# 2nd IEEE INTERNATIONAL CONFERENCE IN INFORMATION AND COMMUNICATION TECHNOLOGIES (ICICT 2018)

## *Research Visibility in the Global South*

### Towards Increased Online Visibility of Research in Zambia

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**University of Zambia**

# Introduction (1)

- **Zambia presently has six (6) public HEIs and 60 registered private HEIs. However, there is little or no online visibility of scholarly research output generated by these entities.**

# Introduction (2)

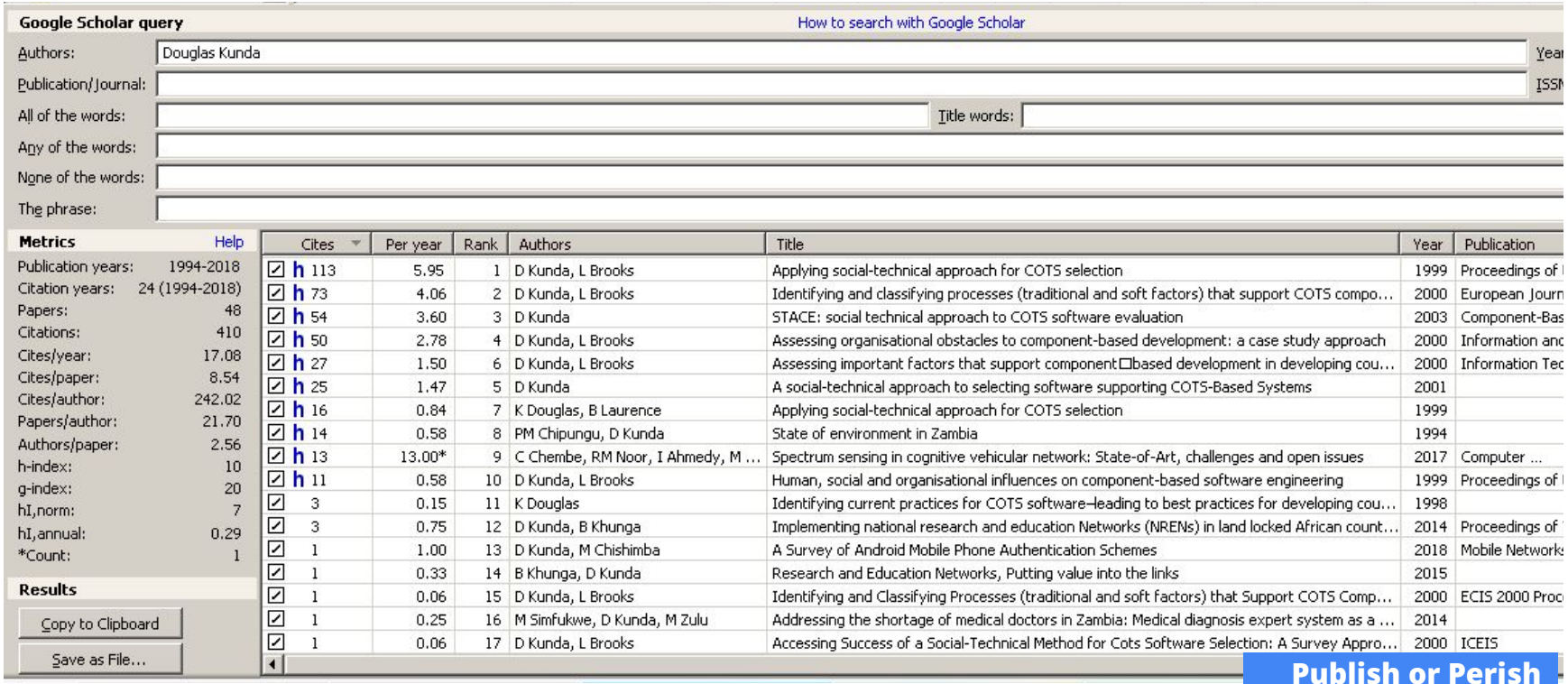
| ranking | World Rank | University | Det. | Presence Rank* | Impact Rank* | Openness Rank* | Excellence Rank* |
|---|---|---|---|---|---|---|---|
| 1 | 3395 | University of Zambia | » | 211 | 14760 | 3181 | 1874 |
| 2 | 5186 | Copperbelt University | » | 3962 | 13289 | 6396 | 4076 |
| 3 | 14381 | Mulungushi University | » | 12951 | 17509 | 7563 | 6008 |
| 4 | 17186 | University of Lusaka | » | 5166 | 16897 | 10778 | 6008 |
| 5 | 17472 | Zambian Open University | » | 20041 | 16142 | 10778 | 6008 |

