# A Comparative Study of Subject Headings in University Libraries in Karnataka

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**Abstract:**

Subject cataloguing is considered more intellectually intriguing than the descriptive cataloguing. Quality of subject catalogues have been the area of interest for researchers. The present study attempted to analyse the subject catalogue records from four university libraries in Karnataka. The result showed that the subject access to the holdings of the university libraries need to be improved. Subject cataloguers have to pay immediate attention in improving the subject access.

***Keywords: Subject Headings, Folksonomies, Vocabularies, Subject Cataloguing,Subjectaccess,Tags,UniversityLibraries,Karnataka,India***

## 1. Introduction

The work of cataloguing comprises of two stages, viz., descriptive cataloguing and subject cataloguing. Descriptive cataloguing involves the description of information resources by their attributes such as author/creator, title, publisher, identifier, and so on. Subject cataloguing, on the other hand, involves the description of the information resources by its thought content which is technically called 'Subject'. The purpose of subject cataloguing is to collocate the works dealing with similar subject. The subject(s) of a resource is described by standardized word or string of words taken from a subject heading or a thesaurus. LCSH, Mesh, Sears List, Art & Architecture Thesaurus (AAT), ERIC thesaurus are some of the popular thesauri,tonameafew.

Providingsubjectaccesstoinformationhasbeenthemostchallengingareasof libraryservice.RightfromChainindexingtoPRECIStoControlledvocabularies, experimentstoimprovethesubjectaccesshavebeenconducted. 6xxtagsin MARC21areusedtosupportsubjectapproachsearchoftheusers. TheMARC tag 650, in particular is used for assigning topical terms. Controlled

vocabularies – such as SLSH, LCSH, MeSH, etc., - have been designed, developed and used for populating the entries in this field. There is, however, a growing concern about the growth of assigning of keywords–subject headings without the use of controlled vocabulary – which might impede the consistency, accuracy and uniformity of subject access to bibliographic records.



In this paper, the researchers have made an attempt to compare the tags (subject headings) of four universities in the state of Karnataka. The universities were considered based on the availability of their OPACs for external users. Moreover, the universities offering programmes in management and economics were considered. The subject tags of management and economic books formed the sample for the study.

**2. Review of Literature:**

Studies on subject headings are not scant in literature. The present study, however, will consider only those recent studies on subject headings. With the growth of folksonomies (user-assigned tags), the interest of the researchers to compare the folksonomies with the standard vocabulary control device has increased. In an interesting work (Wetterstrom, 2007) reported the results of his study which tries to find whether the user-assigned tags are more comprehensive and coextensive description of the subject than the professional-assigned tags from a controlled vocabulary? The study found that 3/4$^{th}$ of the user-assigned tags did not match with the professional-assigned tags as users tend to use more colloquial and popular language. A research work by Drabenstott, Simcox, and Fenton (2011) have shown that users and library professionals do not comprehend the intended meaning of headings in LCSH.

Tags are the user-assigned subject headings. Unlike in the past, recent studies concentrate on studying the nature of tags. Tags, like the subject headings, can be used to augment the subject access to the collection of the libraries (Rolla, 2009). The result of Rolla's study is quite interesting and he has shown that user-created tags are more comprehensive than the subject heading assigned by libraries.

Comparing the author keywords and/or user tags have been of research focus in a few studies (Lu, Park, Hu, & Song, 2010; Lu, Park, & Xiaohua Hu, 2010;

Maurer & Shakeri, 2016; McCutcheon, 2009; Rolla, 2009; Schwing, McCutcheon, & Maurer, 2012; Schwing et al., 2012; Wetterstrom, 2007; Yi & MaiChan,2009).

Strader (2009) compared author keywords to LCSH terms assigned to electronic theses and found that 65% of author terms matched exactly, partially or were variant forms of the headings. Schwing et al., (2012) found a high match rate between the cataloguer- assigned LCSH and the author-assigned keywords in bibliographic records for ETDs, and both attributed this, at least partially, to the cataloguers being guided by keywords previously assigned by the student-authors.



Yi and Mai Chan (2009) compared the social annotations collected from del.icio.us, a social bookmark tool, with LCSHs based on word-matching. They also examined the distribution of folksonomies over the LCSH hierarchy tree. The results showed that about two-thirds of social tags can be matched to LCSHs. Authors have also compared social tags with author-provided metadata in terms of their effectiveness in providing additional information on the resources described and facilitating web clustering and discovery. The results showed that both tags and author-provided metadata add valuable information to existing web page content, but social tags are more effective than author-created metadata in enhancing web clustering performance (Lu, Park, Hu, et al., 2010; Lu, Park, & Xiaohua Hu, 2010).

