

CITATION CONTENT ANALYSIS OF MASTER DEGREE THESES IN LIBRARY AND INFORMATION TECHNOLOGY FOR IMPROVED RESEARCH

By

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Abstract

Citation behaviour as a linear relationship between two articles can be established through the study of citation in research documents (including theses) by counting and measurement of citations which are borne out of complex motives and behaviour influenced by a number of subjective factors. The aim of the study is to determine the role of in-text citation content of Master degree theses in Library and Information Technology. The study described the citation behaviour of M.Tech researches in Library and Information Technology through the analysis of 30 copies of M.Tech theses submitted at the Department of Library and Information Technology, Federal University of Technology Minna, using citation content analysis codebook developed by Zhang, Ding and Milojevic (2013) for Semantic and Syntactic analysis of citation contents. The result revealed that their main motivation for citing was to support their own arguments while most citations were positive. The study stated insights (citation location, citation disposition among other citation indexes) on how and what function citations perform in a body of discourse which can shape and improve research.

Keywords: Bibliometrics, Citation Content Analysis, Citation Behaviour, Master Degree Theses in Library and Information Technology, Improved Research.

Introduction

Describing citation details has become easy and possible, since the broad adoption of natural language processing technologies and open accessibility of full text document data, The practice of citation content analysis has redrawn researchers' attention and become a new happening in the field of Library and Information Science. The study of content-based citation analysis is the analysis of the citations within the full text of any scientific article rather than its simple cumulative frequency. Content-based citation analysis tends to address a reference value by depicting and explaining each citation based on its context syntactically and semantically. Articles and their citations have been used to generate links for example, articles citation links, author citation networks, co-author links, and journal co-citation networks. Zhang, Ding and Milojevic (2013). Content-based citation analysis can be divided in its two tracks: Syntactic content-based citation analysis and semantic content-based citation analysis. Syntactic content-based analysis studies the location where the reference has been mentioned within the citing document and the function it

performs while semantic content-based analysis studies why the reference has been mentioned within the citing source (Ding *et al.*, 2013).

Scholars and researchers refer to earlier articles which are similar to a study to be undertaken or ongoing. These references and sources consulted are supposed to indicate earlier research whose methods, opinions, equipment and concepts inspired the citing author to develop a study. As earlier stated, citations are used to appraise the quality, impact, frequency of occurrence, penetration and originality of individual scholars and corporate entity performance across fields. The fact that an article is referenced shows that within the author's frame of mind, there exists a similarity between a part or the whole of the referenced article.

The socio-constructivist theorists believed that researchers cite scientific articles to persuade readers that the claims they have established in their own articles are valid, robust and authentic. Therefore, scholars cite to defend their claims against abuse, fight for the advancement of their interest, persuade others and attract a dominant position among the community of scientists. Liu, Zhang and Ma (2015), Gabb, Lucic and Blake (2015), Ding *et al.* (2014) have identified different citation content indexes at the syntactic and semantic levels to include citation mention, citation location, frequency of citation, citation functions, citation styles and citation disposition to describe citation content. These studies properly used citation indexes to evaluate the influence and value of a publication as well as guide to novices to understand and properly cite researches.

Motivation behind every citation may vary greatly due to personalized psychological process, citers' social environment and cultural background and normative tendencies governed by the internal norms in science as proposed by Merton (1975) as cited by Zhang, Ding and Milojevic (2013). Persuasion may also play key role in this feature. The authors asserted that there is not an existing method that provides for a complete analysis of all three feature of citations.

Additionally, the framework for the syntactic and semantic analysis of citation contents culls from many theories of citing. The framework focuses on advancement on the current analysis methods; quantitative description of bibliographies and qualitative interpretation of citation functions including traditional citation analysis are to be combined in order to advance and effectively exploit and capture the nature of citations such as citation function, citation location of mentioning, citation disposition, citation styles etc.