http://www.webometrics.info

Research output is also key topic for Webometrics, but including not only formal (e-journals, repositories) publications but also informal scholarly communication. Web publication is cheaper, maintaining the high standards of quality of peer review processes. It could also reach much larger potential audiences, offering access to scientific knowledge to researchers and institutions located in developing countries and also to third parties (economic, industrial, political or cultural stakeholders) in their local community.

We intend to motivate both institutions and scholars to have a web presence that reflect accurately their activities. I**f the web performance of an institution is below the expected position according to their academic excellence, university authorities should reconsider their web policy, promoting substantial increases of the volume and quality of their electronic publications**.

# Introduction (3)



**Google Scholar query** — How to search with Google Scholar

Authors: Douglas Kunda — Year

Publication/Journal: — ISSN

All of the words: — Title words:

Any of the words:

None of the words:

The phrase:

**Metrics** Help

| | |
|---|---|
| Publication years: | 1994-2018 |
| Citation years: | 24 (1994-2018) |
| Papers: | 48 |
| Citations: | 410 |
| Cites/year: | 17.08 |
| Cites/paper: | 8.54 |
| Cites/author: | 242.02 |
| Papers/author: | 21.70 |
| Authors/paper: | 2.56 |
| h-index: | 10 |
| g-index: | 20 |
| hI,norm: | 7 |
| hI,annual: | 0.29 |
| *Count: | 1 |

**Results**

Copy to Clipboard

Save as File...

| Cites | Per year | Rank | Authors | Title | Year | Publication |
|---|---|---|---|---|---|---|
| h 113 | 5.95 | 1 | D Kunda, L Brooks | Applying social-technical approach for COTS selection | 1999 | Proceedings of |
| h 73 | 4.06 | 2 | D Kunda, L Brooks | Identifying and classifying processes (traditional and soft factors) that support COTS compo... | 2000 | European Journ |
| h 54 | 3.60 | 3 | D Kunda | STACE: social technical approach to COTS software evaluation | 2003 | Component-Bas |
| h 50 | 2.78 | 4 | D Kunda, L Brooks | Assessing organisational obstacles to component-based development: a case study approach | 2000 | Information and |
| h 27 | 1.50 | 6 | D Kunda, L Brooks | Assessing important factors that support component□based development in developing cou... | 2000 | Information Tec |
| h 25 | 1.47 | 5 | D Kunda | A social-technical approach to selecting software supporting COTS-Based Systems | 2001 | |
| h 16 | 0.84 | 7 | K Douglas, B Laurence | Applying social-technical approach for COTS selection | 1999 | |
| h 14 | 0.58 | 8 | PM Chipungu, D Kunda | State of environment in Zambia | 1994 | |
| h 13 | 13.00* | 9 | C Chembe, RM Noor, I Ahmedy, M ... | Spectrum sensing in cognitive vehicular network: State-of-Art, challenges and open issues | 2017 | Computer ... |
| h 11 | 0.58 | 10 | D Kunda, L Brooks | Human, social and organisational influences on component-based software engineering | 1999 | Proceedings of |
| 3 | 0.15 | 11 | K Douglas | Identifying current practices for COTS software–leading to best practices for developing cou... | 1998 | |
| 3 | 0.75 | 12 | D Kunda, B Khunga | Implementing national research and education Networks (NRENs) in land locked African count... | 2014 | Proceedings of |
| 1 | 1.00 | 13 | D Kunda, M Chishimba | A Survey of Android Mobile Phone Authentication Schemes | 2018 | Mobile Networks |
| 1 | 0.33 | 14 | B Khunga, D Kunda | Research and Education Networks, Putting value into the links | 2015 | |
| 1 | 0.06 | 15 | D Kunda, L Brooks | Identifying and Classifying Processes (traditional and soft factors) that Support COTS Comp... | 2000 | ECIS 2000 Proc |
| 1 | 0.25 | 16 | M Simfukwe, D Kunda, M Zulu | Addressing the shortage of medical doctors in Zambia: Medical diagnosis expert system as a ... | 2014 | |
| 1 | 0.06 | 17 | D Kunda, L Brooks | Accessing Success of a Social-Technical Method for Cots Software Selection: A Survey Appro... | 2000 | ICEIS |

