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Research Article

Big Data Adoption: Perspectives, Realities, and Myths - An Outer View in Academic Libraries

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Abstract

It is clear that the deluge of information has forced the current civilization into the era of Big Data adoption given the information's quick development and the widespread use of information gadgets. It has been noted that technology is becoming more and more essential to many facets of human existence, which makes this dependence relevant and important. A university's academic library is one of its three pillars. It performs vital functions such as teaching and research services and serves as the hub for auxiliary instruction, information sharing, academic activities, and cultural inheritance. All of these functions depend heavily on the ever-growing amount of data, which is sometimes referred to as "Big Data adoption." This study addresses the concerning connection between the use of Big Data and operations in many areas of human existence and offers a comprehensive explanation of Big Data and its significance in academic libraries. Aside from this, the study clarifies the general ethics of Big Data, its features, advantages, tools, the role of librarians, and the causes of the important problems related to big data adoption and the perspectives in academic libraries. Thus, the adoption of big data continues to be an intriguing new area in both science and technology. Therefore, greater familiarization and demystification of Big Data adoption is still necessary, even with the development of technology and availability of free knowledge. It will require more advanced computing abilities to comprehend and utilize it to its full potential.

Keywords

Big Data, Adoption, Academic Librarians, Librarians, Nigeria

1. Introduction

Big Data adoption is a recent addition to our vocabulary, albeit it can be difficult to pinpoint just how recent. Many information workers are currently thinking about how the library may get involved in the Big Data adoption [1, 2]. *Perspectives, Realities, and Myths.* This is straightforward: find and pick important resources; arrange, characterize, and protect them; and lastly grant users access. Librarians have typically dealt with the products of research that were filtered through publishing, but when it comes to Big Data adoption, they are expected to get involved earlier in the information cycle [1, 2]. Therefore, exploring the factors that affect libraries and the new difficulties that come with big data adoption is crucial because it is undoubtedly a new area of academic inquiry. Information volumes have been steadily rising as a result of the unquestionably active and fast evolving fields of networks and digital technology. The idea of traditional library services has evolved in the context of big data because efficient analysis of library users' needs is necessary

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for the development of successful library collections. As a result, in the big data era, gathering data for academic libraries has become the standard procedure, but the equally crucial job of evaluating data is frequently disregarded [1, 2].

2. Concept of Big Data Adoption

Big Data adoption refers to the 21st-century phenomenon of exponential growth of business data, and the challenges that come with it, including holistic collection, storage, management, and analysis of all the data sets that a business owns or uses. Big Data adoption is an umbrella term used to describe extremely large data sets that are difficult to process and analyze in a reasonable amount of time using traditional methods [23]. Specifically, in academic libraries, it as a collection of data sets that are too big and intricate for conventional database administration systems to process. As more and more data from all spheres of life are available, it has been noted that the idea of big data is gaining importance. This big data as become is now a tool for business competitiveness, quality education, and social integration amongst others. Big data is the result of information explosion in the world today. Big data could be said to be the buildup of the participation of the public in data creation and dissemination [21].

3. Big Data in Academic Libraries

As such understanding Big Data adoption in academic libraries are often intuitive [16, 17]. As per [23] presented that Big Data adoption as data library that cannot be processed by traditional data management tools. Others [14] recommended that discovering alternate methods of handling data libraries that are larger in size than those handled by traditional database systems. Furthermore, Big Data adoption are data library generated constantly, automatically, and rapidly. It is worth noting that while there is not a universally accepted definition of Big Data adoption, various sectors and industries including university libraries have adapted and interpreted it differently to suit their specific objectives [11-13].

According to [22], the use of big data is used to mine, identify, organize, and evaluate reader behavior in structured and semi-structured data sets in order to optimize library resources and services. Adoption of big data can be utilized to improve library resources by learning about trends in catalogue searches. Also, discussed the influence of Big Data on academic libraries' conventional service model, emphasizing the feasibility of reforming and upgrading library services. Another significant problem pertaining to the topic of academic library management research was tackled by Zeng in [16]. Consequently, all of these articles draw attention to the rapidly developing field of Big Data research in academic libraries, and it appears that librarians play a crucial role in the adoption of Big Data by assisting patrons in improving the process of optimizing the library management system. However, in spite of the abundance of research, relatively few studies examined what is it and why it matters in the context of academic libraries.

