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# Accuracy of references in the doctoral theses in library and information science submitted to Banasthali Vidyapith

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The study was carried out to investigate the accuracy of references in the fourteen Ph.D. theses in Library and Information Science (LIS) submitted to Banasthali Vidyapith, Rajasthan, India. One thousand seven hundred and twenty one (1721) journal references were checked thoroughly dividing them into seven bibliographic elements, i.e. name of author(s), article title, journal title, year, volume number, issue number, and pages (both first and last page). These components were checked from the original journal articles. Results show that 22.08% (380) references in LIS theses had no errors, while 77.92% (1341) references contained errors. In 1341 faulty references, a sum of 2869 errors were observed, out of which 1231 were major and 1638 were minor errors. The reference accuracy rate for LIS theses ranged from 0% to 42.77%. The average number of errors in references was 1.67. The research findings indicate that citation instruction in Pre Ph.D. Programme is strongly required to promote better citation behaviour.

**Keywords**: Reference Accuracy; Citation Errors; Reference Lists; Doctoral Theses; LIS Theses.

## Introduction

References embodied in a thesis uniquely indicate specific sources of information. Reference accuracy in research works is necessary for the propagation of fresh knowledge to academic community. So, it is paramount that references should be written perfectly for making retrieval easy. Flawless references furthermore aid the readers knowing new domains of knowledge. Such readers check the bibliographic references to get the cited information sources for a study earlier confirmed to be authentic. Readers feel frustrating and painful when searching an unrecognized reference. Moreover, both credibility and quality of the research works, the research scholars, and the thesis itself are increased through flawless references[1-3].

The doctoral thesis is the final result of an extensive higher educational process. A thesis presents evidence of a seminal contribution to knowledge in a discipline and provides proof of significant scholarly achievement. Donald Edward Davinson[4] states that "the doctoral thesis has come to be thought of in some countries and institutions as simply the demonstration that a certain amount of research methodology has been transmitted and received, with much less emphasis than used to be the case upon the nature and significance of the topic explored."

An immaculate reference list is compilation of dependable and reliable references, which are consulted and used during the research work, and is an integral segment of a thesis. Entries in "Reference list" are arranged in alphabetical order of last names of author, editor, translator, and by first word of title. List of references in a thesis is divided into two parts; first is in parentheses and occurs in the text, i.e. the quotational statement, and second is the reference, which appears at the end of the thesis. In the first essential part, every section of thesis that is either based on an external information source or quoted from is marked as such with an "inline citation." The "inline citation" may be in the format of a parenthetical reference, footnote, and/or a shortened form of the citation known as "short citation." An "inline citation" is any citation marked and written near to the idea or words it supports, for example after the sentence or paragraph, normally by number superscripted at foot note. The other second part of the citation or reference is the list of all the references that occurs at the end of the thesis in a "References" section, which provides fully systematic, formatted and detailed information of the related document or information source, so that any scholar who want to read the thesis can retrieve it and get it. This reference part is compiled and arranged according to a fixed

order, which can be alphabetically by last name of author, editor, translator, and/or by initial words of title or numerically by superscripted numbers as presented in the text.

Errors in references in scholarly communications take place due to various reasons, since several reference guidelines and referencing standards are available, for instance- *AMA Referencing Style*, *APA Referencing Style, Chicago Manual of Style, Harvard Style, IEEE Citation Style, MLA Referencing Style, NISCAIR Referencing Style, Oxford Referencing Style, Turabian Style, Vancouver Style*, etc. When writing a scholarly work in the form of thesis, dissertation, or research article; the research scholar has to follow anyone of these referencing guidelines and standard styles. Primary cause behind the citation and reference errors is that research scholar fails to understand and keep pace with such referencing guidelines and standard styles.

Accuracy is a crucial yardstick of quality evaluation and indicates the closeness of measured values, observations, measures to the true value, or to a value which is trusted as being true. Bibliographical references' accuracy is essential to the success of document delivery services (DDS), interlibrary loan (ILL), bibliometrics studies, citation analysis studies, assessment of a scientist's work, database management, scholarly communications, etc.[5-6] Accurate referencing makes easier all of these works, activities and services. Inaccuracies in bibliographical references influence the findings of citation analysis studies and bibliometrics studies.

Being perfect, needless to say, is the ultimate quality. A doctoral thesis, as a high profile academic publication, is deemed to be error free reference list while errors in references are intractable problems. When any scholarly document, for example- doctoral thesis or dissertation, contains faulty citations, the whole quality of the research work embodied in doctoral thesis becomes questionable.

## Review of literature

Writing a thesis based on empirical research is a very difficult task, since it consists reporting with accuracy, brevity, clarity, and precision in a strong shape or layout giving no space for flexibility[7-9]. A thesis' manuscript is written and then rewritten many times and, ideally revised by intellectually sound subject experts and/or experienced colleagues prior submitting to the academic institution[9]. Once a thesis has been submitted to the academic institution, it should essentially be a responsibility of external subject experts and reviewers to examine the inaccuracies and enhance its quality, and if needed consecutive process of reviews can be adopted[7,10-12]. Nevertheless, review process may be an anxiety-creating process for some young scholars[10,13-14]. It is no exaggeration that review process is the best known method for maintaining the quality and uncompromising in scholarly communication. Albeit, many walls established by the scholarly communication system give no guarantee at all times that thesis are free from faults, omissions and inaccuracies[13,15].

The growth and development of scientific knowledge need the true reporting of earlier relevant works, but present scenario give no guarantee that writers of scientific articles published in important scientific journals follow this approach. The scholars often do not proper study the relevant articles and later create errors in reporting on the articles by making incorrect quotation or incorrect referencing[16-17]. Low quality references cost everyone energy, money, and time. In the average libraries and research labs, an incredible proportion of staff time is consumed in rectifying incomplete references at the expense of more productive works for information science professionals and technicians who are in increasingly short supply[18].

Several studies on reference accuracy in Indian and international LIS journals have been published recently. Gupta[19] checked and verified the journal references in two Indian LIS journals, i.e. *Annals of Library and Information Studies* (ALIS) and *DESIDOC Journal of Library and Information Technology* (DJLIT); and two international LIS journals, i.e. *Libres: Library and Information Science Research e-Journal;* and *Malaysian Journal of Library and Information Science* (MJLIS). These all four journals are open access and indexed in Elsevier's Scopus citation database. The reference error rate is higher in Indian LIS journals. Indian LIS journals, i.e. ALIS and DJLIT have 67% incorrect references, while Libres and MJLIS have 63% and 33% inaccurate references, respectively[19-21].

