Training Course on Bibliometric and Research Impact Analysis

Professional Development Training Course Outline

Category	Library Institute	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today's data-driven research landscape, understanding and measuring **scholarly impact** is no longer optional but essential. This comprehensive training course on **Bibliometric and Research Impact Analysis** empowers researchers, librarians, and policy makers to leverage the power of quantitative research evaluation. By mastering cutting-edge tools and methodologies, participants will gain critical insights into publication trends, collaboration networks, and the broader influence of their work and institutions.

Training Course on Bibliometric and Research Impact Analysis provides a robust foundation in **bibliometric techniques**, ranging from traditional citation analysis to the innovative world of **altmetrics**. Participants will learn to navigate major **bibliographic databases**, interpret key **research indicators**, and visualize complex data for effective communication. The course emphasizes practical application, equipping attendees with the skills to conduct their own analyses, inform strategic decisions, and significantly enhance their **research visibility** and **institutional reputation** in an increasingly competitive global academic environment.

Programme Curriculum

Training Course on Bibliometric and Research Impact Analysis

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Course Objectives

Upon completion of this training, participants will be able to:

1. **Understand** the fundamental principles and historical evolution of **bibliometrics** and **scientometrics**.
2. **Master** advanced techniques for **citation analysis** across diverse disciplines.
3. **Evaluate** the **Journal Impact Factor (JIF)** and its limitations, exploring alternative journal-level metrics.
4. **Explore** and apply **altmetrics** for a holistic understanding of research impact beyond traditional citations.
5. **Utilize** major **bibliographic databases** such as Web of Science, Scopus, and Google Scholar for data extraction.
6. **Perform** data cleaning, harmonization, and preparation for accurate **bibliometric analysis**.
7. **Conduct co-authorship network analysis** to map collaborative research patterns.
8. **Identify** and analyze **research trends** and emerging topics using **co-word analysis** and thematic mapping.
9. **Interpret** key **research performance indicators** like the h-index, g-index, and field-weighted citation impact.
10. **Visualize** complex bibliometric data using specialized software tools (e.g., VOSviewer, Biblioshiny, CiteSpace).
11. **Apply** bibliometric insights for **research evaluation**, strategic planning, and **collection development** in libraries.
12. **Address** ethical considerations and responsible use of metrics in **research assessment** and promotion.
13. **Develop** strategies to enhance personal and institutional **research visibility** and overall **research impact**.

Organizational Benefits

- Data-driven insights into research strengths, weaknesses, and emerging areas for strategic investment.
- Informed decisions to boost research productivity and impact, contributing to better global university rankings.
- Identification of high-impact research areas and productive collaborations for efficient funding and resource distribution.
- Strategies to promote institutional research, attract talent, and secure competitive grants.
- Understanding existing partnerships and identifying potential new collaborators for interdisciplinary research.
- Objective metrics for assessing individual researcher and departmental performance.

- Data-driven insights for library and information professionals to acquire relevant and impactful resources.
- Equipping staff with the skills to leverage research data for evidence-based policy and practice.

Target Audience

1. Academic Researchers and Faculty.
2. Librarians and Information Professionals.
3. Research Managers and Administrators
4. PhD and Postdoctoral Researchers
5. Journal Editors and Publishers.
6. Policy Makers and Funding Agencies.
7. Data Scientists and Analysts.
8. University Leadership and Provosts

Course Outline

Module 1: Introduction to Bibliometrics and Scientometrics

- Definition, history, and evolution of bibliometrics and scientometrics.
- Core concepts: publications, citations, authors, and institutions.
- Key applications in research evaluation and management.
- Limitations and challenges of relying solely on quantitative metrics.
- **Case Study:** *Tracing the historical development of a specific scientific field (e.g., Artificial Intelligence) using early bibliometric studies.*

Module 2: Major Bibliographic Databases

- In-depth exploration of Web of Science (WoS) and its various collections.
- Comprehensive overview of Scopus and its disciplinary coverage.
- Leveraging Google Scholar for broad search and grey literature.
- Understanding database indexing, data quality, and coverage bias.
- **Case Study:** *Comparing search results and data characteristics for a specific research topic across WoS, Scopus, and Google Scholar, highlighting unique insights from each.*

Module 3: Data Collection and Pre-processing for Analysis

- Formulating effective search queries using Boolean operators.
- Strategies for exporting and managing large bibliographic datasets.
- Techniques for data cleaning: de-duplication, standardization of author names and affiliations.
- Handling missing data and ensuring data integrity.
- **Case Study:** *A hands-on exercise in cleaning and preparing a downloaded dataset of publications on "Climate Change Adaptation" for subsequent analysis.*

Module 4: Performance Analysis: Publication and Citation Metrics

- Understanding basic metrics: total publications, total citations, average citations per publication.
- Introduction to author-level metrics: h-index, g-index, and m-quotient.
- Journal-level metrics: Journal Impact Factor (JIF), CiteScore, SJR, SNIP.
- Interpreting metrics in context: disciplinary differences and normalization.

