Archaeometry Community Survey: A platform that promotes data standardisation, sharing, dissemination, and extensive national networking

Survey Results (18.07.2024)

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Responses

Total: 103; Complete: 69; Incomplete: 34

Introduction

This survey is conducted to find out how researchers at the archaeometry community manage their scientific analyses of archaeological materials. This initiative is conducted by the Deutsches Bergbau-Museum Bochum (DBM) in the framework of NFDI4Objects, an integral part of the National Research Data Infrastructure dedicated to the material heritage of human and environmental history.

DBM is one of the executive members in the task area "Analytics and Experiments", which will cover platforms, standards and services for desktop-based research, controlled experiments, and laboratory-based analysis of objects.

This survey is designed to obtain an overview of the following research practices for analytical data:

1. How do you organise your analytical data and associated metadata, especially those related to measurement parameters and experimental protocols?
2. What kind of tools or data services do you use or desire for data collection, data analysis, data evaluation, data dissemination, and data archiving? For instance, Authority File and Vocabulary Services (AVS), Data Services (DaS), Software Application Services (SAS), and Discovery Services (DiS).

The results would provide us with guidelines to establish a national platform that facilitates data standardisation, data sharing and exchange, the provision of desired service tools, and extensive national networking among the archaeometry community. Meanwhile, this survey will also be used to build up a catalogue of analytical services potentially offered by archaeometrically-oriented laboratories.

Content

The survey consists of four sections:

1. Basic information
2. General awareness and involvement
3. Research practices and standards
4. Current challenges and needs

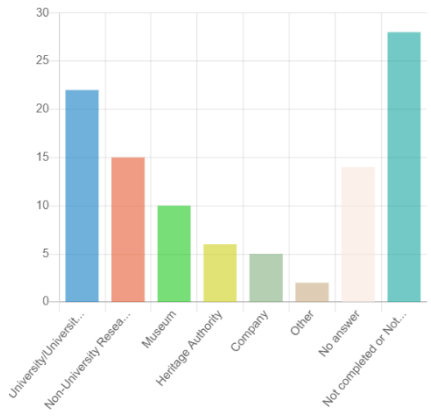
Result Summary

The survey participants represent a diverse array of academic institutions and fields of expertise, with most having experience in sample collection and laboratory analysis. They work with a variety of materials, offering a broad view of different applied techniques. Many participants are familiar with the recent trend towards open access data and have a basic understanding of persistent identifiers, controlled vocabularies, and linked open data. Despite these topics' significance in archaeometry, most researchers lack the tools or infrastructure needed to organise and publish their data according to the FAIR principles. They primarily use Office software for data management and store their data on either personal computers or internal institutional repositories, making data access challenging for others. Additionally, few researchers use standardized schemas to document metadata for samples and their analytical results, leading to data isolation that only the original creators can interpret.

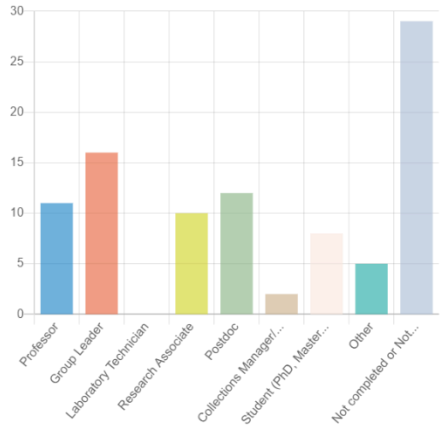
These challenges have heightened participants' awareness, and they are eager to seek established metadata standards, a dedicated repository for storing archaeometric data, and a search platform for lab instruments. Their expectations for the FAIR use of archaeometric data give us a clear direction of what tools and infrastructure are necessary to meet their needs. The initial effort will focus on developing metadata for analytical devices in archaeometry, and a working group has been formed for this purpose.