3.1. Characteristics of Big Data Adoption in Academic Libraries

The term "Big Data" in academic libraries describes the enormous volume of information created and gathered by these establishments, which includes both digital and analog data in different forms. Here are some key characteristics:

1. Volume: Big data adoption, a vast amount of machine-generated data, surpasses traditional data sources and storage capabilities. It is loosely structured, requiring big data adoption tools to effectively handle terabyte-sized data sets. For example, university libraries manage vast amounts of data, including bibliographic records, circulation statistics, digital collections, and user interaction logs. The sheer size of these datasets is a defining characteristics of Big Data adoption.
2. Velocity: The rapid rate at which data is generated is referred to as velocity. This rapid creation of data is frequently seen on social media platforms, where enormous volumes of information, viewpoints, and relationship histories are produced virtually instantaneously. For instance, data in academic library is generated and processed at high speeds. As such, real-time data from catalog searches, circulation transactions, and digital resource accesses require rapid handling and analysis.
3. Variety: Variety in the context of Big Data adoption refers to the wide range of data sources and types, including emails, photos, videos, and audio recordings, among other structured, unstructured, and semi-structured formats. This diversity creates difficulties for mining, storing, and analyzing data. For instance, university Library data comes in multiple formats and from various sources. This includes structured data (catalog records, user profiles), semi-structured data (e-books, digital archives), and unstructured data (social media interactions, user feedback, audio/video files) [10, 20].
4. Value: Adoption of big data has a direct correlation with its source. It requires an evaluation of its accuracy, completeness, and dependability. Amidst the enormous amount of non-traditional data, important information is frequently hidden. One of the main challenges is locating, then converting and retrieving this useful data for study. For example, extracting meaningful insights from Big Data adoption phenomenon, can greatly enhance library services and offerings. As such, analyzing usage patterns, preferences, and feedback helps in better collection development, personalized services, and strategic planning [10, 20].
5. Veracity: In the context of adopting Big Data, veracity

emphasises the significance of data trustworthiness and quality. The quality and consistency of this data collection are crucial, even though the use of big data generates a lot of information in many different formats. Making judgments based on reliable outcomes requires verifying the accuracy of data, which is why doing so is essential. For example, university libraries must manage data quality, address inconsistencies, and validate information to maintain trustworthiness [10, 20].

6. Variability: It is crucial to assess the data's viability in order to build efficient prediction models because of the wide range of data kinds and factors that are involved. Achieving actionable insights requires identifying the most pertinent and significant data items. For instance, the meaning of data library can change rapidly and exponentially. As such, university libraries face challenges in managing data with fluctuating formats, interpretations, and usage patterns [10, 20].
7. Validity: Validity refers to how accurate a data library is for the purpose for which it is intended. To increase the difficulty of developing a meaningful relationship and conducting meaningful inquiry, the librarians can, for instance, get a dataset referring to data connected to the subject of inquiry. Registered charity data contact lists [19].

Consequently, by understanding these characteristics is essential for academic libraries to effectively harness the potential of Big Data adoption to enhance their operations, services, and impact on their communities.

3.2. Types of Big Data Adoption in Academic Libraries

It encompasses various types of data generated from diverse sources and activities within the library ecosystem. Here are some common types:

1. Cataloging Records: For instances, books, journals, audiovisuals, computers, and other resources are all described in the metadata of the library's collection. This data typically includes information such as titles, authors, subjects, publication dates, and ISBN/ISSN numbers. [10, 20].
2. Circulation Data: Information about library circulation transactions, including items borrowed, returned, renewed, and on hold. Circulation data provides insights into usage patterns, popular materials, and user behavior [15, 18].
3. Usage Statistics: Data on the usage of electronic resources such as databases, e-journals, e-books, and other digital collections. This data includes metrics such as downloads, views, searches, and user sessions, helping libraries assess the value and impact of their electronic resources [15, 18].
8. User Data: Information about library users, including demographic data, affiliation (students, faculty, staff, etc.), borrowing history, preferences, and interactions with library services and resources. User data enables libraries to tailor services to meet user needs and preferences [10, 20].
9. Reference and Research Data: Data related to reference inquiries, research consultations, and information literacy sessions conducted by library staff. This data may include topics of interest, types of questions asked, and outcomes of reference interactions [10, 20].
10. Digital Collections Data: Data pertaining to digitized materials such as digitized manuscripts, archives, special collections, and institutional repositories. This data includes metadata, usage statistics, and preservation metadata for digital objects [10, 20].
11. Institutional Repository Data: Content deposited in institutional repositories, including research publications, theses, dissertations, data sets, and other scholarly works produced by the institution's faculty, researchers, and students [10, 20].
12. Acquisition and Collection Development Data: Data related to the acquisition, selection, and management of library collections, including purchase orders, vendor information, collection usage data, and collection development decisions [10, 20].
13. Library Management System Data: Data generated by the library's integrated library system (ILS) or library management system (LMS), including catalog records, patron records, circulation transactions, acquisitions data, and serials management information [10, 20].
14. Interlibrary Loan (ILL) Data: Information on interlibrary loan requests and transactions, including borrowing and lending activities between libraries. ILL data helps libraries facilitate resource sharing and access to materials beyond their collections [15, 18].