- **Case Study:** *Analyzing the research output and citation impact of a specific researcher or research group using various performance indicators.*

Module 5: Citation Analysis: Uncovering Influence

- Direct citation analysis: identifying highly cited papers and authors.
- Co-citation analysis: understanding intellectual connections between works.
- Bibliographic coupling: identifying thematic similarities based on shared references.
- Analyzing citation networks to identify influential works and intellectual fronts.
- **Case Study:** *Mapping the intellectual structure of a sub-discipline by identifying co-cited articles and visualizing their relationships.*

Module 6: Co-Authorship Network Analysis

- Identifying collaborative patterns among authors, institutions, and countries.
- Metrics for network analysis: degree centrality, betweenness centrality, closeness centrality.
- Visualizing collaboration networks using tools like VOSviewer.
- Understanding the dynamics of research collaboration and its impact.
- **Case Study:** *Mapping the collaboration network of researchers within a specific university department or a multi-institutional project.*

Module 7: Co-Word Analysis and Thematic Mapping

- Analyzing keywords from publications to identify dominant research themes.
- Constructing co-occurrence networks of keywords.
- Identifying emerging topics and declining research areas.
- Creating thematic maps to visualize the intellectual landscape of a field.
- **Case Study:** *Applying co-word analysis to a dataset on "Sustainable Development Goals" to identify the most prominent themes and their evolution over time.*

Module 8: Altmetrics and Broader Research Impact

- Introduction to altmetrics: measuring online attention to research outputs.
- Types of altmetrics: social media mentions, news coverage, policy document citations.
- Tools for altmetric tracking (e.g., Altmetric Explorer, PlumX Metrics).
- Integrating altmetrics with traditional bibliometrics for a comprehensive impact assessment.
- **Case Study:** *Assessing the societal impact of a specific research paper or project by tracking its altmetric scores and media mentions.*

Module 9: Advanced Bibliometric Software: VOSviewer

- Hands-on training with VOSviewer for creating network visualizations.
- Generating co-authorship, co-citation, and co-occurrence maps.
- Clustering techniques and interpreting network components.
- Customizing visualizations for effective communication.
- **Case Study:** *Building a detailed VOSviewer map to explore the intellectual structure and collaboration patterns within the field of "Digital Humanities."*

Module 10: Introduction to Biblioshiny (R-based Tool)

- Overview of Biblioshiny functionalities for comprehensive bibliometric analysis.
- Importing data and generating various bibliometric reports.
- Creating advanced visualizations and statistical summaries.
- Understanding the capabilities of R for more customized analyses.

- **Case Study:** *Using Biblioshiny to generate a comprehensive report on the most influential journals, authors, and countries in a chosen research domain.*

Module 11: Research Evaluation and Benchmarking

- Applying bibliometrics for institutional research performance evaluation.
- Benchmarking against peers and identifying areas for improvement.
- Using metrics for funding allocation and strategic planning.
- Understanding the role of bibliometrics in national research assessment exercises.
- **Case Study:** *Benchmarking the research output and impact of a university department against national or international averages in its field.*

Module 12: Ethical Considerations and Responsible Metrics

- Avoiding misuse of bibliometric indicators.
- Understanding the limitations and biases inherent in metrics.
- Promoting responsible use of metrics in hiring, promotion, and tenure decisions.
- The San Francisco Declaration on Research Assessment (DORA) and Leiden Manifesto.
- **Case Study:** *Discussing scenarios where metrics can be misapplied and developing strategies for responsible metric usage in a research institution.*

Module 13: Enhancing Research Visibility and Impact

- Strategies for maximizing publication reach and discoverability.
- Utilizing researcher profiles (ORCID, Google Scholar profiles).
- Leveraging social media and academic networks for dissemination.
- Understanding open access publishing and its impact on visibility.
- **Case Study:** *Developing a personal research impact strategy for a new researcher, focusing on optimizing their online presence and disseminating their work.*

Module 14: Practical Applications in Library & Information Science

- Role of librarians in supporting bibliometric analysis and research impact services.
- Using bibliometrics for collection development and resource allocation.
- Supporting faculty with researcher profiling and impact reporting.
- Developing institutional bibliometric policies and guidelines.
- **Case Study:** *Designing a new library service offering bibliometric support to researchers at an academic institution.*

Module 15: Future Trends in Research Impact Assessment

- Emerging metrics and data sources (e.g., data citation, software citation).
- The role of AI and machine learning in future bibliometric analysis.
- Integration of qualitative and quantitative approaches for holistic assessment.
- New tools and platforms for research evaluation.
- **Case Study:** *Forecasting the future of research impact assessment by analyzing emerging trends and discussing their potential implications for academic institutions.*

Training Methodology

This training course employs a blended learning approach, combining theoretical knowledge with extensive practical application. Methodologies include:

- **Interactive Lectures:** Engaging presentations introducing core concepts and theories.

- **Hands-on Software Workshops:** Practical sessions with step-by-step guidance on using bibliometric tools (VOSviewer, Biblioshiny, etc.).
- **Live Demonstrations:** Real-time examples of data collection, analysis, and visualization.
- **Case Studies and Group Exercises:** Applying learned concepts to real-world scenarios and collaborative problem-solving.
- **Discussions and Q&A Sessions:** Fostering critical thinking and addressing specific participant queries.
- **Individual and Team Assignments:** Reinforcing learning through practical application of skills.
- **Expert-led Facilitation:** Guidance from experienced practitioners in bibliometrics and research evaluation.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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