Publish or Perish

# Research Goals

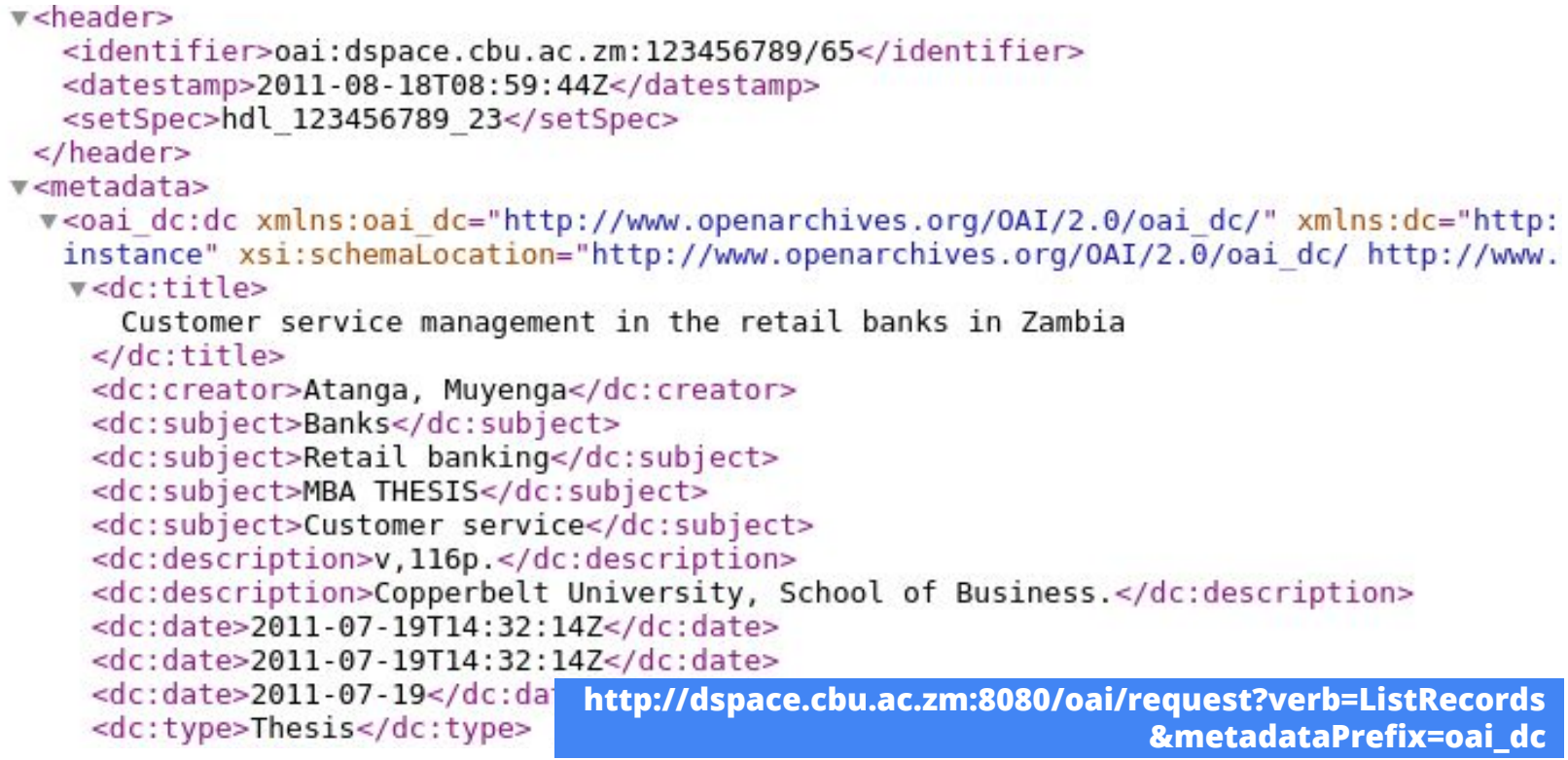
1) Empirically determine online visibility of scholarly research output.
2) Identify appropriate tools and services for improved online visibility.