These types of big data provide valuable insights into various aspects of library operations, user behavior, resource usage, and scholarly communication, enabling libraries to make informed decisions, improve services, and support research and learning activities within their academic communities.

3.3. Big Data Adoption Tools in Academic Libraries

It encompasses range of software and platforms designed to manage, analyze, and visualize large volumes of data. Here are some commonly used tools along with examples according to [9, 10, 12].

1. Integrated Library Systems (ILS):
   a) Ex Libris Alma: A cloud-based ILS that provides management of library collections, acquisitions, cataloging, circulation, and electronic resources.
   b) SirsiDynix Symphony: An extensive information library system that provides modules for acquisitions, circulation, serials management, cataloging, and pa-

tron administration.

2. Digital Asset Management Systems (DAMS):
   a) CONTENTdm: It is a platform for managing digital collections that is used to arrange, describe, and distribute digital content, such as documents, audio, video, and photographs.
   b) Islandora: A Drupal-based digital repository architecture that is open-source and enables academic institutions to produce and handle digital assets and scholarly content.
3. Library Discovery Systems:
   a) EBSCO Discovery Service (EDS): A platform for federated searches that offers access to a variety of library resources, such as digital collections, e-books, e-journals, and databases.
   b) Primo by Ex Libris: A discovery and delivery system that offers unified access to library resources, integrating local and remote content into a single search interface.
4. Data Analytics and Visualization Tools:
   a) Tableau: An effective tool for data visualization that enables academic libraries to build dynamic dashboards and visualizations for the exploration and analysis of usage patterns, library data, and statistics.
   b) Google Analytics: A web-based analytics solution that monitors and documents website traffic, user behavior, and usage trends, offering valuable insights into the ways in which users interact with online resources and library websites.
5. Open Source Tools:
   a) OpenRefine: A tool for cleaning and transforming messy data, including bibliographic metadata, to improve data quality and consistency in library catalogs and digital collections.
   b) DSpace: An open-source digital repository platform used by libraries to capture, preserve, and provide access to scholarly research outputs, institutional publications, and archival materials.
6. Text Mining and Natural Language Processing (NLP) Tools:

Voyant Tools: It is a text analysis and visualization application for the web that enables libraries to examine and evaluate textual material, including digitized books, papers, and manuscripts.

K (Natural Language Toolkit): This Python toolkit is excellent for processing and analyzing big text corpora in academic libraries. It performs tokenization, stemming, part-of-speech tagging, and sentiment analysis among other NLP tasks.

7. Data Management Platforms:
   a) DMPTool: An online platform that helps researchers create data management plans (DMPs) for grant proposals, ensuring compliance with funding agency requirements and best practices for data management and sharing.
   b) Figshare: A cloud-based platform for hosting and sharing research data, enabling researchers to publish, discover, and cite datasets, software, and other research outputs.

Consequently, these big data tools empower academic libraries to efficiently manage their collections, provide seamless access to resources, analyze user behavior, and support research and scholarship within their institutions.

3.4. The Ethics of Big Data Adoption in Academic Libraries

The conscientious acquisition, preservation, examination, and application of extensive data sets are central to the ethics of big data. Big data presents many advantages due to its volume, pace, variety, and authenticity; nevertheless, it also brings up some ethical concerns that should be carefully considered. According to [7], the following are the primary ethical issues surrounding the adoption of big data:

1. Privacy and Confidentiality

Data Collection: Sensitive and personal data is frequently included in the enormous volumes of data that are gathered. Getting people's agreement in writing before collecting their data is essential.

Data Usage: Organizations must ensure that the data is used for the purposes explicitly stated during collection and not repurposed in ways that could harm individuals.

Anonymization: While anonymizing data can protect privacy, advances in data analytics can sometimes re-identify individuals from supposedly anonymized datasets.