Section 1: Basic Information

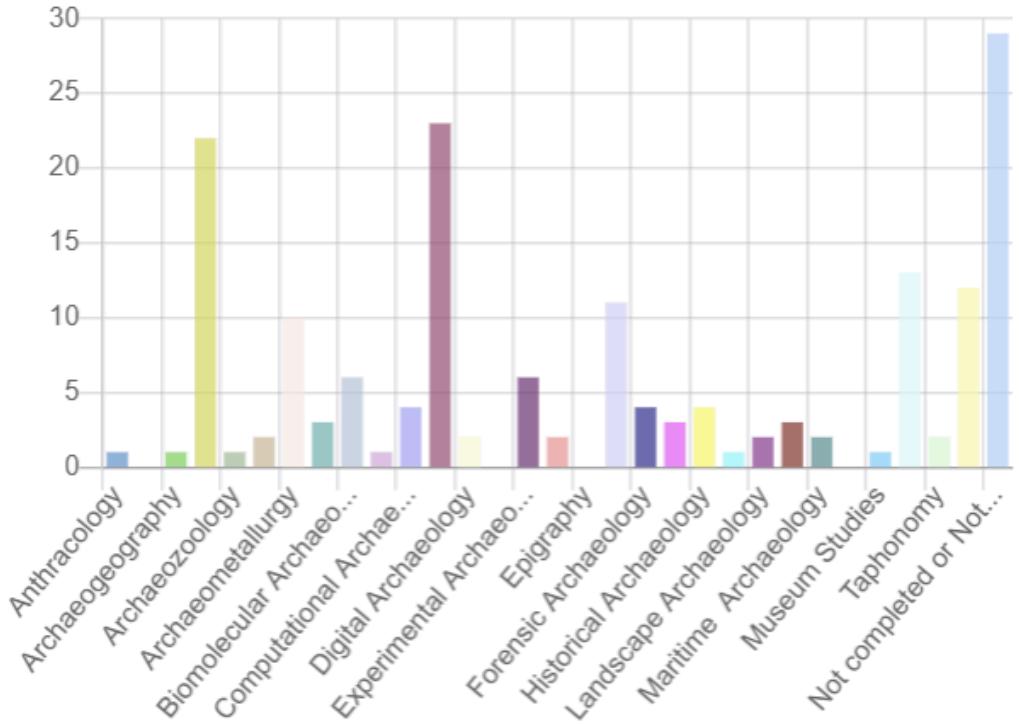
Affiliation



Academic Position

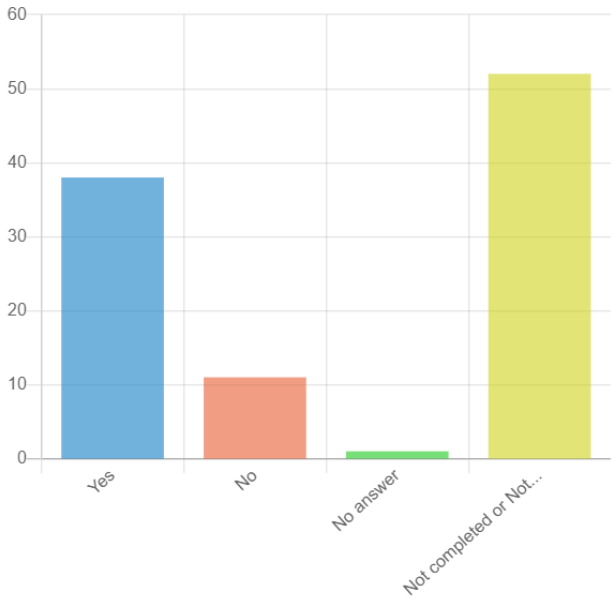


Research Disciplines

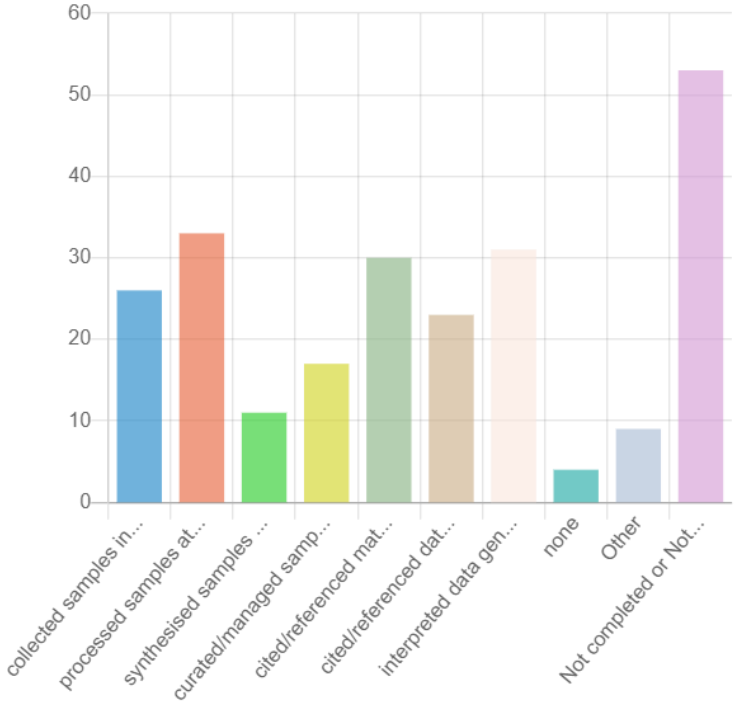


Section 2: General Awareness and Involvement

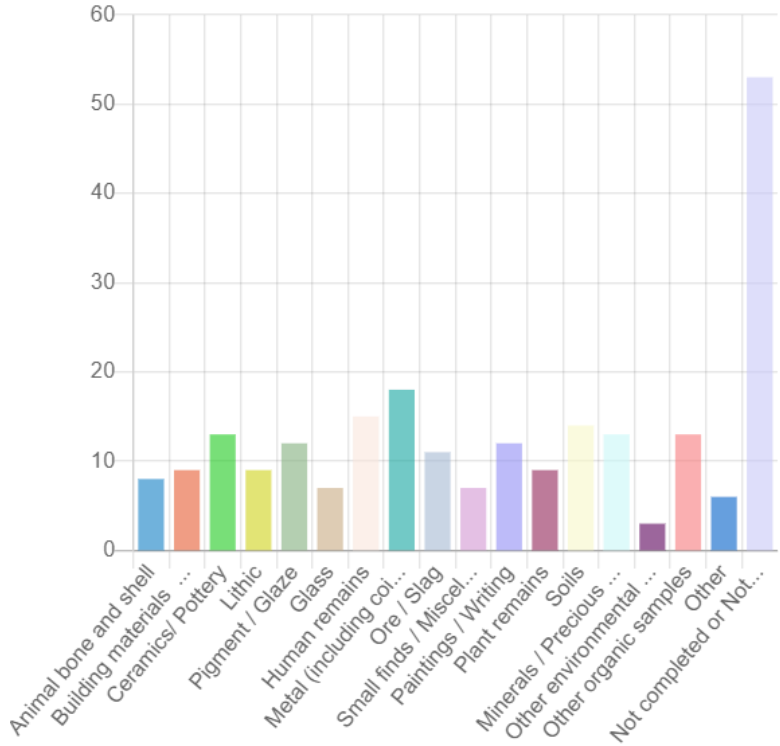
Q1: Are you currently involved in any research projects or activities that deal with the analysis of archaeological samples in a laboratory setting?