# Approach and Methods

1) Content analysis of HEI IRs
    - OAI-PMH protocol used to harvest metadata
    - OAI-ORE protocol used to harvest bitstreams

2) Tooling for increased visibility
    - Open source platforms for effective dissemination of content

# Content Analysis of HEI IRs (1)



# Content Analysis of HEI IRs (1)

```
▼<header>
   <identifier>oai:dspace.cbu.ac.zm:123456789/65</identifier>
   <datestamp>2011-08-18T08:59:44Z</datestamp>
   <setSpec>hdl_123456789_23</setSpec>
 </header>
▼<metadata>
 ▼<oai_dc:dc xmlns:oai_dc="http://www.openarchives.org/OAI/2.0/oai_dc/" xmlns:dc="http:
  ▼<dc:title>
     Customer service management in the retail banks in Zambia
   </dc:title>
   <dc:creator>Atanga, Muyenga</dc:creator>
   <dc:subject>Banks</dc:subject>
   <dc:subject>Retail banking</dc:subject>
   <dc:subject>MBA THESIS</dc:subject>
   <dc:subject>Customer service</dc:subject>
   <dc:description>v,116p.</dc:description>
   <dc:description>Copperbelt University, School of Business.</dc:description>
   <dc:date>2011-07-19T14:32:14Z</dc:date>
   <dc:date>2011-07-19T14:32:14Z</dc:date>
   <dc:date>2011-07-19</dc:da
   <dc:type>Thesis</dc:type>
```

http://dspace.cbu.ac.zm:8080/oai/request?verb=ListRecords&metadataPrefix=oai_dc

# Content Analysis of HEI IRs (2)

- **Step #1: Harvesting digital objects**
  - OAI-PMH used to harvest metadata
  - OAI-ORE used to harvest resources
- **Step #2: Processing harvested objects**
  - Metadata to identify structures
  - Bitstreams to help classify ETDs

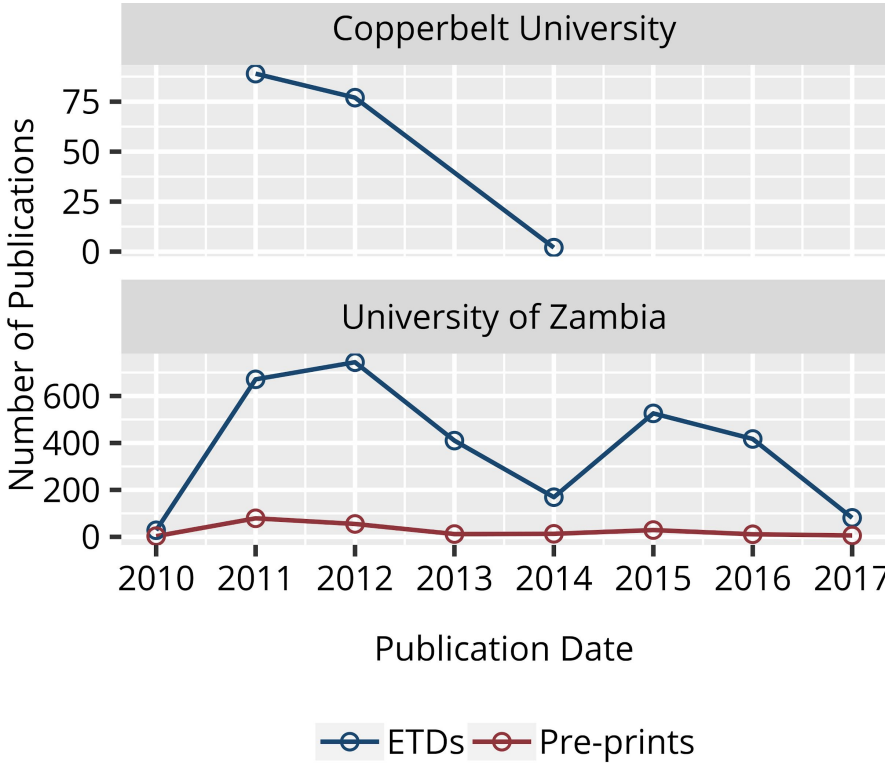
# Content Analysis of HEI IRs (3)