Statement of the Research Problem

The analysis of the citation content in the body of a research throws light on features of citation such as citation mention, citation location, citation function, citation style, citation length and in some cases citation disposition. These indexes are adopted to describe citation behaviour of master degree researchers which sought to define how, why, when and where researchers cite. Citation within the body of research work plays an important role and try to substantiate and develop a relationship between the citing and cited works. However, researchers may reluctantly neglect or do not understand the reasons behind citations when conducting researches, as in knowing when citation are to be mentioned and where they are mention. Citation needs to be properly placed in their various locations to ensure compliance to norms and motives of citing. Therefore, this study investigated the citation behaviour of Masters' degree researchers in Library and Information Technology.

Aim and Objectives of the Study

The aim of the study is to determine the citation behaviour of masters' degree researches in Library and Information Technology. The specific objectives are to:-

1. Determine the location of mentioning of citations in Master Degree theses in Library and Information Technology.
2. Describe the styles of mentioning of citations in Master Degree theses in Library and Information Technology.
3. Find out the frequency of mentioning of citations in Master Degree theses in Library and Information Technology.
4. Find out the function of citation in Master Degree theses in Library and Information Technology.
5. Describe the citation motivation in Master Degree theses in Library and Information Technology.
6. Determine the disposition of citation in Master Degree theses in Library and Information Technology.

Research Questions

1. Where are the locations of mentioning in Master Degree theses in Library and Information Technology?
2. What are the styles of mentioning in Master Degree theses in Library and Information Technology?
3. What are the frequencies of mentioning in Master Degree theses in Library and Information Technology?
4. What are the function of citation in Master Degree theses in Library and Information Technology?
5. What are the citation motivation in Master Degree theses in Library and Information Technology?
6. What are the dispositions of citation in Master Degree theses in Library and Information Technology?

Research Hypothesis

This hypothesis was tested in the study:

HO: There is no significant associative relationship between citation location and citation function in Master Degree theses in Library and Information Technology at Federal University of Technology, Minna.

Literature Review

Some studies have explained the theories of citation behaviour which form the basis for citation content analysis and citing behaviour (Tahamatan & Bornman, 2018). The two traditional theories are the normative and social constructive theories by Merton (1973) as cited in the above-mentioned authors. The author explained that scientists primarily cite their peers to recognise their earlier works based on the normative theory of citations. The socio-constructivist theory inclines that the reasons behind citations are multidimensional and depend on some factors. Liu, Zhang and Ma (2015) indicated that citation indexes represent the features of citation content. Citation mention is defined as how many times a cited article is mentioned within a given citing document which according to Ding *et al.*, (2014) involves counting every citation throughout the sections of

a body of discourse. Citation location is where citation is located and Hu, *et al.*, (2013) proved that citation location is related to the citing behavior. The authors further stated that different locations of the cited paper in the citing paper may appear or weigh differently. Based on this assertion, the citation locations are based into types: Introduction, Review of related works, Methods used, Analysis, Results, Discussion and Conclusion. Citation date simply means the year of the publication of the cited work in the citing document. Dates accompanied every acceptable citation, though dates may appear missing in some cases.

Citation length has to do with the length of the citation contents. Previous works such as Liu & Chen (2013) has extracted only one sentence of the citation content, Lu, Zhang and Ma (2015) also employed some methods such as studying full text documents. The length of the citation content can point out the importance of the cited article. Citation function means the roles citations play within the body of discourse or the cited document. It shows that citation provides historical background, provide data as methodological functions, developing methods as well empirical information about a related previous work (Zhang, Ding and Milojevic, 2013).

