Chapter- 1
Introduction
CHAPTER - 1

INTRODUCTION

1.0 BACKGROUND OF THE STUDY

“Knowledge is power. Information is liberating. Education is the premise of progress, in every society, in every family” This famous quote by Kofi Annan clearly accentuates the importance of knowledge and information as the most important resources one can possess. Knowledge possesses the power to play a crucial role in survival of mankind and development of the society. It is only as the result of accumulation of knowledge that research and developmental work is persistently being carried out all over the world that has enabled our society to make advances in every known field of human knowledge ranging from science, engineering and technology to arts and social sciences.

The process of research has grown out to be more intricate and multifaceted than ever before in this knowledge based society. Emphasizing on the importance of research Neil Armstrong the first man to walk on the Moon had said “Research is creating new knowledge” and this new knowledge is generated through the research ventures of thousands of researchers all over the world who are engrossed determinedly round-the-clock in creating and communicating scholarly information and, hence the valuable contribution of researchers and their service in the development of the society is undeniable.

Research involves communication, cooperation and collaboration among the scholarly community, and web resources have provided the researchers with a convenient platform for easy communication, mutual cooperation and productive collaboration making them the most important part of modern day research environment. Since the researchers are engaged in the generation and consumption of information hence the web resources have become an inherent part of their work.

The scholarly community has very efficaciously utilized web and web resources as a significant channel to facilitate the flow of scholarly output between researchers and the outside world. The primary reason for web resources attaining such a significant position in current research scenario is the change from traditional research environment to currently prevailing e-research and virtual research
environments (VRE) characterized by profound use of information and communication technology (ICT). Intense intellectual use of Information and Communication Technology (ICT) has given birth to a number of web based information sources. Origin of one of the most important information source for scholarly communication ‘journals’ dates back to 1665, the first scholarly journal ‘Journal des Scavans’ was published on January 5th, 1665 in Paris (Brown, 1972) however, in the present time the journals have changed their form from print to electronic, since then there has never been a dearth of web resources, nowadays most of the quality scholarly research journals are available in electronic form.

With the application of ICT tools and services the number of web resources is ever increasing leading to the accumulation of a wide variety of web resources driven by the technological innovations. Although the web is flooded with information on any conceivable topic of importance on a variety of disciplines and subjects but not every bit of information presented on the web is credible or to be blindly trusted upon hence, evaluation of information on the web has become an essential part of any research and scholarly work. There is no denying the fact that currently the web resources are very competently serving the research community in carrying out their scholarly endeavours but there is a constant need to keep a check on researcher’s choices and their perspectives regarding the use of web resources taking into account the rapid technological advances. In order to plan and develop better and improved resources for catering to their research needs. Thus, it is necessary to delve into the current scenario regarding web resources use among the researchers, to explore the use of different types of web resources, to analyse the impact which the web resources have had on their research work and academic career besides, it is also imperative to address the problems and concerns of researcher’s regarding web resources usage for greater productivity and increased research output.

1.1 STATEMENT OF THE PROBLEM

A well defined statement of the problem is very important to clearly describe the nature and scope of the problem helping in the achievement of goals and objectives of the study. The problem selected for the present study is:

“Use of Web based Resources by Researchers of Universities in Delhi: A Comparative Study”
The problem has been selected by the investigator to provide a comprehensive analysis of various aspects related to the use of web resource. It will be significant in providing valuable perspective of both faculty members and research scholars regarding the use and impact of web resources on their academic tasks. The problem is chosen with the intention of contributing to the existing body of research as well as to encourage further studies of its kind for different user groups and institutions.

1.2 OPERATIONAL DEFINITIONS OF TERMS USED IN THE STATEMENT

The terms used in the statement of the problem have been defined below to enable the better understanding of the context and its usage.

1.2.1 Use

According to Merriam Webster dictionary (2013) ‘Use’ is defined as: “The act of using something; the state of being used; a way in which something is or can be used”.

Collins English Dictionary (2013) defines ‘Use’ as: “To put into service or action; employ for a given purpose; to make a practice or habit of employing; exercise”.