1) Only two public HEIs in Zambia have IRs.
2) HEI IRs have noticeably low content.

| Institution | Count |
|---|---|
| University of Zambia | 4,863 |
| Copperbelt University | 168 |
| Chalimbana University | — |
| Kwame Nkhruma University | — |
| Mulungushi University | — |
| Mukuba University | — |

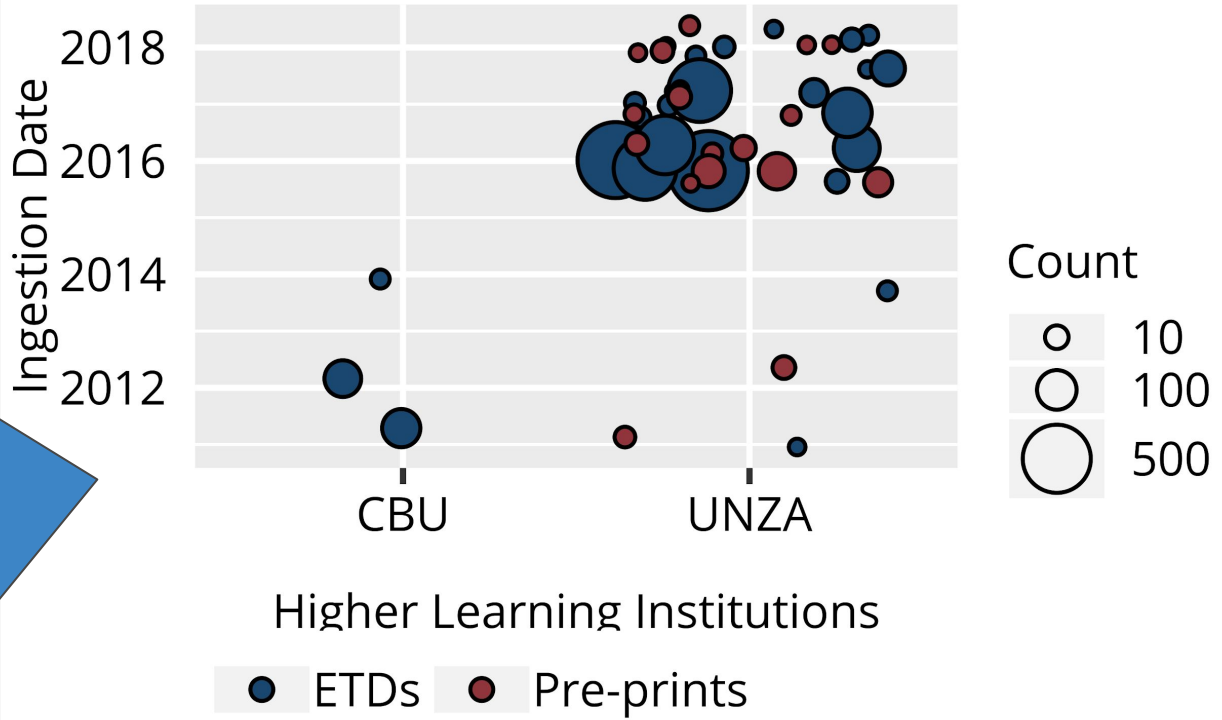
# Content Analysis of HEI IRs (4)

1) CBU IR last updated in 2014.
2) UNZA IR not consistently updated.
3) Content ingested in batches in UNZA IR
4) UNZA pre-print ingestion negligible.