The accuracy of references in five psychology doctoral dissertations available in the University of Mysore Library, India was checked by Harinarayana, Chikkamanju, and Vasantha Raju[22]. They verified a total of 923 cited references from various information

sources, including website of concerned journal, Library of Congress database, Google scholar, and several other sources. They revealed that 39.54% cited references contained major errors. They also recommended for running training programme for new researchers so that they may comfortably follow a prescribed citation style guide to eliminate the citation errors and maintain the accuracy in references.

The quality of lists of references in 93 PhD proposals in the field of education was studies by Jiao, Onwuegbuzie, and Waytowich[23] in 2008. They presented the psychological link between "library anxiety and citation error rate," and investigated that 31.81% of cited references were faulty in PhD proposals in the subject of Education. Determining the psychological characteristics of researchers in education, who make errors, in the research was the first one of its kind. The important output of the research work indicated that "library anxiety plays a key role in scholars' ability to compile flawless and error free reference lists."[23]

Lee and Lin[24] study on "citation errors in the masters' theses of the library and information science and information engineering," employed a small sample of references appended in 125 masters' level dissertations of the Tamkang University's Department of Computer Science and Information Engineering (DCSIE) and the Department of Information and Library Science (DILS) to compare citation errors in two different subjects. These masters' dissertations were submitted in the years 2007 and 2011. This study indicated that out of 3564 citations verified, 70.8% (2527) citations were correct while 22.8% (813) were incorrect and remaining 6.4% (224) citations were not verifiable by any sources.

The key objectives of research of Azadeh and Vaez's[25] were to measure the reference accuracy in doctoral theses in Farsi, which were awarded during 2007-2008 by the two Universities of Medical Sciences situated at Tehran and Tabriz. The accuracy level of references was unsatisfactory in both the medical universities. They checked a sum of 704 journal articles' references, in which 357 references were from the Tehran and 347 from the Tabriz. Total 53% of journal articles' references in the Tabriz and 62% in the Tehran contained errors. In the Tabriz 136 references and in the Tehran 164 references were totally accurate. Thirty four references (9.8%) out of 357 in the Tehran were compiled according to the Vancouver referencing style. According to Azadeh and Vaez, "accuracy of referencing did not differ significantly between the two groups, but compliance with the Vancouver style was significantly better in the Tehran."[25]

Various articles on reference accuracy and citation errors in non-LIS journals have been reported. Lopresti[26] verified the references appended in five leading journals on environmental science and revealed that 24.41% references were erroneous. Spivey and Wilks[27] examined the citation error rate in the reference lists appended to five journals in the field of social work and found that 41.2% of references had errors. Similarly, O'Connor and Kristof[28] investigated a sum of 4851 cited references appended in 93 articles in twelve journals in the field of business and economics. They concluded that "an average of 41.7% of citations in the journals had 1 or more errors."

Armstrong, Conduff, III, Fenton, and Coelho[29] published an article entitled "Reference errors in otolaryngology- head and neck surgery literature" in *Otolaryngology-Head and Neck Surgery* (OHNS) journal. They also compared the findings with the results from 1997 papers. The primary aim of this research was to measure the prevalence of reference and quotation errors in 8 leading otolaryngology-head and neck surgery journals. Fifty references were randomly chosen from the first published issue of 2017 for all 8 journals (total 400 references) and were analysed for reference and quotation errors. In this study, reference errors were classified in 3 categories, namely- minor, intermediate, and major; and quotation errors in 2 categories, namely- minor and major. A total of 17% references were erroneous, in which 34% categorized as major errors. Quotation inaccuracies observed in 9% references, in which 69% were major errors. Authors, editors, and reviewers are responsible for reference and quotation errors and they all need to further decrease the error rates to maintain the integrity of OHNS literature.

Mitchell S. Cappell[30] detected major bibliographic errors in PubMed database. Cappell reviewed his 240 articles cited in PubMed during 1982 to 2015 and found 3 major bibliographic errors (1.25% error rate). The PubMed is a ubiquitous bibliographic database of biomedical research journals and literature search engine. It doesn't contain full texts articles but provides a digital card catalogue. According to Cappell, major bibliographic "errors in PubMed could render articles

inaccessible to researchers or clinicians performing computerized literature searches."[30] Bibliographic inaccuracies in the PubMed database are imperative than inaccuracies in any specific journal.

## Objectives of the study

The main objectives of the present research study are:

1. To evaluate the number of errors in references;
2. To evaluate the major and minor errors in references;
3. To find out the accuracy level of references;
4. To evaluate the errors in citing name of authors;
5. To evaluate the errors in article titles;
6. To evaluate the errors in journal name;
7. To evaluate the errors in year and page number; and
8. To evaluate the errors in volume, issue numbers and punctuation marks.

## Materials and methods

The research is primarily based on references appended to the fourteen LIS theses submitted to Banasthali Vidyapith, Rajasthan, India up to the year 2016. All the theses have been decoded and assigned an exclusive code- T1 to T14. These codes are the unique accessory of the individual thesis in the further text of this work. As shown in table 1, the names and details of the research scholars and supervisors are not disclosed for keeping the anonymity of the research scholars who have submitted their thesis. Some keywords of the title of thesis are mentioned to show the field of research work.

## Verifiable references

The references were classified as journal and non-journal references for the purpose of this research. All the fourteen LIS theses contained 2672 references, in which 1803 are journal references, while 869 are non-