Citation disposition has to do with the stance or sentimental view of the citation which could be a positive, negative, neutral and mixed reactions. Citation styles indicates the importance of a cited document. Zhang, Ding and Milojevic (2013) argued that a reference that is cited by a paper but is not obviously mentioned in text can be considered less relevant than one that is discussed in depth within the text of the citing paper. Based on this, citation styles of mentioning such as not specifically mentioning, specifically mentioning but interpreting and direct quotation. Citation frequency in a given cited work means identifying and counting the frequency of mentioning in a particular article which can suggest its level of significance according to Zhang, Ding & Milojevic (2013). The contribution of a cited reference can be calculated based on the number of times it is cited. The authors further stated that a work that was cited in Introduction, Review of Related Literature and again cited in the Methodology or Discuss section has a greater contribution to the citing papers than others that have appeared once. Therefore, it is possible that a paper was cited more than 4 or 5 times in different sections of an article is of greater importance than a reference that was mentioned once throughout the work.

Citation content studies are based on the analysis of the statement around the reference author. Chang (2013) evaluated the 1963 and 1965 editions of de Solla Price's book "Little Science, Big Science" (LSBS) a landmark publication in Scientometrics to identify the citation functions and cited concepts to evaluate differences between natural sciences and social science and Humanities. 908 articles citing de Solla's price's book were obtained from Web of Science, and their citation context analysed. Ulrichs Global Series Directory, Dewey Decimal Classification (DDC) and the Library of Congress Classification Scheme were used to classify cited papers on Natural Science and Social Sciences and Humanities. According to the study, "Science growth patterns" which has (16%), "Scientific communication" which has (15.7%) and Scientific productivity (12.9%) were the top concepts in Natural Science while "Scientific communications" (16.2%) "Science growth patterns" (13.2%) and Scientific Productivity (10.8%) were the top concepts in Social Science and Humanities. Chang (2013) classified the citation contents according to one of the citation indexes; Citation functions which were, Background information, Definition, Empirical evidence and Related studies.

Additionally, Tang and Safer (2008) in Tahamtan and Bornmann (2019) tasked 50 psychologists and 49 biologists to rate the importance of the cited references in their own publications, and to describe their reasons for citing them. The study explored textual indexes of cited references

(frequency of citation, citation length, location of citation within the text and citation treatment) which could be used to predict citation importance. The results showed that citations were relatively important. 64.7% of references in psychology and 50.9% in biology were cited in the introduction section. Most reasons for citing were found in general background “(37.3%), conceptual ideas” (31%), “Methods and Data” (13.4%).

Furthermore, surveys and interviews have been used to investigate the citing behaviour of scholars (Bornmann & Daniel, 2008) as stressed in Tahamtan and Bornman (2019). In interviews and surveys, the citing authors are requested to express their reasons for citing the article. There are several weaknesses towards this in citation content analysis purposes. This is because, according to Harwood (2009) sometimes the motivation of the citing author is not explicitly apparent after going through the text and a successful text analysis demands the scholar to have in depth knowledge of the article research focus. Willet (2013) revealed that there was a limited level of agreement among citing authors judgement of their own reasons for citing and the judgement of independent readers. The authors noticed that experts understand the contexts of some citations in a very different and divergent ways.

Similarly, Clarke and Oppenheim (2006) conducted a survey on the citing behavior of 65 postgraduate students in Loughborough University Department of Information Science. The findings showed that most frequent reasons for citing was to “support their own argument” (95.4%) and because of the currency of the cited paper (95.4%), “Acknowledging related work” (94.4%) and persuasion of readers” (92.3%) were the most reasons given to cite. The results also showed that 80% of the students said they cite to criticize other works. 56.9% of respondents disagreed that they cite because the cited author had been their tutor. Well-known authors seemed to be another reason for citing for 70.8% of the participants. The work concluded that students believed they often based their reasons to cite on the references and importance of the cited articles than any other or non-scientific reasons.

In a recent study by Gonzalez-Teruel and Abad-Garcia (2018) on citation content analysis who investigated the influences of Elfreda Chatman’s Theories (Information Poverty Theory, Life in the Round Theory and Normative Behavior Theory) on citing papers. Full text of 332 citing papers was obtained from Web of Science and Scopus. Result showed that most of the citing papers were in “Social Sciences,” 39% for Information Poverty Theory, 29.4% for Life in the Round Theory and 66.7% Normative Behavior Theory. The analysis also showed that for “Computer Science” (31.7% for Information Poverty Theory, 47.1% for Life in the Round, and 33.3% for Normative Behavior Theory) and “Medicine” (19.5% for Information Poverty Theory, 11.8% for Life in the Round Theory, and 33.3% for Normative Behavior Theory).