# Content Analysis of HEI IRs (5)

- **Batch ingestion of content in UNZA IR**
- **Ingestion of content conducted by Library.**



# Content Analysis of HEI IRs (6)

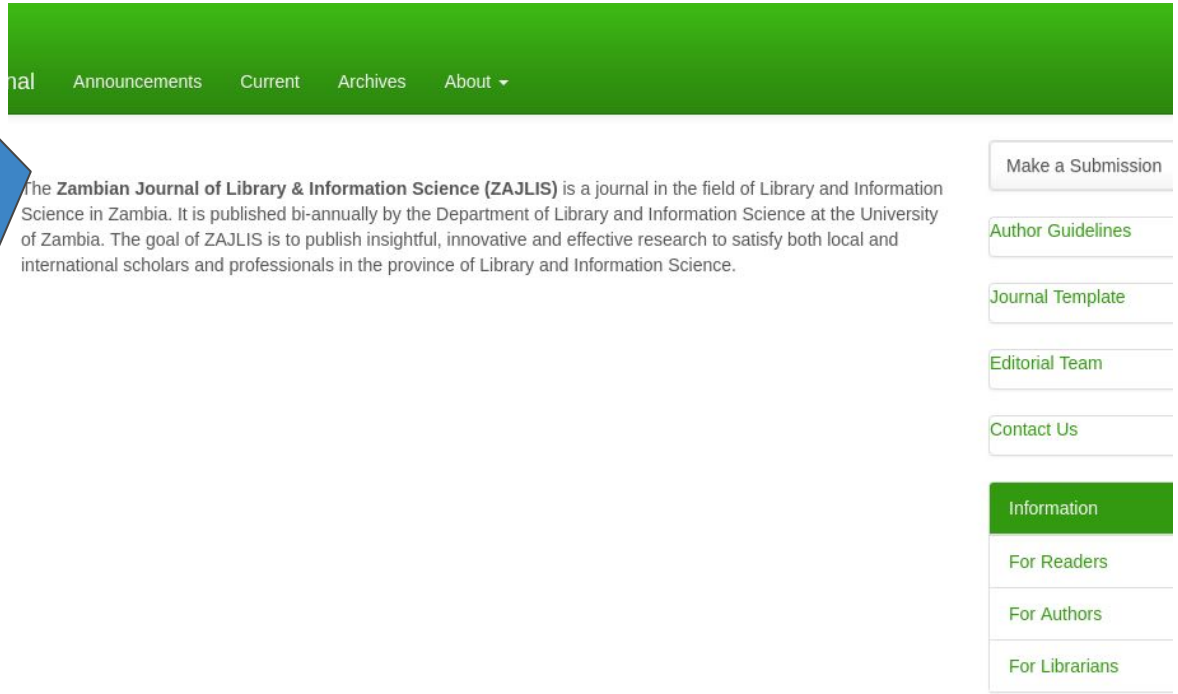
- **Quality of metadata**
  - Lack of use of controlled vocabularies
  - Missing metadata elements; only 38.66% of ETDs were classified into their respective types.
- **Submission workflows**
  - Self-archiving is almost non-existent
- **Born digital vs. digitised bitstreams**
  - 5.6% of bitstreams are digitised