*Use* in terms of present of current study means judging the use of web based resources among the sample population.

1.2.2 Web based Resource

*Web based resources* are digital information sources that are stationed on the World Wide Web and can be accessed using an Internet connection. The concept of web based resource is used and defined in the present study as ‘*web resource*’ as it was found from the review of related literature that use of the term ‘*web resource*’ best explains the connotation of ‘*web based resource*’. Gangemi and Presutti (2006) defined web resource as “a resource that is made available on the World Wide Web, hence accessible through a web protocol”. The concept of “web resource” has been used interchangeably as e-resource, digital resource, and online resource in the related literature.
1.2.3. Researcher

Online Dictionary for Library and Information Science defines (ODLIS) ‘Researcher’ as: “A person who conducts a careful, systematic investigation of a subject, or inquiry in a field of study, to establish facts, reveal underlying principles, and determine the current state of knowledge”.

Shorter Oxford English dictionary: On historical principles defines ‘Researcher’ as: “A person who researches; someone studying or investigating a subject”

In the context of the present study the sample population consists of researchers which include faculty members and research scholars of the select universities.

1.2.4 University

According to Macmillan Dictionary a ‘University’ is defined as: “An educational institution where students study for degrees and where academic research is done”.

Shorter Oxford English dictionary: on historical principles defines “University” as: “An institution of higher education offering courses and research facilities in mainly non-vocational subjects and having acknowledged powers and privileges especially that of conferring degrees”.

The current study has selected under its scope the University of Delhi, Jamia Millia Islamia and Jawaharlal Nehru University for carrying out the research investigation.

1.2.5 Delhi

Encyclopaedia Britannica defines ‘Delhi’ as: “city and national capital territory, north-central India”.

According to Longman Dictionary of Contemporary English defines ‘Delhi’ “as a large city in northern India”.

Current study presents the result of research investigation conducted among the researchers in the Delhi.

1.2.6 Comparative Study

Oxford Advanced Learner’s Dictionary of Current English defines ‘comparative’ as “connected with studying things to find out how similar or different they are”.

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According to Collins English Dictionary & Thesaurus ‘study’ means to “investigate or examine, as by observation, research, etc”.

According to Longman Dictionary of Contemporary English ‘comparative study’ is defined as a study etc that involves comparing something to something else.

The current study presents a comparative analysis of use of web resources among the select universities.

1.3 OBJECTIVES OF THE STUDY

Clearly developed objectives are essential to attain the goals that are set for the study. Objectives serve as a significant tool in familiarizing the users about what the study wants to attain. The objectives formulated for the present study are as follows:

a) To explore the awareness and use of the web resources among the researchers of University of Delhi (DU), Jamia Millia Islamia (JMI) and Jawaharlal Nehru University (JNU).

b) To identify different purposes for which the web resources are used by the researchers of DU, JMI, and JNU.

c) To assess the frequency of using the web resources, and also to establish preferred location for accessing web resources among researchers in the select universities.

d) To examine the importance of different types of web resources for researcher’s academic and research tasks in the University of Delhi, Jawaharlal Nehru University and Jamia Millia Islamia, and to determine the various beneficial features of the web resources.

e) To identify and analyse the specific factors that hinder the use of web resources among the researchers of University of Delhi, Jawaharlal Nehru University and Jamia Millia Islamia.

f) To explore the various search and retrieval techniques adopted to locate the web resources, as well as to know about the amount of time spent while searching the web resources by the researchers in the select universities.

g) To identify the researcher’s preferred criteria for the evaluation of web resources in the University of Delhi, Jawaharlal Nehru University and Jamia Millia Islamia.
h) To ascertain the need for user training and, to know about the type of user training that the researchers would like to go through for better search and access of web resources in the University of Delhi, Jawaharlal Nehru University and Jamia Millia Islamia.