Table 1 — Library and Information Science theses selected for the study

| Sl. no. | Thesis code | Year | Keywords in the title of thesis | Referencing style used in thesis |
|---|---|---|---|---|
| 1 | T1 | 2008 | Information literacy, Electronic information resources, Digital information services, Universities of Dubai (U.A.E.). | Not mentioned in the thesis |
| 2 | T2 | 2010 | Information technology, University libraries, Rajasthan. | Gibaldi, Joseph. (2004). "MLA Handbook for Writers of Research Papers." 6th Ed. New Delhi: Affiliated East West Press |
| 3 | T3 | 2011 | E-resources, Academic staff, Engineering colleges, Rajasthan. | Not mentioned in the thesis |
| 4 | T4 | 2011 | Information seeking behaviour, University libraries, Rajasthan. | Not mentioned in the thesis |
| 5 | T5 | 2012 | Scientrometric study, Computer science, Association for Computing Machinery (ACM). | Not mentioned in the thesis |
| 6 | T6 | 2012 | Electronic commercial databases, Public domain resources, Law. | Not mentioned in the thesis |
| 7 | T7 | 2012 | Libraries, Management, M.Ed. Institutions, Rajasthan. | Not mentioned in the thesis |
| 8 | T8 | 2012 | Marketing, Information products and services, NGO libraries, Health education, Women studies, Delhi and NCR. | American Psychological Association. (2010). "Publication manual of the American Psychological Association." 6th Ed. |
| 9 | T9 | 2013 | Periodical literature, Gandhian studies, Bibliometric study. | Not mentioned in the thesis |
| 10 | T10 | 2013 | Information technology, Engineering colleges, Libraries, Rajasthan. | Gibaldi, Joseph. (2004). "MLA Handbook for Writers of Research Papers." 6th Ed. |
| 11 | T11 | 2014 | Information resources, Library services, Information seeking behaviour, Libraries and information centres, Academic institutions, Delhi. | Not mentioned in the thesis |
| 12 | T12 | 2014 | Electronic information resources, University libraries, Delhi. | American Psychological Association. (2010). "Publication manual of the American Psychological Association." 6th Ed. |
| 13 | T13 | 2015 | Citation behaviour, Scientists, Council of Scientific and Industrial Research (CSIR). | American Psychological Association. (2010). "Publication manual of the American Psychological Association." 6th Ed. |
| 14 | T14 | 2016 | Information sources, Women's studies, India, Bibliometric study, Periodical literature. | Gibaldi, Joseph. (2004). "MLA Handbook for Writers of Research Papers." 6th Ed. |

journal references. Out of total 1803 journal references, 1721 references were found verifiable, while 62 references were unverifiable which could not be retrieved by any source due to their obsolete nature and non-English language publications. A sum of 20 references was duplicated and excluded from the analysis. Table 2 presents the quantity of verifiable journal references. The mean value of verifiable references was accounted 123 references.

Primary data for this research study were mainly gathered from the Central Library of Banasthali Vidyapith, Rajasthan. Data were also gathered from the relevant documents of the concerned institutions. In this study, each individual 'Bibliography' and/or 'References List' in thesis in Library and Information Science was scanned, checked, examined and tabulated for necessary analyses. References of non-journal items such as books, monographs, conference proceedings, theses and dissertations, abstracts, patents, reports, websites, government publications, etc. were excluded from the study. Journal articles were obtained and photocopied from the Central Library of Banasthali Vidyapith. Some articles were downloaded in PDF, html and other formats from the journal websites, online databases, and other aggregators' websites.

Doms'[31] approach was employed to categorize and analyze the errors in references. He suggested two main categories of all references as "correct or incorrect" and interpreted both of them as "a correct reference was a reference that was identical to the source. An incorrect reference was a reference that deviated from the source."[31]

One hundred references were randomly chosen to be examined for typing errors. Out of 100 references, one reference (1%) was type inaccurately. An average of 17 for a 1% typing error rate was estimated for the 1721 references verified for the research study.

In this study, following steps were undertaken to check the accuracy level of the references:

1. Each and every journal article reference in all the theses was checked from the original source, available in the Central Library of Banasthali Vidyapith, Rajasthan.

2. In case journal is not available in the Central Library of Banasthali Vidyapith, then website of the concerned journal was visited. The original article was downloaded to make the exact comparison of the reference to the original source.

3. In case the journal article is not available on journal website, the online databases like PubMed, Google Scholar, ResearchGate, ERIC, etc. were used to verify the references.

4. A small number of references which could not be verified by all means are classified as "Unverifiable" and excluded from the study.

Each and every reference was examined against the original article for the accuracy of seven elements. Errors in following seven elements of a reference contained added words, omitted words, misspellings, grammar notation (for example- colons, dashes, etc.), wrong sequence of authors, wrong author name,

Table 2 — Number of verifiable journal references in theses

| Sl. No. | Thesis code | Verifiable journal references | Cumulative references | Unverifiable journal references | Cumulative references | Duplicate references | Cumulative references | Total journal references | Cumulative references |
|---|---|---|---|---|---|---|---|---|---|
| 1 | T1 | 32 | 32 | 0 | 0 | 0 | 0 | 32 | 32 |
| 2 | T2 | 81 | 113 | 1 | 1 | 1 | 1 | 83 | 115 |
| 3 | T3 | 78 | 191 | 2 | 3 | 0 | 1 | 80 | 195 |
| 4 | T4 | 120 | 311 | 4 | 7 | 2 | 3 | 126 | 321 |
| 5 | T5 | 276 | 587 | 25 | 32 | 5 | 8 | 306 | 627 |
| 6 | T6 | 90 | 677 | 0 | 32 | 0 | 8 | 90 | 717 |
| 7 | T7 | 12 | 689 | 1 | 33 | 1 | 9 | 14 | 731 |
| 8 | T8 | 94 | 783 | 1 | 34 | 2 | 11 | 97 | 828 |
| 9 | T9 | 338 | 1121 | 25 | 59 | 6 | 17 | 369 | 1197 |
| 10 | T10 | 85 | 1206 | 0 | 59 | 0 | 17 | 85 | 1282 |
| 11 | T11 | 147 | 1353 | 1 | 60 | 1 | 18 | 149 | 1431 |
| 12 | T12 | 94 | 1447 | 1 | 61 | 0 | 18 | 95 | 1526 |
| 13 | T13 | 173 | 1620 | 0 | 61 | 0 | 18 | 173 | 1699 |
| 14 | T14 | 101 | 1721 | 1 | 62 | 2 | 20 | 104 | 1803 |
| Total | 14 | 1721 | | 62 | | 20 | | 1803 | |

wrong or missing year, wrong or missing volume and issue number, wrong or missing first and last page numbers.

1. Author name;
2. Article title;
3. Journal name;
4. Volume number;
5. Issue number;
6. Pagination; and
7. Year.

First of all, all the references appended to LIS theses were classified into two groups, i.e. incorrect reference and correct reference. An incorrect reference was a reference that deviated from the original article, while a correct reference was a reference that was exactly similar to the original article.

Errors within incorrect references contained initials or names of authors, title of article, journal title, volume and issue number, publication year, page numbers, spellings and punctuation. The quantity of errors in the inaccurate references was calculated and categorized into two groups- major errors and minor errors.

Major errors in references blocked actual and prompt location of the cited information sources, and contained wrong author names, incorrect journal titles, wrong article titles, wrong or missing volume, wrong or missing issue, wrong or missing year, and wrong or missing first page number.