# Tools for Increased Visibility

1) Electronic journals
2) Subject repositories
3) Downstream aggregate services

# Electronic Journals (1)

**None of the seven (7) official journals at UNZA are online [...]**

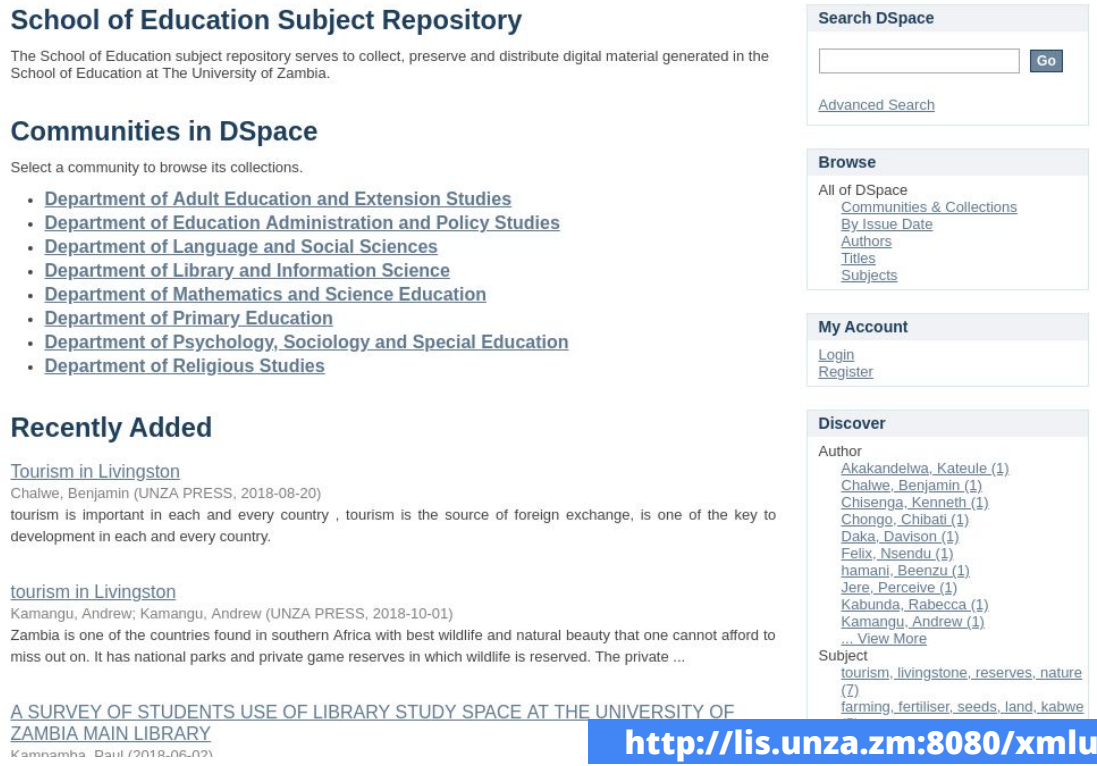



https://zajlis.unza.zm

# Electronic Journals (2)

# Subject Institutional Repositories

**Subject repositories can potentially decentralise content submission**



## School of Education Subject Repository

The School of Education subject repository serves to collect, preserve and distribute digital material generated in the School of Education at The University of Zambia.

## Communities in DSpace

Select a community to browse its collections.

- Department of Adult Education and Extension Studies
- Department of Education Administration and Policy Studies
- Department of Language and Social Sciences
- Department of Library and Information Science
- Department of Mathematics and Science Education
- Department of Primary Education
- Department of Psychology, Sociology and Special Education
- Department of Religious Studies

## Recently Added

Tourism in Livingston
Chalwe, Benjamin (UNZA PRESS, 2018-08-20)
tourism is important in each and every country , tourism is the source of foreign exchange, is one of the key to development in each and every country.

tourism in Livingston
Kamangu, Andrew; Kamangu, Andrew (UNZA PRESS, 2018-10-01)
Zambia is one of the countries found in southern Africa with best wildlife and natural beauty that one cannot afford to miss out on. It has national parks and private game reserves in which wildlife is reserved. The private ...

A SURVEY OF STUDENTS USE OF LIBRARY STUDY SPACE AT THE UNIVERSITY OF ZAMBIA MAIN LIBRARY
Kampamba, Paul (2018-06-02)

Search DSpace
Go
Advanced Search

Browse
All of DSpace
Communities & Collections
By Issue Date
Authors
Titles
Subjects