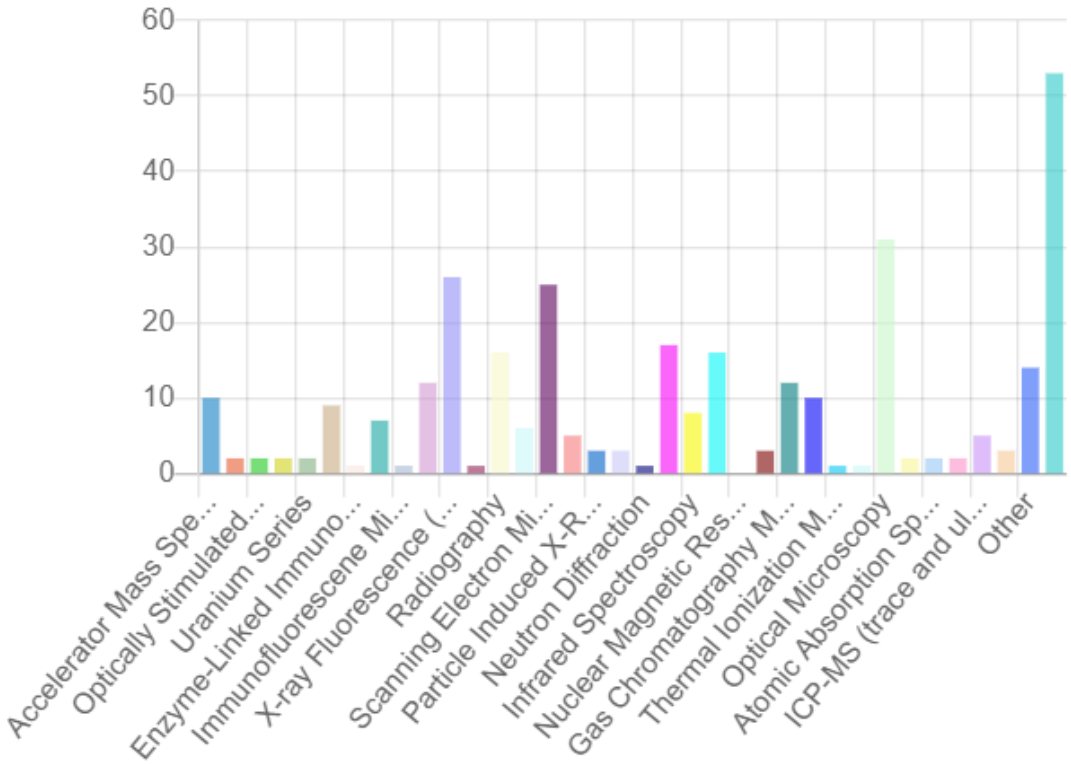
Q2: What is your role/experience in your research activities?



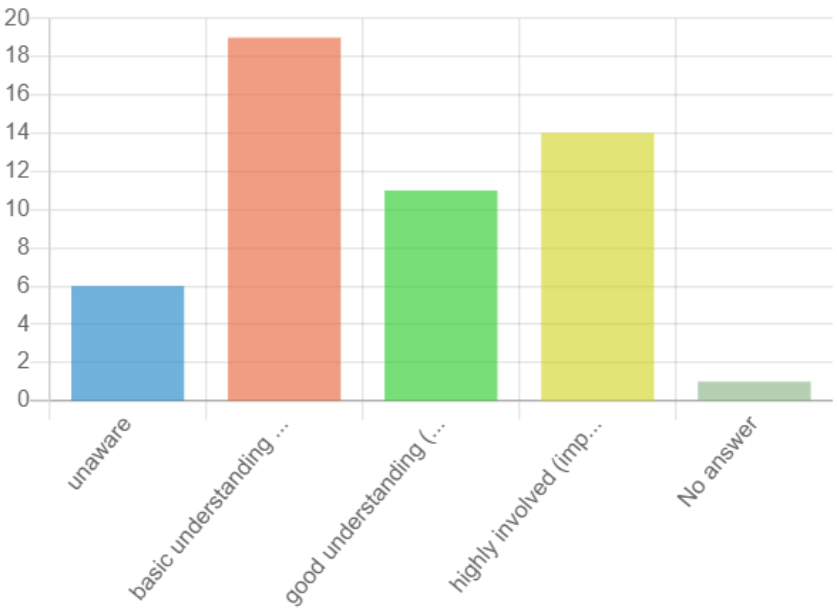
Q3: What types of material samples have you collected/managed/studied in your research activities?



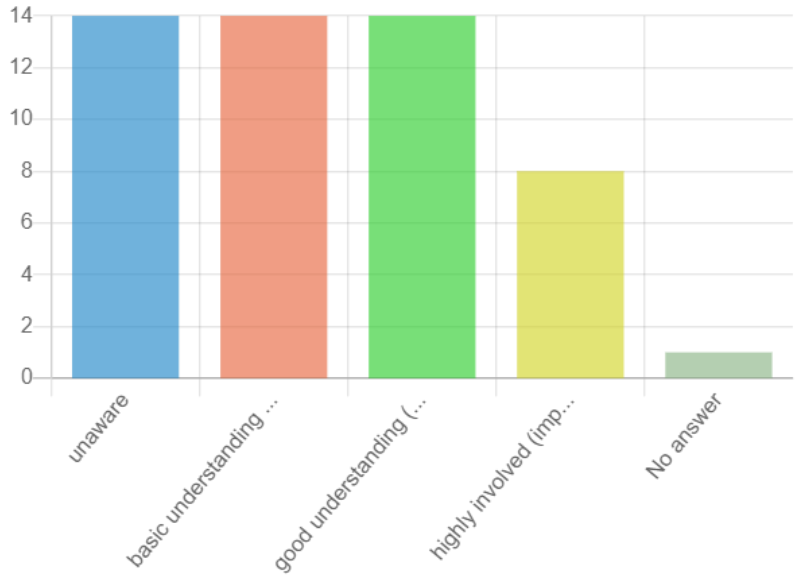
Q4: What analytical techniques have you employed to investigate your samples?