1.4 HYPOTHESES

A hypothesis is a tentative, declarative statement or an assumption which serves as starting point for further investigation. Busha and Harter (1980) envisioned hypothesis as an important intellectual instrument for research which serves as guide to the collection and analysis of research data. Thus, the importance of hypothesis formulation in research investigations cannot be denied. The hypotheses of the present study were formulated on the basis of review of related literature moreover, the findings of the previous studies, provided valuable clues and important insights for the development of the hypotheses. The hypotheses for the study are:

1.4.1 Hypothesis 1

H₀: There is no significant difference in the purpose of using web resources among the researchers of DU, JMI, and JNU.

H₁: There is significant difference in the purpose of using web resources among the researchers of DU, JMI, and JNU.

1.4.2 Hypothesis 2

H₀: There is no significant difference among the researchers of DU, JMI, and JNU in considering e-journals as the most important form of the web resources.

H₁: There is significant difference among the researchers of DU, JMI, and JNU in considering e-journals as the most important form of the web resources.

1.4.3 Hypothesis 3

H₀: There is no significant difference in the level of satisfaction with the use of web resources among the researchers of DU, JMI, and JNU.

H₁: There is significant difference in the level of satisfaction with the use of web resources among the researchers of DU, JMI, and JNU.
1.4.4 Hypothesis 4

H$_{0}$: Use of web resources has not positively impacted the research and scholarly work of the researchers in DU, JMI, and JNU.

$H_{a}$: Use of web resources has positively impacted the research and scholarly work of the researchers in DU, JMI, and JNU.

1.4.5 Hypothesis 5

H$_{0}$: Majority of the researchers from DU, JMI, and JNU do not consider user training helpful for better search and access of the web resources.

$H_{a}$: Majority of the researchers from DU, JMI, and JNU consider user training helpful for better search and access of the web resources.

1.5 SIGNIFICANCE OF THE STUDY

Researchers are in the possessions of circumstances and an environment to explore the unexplored and make significant contributions to human knowledge. It is only due to the dedicated efforts of the researchers all over the world that mankind has been able to make many groundbreaking discoveries, from life saving drugs to many technological innovations making our society a better place to live. In today’s modern age of global networking and information superhighway that supports e-research characterised by the use of newer research methodologies exploiting a gamut of advanced information and communication technology (ICT) capabilities and virtual research environments for collaboration among the e-research community that has made web resources the lifeline of researchers and scholars and its importance in current research environment is unequivocal.

Although the Web resources are very efficiently serving the purpose for which they are used by the research community but, as in today’s society science and technological advancements occur at a very rapid pace, and with these advances in the scientific knowledge the related technologies also become obsolete hence, the preferences of researchers and scholars also change in keeping up with the current research trends giving way for improvement in design and development of web resources to pertinently cater to the information needs of the researchers. Thus, it is indispensable to explore the current picture regarding the use of web resources among the researchers.
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The constant shifting of trend from print resources to web resources with its numerous advantages has provided the investigator an impetus to explore and present a valuable insight on different aspects related to the use of web resources. The current study seeks to investigate the use of web resources by researchers of universities in Delhi. The utilization of web resources as a valuable tool has bestowed researchers with modern ways and innovative techniques for conducting research.

The need for the study is quite apparent as the researchers constitute the core group of the user of web resources in universities. The study will be examining the acceptance of web resources among the researchers along with the perceived advantages, users’ satisfaction, impact that the web resources have on the respondent’s research and academic work and obstacles that come during the use of web resources. The study will be significantly helpful in providing a detailed, up-to-date picture and identifying major emerging trends about the scholarly use of web resources. The significance of the study can be summed up in the following points.

- Study will be helpful in designing of more pertinent web resources by critically analyzing the best used features and scrutinizing those that are less used.

- Study will be beneficial in enhancing the research and learning experience of researchers by presenting them with better designed web resources that can be developed as a result of the present study.

- Analyzing the use of web resources will help in analyzing the impact that the web resources have on the research community.

- Study will be valuable in identifying search and retrieval pattern of the researchers and in analyzing the relevance of various search techniques among the researchers so that accordingly appropriate tutorials and lectures can be designed on the basis of the research findings to make researchers familiar with various search techniques.