2. Data Security

Protection Measures: Robust security measures must be in place to protect data from breaches, which can have serious repercussions for individuals whose data is exposed.

Responsibility: Organizations are responsible for safeguarding data against unauthorized access and ensuring that third parties handling the data also adhere to strict security protocols.

3. Transparency and Accountability

Clear Policies: When it comes to data collection, usage, and access, academic libraries ought to be open and honest about their procedures.

Accountability Mechanisms: There should be clear mechanisms for holding entities accountable for misuse of data or failure to protect it adequately.

4. Bias and Discrimination

Algorithmic Fairness: Big data analytics and machine learning algorithms can perpetuate and even exacerbate existing biases. It is crucial to regularly audit these systems to ensure fairness.

Inclusive Data: Ensuring that datasets are representative and inclusive can help mitigate bias and prevent discriminatory outcomes.

5. Ownership and Control

Data Ownership: One of the most important ethical concerns is figuring out who owns the data and who can access and use it.

User Control: Empowering individuals with control over their data, including options to access, modify, and delete their data, is essential for ethical big data practices.

6. Impact on Society

Social Implications: The use of big data can have broad social implications, including impacts on employment, privacy, and autonomy. Ethical considerations must address these potential societal effects.

Regulation and Compliance: Adhering to legal and regulatory standards, such as GDPR in Europe, is a critical component of ethical big data use.

7. Informed Consent

Clarity and Understanding: Ensuring that individuals fully understand what they are consenting to when providing their data is a fundamental ethical requirement.

Dynamic Consent: Implementing mechanisms for dynamic consent, where individuals can update their preferences over time, enhances ethical data practices.

8. Data Stewardship

Responsible Data Management: Organizations must practice responsible data stewardship, including data minimization (collecting only what is necessary) and data retention policies.

Ethical Data Sharing: Sharing data ethically, particularly in research contexts, involves balancing the potential benefits of data use against the risks to individuals.

Thus, the ethics of Big Data adoption require a multifaceted approach that balances the benefits of data-driven insights with the need to protect individual rights and promote fairness. Ethical guidelines and frameworks, ongoing audits, and stakeholder engagement are essential in navigating the complex landscape of Big Data adoption. Responsible use of Big Data not only fosters trust but also ensures that technological advancements contribute positively to society.

3.5. Benefits of Big Data Adoption in Academic Libraries

Big Data adoption offers numerous benefits to academic libraries, enhancing their services, operations, and overall impact on academic communities. Here are some key benefits:

1. Improved Resource Management:

Collection Development: Big Data analytics help libraries understand which resources are most utilized, allowing for better allocation of budgets and informed decisions on which new materials to acquire.

Space Utilization: Analysis of data on how physical spaces are used can inform changes in the layout and design of library spaces to better meet user needs [1-3].

2. Enhanced User Experience:

Personalization: Big Data adoption enables libraries to provide personalized recommendations for books, articles, and other resources based on individual user behavior and preferences.

User Services: Data library on user interactions with library services can be used to improve help desks, research support, and information literacy training.

3. Support for Academic Research:

Research Data Management: academic libraries can use big data to support researchers in managing their data, ensuring compliance with data management plans, and facilitating data sharing and reuse.

Bibliometrics and Impact Analysis: Analysis of publication and citation data can help in understanding research trends, measuring the impact of research outputs, and identifying potential collaborators [10, 12].

4. Operational Efficiency:

Workflow Optimization: By analyzing data on library operations, libraries can streamline workflows, reduce redundancies, and improve service delivery.

Inventory Management: Big Data adoption helps in efficiently managing the inventory of books and other materials, reducing losses and ensuring timely replacement or repair of items [10, 12].

5. Strategic Planning and Decision-Making:

Trend Analysis: academic libraries can identify trends in information consumption and academic needs, allowing them to anticipate future demands and plan accordingly.

Performance Metrics: Data on library usage, user satisfaction, and service effectiveness provide valuable insights for continuous improvement and strategic planning [10, 12].

6. Advancement of Digital Initiatives:

Digital Collections: Big Data analytics can guide the digitization of collections by identifying high-demand materials and predicting future usage patterns.

Access and Discovery: Enhanced search algorithms and discovery tools can be developed using big data to improve access to digital resources [6, 10, 12].

7. Enhanced Collaboration:

Inter-Library Cooperation: Data sharing among academic libraries can facilitate resource sharing, collaborative purchasing, and joint initiatives.