The assignment of LCSH and keywords to ETD records in different disciplines was investigated by Maurer and Shakeri (2016) found more cataloguer-assigned LCSH and more author-assigned keywords were found in ETD records in the arts and humanities as opposed to ETD records in the sciences, technology, engineering, and mathematics (STEM) disciplines and the social sciences. Authors in the arts and humanities assigned more keywords to their ETDs than authors from other disciplines. Personal name access points, geographic name access points, and corporate name access points were more likely to appear in LCSH assigned to arts and humanities ETD records than in records from other disciplines (Maurer & Shakeri, 2016).
Are controlled vocabulary subject terms preferable to keywords in Theses and Dissertations catalogue records? Keyword searching is easy to use and is "adequate for straightforward to moderately complex information needs". However, he further opines that "its deficiencies include limited precision, unselective recall and lack of connections showing relationships. In contrast,

controlled vocabularies, such as LCSH, are less intuitive for the user and may requireinstructionforeffectiveuse"(McCutcheon,2009).

Mostoftheauthorswhohavestudiedtagsandfolksonomiesgenerallyfeelthat usertaggingwouldenhancelibraries'websitesandcatalogues.Spiteri,(2006) for example, believes that allowing user tags on a library site can supplement controlledvocabularies(Spiteri,2006)



**3. Methodology:**

Tagging behaviour is one of the most recent areas of attraction of researchers. A subject heading is a tag (a string of tags) assigned using a controlled vocabulary by a professional (e.g. a subject cataloguer). The current investigation attempts to study the similarity and variations in assigningofsubjectheadingsforthesamesetofresourcesbythecataloguersof fouruniversitiesinKarnataka.

The investigators identified a set of 75 books from the field of management and economics in consultation with concerned faculty, researchersandlibrarians.Thesebooksarethebasicbooksthatareexpected tobefoundinthelibrariesoftheuniversities/institutionswheremanagement andeconomiccoursesareofferedforstudy. Ofthe75books,theinvestigators foundthat52bookswerecommonlyavailableinallthelibraries. Thesebooks haveformedthesamplecollectingthedataforthestudy.

Thesubjectheadingsassignedtosampled52bookswerecollectedfor the analysis. Out of the 52 titles in the sample, there were 34 (65.38%) management books and 18 (34.62%) economics books. These books are available in University of Mysore – Mysuru (UML), Bangalore University – Bengaluru (BUL), Gulbarga University – Kalaburagi (GUL), and Mangalore University – Mangaluru (MUL). The subject headings for the books were collectedinJuly2018bysearchingtherecordsthroughtheirISBNsandauthors. In total, the researchers extracted 231unique subject headings from 208 titles/books(52booksX4libraries=208). Asimplecalculationshowsthatonan average 1.53 subject headings were given by the universities per record. An experienced professional would agree that the average is much less than normallyexpected. Thedatawastabulatedindifferentsequencetoanalyse thetaggingbehavioroflibrarians.

## 4. Findings and Analyses:

This study carried out the comparison of subject terms as collected through the OPACs of respective libraries. The keyword terms associated with the same work were compared in a term-by-term manner. Variations in the part-of-speech of words were also meticulously examined. The abbreviations or acronyms were considered the same as the full form of the words. The prepositions and punctuation marks were ignored

**Table 1**
**Number of Subject Headings.**

| Sl. No | Name of the University | Number of subject headings | Average number of subject headings per record | Unique words in the subject headings | Average number of unique words in subject headings per record |
|---|---|---|---|---|---|
| 1 | UML | 147 | 2.83 | 117 | 2.25 |
| 2 | BUL | 52 | 1.00 | 30 | 0.58 |
| 3 | GUL | 39 | 0.75 | 32 | 0.62 |
| 4 | MUL | 80 | 1.54 | 52 | 1.00 |
| Total | | 318 | | 231 | |

The total number of records was 208 and the total number of subject headings was 231. The average number of keywords per records was 1.53. As said earlier the average was much less than expected. Table 1 also shows the number of unique words found in the respective libraries.

**Table 2**
**Common Subject Headings**

| Sl.no | Name of the University | Number of Common Subject Headings |
|---|---|---|
| 1 | UML – BUL | 15 |
| 2 | UML – GUL | 18 |
| 3 | UML – MUL | 23 |
| 4 | BUL– MUL | 14 |
| 5 | BUL – GUL | 09 |
| 6 | MUL – GUL | 19 |

Table 2 shows one-to-one comparison of matching subject headings

between catalogue records of university libraries. It may once again be noted here that the sample for this study contained same 52 books from each of these libraries. The commonality was found to be more between UML and MUL with 23 books (44.23%) having similar (same) subject between them.

Table 3
Commonly found subject headings

| Sl.no | Name of the subject headings |
|---|---|
| 1 | Cost accounting |
| 2 | Economics |
| 3 | International business enterprises |
| 4 | Investments |
| 5 | Management |
| 6 | Management information systems |
| 7 | Marketing |



The total number of unique subject headings are 231 of which only 7 subject headings are found to be common between them. As the books have been drawn from the same domain from all the universities, one would have expected more common subject headings. But the result was bit surprising.