Minor error contained minor deletions that did not block the article's location, and contained paraphrased or incomplete article titles, wrong initials of author, or a fault in the article's last page number, and punctuation errors.

Each error group either minor or major was further subdivided by type. Errors within an erroneous reference were measured by type of error- author name, article title, journal name, publications year, volume number, issue number, first and last page number, and punctuation errors. For instance, a reference containing a major journal title error and a major volume number error would consider as two major errors; a reference having a major author name error and a minor last page error would treat as one major and one minor error. References which consisted one or more errors in only a single bibliographic element (i.e. author's name, article's title, journal's name, volume number, issue number, year, and page numbers) were treated as consisting only a single error; those which contained errors in two or more bibliographic elements were considered to have two or more errors.

## Analysis

### Erroneous references

Table 3 shows the number of correct and incorrect references appended in fourteen LIS theses. Out of the 1721 verifiable references, 1341 (77.92%) references were incorrect and remaining 380 (22.08%) were correct. The three theses (T2, T7, and T14) contained no accurate journal references in their reference lists. The thesis (T13) had the highest (42.77%) accurate journal references in its reference list. It is found that

Table 3 — Correct and incorrect references

| Sl. no. | Thesis code | Correct references | Cumulative references | Incorrect references | Cumulative references | Total | Cumulative references |
|---|---|---|---|---|---|---|---|
| 1 | T1 | 5 (15.62%) | 5 | 27 (84.38%) | 27 | 32 (100%) | 32 |
| 2 | T2 | 0 (0%) | 5 | 81 (100%) | 108 | 81 (100%) | 113 |
| 3 | T3 | 21 (26.92%) | 26 | 57 (73.08%) | 165 | 78 (100%) | 191 |
| 4 | T4 | 19 (15.83%) | 45 | 101 (84.17%) | 266 | 120 (100%) | 311 |
| 5 | T5 | 88 (31.88%) | 133 | 188 (68.12%) | 454 | 276 (100%) | 587 |
| 6 | T6 | 9 (10%) | 142 | 81 (90%) | 535 | 90 (100%) | 677 |
| 7 | T7 | 0 (0%) | 142 | 12 (100%) | 547 | 12 (100%) | 689 |
| 8 | T8 | 2 (2.13%) | 144 | 92 (97.87%) | 639 | 94 (100%) | 783 |
| 9 | T9 | 100 (29.59%) | 244 | 238 (70.41%) | 877 | 338 (100%) | 1121 |
| 10 | T10 | 25 (29.41%) | 269 | 60 (70.59%) | 937 | 85 (100%) | 1206 |
| 11 | T11 | 30 (20.41%) | 299 | 117 (79.59%) | 1054 | 147 (100%) | 1353 |
| 12 | T12 | 7 (7.45%) | 306 | 87 (92.55%) | 1141 | 94 (100%) | 1447 |
| 13 | T13 | 74 (42.77%) | 380 | 99 (57.23%) | 1240 | 173 (100%) | 1620 |
| 14 | T14 | 0 (0%) | 380 | 101 (100%) | 1341 | 101 (100%) | 1721 |
| Total | 14 | 380 (22.08%) | | 1341 (77.92%) | | 1721 (100%) | |

the 77.92% of references were incorrect. It reflects that a majority of references were erroneous in LIS theses.

**Number of errors**

The number of errors committed by the LIS research scholars in 1721 verifiable journal references of the fourteen theses was 2869 (Table 4). The study concluded that average number of errors, i.e. ratio of number of errors, is 1.67. It shows that every journal reference in the theses selected in the study has at least one error.

**Major errors**

Table 5 presents the detail of major errors in references. The number of the major errors in 1721 journal references in the fourteen LIS theses was 1231. The mean value of major errors in references was 87.93. Major errors in cited references are considered as critical and serious type errors, because they prevent the research scholars and readers from searching and retrieving the cited documentary sources. Such type of errors in cited references ought to be very negligible or lesser in quantity. All the

Table 4 — Errors in references

| Sl. no. | Thesis code | Number of references verified =a | Cumulative references verified | Number of errors = b | Cumulative errors | Average number of errors c = b/a | Percentage of errors D = (b/∑b)*100 | Cumulative percentage of errors |
|---|---|---|---|---|---|---|---|---|
| 1 | T1 | 32 | 32 | 78 | 78 | 2.44 | 2.72 | 2.72 |
| 2 | T2 | 81 | 113 | 295 | 373 | 3.64 | 10.28 | 13 |
| 3 | T3 | 78 | 191 | 100 | 473 | 1.28 | 3.49 | 16.49 |
| 4 | T4 | 120 | 311 | 190 | 663 | 1.58 | 6.62 | 23.11 |
| 5 | T5 | 276 | 587 | 322 | 985 | 1.17 | 11.22 | 34.33 |
| 6 | T6 | 90 | 677 | 167 | 1152 | 1.85 | 5.82 | 40.15 |
| 7 | T7 | 12 | 689 | 38 | 1190 | 3.17 | 1.32 | 41.47 |
| 8 | T8 | 94 | 783 | 295 | 1485 | 3.14 | 10.28 | 51.75 |
| 9 | T9 | 338 | 1121 | 418 | 1903 | 1.24 | 14.57 | 66.32 |
| 10 | T10 | 85 | 1206 | 102 | 2005 | 1.2 | 3.56 | 69.88 |
| 11 | T11 | 147 | 1353 | 199 | 2204 | 1.35 | 6.94 | 76.82 |
| 12 | T12 | 94 | 1447 | 194 | 2398 | 2.06 | 6.76 | 83.58 |
| 13 | T13 | 173 | 1620 | 206 | 2604 | 1.19 | 7.18 | 90.76 |
| 14 | T14 | 101 | 1721 | 265 | 2869 | 2.62 | 9.24 | 100 |
| Total | 14 | ∑a = 1721 | | ∑b = 2869 | | 1.67 | 100 | |