- Familiarizing the researchers about the searching techniques will save their valuable time and will also ensure maximum productivity, i.e. by getting access to precious information with less effort and wastage of time.
1.6 SCOPE OF THE STUDY

Use of web resources by universities is a global trend and the present study covers the use of web based resources among the researchers in universities of Delhi. The present study has included in its scope three central universities in Delhi Viz. University of Delhi (DU), Jamia Millia Islamia (JMI), and Jawaharlal Nehru University (JNU). The sample population for the present study comprise of the researchers (faculty members and research scholars) in the select universities in Delhi as they constitute the core users of the web resources in universities.

The study within its scope seeks to examine the use of web based resources among the sample population. It looks into the various aspects related to the use of web resources. The study analyses the various purposes for which the web resources are used by the scholarly community. Furthermore, the study presents a detailed analysis of the various feature possessed by the web resources to get an insight into the features that are rated higher and lower i.e. the features that the researchers consider more valuable and fruitful for their research work and also those features that are low on popularity. Analysis of the hindrances and problems in the use of web resources, search and retrieval pattern of the researchers have also been included in the scope of the study. Since, in modern times the use of web has been the greatest influence in every field of human knowledge and so the research and educational field is no exception, hence it becomes a necessity to examine the influence of web resources on researcher’s research and academic tasks.

The study has also included in its scope the evaluation of web resources as the evaluation of information is an integral part of any scholarly work, and a vital component of information search and retrieval. This makes it absolutely necessary for the researchers to have the necessary skills to be able to evaluate the information on the web. Appropriate training and guidance is a prerequisite for productive use of web resources therefore the study explores the issues related to the training and guidance in the use of web resources. In the conclusion the of the study some valuable suggestions derived from the analysis of data have been provided that will be helpful in improving the users experience with the use of web resources which in turn will ensure the productive use of web resources for research and scholarly work.
1.7 LIMITATIONS OF THE STUDY

Every research investigation has its limitations and this study is no exception. The limitations of the present study are presented below:

1. It was impossible to carry out a research covering all the universities in Delhi so the study has been limited to the Central Universities in Delhi to ensure an exhaustive and comprehensive study regarding the impacts of web resources on the researchers, so that the extent of use and the influence of web resources on researcher’s academic work can be efficiently judged and compared.

2. The present study has excluded Indira Gandhi National Open University (IGNOU) because of its Open and Distance Learning (ODL) mode.

3. The present study has excluded South Asian University (SAU) because at the time of survey it offered PhD program in very few subjects and the number of researchers were negligible as compared to the University of Delhi (DU), Jamia Millia Islamia (JMI), and Jawaharlal Nehru University (JNU) which are old and established universities in Delhi.

1.8 RESEARCH METHODOLOGY

Research methodology involves the methods used by the researcher to investigate a research problem. It is a collection of methods, procedure and techniques that are important in examining and solving the research problem.

Different types of research problems involve different types of methodologies to solve the research problem depending on the nature of the problem. “Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically” (Kothari, 2004). Busha and Harter (1980) envisioned methodology as the essence of scientific investigations according to them “The means, techniques, and frames of reference by which researchers approach and carry out inquiry are known as methodology”. Identifying the correct research methodology is instrumental in seeking and finding the valid answers to the research problem. Thus, the value of good research methodology cannot be denied in a research investigation.

There are different methods and procedures that are used by the researchers to collect data for the research such as, historical method, experimental method, case
study method and survey method. The present study is based on the survey method for carrying out the research. Survey method is a cost effective and time efficient way to acquiring primary data from the universe under the study. Survey research is the most commonly used method in educational research. It allows researcher to collect different types of information such as demographic, attitudinal, perspective, behavioural etc. about the sample population. Reddy, P.N and Acharyulu (2008) highlighted the importance of survey methods as: “It allows for standardization and uniformity both in the questions asked and in the method of approaching subjects, making it far easier to compare and contrast answer by respondent group. It also ensures higher reliability than some other techniques”.