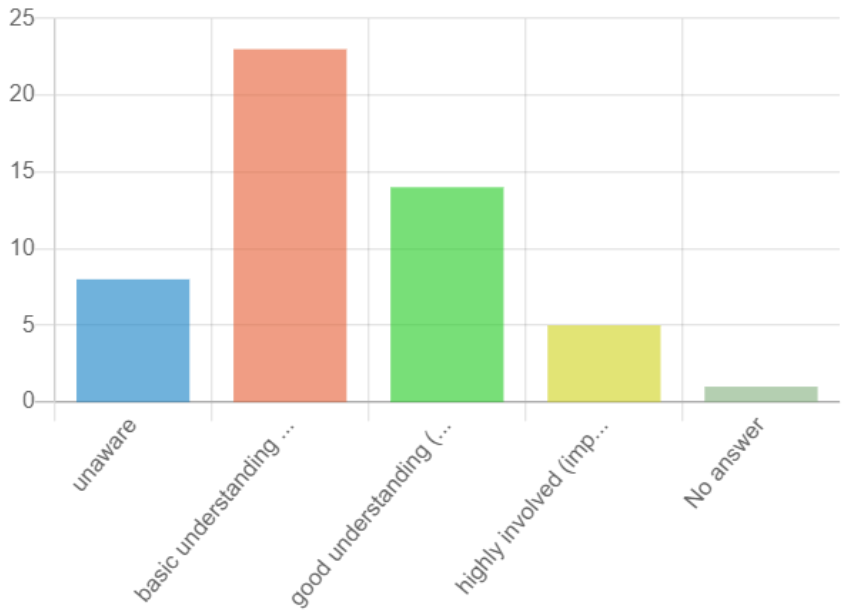
Q5: What is your level of understanding of the following topics before receiving this survey? [FAIR principles (findable, accessible, interoperability, reusable)]



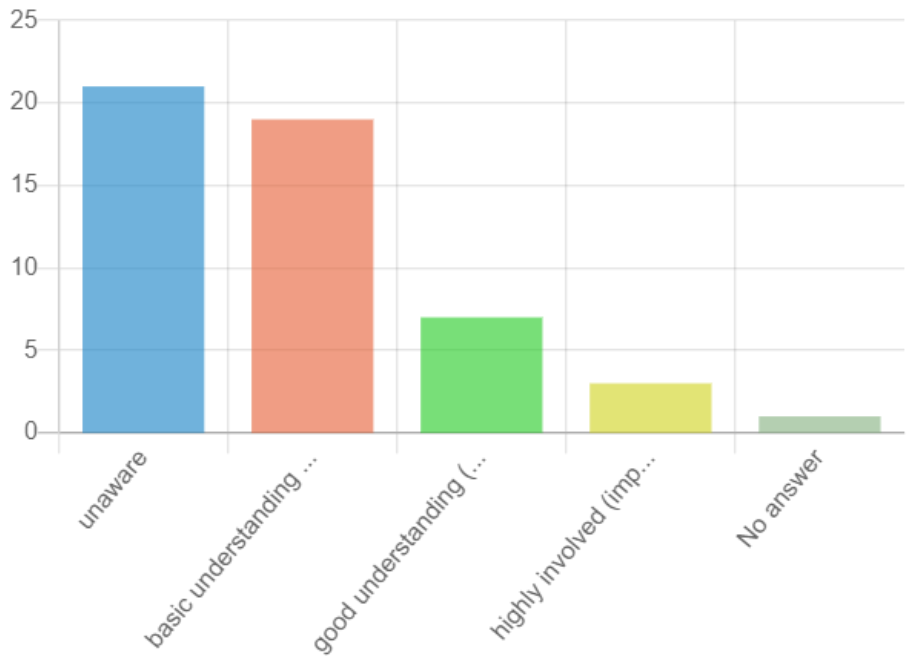
Q6: What is your level of understanding of the following topics before receiving this survey? [Persistent Identifiers (PIDs)]



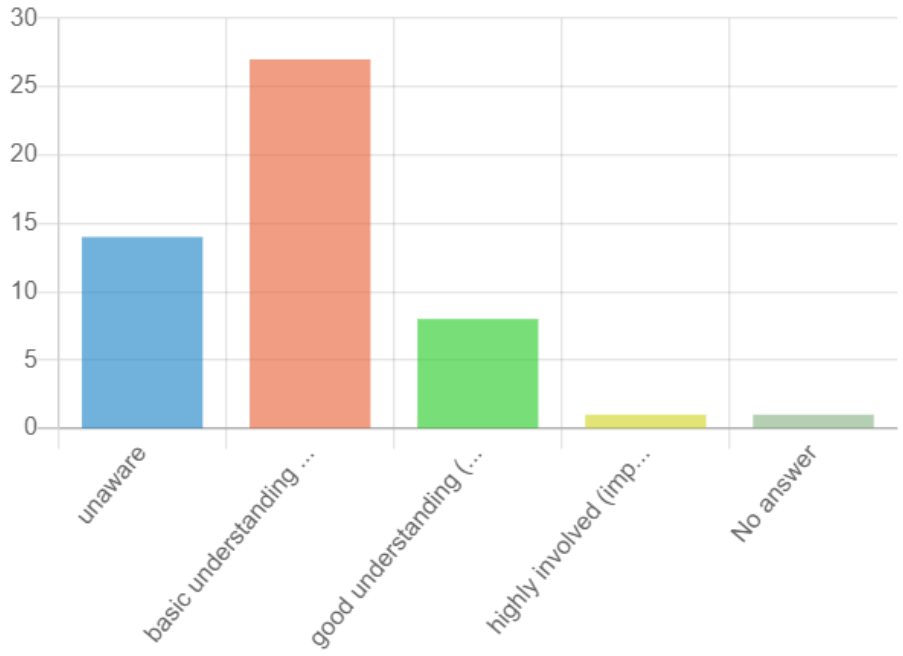
Q7: What is your level of understanding of the following topics before receiving this survey? [Controlled Vocabularies (e.g. Getty the Art and Architecture Thesaurus)]