The issue of treating all citations equally was first addressed by Voos and Danger (1976) as cited in Ding et.al (2013). The authors analysed citations contained in an article based on its location within the Introductions covering the background of the study, Methodology, Discussions and Conclusions sections of an article. The results show among things, that the Introduction section contained more highly referenced articles than the other sections. A conclusion was drawn that citation should be based on both its frequency and its location within the article. An opinion of Herlach (1978) also contained in the article of Kumar and Sharma (2010) extended its own argument by contending that an article cited on the Introduction, Review of Related Works and later again in the Methodology and also in the Discussion section should be regarded as having contributed a greater impact to the citing article than others, which may have appeared once in the entire citing document frequently should the method used to determine a citation behaviour of the

citing article. Peritz (2013) differentiated between formal citations, which indicate the further name with one of the imprints (year of publication) and informal citations which bears the authors name. The author further studied the redundant patterns of citation in which a given author cites multiple articles simultaneous within a citation block to indicate a list of instances such as very similar situation, impact full source and the application and used of similar classic methods. Their analysis of 575 references in 30 articles of theoretic high-energy physics found that one third of the reference was redundant, one-seventh were negation and two-fifths were perfunctory.

In a related study by Snizek, Oehler, and Mullins (2010), who conducted textual and non-textual characteristics (for instance, number of uncommon words, number of references, figures and abstract readability) opined that citation content studies can take up to 15%-35% of the variation in citation frequencies. There is important need to note that these early studies on syntactic content-based citation analysis were mostly carried out manually on small size paper sets. However, Marvic, *et al.* (2008) carried out a citation content analysis based on the location of references in more than 350 papers. The results showed that the methods, result and discussion chapters contain more impactful and meaningful citation than the introduction and background chapter. In support of the above finding, Suppe (2018) indicated that article sections about methods, data and interpretations were very useful to the evaluation of inclusion of the new findings into the common knowledge pool or base of a discipline.

According to the review of related works, citation content analysis have their peculiar challenges and limitations, one of which is that contradictory results obtained are based on the subjective judgement of Scientometricians who in most times are not experts in the area understudy as stressed by Haleri & Moed (2013).

Another bottleneck is that a text may carry several citations while parts of the text may not be talking about a cited paper even if it contains a reference anchor to it and lastly, a citation that appears once in an article can have more than one function as opined by Erikson & Erlandson (2014).

Summarily, citation content analyses are conducted to ascertain the roles of in-text bibliographic content of a document, to determine the reasons and motives why citations are made. Many researchers used different indexes to study citations in bits or full-text documents. This current study employed citation content indexes such as citation functions, citation styles, and citation location of mentioning etc. to describe the citation contents in Master Degree Theses in Library and Information Technology.

Research Methodology

Citation content analysis codebook was complemented with summative content analysis method for the study. The summative analysis method enables a researcher to identify and quantify the existence of certain words, phrases, subjects or concept (indexes) and making qualitative inferences about the meaning and their Semantic relationship in the context of use (Hsieh, H. and Shannon, E., 2014) The summative citation content analysis method was used to determine and quantify the existence of citation content indexes of 30 copies Master Degree theses in Library and Information Technology. It was also used to determine and quantify the occurrence of citation content indexes in the theses.

Data collection was achieved through the use of Master Degree Theses Syntactic Analysis of Citation Content Worksheet (MD TSACCW) and Master Degree Theses Semantic Analysis of Citation Content Worksheet (MD TSACCW) by scanning and recording manually the frequency

of existence or occurrence of relevant data items on the worksheet. The data extracted was statistically analysed and the results presented using tables and frequency counts. Spearman rank correlation was used to test if there is a significant associative relationship between location of mentioning and citation function in Master degree theses in Library and Information Technology.