A properly designed survey can very effectively collect reliable, accurate, and adequate information from the user group. To accomplish the purpose and objectives of the present study, survey method was adopted since survey method was considered most suitable for this study as it best served the nature of the current study. The questionnaire for the present study was designed, keeping in sight the objectives of the study for collecting the relevant information about the use of web resources. Busha and Harter (1980) believed that survey research is characterized by selection of random samples and obtaining the empirical knowledge of contemporary nature, as quoted by the authors “This knowledge allows generalizations to be made about characteristics, opinions, beliefs, attitudes and so on, of the entire population being studied. The methods of survey research allow investigators to gather information about the target populations without undertaking a complete enumeration”.

1.8.1 Literature Survey

Extensive review of literature is a pre-requisite for any research investigation. The purpose of literature survey is to explore the existing trends about the topic and also to inspect how the topic has been previously studied. Literature survey is helpful in identifying the areas that were left unexplored by the previous studies so that further researches carry forward the research work and add to the existing body of knowledge. A thorough review of literature was conducted by the investigator to get a clear picture of various aspects related to the use of web based resources. Related literature from both print and web based sources of information was consulted for the purpose of reviewing the literature.
1.8.2 Source of Data

Investigator made use of primary, secondary, and tertiary sources of information for collecting the relevant data for the study.

**Primary data**

As the present study is survey based, the relevant primary data about the various aspects related to the use of web based resources was obtained through the survey conducted among the research scholar and the faculty members of the select universities. In addition to this various primary sources of information like journal articles, annual reports, theses, and institute websites were also used for obtaining the required primary data.

**Secondary Data**

Various secondary sources of information such as dictionaries, books, abstracting, and indexing periodicals, directories both in print and electronic form were consulted as per the need of the study.

**Tertiary Data**

Tertiary source of data as a means to find out the relevant primary and secondary information related to the topic have been used. Tertiary source of data such as open access directories, repositories have been helpful in the study.

1.8.3 Data Collection Methods

Data Collection is a vital facet of any type of research investigation. Thus selecting the correct data collection tool is crucial for getting the valid results as inaccurate data collection methods might lead to invalid results. There are varieties of tools that are available for collecting data for research purpose. Different type of data collection tools can be used based on the type of research methodology used.

1.8.3.1 Questionnaire

The core component of a survey research is its questionnaire. A questionnaire is a research instrument consisting of a number of questions in order to collect and record information from the sample population under the study. A questionnaire should always be designed keeping in view the objectives of the research. Since, the questionnaire constitutes a crucial tool for the collection of data in survey research
hence its careful construction is of utmost importance for obtaining valid responses from the respondents. As it is through the questionnaire that the data is obtained which is then analyzed and the research findings are developed. The current study employed both print and online questionnaires for collecting the data. While the print questionnaires were administered personally to the respondents by the investigator the online questionnaire was designed using Google forms and emailed to the researchers. The detailed questionnaire administered among the researchers of DU, JMI and JNU has been appended as Appendix-A and copy of online questionnaire has been appended as Appendix-B.

a) Questionnaire Design

The questionnaire for the present study was designed to elicit responses to a variety of questions on the use of web resources. A thorough search and review of all the related literature was conducted by the investigator to attain a better understanding of the various facets relating to the present problem in order to prepare a questionnaire that corresponds to the objectives of the study and is able to convert the research objectives into significant questions. The questions were so framed that they were easy to answer and avoided any ambiguity or misunderstanding in order to secure a higher response rate. The wording of the questionnaire was kept simple in order to encourage respondents to complete the questionnaire with accuracy and ease. The required thought and consideration was taken in the preparation of questionnaire so that it addressed the aims and objectives of the present research. The questions were arranged into an effective and logical order so as to achieve the desired result.