Table 5 — Major errors in references

| Sl. no. | Thesis code | Number of references verified =a | Cumulative references verified | Major errors =b | Cumulative major errors | Percentage of Major errors c = (b/∑b)*100 | Cumulative percentage of major errors |
|---|---|---|---|---|---|---|---|
| 1 | T1 | 32 | 32 | 33 | 33 | 2.68 | 2.68 |
| 2 | T2 | 81 | 113 | 58 | 91 | 4.71 | 7.39 |
| 3 | T3 | 78 | 191 | 47 | 138 | 3.82 | 11.21 |
| 4 | T4 | 120 | 311 | 81 | 219 | 6.58 | 17.79 |
| 5 | T5 | 276 | 587 | 178 | 397 | 14.46 | 32.25 |
| 6 | T6 | 90 | 677 | 66 | 463 | 5.36 | 37.61 |
| 7 | T7 | 12 | 689 | 13 | 476 | 1.06 | 38.67 |
| 8 | T8 | 94 | 783 | 71 | 547 | 5.77 | 44.44 |
| 9 | T9 | 338 | 1121 | 240 | 787 | 19.5 | 63.94 |
| 10 | T10 | 85 | 1206 | 53 | 840 | 4.3 | 68.24 |
| 11 | T11 | 147 | 1353 | 81 | 921 | 6.58 | 74.82 |
| 12 | T12 | 94 | 1447 | 77 | 998 | 6.25 | 81.07 |
| 13 | T13 | 173 | 1620 | 146 | 1144 | 11.86 | 92.93 |
| 14 | T14 | 101 | 1721 | 87 | 1231 | 7.07 | 100 |
| Total | 14 | ∑a = 1721 | | ∑b = 1231 | | 100 | |

theses show a high level of major errors. Only three theses (T5, T9, and T13) accounted for 45.82% major errors.

**Minor errors**

In 1721 journal references, 1638 minor errors were detected (Table 6). The mean value of minor errors in references was 117. Only four theses (T2, T8, T9 and T14) accounted for 817 almost half (i.e. 817) of minor errors. Such minor errors may be further reduced easily by following a specific citation style and referencing guidelines. Errors in punctuation marks, errors in formatting pattern which means error in sequence of bibliographic elements, error in last page number, and minor addition or omission are few instances of minor errors in cited references. Minor errors, although, can't influence the retrieving and searching of cited document or information source, these mar the consistency and uniformity of the referencing style and format[32].

**Accuracy level**

Accuracy is, undoubtedly, a significant parameter of testing quality aspect of references. Table 7 reveals

Table 6 — Minor errors in references

| Sl. no. | Thesis code | Number of references verified =a | Cumulative references verified | Minor errors =b | Cumulative minor errors | Percentage of minor errors c = (b/∑b)*100 | Cumulative percentage of minor errors |
|---|---|---|---|---|---|---|---|
| 1 | T1 | 32 | 32 | 45 | 45 | 2.75 | 2.75 |
| 2 | T2 | 81 | 113 | 237 | 282 | 14.47 | 17.22 |
| 3 | T3 | 78 | 191 | 53 | 335 | 3.24 | 20.46 |
| 4 | T4 | 120 | 311 | 109 | 444 | 6.65 | 27.11 |
| 5 | T5 | 276 | 587 | 144 | 588 | 8.79 | 35.9 |
| 6 | T6 | 90 | 677 | 101 | 689 | 6.17 | 42.07 |
| 7 | T7 | 12 | 689 | 25 | 714 | 1.53 | 43.6 |
| 8 | T8 | 94 | 783 | 224 | 938 | 13.67 | 52.27 |
| 9 | T9 | 338 | 1121 | 178 | 1116 | 10.87 | 68.14 |
| 10 | T10 | 85 | 1206 | 49 | 1165 | 2.99 | 71.13 |
| 11 | T11 | 147 | 1353 | 118 | 1283 | 7.2 | 78.33 |
| 12 | T12 | 94 | 1447 | 117 | 1400 | 7.14 | 85.47 |
| 13 | T13 | 173 | 1620 | 60 | 1460 | 3.66 | 89.13 |
| 14 | T14 | 101 | 1721 | 178 | 1638 | 10.87 | 100 |
| Total | | ∑a = 1721 | | ∑b = 1638 | | 100 | |

Table 7 — Accuracy level of references

| Sl. no. | Thesis code | Number of references verified =a | Cumulative references verified | Correct references = b | Cumulative correct references | Reference accuracy percentage d = (b/a)*100 |
|---|---|---|---|---|---|---|
| 1 | T1 | 32 | 32 | 5 | 5 | 15.62 |
| 2 | T2 | 81 | 113 | 0 | 5 | 0 |
| 3 | T3 | 78 | 191 | 21 | 26 | 26.92 |
| 4 | T4 | 120 | 311 | 19 | 45 | 15.83 |
| 5 | T5 | 276 | 587 | 88 | 133 | 31.88 |
| 6 | T6 | 90 | 677 | 9 | 142 | 10 |
| 7 | T7 | 12 | 689 | 0 | 142 | 0 |
| 8 | T8 | 94 | 783 | 2 | 144 | 2.13 |
| 9 | T9 | 338 | 1121 | 100 | 244 | 29.58 |
| 10 | T10 | 85 | 1206 | 25 | 269 | 29.41 |
| 11 | T11 | 147 | 1353 | 30 | 299 | 20.41 |
| 12 | T12 | 94 | 1447 | 7 | 306 | 7.45 |
| 13 | T13 | 173 | 1620 | 74 | 380 | 42.77 |
| 14 | T14 | 101 | 1721 | 0 | 380 | 0 |
| Total | 14 | ∑a = 1721 | | ∑b = 380 | | 22.08 |

the accuracy level of references in the fourteen LIS theses. Out of a total of 1721 references checked, only 380 (22.08%) references were accurate, while 1341 (77.92%) were inaccurate. The accuracy level of journal references measured in this study is 22.08%. This indicates that out of 5 journal references only 1 reference is accurate and 4 are inaccurate. The accuracy level of three theses (T2, T7 and T14) is found to be zero. The Thesis (T13) had the highest (42.77%) accuracy level. The research scholars are mainly responsible for erroneous references. The casual behaviour of referencing is presented by the LIS research scholars.

**Errors in citing name of authors**

Every author, who writes for a journal, expects that his own name should be mentioned everywhere correctly. Faults in citing name of the author are spelling errors, missing and addition of initials, and wrong name. Table 8 exhibits the 372 errors in citing name of authors. The mean value of errors in citing name of authors was found to be 26.57. Errors in citing name of the author contain spelling errors, missing and addition of initials, and wrong name. Highest number of errors is wrong/missing author errors 289 (77.69%), followed by addition/spelling errors 83 (22.31%). Thesis (T9) and Thesis (T7) accounted for the highest (i.e. 66) and the lowest (i.e. 3) errors in citing name(s) of authors respectively.