Table 4
**Top 10 most frequently used subject headings**

| Sl.no | University SH | UML | BUL | GUL | MUL | Total |
|---|---|---|---|---|---|---|
| 1 | Management | 9 | 9 | 6 | 7 | 31 |
| 2 | Economics | 5 | 11 | 3 | 7 | 26 |
| 3 | India | 5 | 0 | 1 | 4 | 10 |
| 4 | Financial Management | 1 | 1 | 1 | 6 | 9 |
| 5 | Organizational behavior | 0 | 1 | 1 | 5 | 7 |
| 6 | Finance | 5 | 0 | 1 | 0 | 6 |
| 7 | International business enterprises | 3 | 1 | 1 | 1 | 6 |
| 8 | Marketing | 3 | 0 | 1 | 2 | 6 |
| 9 | Rural Development | 1 | 3 | 0 | 1 | 5 |
| 10 | Industrial Management | 3 | 1 | 0 | 0 | 4 |

The results shown in Table 4 is not surprising. The subject headings such as 'Management' and 'Economics' occupy the top two positions true to the scope of the domain considered in the study. Surprising, the geographical component India took the third place over taking the other domain related keywords.

## 4. Length of the Keywords

Length of the keywords in terms of characters contained in them is one of the parameters with which the data set was analyzed. The length was calculated by using LEN function of Microsoft Excel. The spaces in between words are also considered as characters in LEN function. For example, LEN function returns 20 as the length for an author keyword "Financial Management" (excluding the inverted commas).

**Table 5**
**Length of the keywords**

| Length Range | UML | | BUL | | GUL | | MUL | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. of SH | % | No. of SH | % | No. of SH | % | No. of SH | % | No. | % |
| One to ten | 46 | 31.29 | 22 | 42.31 | 14 | 35.90 | 27 | 33.75 | 109 | 34.28 |
| Eleven to twenty | 64 | 43.54 | 20 | 38.46 | 16 | 41.03 | 33 | 41.25 | 133 | 41.82 |
| Twenty-one to Thirty | 24 | 16.33 | 10 | 19.23 | 8 | 20.51 | 18 | 22.50 | 60 | 18.87 |
| Thirty-one to Forty | 10 | 6.80 | 0 | 0 | 1 | 2.56 | 1 | 1.25 | 12 | 3.77 |
| Forty-one to Fifty | 3 | 2.04 | 0 | 0 | 0 | 0 | 1 | 1.25 | 4 | 1.26 |
| **Total** | **147** | **100** | **52** | **100** | **39** | **100** | **80** | **100** | **318** | **100** |

The subject headings with 11 to 20 characters were found to be more accounting for 41.82%. Little less than 1/4$^{th}$ of the subject headings were more than 20 characters. This shows that the cataloguers desist to give longer subject headings.

**Table 6**
**Number of subject headings in catalogue records**

| Sl.no | Number of records | UML | BUL | GUL | MUL | Total | % |
|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 7 | 29 | 0 | 36 | 17.31 |
| 2 | 1 | 10 | 40 | 12 | 36 | 98 | 47.11 |
| 3 | 2 | 14 | 4 | 7 | 9 | 34 | 16.35 |
| 4 | 3 | 15 | 0 | 3 | 3 | 21 | 10.10 |
| 5 | 4 | 6 | 1 | 1 | 3 | 11 | 5.29 |
| 6 | 5 | 3 | 0 | 0 | 1 | 4 | 1.92 |
| 7 | 6 | 3 | 0 | 0 | 0 | 3 | 1.44 |
| 8 | 7 | 1 | 0 | 0 | 0 | 1 | 0.48 |
| | **Total** | **52** | **52** | **52** | **52** | **208** | **100** |

Table 6, arguably, the calls for the greater attention of the subject cataloguers of the universities. It is hard to believe that 36 records (17.31%) exists without subject heading. This means the libraries have not provided those books any subject access at all. Gulbarga university library (GUL) holds the lion-share in this. Nearly half of the books (47.11%) have only one subject headings. This trend is also not very conducive for good subject access. The literature on the subject shows that the average number of subject headings found in catalogue records is 5 to 6. In comparison, it is discouraging to see that the number of subject headings found in catalogue records of university libraries was found to be less.

**5. Conclusion:**

Subject access to document is of paramount importance. Librarians and indexers have been coming out with different strategies to derive subject headings in the past. Use of controlled vocabulary for subject heading generation is prevailing in most of the libraries. The university libraries considered in the study also use this method.

The present study demonstrates that the quantum of subject heading given by the librarians are less than satisfactory. It may, however, be argued that the increase in number of subject headings per record would not provide significantly better access for user; however, even the marginal increase in the subject access would serve the user community. With the increase in computerized catalogue systems, the librarians need to encourage themselves to provide as many subject access points as possible.

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