The questionnaire designed for the present research included various parameters such as the awareness and use of web resources; purpose and frequency of using web resources; an analysis of the various features of the web resources; hindrances and problems faced by the users in the use of web resources; queries related to search and access of web resources; influence of web resources on researchers; evaluation of web resources and importance of training and guidance for the utilization of web resources.
The questions were divided into the following types depending on the need for the study:

i. **Dichotomous**: The respondent answers with a "Yes" or a "No".

ii. **Multiple Choice Questions**: A respondent has several options to choose from. Multiple choice questions involve both single-answer questions (questions allow only one answer to be chosen from the given options) and, multiple-answer questions (questions allow multiple answers to be chosen from the given options).

iii. **Scaled questions**: Scaled questions include such type of questions in which the responses are chosen from a range of values i.e. it involves choosing a number from a lowest possible number to a highest possible number.

iv. **Matrix Questions**: Identical response categories are assigned to multiple questions. The questions are placed one under the other, forming a matrix with
response categories along the top and a list of questions down the side. Matrix questions are very helpful in collecting large amount of data in a single question.

b) Pilot study

Pilot study is an important element of a good research design. It is a trial study which is carried out before the main study to check the feasibility and reliability of the research tool. Pilot study for the present study was conducted with the purpose of getting respondents opinion on the questionnaire and also to rule out the presence of ambiguities and doubts so as to get clear and accurate responses. Pilot study was conducted among the researchers of the select universities in November, 2014. Pilot study provided the investigator with valuable suggestions and ideas. On the basis of the suggestions and feedback received from the respondents the necessary adjustment and modifications to the questionnaire was made. Some of the questions were redrafted while, some others were added and the irrelevant questions were removed.

c) Sample Selection

Sampling is the process of selecting units or subset from the population of interest so that the research findings may be generalized back to the population from which the samples were chosen. According to Merriam Webster dictionary sample is “a group of people or things that are taken from a larger group and studied, tested, or questioned to get information”. The accuracy of research findings principally depends on the way the sample population for the study is selected. Hence the sample population should be selected in a manner that it truly represents the population from which the samples were derived. The present study was conducted among the researchers i.e. the research scholars and the faculty members of the three central universities of Delhi. The universe of population was divided into two groups on the basis of their academic status, viz. research scholars and faculty members. Quota sampling was then used for data collection. Questionnaires were distributed among the sample population within each group of the respondents through convenience sampling until each quota was filled for the required number of respondents. The researcher selected a sample of population of 457, 252 and 494 out of total population of 4571, 2523 and 4941 researchers respectively from the select universities under the
study i.e. University of Delhi (DU), Jamia Millia Islamia (JMI), and Jawaharlal Nehru University (JNU).

d) Administration of questionnaire

The investigator visited the universities under the study namely University of Delhi (DU), Jamia Millia Islamia (JMI), and Jawaharlal Nehru University (JNU) and questionnaires were administered personally among the research scholars and faculty members of the select universities. The investigator distributed the questionnaire to the respondents by personally meeting them at various places such as chambers of the faculty members, libraries, departments of various faculties, departmental labs and other places within the university campus during the period of the study (February-May, 2015). In addition to personally administering the questionnaires to the respondents a number of online questionnaires were mailed to the faculty members of DU, JMI and JNU for this purpose the investigator obtained the email address of the faculty members from the websites of the universities.

Online questionnaire proved to be useful in getting responses from the faculty members as they were unable to fill the questionnaire on the spot due to time constraints and requested for an online questionnaire to be sent to them which they could fill later according to their ease.

Table 1.1: Sample distribution

<table>
<thead>
<tr>
<th>Categories</th>
<th>DU</th>
<th>JMI</th>
<th>JNU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FM</td>
<td>RS</td>
<td>Total</td>
</tr>
<tr>
<td>Questionnaire administered</td>
<td>125</td>
<td>485</td>
<td>610</td>
</tr>
<tr>
<td>Questionnaire received</td>
<td>79</td>
<td>411</td>
<td>490</td>
</tr>
<tr>
<td>Questionnaire analysed</td>
<td>74</td>
<td>383</td>
<td>457</td>
</tr>
</tbody>
</table>

(Figures within parenthesis represent percentage)

A total of 610, 360, 645 questionnaires (including print and online) were distributed among the researchers of DU, JMI, JNU respectively. Out of the total administered questionnaire, a total of 490, 274 and 557 questionnaire were received back from DU, JMI, and JNU respectively. Finally, after screening and rejecting the incomplete questionnaire a total of 457, 252, and 494 completely filled in questionnaires were selected and used for the data analysis.
The response rate of the researchers from DU, JMI, and JNU was found to be 74.92 percent, 70.00 percent, and 76.59 percent respectively.