**Errors in article title**

The complete theme of the scientific article, in most cases, is presented by the title of an article. Thus, title of an article is considered as a major component of a bibliographic reference. Table 9 depicts the 397 referencing errors in article title. The mean value of errors in article titles was found to be 28.36. Highest errors are word addition and spelling errors 223 (56.17%), followed by wrong and missing words errors 174 (43.83%). Only four theses (T4, T5, T9, and T11) accounted for 270 article title errors, which is about (68.88%) of total article title errors.

**Errors in journal title**

Table 10 reveals the errors in title of the journal. The errors in title of the journal turn out to be 148. The mean value of errors in journal titles was measured 10.57. Highest errors 114 (77.03%) were committed in wrong and missing title of journal. Word(s) addition and spelling errors were 34 (22.97%). Only four theses (T9, T10, T13, and T14) contained 73 journal name errors, which is about (49.32%) of total journal title errors.

**Errors in year of publication**

Out of a total of 1721 journal references, 70 references had year of publication errors (Table 11). The mean value of errors in publication year was accounted 5. The study revealed that 63 (90%) references had contained wrong year of publication

Table 8 — Errors in citing name of authors

| Sl. no. | Thesis code | Wrong/Missing author(s) | Addition/Spelling errors | Total number of errors | Cumulative errors | Percentage | Cumulative percentage |
|---|---|---|---|---|---|---|---|
| 1 | T1 | 7 | 3 | 10 | 10 | 2.69 | 2.69 |
| 2 | T2 | 11 | 9 | 20 | 30 | 5.38 | 8.07 |
| 3 | T3 | 14 | 9 | 23 | 53 | 6.18 | 14.25 |
| 4 | T4 | 8 | 13 | 21 | 74 | 5.65 | 19.9 |
| 5 | T5 | 44 | 8 | 52 | 126 | 13.98 | 33.88 |
| 6 | T6 | 19 | 4 | 23 | 149 | 6.18 | 40.06 |
| 7 | T7 | 3 | 0 | 3 | 152 | 0.8 | 40.86 |
| 8 | T8 | 11 | 0 | 11 | 163 | 2.96 | 43.82 |
| 9 | T9 | 54 | 12 | 66 | 229 | 17.74 | 61.56 |
| 10 | T10 | 13 | 0 | 13 | 242 | 3.49 | 65.05 |
| 11 | T11 | 32 | 3 | 35 | 277 | 9.41 | 74.46 |
| 12 | T12 | 25 | 0 | 25 | 302 | 6.72 | 81.18 |
| 13 | T13 | 34 | 2 | 36 | 338 | 9.68 | 90.86 |
| 14 | T14 | 14 | 20 | 34 | 372 | 9.14 | 100 |
| Total | 14 | 289 (77.69%) | 83 (22.31%) | 372 (100%) | | 100 | |

whereas 7 (10%) references had missing year. Only two theses (T5 and T9) had 28 (40%) year errors of the total year errors.

**Errors in page numbers**

Table 12 shows the detail of errors in page numbers (both first and last page). Out of a total of 1721 journal references, 392 inaccuracies in page numbers were detected in fourteen LIS theses. The mean value of errors in page numbers was 28 (mean value of errors in first page number- 11.93 and last page numbers- 16.07). Out of 392 errors, 167 (42.6%) errors were found in first page number and 225 (57.4%) errors in last page number. Only four theses (T5, T9, T12, and T13) contained 211 page number errors, which is about (53.82%) of total page number errors. Errors in page numbers in cited references block the retrieving and searching of original journal's article.

**Errors in volume and issue numbers**

A sum of 143 and 402 errors in volume and issue number were detected in 1721 journal references in fourteen LIS theses respectively. Table 13 shows the errors detected in volume and issue number. The mean values of errors in volume and issue numbers were measured 10.21 and 28.71 respectively. The study shows that the Thesis (T9) has the highest

Table 9 — Errors in article titles

| Sl. no. | Thesis code | Wrong/Missing word(s) | Word addition/spelling errors | Total number of errors | Cumulative errors | Percentage | Cumulative percentage |
|---|---|---|---|---|---|---|---|
| 1 | T1 | 2 | 2 | 4 | 4 | 1.01 | 1.01 |
| 2 | T2 | 3 | 10 | 13 | 17 | 3.27 | 4.28 |
| 3 | T3 | 5 | 10 | 15 | 32 | 3.78 | 8.06 |
| 4 | T4 | 17 | 34 | 51 | 83 | 12.85 | 20.91 |
| 5 | T5 | 39 | 38 | 77 | 160 | 19.4 | 40.31 |
| 6 | T6 | 8 | 10 | 18 | 178 | 4.53 | 44.84 |
| 7 | T7 | 3 | 4 | 7 | 185 | 1.76 | 46.6 |
| 8 | T8 | 2 | 4 | 6 | 191 | 1.51 | 48.11 |
| 9 | T9 | 47 | 45 | 92 | 283 | 23.17 | 71.28 |
| 10 | T10 | 6 | 3 | 9 | 292 | 2.27 | 73.55 |
| 11 | T11 | 17 | 33 | 50 | 342 | 12.59 | 86.14 |
| 12 | T12 | 8 | 8 | 16 | 358 | 4.03 | 90.17 |
| 13 | T13 | 10 | 4 | 14 | 372 | 3.53 | 93.7 |
| 14 | T14 | 7 | 18 | 25 | 397 | 6.3 | 100 |
| Total | 14 | 174 (43.83%) | 223 (56.17%) | 397 (100%) | | 100 | |

Table 10 — Errors in journal titles

| Sl. no. | Thesis code | Wrong/Missing title | Word addition/spelling errors | Total number of errors | Cumulative errors | Percentage | Cumulative percentage |
|---|---|---|---|---|---|---|---|
| 1 | T1 | 2 | 0 | 2 | 2 | 1.35 | 1.35 |
| 2 | T2 | 4 | 0 | 4 | 6 | 2.7 | 4.05 |
| 3 | T3 | 6 | 1 | 7 | 13 | 4.73 | 8.78 |
| 4 | T4 | 12 | 2 | 14 | 27 | 9.46 | 18.24 |
| 5 | T5 | 11 | 2 | 13 | 40 | 8.78 | 27.02 |
| 6 | T6 | 2 | 5 | 7 | 47 | 4.73 | 31.75 |
| 7 | T7 | 1 | 2 | 3 | 50 | 2.03 | 33.78 |
| 8 | T8 | 1 | 0 | 1 | 51 | 0.68 | 34.46 |
| 9 | T9 | 22 | 3 | 25 | 76 | 16.89 | 51.35 |
| 10 | T10 | 10 | 5 | 15 | 91 | 10.14 | 61.49 |
| 11 | T11 | 9 | 2 | 11 | 102 | 7.43 | 68.92 |
| 12 | T12 | 8 | 5 | 13 | 115 | 8.78 | 77.7 |
| 13 | T13 | 16 | 2 | 18 | 133 | 12.16 | 89.86 |
| 14 | T14 | 10 | 5 | 15 | 148 | 10.14 | 100 |
| Total | 14 | 114 (77.03%) | 34 (22.97%) | 148 (100%) | | 100 | |