Community Engagement: academic libraries can use data to better understand and engage with their academic communities, tailoring programs and services to meet specific needs [5, 6].

Consequently, Big Data adoption empowers academic libraries to better manage resources, enhance user experiences, support research, improve operational efficiency, inform strategic planning, advance digital initiatives, and foster collaboration. As a result, by leveraging Big Data, academic libraries can significantly improve their services and contributions to the academic community.

4. Big Data Adoption with Big Problem

It has been noted that while Big Data adoption offers numerous benefits to academic libraries, it also presents significant challenges. Here are some of the main big problems associated with Big Data adoption in academic libraries:

1. Data Privacy and Security:

Privacy Concerns: Handling large volumes of data, especially personal and usage data, raises significant privacy issues. Academic libraries must ensure that user data is protected and that privacy policies are transparent and robust.

Security Risks: The storage and processing of Big Data require advanced security measures to prevent data breaches and unauthorized access [5, 6].

2. Data Management Challenges:

Volume and Variety: The sheer volume and variety of data can be overwhelming. Libraries must manage different types of data, including structured, semi-structured, and unstructured data, which can be challenging to integrate and analyze.

Data Quality: Ensuring data accuracy, consistency, and reliability is crucial but difficult. Poor data quality can lead to incorrect insights and decisions [5, 6].

3. Technical and Infrastructure Issues:

Storage and Processing: Managing the infrastructure required to store and process large datasets can be costly and complex. Libraries often need to invest in advanced technologies and scalable solutions.

Software and Tools: Selecting and maintaining the right tools for big data analytics is a challenge. Libraries must ensure compatibility, scalability, and usability of these tools [5, 6].

4. Skills and Expertise:

Staff Training: academic library staff often need training to handle Big Data effectively. This includes skills in data analysis, data science, and the use of specific big data tools and technologies.

Hiring Experts: Finding and hiring qualified data scientists and analysts can be difficult and expensive [5, 6].

5. Ethical Considerations:

Data Ethics: The ethical use of data is a major concern. Academic libraries must navigate issues related to consent, data ownership, and the ethical implications of data analytics.

Bias and Fairness: Ensuring that data analysis and algorithms are free from bias and that they promote fairness is a complex challenge [5, 6].

6. Interoperability and Standards:

Data Integration: Integrating data from various sources and ensuring interoperability between different systems can be difficult. Academic libraries need to adhere to data standards and protocols to facilitate this integration.

Metadata Management: Proper metadata management is essential for data discovery and usage, but it is often a complex task [5, 6].

7. Resource Constraints:

Budgetary Limits: Implementing Big Data solutions often requires significant financial investment, which can be a constraint for many academic libraries.

Time and Effort: The time and effort required to manage Big Data projects can strain library resources and divert attention from other important tasks [5, 6].

8. Legal and Regulatory Issues:

Compliance: academic libraries must comply with various legal and regulatory requirements related to data protection, such as GDPR and other local data protection laws.

Licensing and Access: Managing licenses for data use and ensuring appropriate access controls can be legally complex [5, 6].

Consequently, while Big Data adoption presents many opportunities for enhancing academic library services, it also brings substantial challenges related to privacy, security, data management, technical infrastructure, skills, ethics, interoperability, resources, and legal compliance. Therefore, addressing these challenges requires careful planning, investment, and ongoing management.

5. Big Data Important in Academic Libraries

Big Data adoption is becoming increasingly important in academic libraries for several reasons, which enhance their services, operations, and overall impact on academic communities:

1. Improving Resource Management:

Collection Development: Big data analytics help academic libraries understand which resources are most utilized, allowing for better allocation of budgets and more informed decisions on which new materials to acquire.

Space Utilization: Analysis of data on how physical spaces are used can inform changes in the layout and design of library spaces to better meet user needs [3, 4].

2. Enhancing User Experience:

Personalization: Big Data adoption enables academic libraries to provide personalized recommendations for books, articles, and other resources based on individual user behavior and preferences.

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3. Supporting Academic Research:

Research Data Management: academic libraries can use Big Data adoption to support researchers in managing their data, ensuring compliance with data management plans, and facilitating data sharing and reuse.

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Inter-Library Cooperation: Data sharing among academic libraries can facilitate resource sharing, collaborative purchasing, and joint initiatives.

Community Engagement: academic libraries can use data to better understand and engage with their academic communities, tailoring programs and services to meet specific needs [3, 4].