1.9 DATA ANALYSIS AND INTERPRETATION

Data analysis is the process of collecting, reviewing, and analyzing the data obtained from various sources to reach to a conclusion. According to Investor Words glossary ‘data analysis’ is “The process of extracting, compiling, and modeling raw data for purposes of obtaining constructive information that can be applied to formulating conclusions, predicting outcomes or supporting decisions in business, scientific and social science settings”.

The data collected from the researchers of DU, JMI, and JNU was organized, tabulated, analyzed, interpreted, and compared in the light of objectives set for the study using tables, percentages and statistical test (One way ANOVA). The data was analyzed using MS Excel and statistical package for social sciences (SPSS). Based on the analysis and interpretation of data findings, suggestions and conclusions were derived.

1.10 STANDARD USED FOR BIBLIOGRAPHIC REFERENCES

American Psychological Association Formatting and Style Guide (APA, 6th ed., 2009) format has been followed to provide the bibliographic references. Some examples for citing references in text and in reference list or bibliography are given as under.

1.10.1 In-Text Citations

a) A work by single author

Rieh (2002) considered making judgments of information quality and authority a difficult task owing to the overall dearth of quality control mechanism on web.

Growing importance of digital information in our lives, has guided researchers to study information access, utilization and evaluation (Eastin, 2008).

b) A work by multiple authors

Web resources possess hyperlinks which sometimes turn out to be dead or broken and needs to be evaluated. (Grimes & Boening, 2001)
Metzar, Flanagin and Zwarun (2003) expressed concern over the potentially dubious nature of information on the web. 1.10.2 Reference List

Books


Journal Article (print)


Journal Article (online)


Journal Article (online with DOI Assigned)


Dictionary (online)


Dictionary (Print)


1.11 CHAPTERIZATION

The entire research work runs into five chapters. A brief outline of each chapter is given below:

Chapter-1 Introduction

The chapter provides the outline and nature of research study undertaken. The chapter presents the background behind the current study. The chapter explains the
importance of web resources to researchers in carrying out research and scholarly works furthermore, explaining the statement of the problem, definitions, objectives, significance of the study, scope and limitation of the study. The research methodology adopted in conducting the study is also explained in detail.

**Chapter-2 Review of Related Literature**

The Review of related literature involves the systematic identification, location, and analysis of documents containing information related to the research problem. Chapter 2 is enriched with an exhaustive and comprehensive literature review of all the related literature. It highlights the research work taking place worldwide. For this purpose a variety of documents such as electronic journals, print journals, books, reports, seminar and conference proceedings were consulted.

**Chapter -3 Introduction to Web Resources**

The chapter presents an insight into the origin of the web resources explaining the concept of web resources along with the definitions. The chapter also highlights the significance of web resources in research and learning, explaining the influence of web resources on researchers. Moreover, the advantages and various types of web resources are also explained.

**Chapter-4 Evaluation of Web Resources**

The chapter highlights the need for the evaluation of web resources. It also reviews the various established criteria that have been formulated and presented by various scholars over a period of time for the evaluation of information and suggests the criteria that should be considered for the proper and productive utilization of the web resources.

**Chapter-5 Data Analysis and Interpretation**

This chapter deals with the analysis and interpretation of data. The chapter analyses the collected data and proposes findings based on the interpretation of the data collected from the respondents which comprised of the researchers of the select universities. The collected data has been tabulated and interpreted by means of statistical tools and techniques.
Chapter -6 Findings and Conclusion

This chapter presents the major findings of the study on the basis of analysis and interpretation of data. On the basis of findings derived from the study some suggestions have been provided. In addition, areas for future research have also been provided.

1.13 Bibliography and Appendices

List of bibliography and appendices have been provided in the last part of the thesis. Appendix-A contains print version of the questionnaire administered to the researchers and copy of online questionnaire has been appended as Appendix-B. Data tables have been appended as Appendix-C (C1 to C9). The profiles of universities under the study have been attached as Appendix-D.
References