Table 11 — Errors in year of publication

| Sl. no. | Thesis code | Wrong year | Missing year | Total number of errors | Cumulative errors | Percentage | Cumulative percentage |
|---|---|---|---|---|---|---|---|
| 1 | T1 | 2 | 0 | 2 | 2 | 2.86 | 2.86 |
| 2 | T2 | 7 | 0 | 7 | 9 | 10 | 12.86 |
| 3 | T3 | 2 | 0 | 2 | 11 | 2.86 | 15.72 |
| 4 | T4 | 5 | 0 | 5 | 16 | 7.14 | 22.86 |
| 5 | T5 | 8 | 1 | 9 | 25 | 12.85 | 35.71 |
| 6 | T6 | 2 | 0 | 2 | 27 | 2.86 | 38.57 |
| 7 | T7 | 1 | 0 | 1 | 28 | 1.43 | 40 |
| 8 | T8 | 2 | 0 | 2 | 30 | 2.86 | 42.86 |
| 9 | T9 | 16 | 3 | 19 | 49 | 27.14 | 70 |
| 10 | T10 | 2 | 0 | 2 | 51 | 2.86 | 72.86 |
| 11 | T11 | 4 | 3 | 7 | 58 | 10 | 82.86 |
| 12 | T12 | 1 | 0 | 1 | 59 | 1.43 | 84.29 |
| 13 | T13 | 4 | 0 | 4 | 63 | 5.71 | 90 |
| 14 | T14 | 7 | 0 | 7 | 70 | 10 | 100 |
| Total | 14 | 63 (90%) | 7 (10%) | 70 (100%) | | 100 | |

Table 12 — Errors in page numbers

| Sl. no. | Thesis code | First page | | | Cumulative errors | Percentage | Cumulative percentage | Last page | | | Cumulative errors | Percentage | Cumulative percentage | Total errors |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Wrong | Missing | Total | | | | Wrong | Missing | Total | | | | |
| 1 | T1 | 1 | 4 | 5 | 5 | 2.99 | 2.99 | 3 | 4 | 7 | 7 | 3.11 | 3.11 | 12 |
| 2 | T2 | 6 | 1 | 7 | 12 | 4.19 | 7.18 | 7 | 1 | 8 | 15 | 3.55 | 6.66 | 15 |
| 3 | T3 | 3 | 0 | 3 | 15 | 1.8 | 8.98 | 5 | 2 | 7 | 22 | 3.11 | 9.77 | 10 |
| 4 | T4 | 11 | 2 | 13 | 28 | 7.78 | 16.76 | 15 | 5 | 20 | 42 | 8.89 | 18.66 | 33 |
| 5 | T5 | 7 | 12 | 19 | 47 | 11.38 | 28.14 | 17 | 14 | 31 | 73 | 13.78 | 32.44 | 50 |
| 6 | T6 | 8 | 2 | 10 | 57 | 5.99 | 34.13 | 11 | 4 | 15 | 88 | 6.67 | 39.11 | 25 |
| 7 | T7 | 3 | 0 | 3 | 60 | 1.8 | 35.93 | 5 | 1 | 6 | 94 | 2.67 | 41.78 | 9 |
| 8 | T8 | 1 | 6 | 7 | 67 | 4.19 | 40.12 | 0 | 7 | 7 | 101 | 3.11 | 44.89 | 14 |
| 9 | T9 | 9 | 11 | 20 | 87 | 11.98 | 52.1 | 22 | 16 | 38 | 139 | 16.89 | 61.78 | 58 |
| 10 | T10 | 3 | 8 | 11 | 98 | 6.59 | 58.69 | 4 | 4 | 8 | 147 | 3.55 | 65.33 | 19 |
| 11 | T11 | 7 | 2 | 9 | 107 | 5.39 | 64.08 | 12 | 2 | 14 | 161 | 6.22 | 71.55 | 23 |
| 12 | T12 | 4 | 25 | 29 | 136 | 17.36 | 81.44 | 5 | 24 | 29 | 190 | 12.89 | 84.44 | 58 |
| 13 | T13 | 2 | 21 | 23 | 159 | 13.77 | 95.21 | 2 | 20 | 22 | 212 | 9.78 | 94.22 | 45 |
| 14 | T14 | 7 | 1 | 8 | 167 | 4.79 | 100 | 10 | 3 | 13 | 225 | 5.78 | 100 | 21 |
| Total | 14 | 72 | 95 | 167 | | 100 | | 118 | 107 | 225 | | 100 | | 392 |

number (32) of volume number errors, while Thesis (T7) contained no such error. Similarly, Thesis (T9) contained highest number (84) of issue number errors, while Thesis (T7) had the lowest (3) issue number errors. Readers and scholars believe in both journal's volume and issue numbers, since they retrieve their cited papers easily and comfortably in less time. Both journal's volume and issue numbers have significant value in a cited reference.

## Errors in punctuation marks

A total of 940 errors in punctuation marks were detected in 1721 journal references in fourteen LIS theses (Table 14). The mean value of errors in punctuation marks was 67.14. The thesis (T8) contained highest number (217) of punctuation errors, while Thesis (T7) had the lowest (12) punctuation errors. Only three theses (T2, T8, and T14) contained 558 punctuation errors, which is about (59.36%) of total punctuation errors. Punctuation marks are very useful to make sense of every bibliographic component and helpful in splitting reference components.

## Some cases of unusual errors

Some errors in references were very unusual and deserved a special attention.