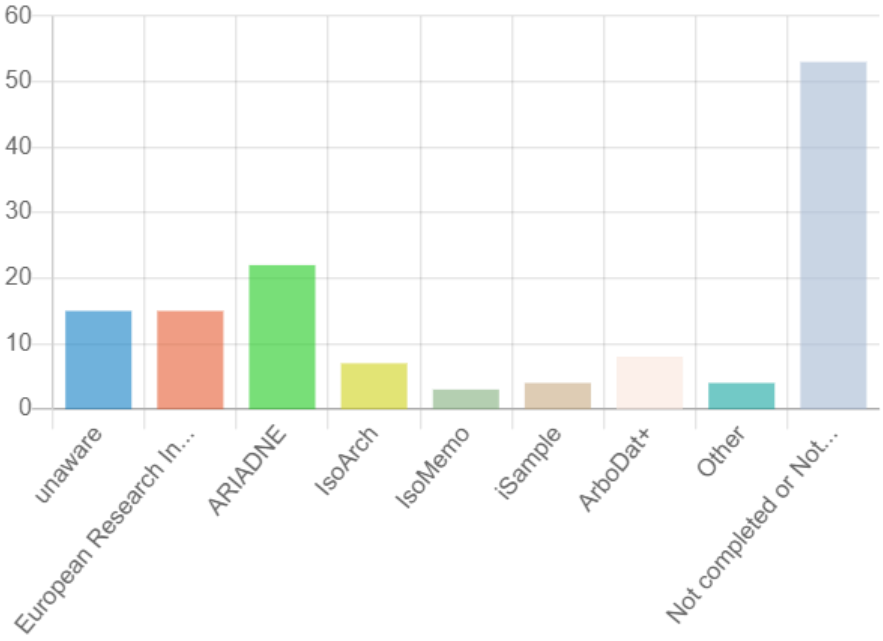
Q8: What is your level of understanding of the following topics before receiving this survey? [Ontology (e.g. CIDOC-CRM, Schema.org)]



Q9: What is your level of understanding of the following topics before receiving this survey? [Linked Open Data and Semantic Web]

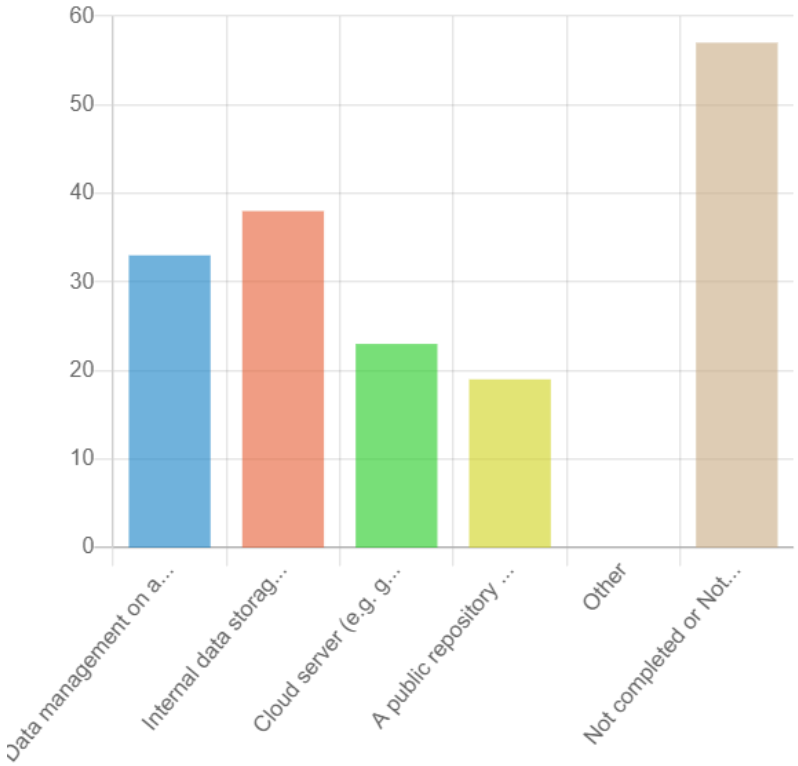


Q10: Are you aware of any existing initiatives or projects similar to NFDI4Objects that focus on the FAIR use of research data in the archaeometry community?