The spearman's rank correlation formula is this: $P = 1 - \frac{6\sum di^2}{n(n^2-1)}$.

Results and Discussions

RQ1: Location of Mentioning of citations in Master Degree Theses in Library and Information Technology

Table 1 presents the location of mentioning of citations in Master Degree theses in Library and Information Technology

Table 1: Location of Mentioning of citations in Master Degree Theses in Library and Information Technology

Abstracts	Nil
Introductions	587
Literature Reviews	3,045
Research Methodologies	125
Results and Discussions	314
Conclusions and recommendations	1
Total	4,072

A total of 4,072 citations were found in 30 copies of M. Tech theses in library and information technology produced between 2016 and 2019.

Table 1 reveals that none of the abstract section had any of citation. Out of 4,072 Citations, Introduction had 587 Citations, Literature Review produced 3045 Citations, Research Methodologies contained 125 Citations then Results and Discussions, Conclusions and Recommendations produce 314 and 1 Citations respectively.

RQ2: Styles of mentioning of citations in Master Degree Theses in Library and Information Technology

Table 2 shows styles of mentioning of citations in Master Degree theses in Library and Information Technology

Table 2: Styles of mentioning of citations in Master Degree Theses in Library and Information Technology

Styles of mentioning	Number of Citations
Specifically mentioning but interpreting	1,796
Direct quotation	1,549
Not specifically mentioning	435
Summarising	268
Paraphrasing	69
Block quotation	15

Plagiarising	Nil
Total	4,072

Table 2 indicated that not specifically mentioning produced 435 Citations, specifically mentioning but interpreting produced the highest frequency of 1,796, Direct Quotation produced the second to the highest with 1,549 Citations, Block Quotation had the lowest tally of Citations with 15 entries, Plagiarising produced no citation in the Style of Mentioning, while Summarising and Paraphrasing produced 208 and 69 Citations respectively.

RQ3: Frequency of Mentioning of citations in Master Degree Theses in Library and Information Technology

Table 3 presented the frequency of mentioning of citations in Master Degree theses in Library and Information Technology.

Table 3: Frequency of Mentioning in Master Degree Theses in Library and Information Technology

Frequency of Mentioning	Number of Citations
Once	1661
Two times	508
Three times	235
Four times	141
Five or more times	78
Total	2,623

Table 3 revealed that Authors mentioned just ‘Once’ produced 1,661 entries, authors mentioned Two times had 508 entries, authors mentioned Three times produced 235 entries, while authors mentioned Four times had 141 entries while Five times or more produced only 78 entries.

RQ4: Functions of Citation in Master Degree theses in Library and Information Technology

Table 4 showed the functions of citation in Master Degree theses in Library and Information Technology

Table 4: Functions of Citation in Master Degree in Library and Information Technology

Functions of Citations	Number of Citations
Provide Background information	586
Construct Theoretical framework	270
Construct Conceptual framework	2,333
Provide Methodology	124

Provide Previous experiment /empirical evidence	546
Provide Resources to support results and discussion	213
Describe Challenges	Nil
Total	4,072

Table 4 showed that out of the total of 4,072 citations in M. Tech Theses in Library and Information Technology, 586 Citations provided Background Information, 270 Citations were used to construct Theoretical Frameworks, 2,333 Citations contained Conceptual Frameworks, and 124 citations provided Methodologies. Furthermore, citations entries on Previous Experiment/Empirical evidence were 546, 213 citations supported Results and Discussions while none was used to describe Challenges.