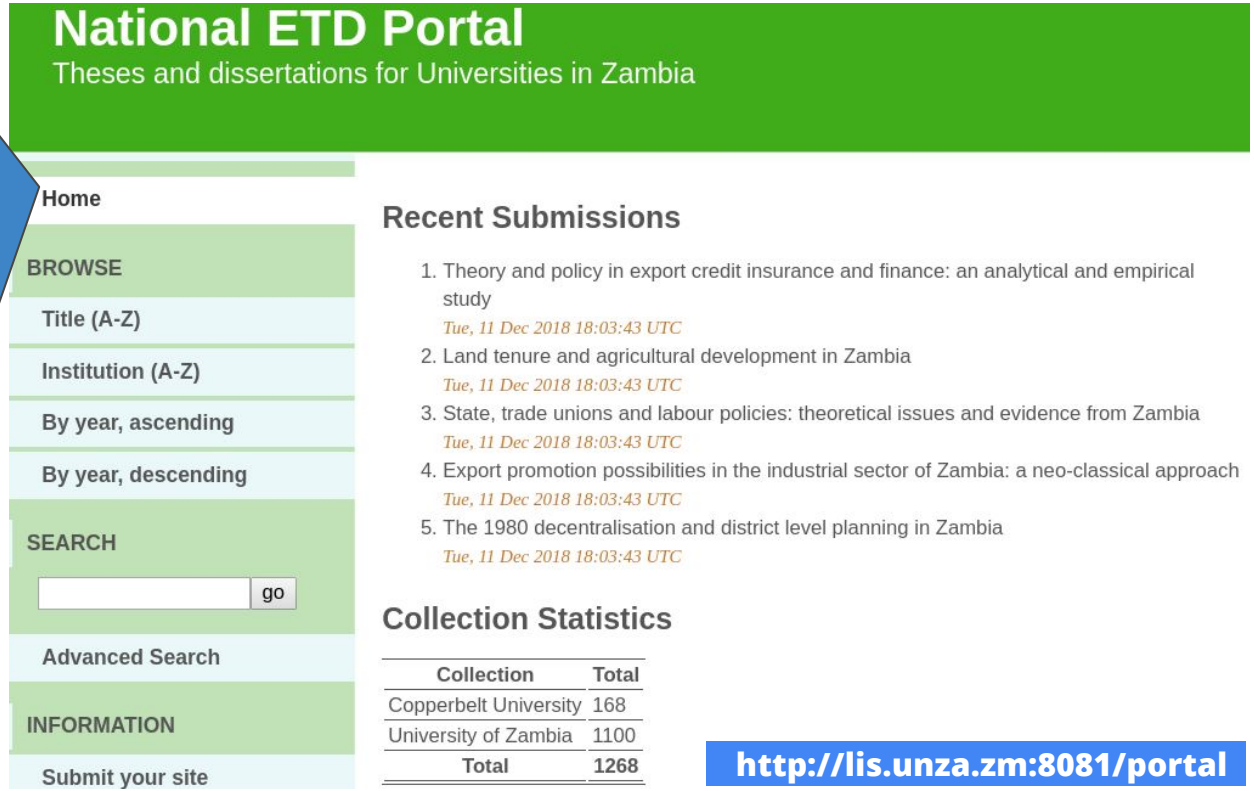
My Account
Login
Register

Discover
Author
Akakandelwa, Kateule (1)
Chalwe, Benjamin (1)
Chisenga, Kenneth (1)
Chongo, Chibati (1)
Daka, Davison (1)
Felix, Nsendu (1)
hamani, Beenzu (1)
Jere, Perceive (1)
Kabunda, Rabecca (1)
Kamangu, Andrew (1)
... View More
Subject
tourism, livingstone, reserves, nature (7)
farming, fertiliser, seeds, land, kabwe

http://lis.unza.zm:8080/xmlui

# Downstream Aggregate Services

**We are working towards setting up aggregate services [...]**




http://lis.unza.zm:8081/portal

# Conclusion

- **Summary**
  - Content analysis.
  - Open source tools.
- **Potential future work**
  - Automatic classification of existing objects.
  - Challenges and perceptions of using IRs.
  - Browser plugins for effective workflows.
  - Techniques for capturing descriptive metadata.
  - Collaboration with key stakeholders.

# Bibliography


[1] National Assembly of Zambia, “The Higher Education 2013”
URL: http://www.parliament.gov.zm/node/3097

[2] C. Lagoze, H. Van de Sompel, “The open archives initiative: building a low-barrier interoperability framework”
DOI: 10.1145/379437.379449

[3] J. Willinsky, “Open Journal Systems”
DOI: 10.1108/07378830510636300

# Questions?
# Comments?
# Thoughts?

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