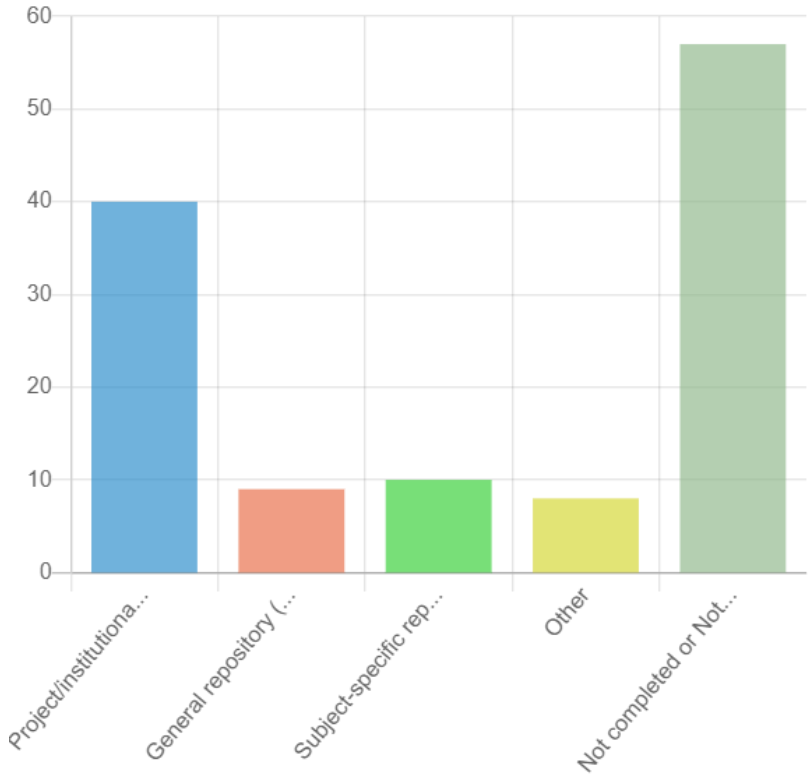


Section 3: Research practices and standards

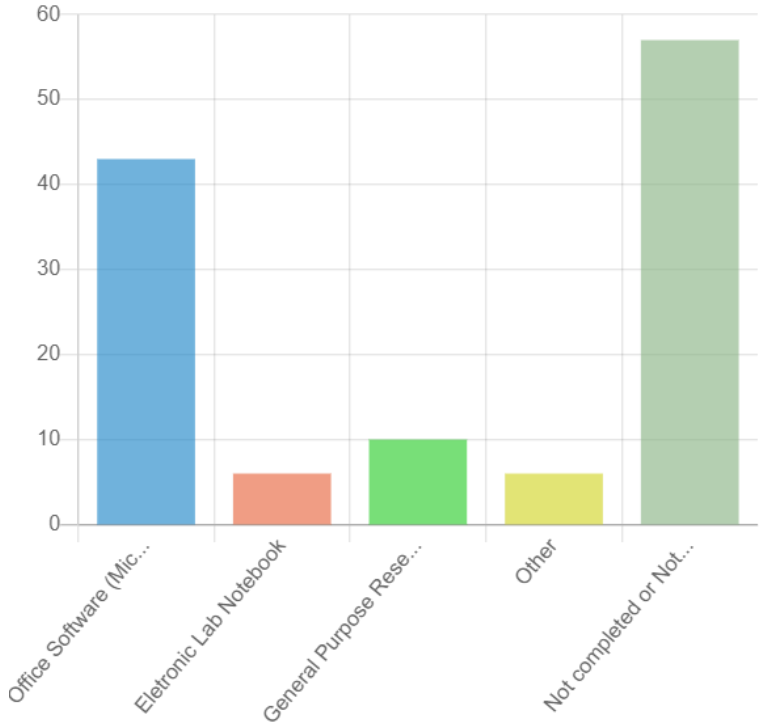
Q11: Where do you currently store your analytical data and metadata?



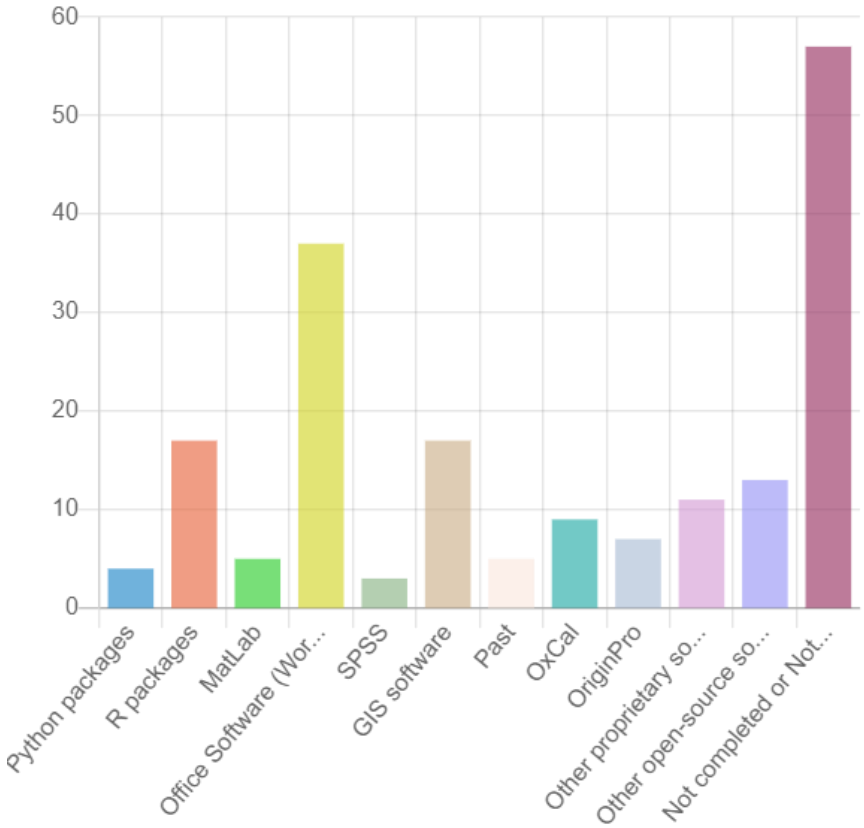
Q12: What database systems do you use for data storage and retrieval?