Q5: Citation Motivation in Master Degree Theses in Library and Information Technology

Table 5 showed the citation motivation in Master Degree theses in Library and Information Technology

Table 5: Citation Motivation in Master Degree Theses in Library and Information Technology

Citation Motivation	Number of Citations
Interpretative	1,966
Affirmative	1,846
Negation	115
Contrastive	88
Comparative	57
Total	4,072

Table 5 indicated that most citations motivation of Master Degree researchers' were Interpretative and Affirmative which had 1,966 and 1,846 citations out of 4,072 Citations in Master Degree theses in Library and Information Technology. The Contrastive, Comparative and Negative Motives for citing had 88, 57, and 115 entries.

RQ6: Disposition of Citation in Master Degree Theses in Library and Information Technology

Table 6 presents the disposition of citation in Master Degree theses in Library and Information Technology.

Table 6: Disposition of Citation in Master Degree Theses in Library and Information Technology

Disposition of Citation	Number of Citations
Positive	3,708
Negative	250
Mixed	76
Neutral	38
Total	4,072

Table 6 shows that out of 4,072 citations in Master Degree theses, 3,708 were positive, 250 citations were negative, 76 Citations were Mixed while 38 citations were Neutral.

Hypothesis Testing

Locations of citation		Functions of citation	
Abstracts	0	Provide background information	586
Introduction	586	Construct Theoretical Framework	270
Literature Review	3,045	Construct Conceptual Framework	2,333
Research Methodology	125	Provide methodology	124
Results and Discussion	314	Provide previous experiments	546
Conclusion and Recommendation	1	Provide resources to support result	213
0	0	Describe challenges	0

Ho: There is no associative relationship between citation locations and citation functions in Master Degree theses in Library and Information Technology at Federal University of Technology, Minna. Using Spearman's Rank Correlation Equation, $P = 1 - \frac{6\sum di^2}{n(n^2-1)}$

Spearman's P is a non-parametric measure of rank correlation between two or more data items.

P = Spearman's rank correlation coefficient.

di = difference between two ranks of each observation.

n = Number of Observations

Location of Mentioning X	Functions of Citation y	R_x	R_y	d_i ($R_x - R_y$)	$\sum di^2$
0	586	6.5	2	4.5	20.25
587	270	2	4	-2	4
3,045	2,333	1	1	0	0
125	124	4	6	-2	4
314	546	3	3	0	0
1	213	5	5	0	0

0	0	6.5	7	-0.5	$\frac{0.25}{28.5}$
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Key: R_x = Rank of x R_y : Rank of y d_i : Difference in R_x and R_y

$$P = 1 - \frac{6(28.5)}{7(7^2-1)} = 1 - \frac{171}{336} = 0.4911$$

It can be deduced that the result is significant and produced weak hypothesis value. This means that there is an associative relationship between location of mentioning and citation function in Master Degree theses in Library and Information Technology. Therefore, the null hypothesis is rejected. From the result of the hypothesis testing which showed that there is an associative relationship between location of mentioning and citation functions in Master Degree theses in Library and Information Technology. In describing citation content analysis, location of mentioning is where citation is located and it is very related to citation functions, as citations location are categorised into sections such as Introduction, Literature Reviews to mention but a few, while citation functions means the roles citation plays on the body of the document. It clearly shows that, just like location of mentioning of citation, citation functions also provides background of the study, provide research methods as well as support previous research findings.

According to the positive value of the hypothesis testing it is deduced that there is an associative relationship between location of mentioning and citation functions in Master Degree theses in Library and Information Technology.

Findings and Discussion

The study discovered that on the styles of mentioning in Master Degree theses in Library and Information Technology, more citations were based on Specific mentioning and interpreting the submission of other related articles and directly quoting other articles towards building up literature. From the findings of this study, Master Degree theses had few block quotation styles while there was no citation attributed to plagiarism. Zhang, Ding and Milojevic (2012) accorded that a reference that is cited by a paper but it is not constantly cited text can be seen as less relevant than one that is discussed or cited in depth. Based on this, citation styles of mentioning such as not specifically mentioning, direct quotation, block quotation were applied to study the styles of mentioning in M-Tech theses in Library and Information Technology. Eclevia and Janio (2016) studied the citation styles of mentioning among Filipino faculty researchers and reported that 'Not specifically mentioning' produced the highest styles of mentioning among Filipino faculty members and researchers

The study revealed that on the frequency of mentioning authors mentioned 'Once' has the highest frequency of reference in Master Degree theses in Library and Information Technology. Having mentioning of 'Two times', 'Three times' and more showed that those references are considered to be more relevant than those mentioned 'Once'. Eclevia and Janio (2016) also reported higher number of citations being mentioned 'once'. Researchers are expected to review literature that have in depth knowledge related to issue to be solved at hand and whose article provided for other segment of research.