Consequently, Big Data adoption is a powerful tool for academic libraries, enabling them to better manage resources, enhance user experiences, support research, improve operational efficiency, inform strategic planning, advance digital initiatives, and foster collaboration. As such, by leveraging Big Data adoption, academic libraries can significantly improve their services and contributions to the academic community.

6. Where Do Librarians Fit in

According to [8, 9] librarians have long played a crucial role in managing information, and their skills and expertise are highly relevant in the context of big data. As the volume, variety, and complexity of data grow, librarians can contribute significantly in several areas:

1. Data Management and Curation

Organizing Data: Librarians are skilled in organizing and categorizing information, making them well-suited to manage large datasets.

Metadata Creation: They can create detailed metadata to ensure that datasets are discoverable, understandable, and reusable.

Preservation: Librarians can implement strategies for long-term data preservation, ensuring that valuable data remains accessible over time [8, 9].

2. Data Literacy and Education

Teaching Data Skills: Librarians can provide training and resources to help individuals and organizations develop data literacy skills, enabling them to understand and use big data effectively.

Workshops and Seminars: They can organize workshops and seminars on topics such as data ethics, data visualization, and statistical analysis.

3. Ethics and Privacy Advocacy

Ethical Data Use: Librarians are advocates for ethical information practices and can help ensure that big data initiatives adhere to ethical standards.

Privacy Protection: They can educate users and institutions on the importance of data privacy and the methods for protecting personal information.

4. Research Support

Assisting Researchers: Librarians can support researchers in finding, accessing, and using large datasets. They can also assist in data management planning for research projects.

Data Repositories: They can help establish and manage institutional data repositories, ensuring that research data is stored securely and made available for future use.

5. Information Retrieval and Data Mining

Advanced Search Techniques: Librarians have expertise in advanced search techniques, which can be applied to retrieving relevant information from large datasets.

Data Mining: They can assist in data mining processes, helping to uncover patterns and insights within large collections of data.

6. Policy Development

Institutional Policies: Librarians can contribute to the development of institutional policies on data management, sharing, and security.

Compliance: They can ensure that data practices comply with legal and regulatory requirements, such as GDPR or HIPAA.

7. Interdisciplinary Collaboration

Facilitating Collaboration: Librarians can act as intermediaries between different disciplines, facilitating interdisciplinary research and data sharing.

Knowledge Transfer: They can help transfer knowledge and best practices between departments and institutions.

8. Technology Integration

Tools and Platforms: Librarians can evaluate and recommend tools and platforms for data storage, analysis, and visualization.

Technical Support: They can provide technical support for data management tools and software, ensuring users can effectively utilize these resources.

9. Data Stewardship and Governance

Data Stewardship: Librarians can take on roles as data stewards, responsible for overseeing the lifecycle of data within an organization.

Governance Frameworks: They can help develop and implement data governance frameworks that define roles, responsibilities, and processes for managing data [8, 9].

Consequently, Librarians' expertise in information organization, access, ethics, and education positions them as valua-

ble contributors in the realm of Big Data adoption. By leveraging their skills, librarians can help ensure that Big Data is managed responsibly, ethically, and effectively, supporting a wide range of academic, professional, and societal goals.

7. Conclusion

The term "Big Data adoption" appears to have many facets and is always changing. It has garnered attention worldwide and sparked innovative ideas that are quickly altering and revolutionizing the ways in which we work, live, and think. According to research, the adoption of big data presents academic libraries with enormous opportunities since it may result in the establishment of new positions for information workers and librarians. In actuality, the data and information industry has long relied heavily on librarians. Therefore, the primary goals are to support knowledge creation in communities, stay informed about the rapidly changing field of data-based research, and determine the ethical and positional roles of librarians. According to this research, the adoption of Big Data adoption is already significant in the context of academic libraries. Because of this, information professionals have a responsibility to keep up with the quick changes in society, to be well-informed, well-prepared, well-trained, to collaborate closely with other communities, to create synergies, and to rise to new challenges for the good of society. These problems could establish a future agenda item for the field of library and information science. Ultimately, the creation of a Big Data adoption management policy is necessary to guarantee sustainability and execution.

Abbreviations

NLP	Natural Language Processing
DMPs	Data Management Plans
EDS	EBSCO Discovery Service
DAMS	Digital Asset Management Systems
ILS	Integrated Library Systems

Author Contributions

Adeniyi Isaiah Kayode is the sole author. The author read and approved the final manuscript.

Conflicts of Interest

The author declares no conflicts of interest.

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