- Few articles were cited twice (and also thrice) in the references lists of some theses. In such condition, only first article's reference was

Table 13 — Errors in volume and issue numbers

| Sl. no. | Thesis code | Volume number | | | Cumulative errors | Percentage | Cumulative percentage | Issue number | | | Cumulative errors | Percentage | Cumulative percentage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Wrong | Missing | Total | | | | Wrong | Missing | Total | | | |
| 1 | T1 | 1 | 5 | 6 | 6 | 4.2 | 4.2 | 1 | 8 | 9 | 9 | 2.24 | 2.24 |
| 2 | T2 | 5 | 1 | 6 | 12 | 4.2 | 8.4 | 7 | 10 | 17 | 26 | 4.23 | 6.47 |
| 3 | T3 | 3 | 3 | 6 | 18 | 4.2 | 12.6 | 4 | 11 | 15 | 41 | 3.73 | 10.2 |
| 4 | T4 | 7 | 1 | 8 | 26 | 5.59 | 18.19 | 6 | 17 | 23 | 64 | 5.72 | 15.92 |
| 5 | T5 | 10 | 18 | 28 | 54 | 19.58 | 37.77 | 8 | 61 | 69 | 133 | 17.16 | 33.08 |
| 6 | T6 | 4 | 2 | 6 | 60 | 4.2 | 41.97 | 4 | 20 | 24 | 157 | 5.97 | 39.05 |
| 7 | T7 | 0 | 0 | 0 | 60 | 0 | 41.97 | 3 | 0 | 3 | 160 | .75 | 39.8 |
| 8 | T8 | 0 | 5 | 5 | 65 | 3.5 | 45.47 | 0 | 39 | 39 | 199 | 9.7 | 49.5 |
| 9 | T9 | 13 | 19 | 32 | 97 | 22.37 | 67.84 | 8 | 76 | 84 | 283 | 20.9 | 70.4 |
| 10 | T10 | 3 | 3 | 6 | 103 | 4.2 | 72.04 | 1 | 13 | 14 | 297 | 3.48 | 73.88 |
| 11 | T11 | 4 | 1 | 5 | 108 | 3.49 | 75.53 | 8 | 6 | 14 | 311 | 3.48 | 77.36 |
| 12 | T12 | 3 | 3 | 6 | 114 | 4.2 | 79.73 | 3 | 11 | 14 | 325 | 3.48 | 80.84 |
| 13 | T13 | 3 | 24 | 27 | 141 | 18.88 | 98.61 | 9 | 35 | 44 | 369 | 10.95 | 91.79 |
| 14 | T14 | 2 | 0 | 2 | 143 | 1.39 | 100 | 2 | 31 | 33 | 402 | 8.21 | 100 |
| Total | 14 | 58 | 85 | 143 | | 100 | | 64 | 338 | 402 | | 100 | |

Table 14 — Errors in punctuation marks

| Sl. no. | Thesis code | Punctuation errors | Cumulative errors | Percentage | Cumulative percentage |
|---|---|---|---|---|---|
| 1 | T1 | 33 | 33 | 3.51 | 3.51 |
| 2 | T2 | 213 | 246 | 22.66 | 26.17 |
| 3 | T3 | 22 | 268 | 2.34 | 28.51 |
| 4 | T4 | 33 | 301 | 3.51 | 32.02 |
| 5 | T5 | 23 | 324 | 2.45 | 34.47 |
| 6 | T6 | 62 | 386 | 6.6 | 41.07 |
| 7 | T7 | 12 | 398 | 1.28 | 42.35 |
| 8 | T8 | 217 | 615 | 23.09 | 65.44 |
| 9 | T9 | 40 | 655 | 4.26 | 69.7 |
| 10 | T10 | 24 | 679 | 2.55 | 72.25 |
| 11 | T11 | 54 | 733 | 5.74 | 77.99 |
| 12 | T12 | 61 | 794 | 6.49 | 84.48 |
| 13 | T13 | 18 | 812 | 1.91 | 86.39 |
| 14 | T14 | 128 | 940 | 13.61 | 100 |
| Total | 14 | 940 | | 100 | |

considered, and duplicate references were removed from the analysis.

- In two references of a same article in a Thesis (T14) the authors name appeared as “Hirawade, M.A. and S.S. Dankhade” and “Mangala, Anil Hirwade and Seema Sanjay Kumar Dankhade.” The later reference was excluded from the counting while analysis.
- In many references in the theses T5 and T9, the journal title appeared as “Lib. Sc.” but the full journal title is “Library Science with a slant to Documentation.”
- In a Thesis (T13), some non-existence authors are cited, for example- “Flaspohler, M.R., Rux, E.M., Flaspohler, J.A., Library, C.B.Y., & College, C.” In the same thesis, “Index, S.C., Information, S., Science, S., Index, C., & Index, H.C.” and “M. E., C. & C, O.” and “Under, F., & Publishing A.” and “What, I.” are some cited authors.
- In an article reference of “ILA Bulletin” the page numbers were different in print and online issues (available in PDF format). That happened only due to the mistake of Indian Library Association. In this case, page numbers of both issues are right.
- In eight theses out of fourteen, research scholars did not mention the reference style they used in their theses. Only six scholars mentioned the reference style they used; three used APA reference style and remaining three used MLA reference style.
- Incorrect titles of article appeared in many forms, which are deviated from the title as given in original title. For instance, omitting or adding an “s,” missing subtitle, missing an article, a hyphen, a colon, a comma, and punctuation marks.
- In case of more than three authored articles, “et al.” and “and others” are used regularly, which was not considered an error, if particular thesis frequently used a single term (either ‘and others’ or ‘et al.’) in references.
- In some references issue number of a journal is mentioned, while in other references issue number not mentioned, thus break the uniformity in the references. Issue number of a journal is an important bibliographic element, if the page numbers are non-consecutive in each issue of a volume. To maintain the uniformity in the references, missing or wrong issue number is considered as an error in this study.

## Conclusion

Reference accuracy rate for LIS theses ranged from 0% to 42.77%. The research findings indicated that citation instruction in Pre Ph.D. Programme is strongly required to encourage better citation behaviour. The application of online reference management software coupled with citation guide via research method and library instruction course can successfully eliminate the frequency rate of citation errors. Research scholars should be well-trained to search information sources as well as cite them accurately in their thesis.

The main output of this study recommends the necessity for every research scholar of information literacy education as well the information seeker and creator and communicators of all forms of scholarly communication. Research scholars who cite information sources without searching, retrieving and reading can raise the number of inaccuracies in references appended in the thesis.

Maintaining the utmost level of reference accuracy is one the fine traits of a research scholar. Researcher should consistently go along with only one reference style throughout in his/her writing. While researcher should try to compile references flawlessly, what matters most is that researcher gives adequate bibliographic information to search and retrieve the original information source.

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