The function of citation in Master Degree theses in Library and Information Technology were extracted and the study discovered that more of the citations were used to define and support facts on the concept of the subject matter or the problem identified. Each segment of the research contain citation used to build up or support facts. It was discovered that citations were not made to describe

challenges in Master Degree theses in Library and Information Technology. This is very different from the investigation done by Eclevia and Janio (2016) on Filipino faculty members and researchers which reported that citations were made to describe challenges. Fewer citations provided background information, theoretical frameworks, and research methodologies.

Citation motivation of Master Degree researchers in Library and Information Technology were extracted and analysed to determine their citation behavior. The study indicated that researchers cite to interpret and affirm previous researches related to the subject matter. On the motivation to cite, it is the norm that researcher cite to always acknowledge related work, support their own argument and also make criticism where due. Citation motivations should not be based on non-scientific practices in which researchers cite authors because they have met them before or for the reason that they may have been taught by the authors they cite. Citation motivation could be spurred through comparing two articles and also totally rejecting the submission of others.

The findings further indicated that disposition of citations Master Degree researches were mostly positives which means interpreting support and upholding submissions of articles of interest to them. According to the findings, citations were made to negate the statements of others while a handful of citation were mixed and neutral towards citing. Eclevia and Janio (2016) reported that Filipino faculty members and researchers were mostly positive in their disposition of citation. Ding et al., (2013) used citation indexes such as disposition of citation to determine the value of publication and as well as guide novices on how to conduct researches.

Summary of Findings

Location of mentioning: The values of intent citations with regards to location of citation revealed that literature review segment of master degree research had the highest citation counts while the abstract segment produced no citation across the thesis analysed.

Styles of mentioning: Specifically mentioning but interpreting other previous statements by researchers produced the highest count in styles measurement. This means that researchers cite to interpret the opinion of other previous studies that are related to their current studies.

Frequency of mentioning: Single authors “once” had the highest frequency of mentioning while five and above authors produced the least frequency of mentioning.

Functions of citations: Citation function with regards to “conceptual framework” produced the highest count of citation, while no citation was used to describe “challenges and limits”.

Citation motivation: Citation motivation among masters degree researchers were predominantly to interpret previous studies related to their individual areas of interest and to buttress their assertions.

Disposition of citation: Master degree researchers were of positive opinion when citing other previous studies.

Conclusion

The motivation for citing or citation behaviour has not been studied in great details. Few studies have been carried out on the citation behavior of scholars and handlers of information resources across fields of studies occasionally with the objective to find out if these features are prone to change or have changed over a period of time. Studies on Citation behaviors covers disciplines by examining the authenticity and quality of references used and cited and what informs the ways and why scholars cite. Master Degree researchers in Library and Information Technology based their motivation to cite on the norms and theories behind citation. Though, most of these studies done

earlier provided some analysis usually through opinion sampling by the use of questionnaire, while this study adopted another method (worksheet) to determine the motivation behind and individuals' citation behaviour.

Recommendations

1. The study recommends that researchers should map out means of communicating and reporting scientific feat. It becomes easy to study and analyse citation content for their perceived relevance, reasons, functions, and usefulness within the body of discourse.
2. It is highly recommended that researchers understand the norms, values, and rationale behind citation. This will help one to properly have the knowledge of and reasons why people cite and where they cite. This will be of help towards attaining compliance to research standard and also do away with biasness when citing documents.

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