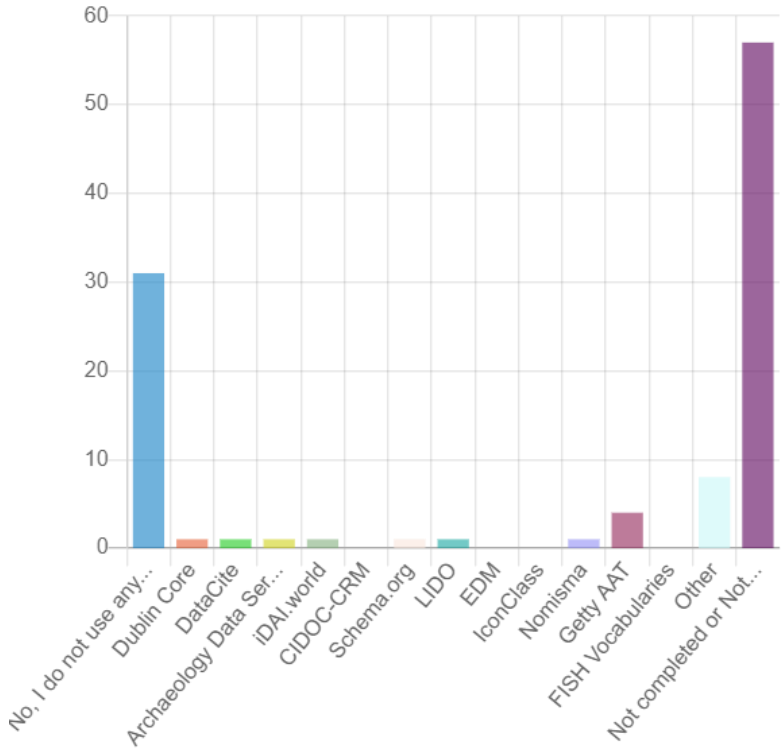
Q13: What tools or software do you use to manage your analytical data and metadata?



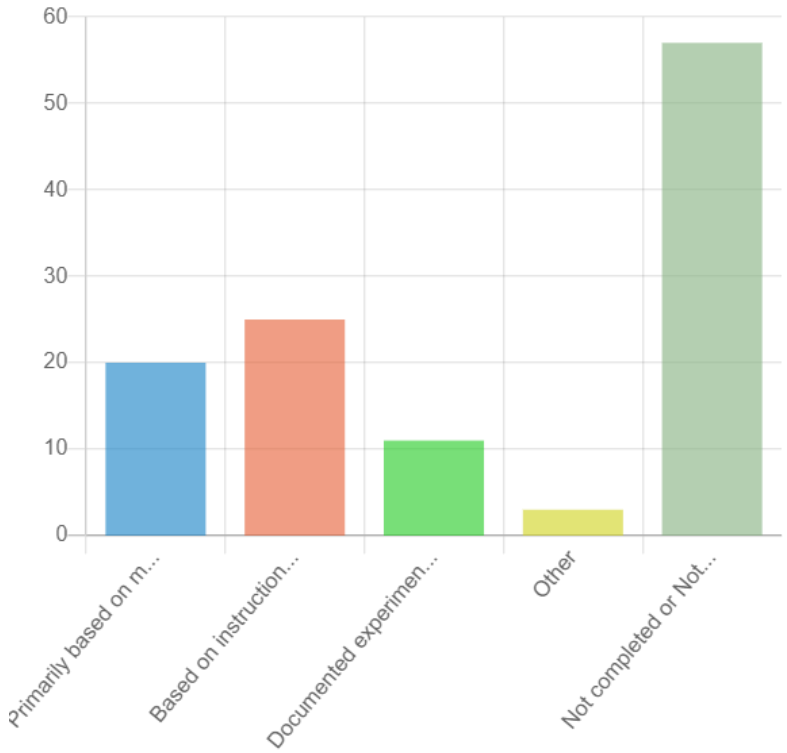
Q14: What tools or software do you use to interpret / process / evaluate your analytical data?



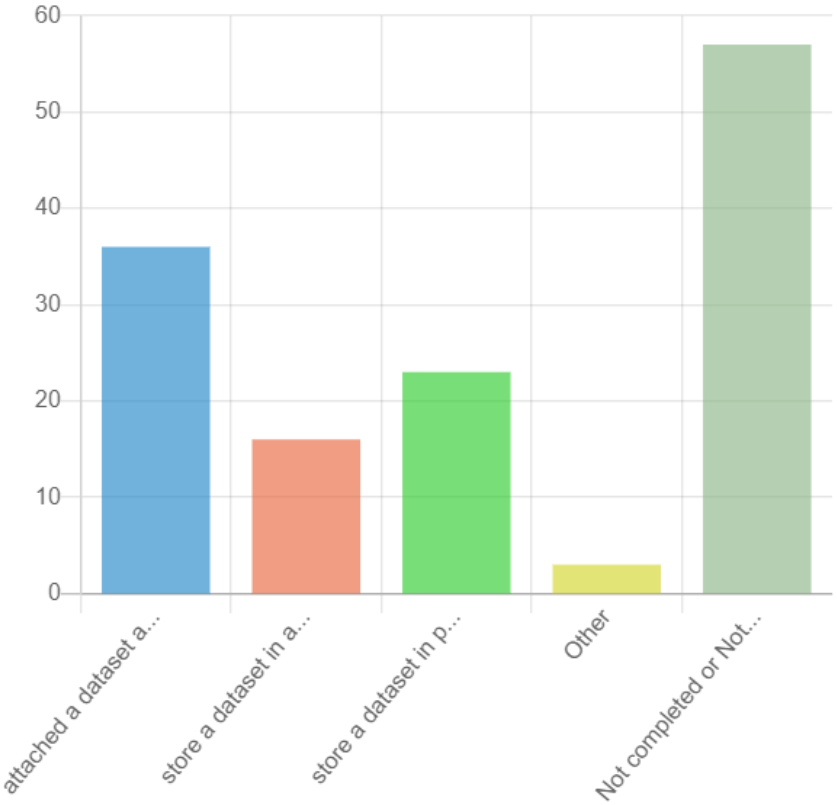
Q15: Do you follow any standardised metadata model, controlled vocabulary, or ontology for your research data?



