 9-11 October 2018, Krakow, Poland, 9-11 October, 2018. 2019, **24**(1). https://www.researchgate.net/publication/333132210_Research_data_management_and_data_sharing_behaviour_of_university_researchers/citations (accessed on 31 October 2019).
18. Holly, H. Yu. The role of academic libraries in research data service (RDS) provision: Opportunities and challenges. *Electron. Libr.*, 2017, **35**(4), 783-797. doi: 10.1108/EL-10-2016-0233.
19. Schlembach, M.C. & Brach, C.A. Research data management and the role of libraries. In *special issues in data management. Am. Chem. Soc.*, 2012, 129-144. doi: 10.1021/bk-2012-1110.ch008.
20. <https://libguides.coventry.ac.uk/c.php?g=671533&p=4769341> (accessed on 15 October 2019).
21. Nishtha, Anil kumar. Research data management in India: A pilot study. *EPJ Web of Conferences*. 2018, **186**(3002), 1-10. doi: 10.1051/epjconf/201818603002.
22. Mannheim, S.; Pienta, A.; Kirilova, D.; Elman, C. & Wutich, A. Qualitative data sharing: Data repositories and academic libraries as key partners in addressing challenges. *Am. Behav. Sci.*, 2018). doi: 10.1177/0002764218784991.
23. Carroll, S.; Kennan, M. & Afzal, W. Bibliometrics and research data management services: Emerging trends in library support for research. *Libr. Trends*, 2013, **61**(3), 636-674. doi: 10.1353/lib.2013.0005.
24. <https://www.paruluniversity.ac.in/academics/research/overview>.

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Appendix 1

The following questions were asked in the present study:

1. Designation
2. Department
3. Specialisation
4. Research Area
5. Kind of raw data is generated during the research
6. Generally Type of format you used to save research data
7. Organizing, maintaining and preserve your research data for further use
8. Do you face any problems raw data storage of research data
9. Is there any data sharing practice exist in your subject field
10. Is there any tradition to data sharing data with others in your field
11. Do you agree in freely accessible of raw data for use
12. Are you aware of any data repositories of your discipline
13. Have you ever submit your data to any data repositories of discipline
14. If yes, kindly mention the name of the data repositories.
15. If no. would you like to know about Data Repositories of your discipline.
16. Do you believe that the central Library should offer any kind support in managing storing and archiving your research data for future use
17. Any suggestion