Q16: How do you routinely document your analytical procedures or workflow?

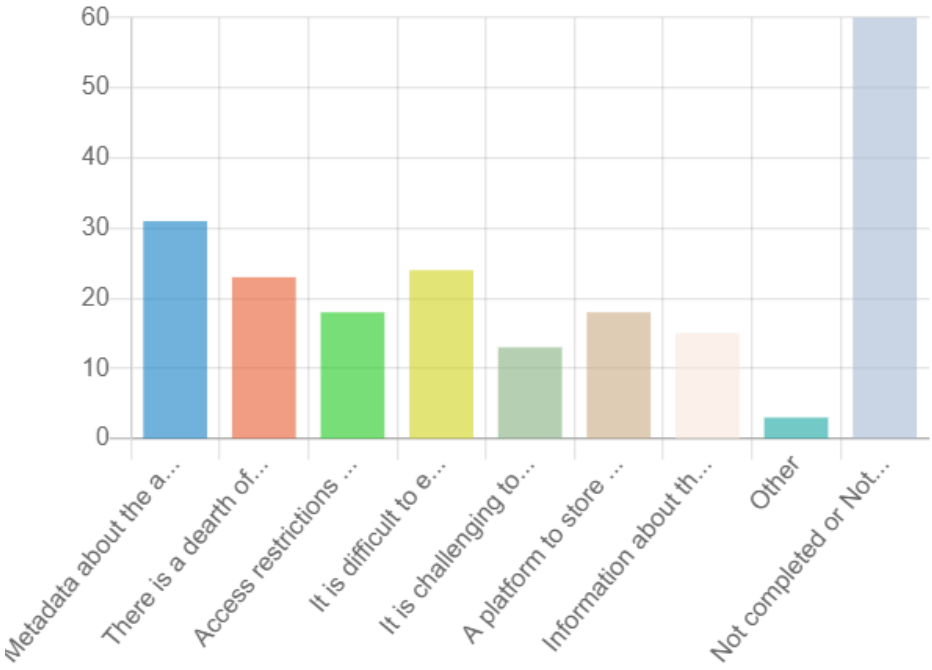


Q17: Where do you publish your analytical data and metadata?



Section 3: Current challenges and needs

Q18: What challenges or gaps are you currently experiencing in accessing, interpreting, and storing analytical data and metadata related to your research?



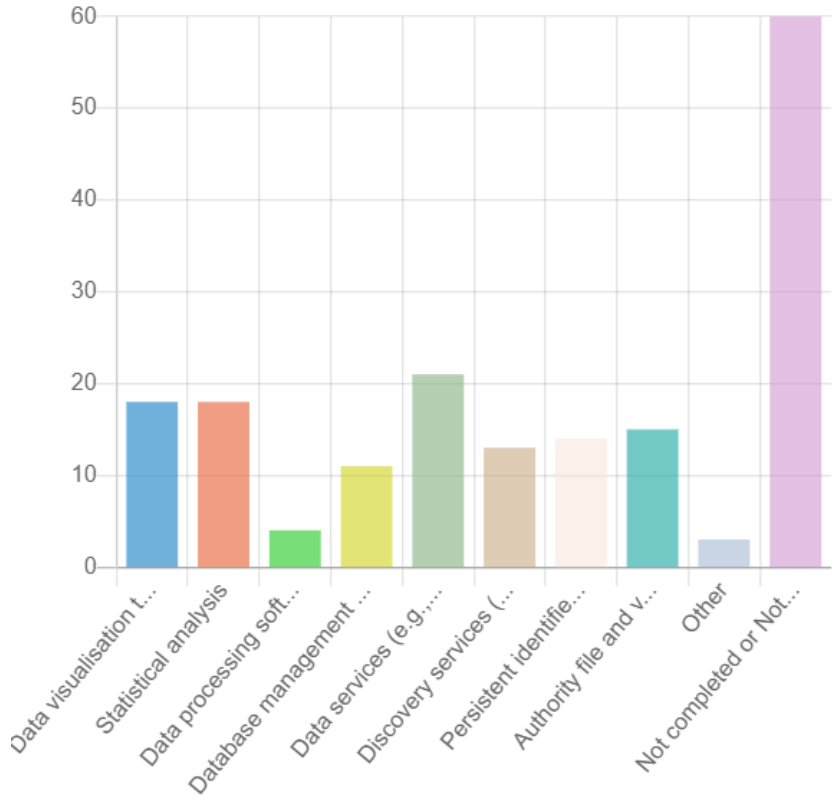
- Metadata about the analytical data is incomplete or not standardized (e.g., lack of archaeological context or, experimental parameters).
- There is a dearth of a centralised database for retrieving the required data. Data must be gathered individually from either publications or the internet.
- Access restrictions to certain datasets or tools due to organisational policies or budget constraints.
- It is difficult to ensure data quality and consistency due to a lack of data quality protocols for different types of analytical data.
- It is challenging to access real-time analytical data and keep the database up-to-date.
- A platform to store and share subject-specific analytical data is missing.
- Information about the capabilities or expertise of archaeometric laboratories is insufficient. In other words ,there is a lack of platform to search lab services.
- Other
- Not completed or Not displayed

Specific answers:

Data is primarily stored within pdf (tables), not as machine-operable data.

Data management is neglected due to shortage of staff and instruction.

Q19: What tools, software, or services do you wish to have to better manage your research data and meanwhile enhance findability, accessibility, and reusability?



Q20: Is there any other aspect, feedback, or concern that you would like to share with us?

Specific responses:

nein, habe kein großes Wissen in diesem Bereich.

High Resolution 3D Scanner and Analytics / Simulation Software.

Concerning the last questions: I don't know most of the data management tools listed, so it is hard to decide if I would actually need them.

I have all tools and software that I need for my research.