CHAPTER NO – 1
FUNDAMENTALS OF RESEARCH METHODOLOGY

Introduction

‘Research’ is in fact re-search of facts and information in order to find out the truth. The literal meanings of research are:

“Detailed and careful investigation into some subject or area of study with the aim of discovering and applying new facts or information”

(Chambers Dictionary 21st Century)

A researcher applies scientific method to investigate a phenomenon. The basis of scientific method is to develop a hypothesis about the impending problem, collect the data and conduct experiments, in the light of these experiments draw findings and conclusion about the problem and suggest the course of action. The scientific method differs from knowledge derived from myths, intuitions, beliefs or common sense. The scientific method relies on empirical verification. Similarly, a researcher, by applying scientific methods, identifies the problem, develops hypothesis or research questions, collects the data, apply various instruments, examine the data, draws findings, make conclusions and finally gives recommendations. It is the most rational approach to handle problems. It helps the planners to arrive at correct decisions, reducing the risk of over-simplications or pitfalls in decision making.

Organizations which conduct research studies before formulating a new strategy can always reduce the risks and uncertainties in implementation process. Research study can also give food for thought to the new researchers. From educational perspective, a research study can enhance the critical and analytical thinking of the students. In today’s competitive world, we cannot contemplate a healthy organization which does not provide for research facilities. Thus, National Defence University is the highest forum of learning for fostering an environment, where the individuals should imbibe the spirit of inquisitiveness.
Formulation of Hypothesis

A hypothesis is a tentative explanation for certain behaviors, phenomena, or events that have occurred or will occur. A hypothesis states the researcher’s expectations concerning the relationship between the variables in the research problem; a hypothesis is the most specific statement of a problem. The researcher does not then set out to “prove” his or her hypothesis, but rather collects data that either support the hypothesis or do not support it. Hypotheses are essential to all qualitative and quantitative research studies with the possible exception of some descriptive studies whose purpose is to answer certain specific questions. The hypothesis is formulated following the review of related literature and prior to the execution of the study. It logically follows the review since it is based on the implications of previous research.

Statement of the Problem

A statement of the problem is invariably the first component of the introduction section of both a research plan and a research report on a completed study. Since the problem statement gives direction to the rest of the plan or report, it should be stated as soon as possible. The statement of the problem should be accompanied by a presentation of the background of the problem, including a justification for the study in terms of the significance of the problem. Background of the problem means information required for an understanding of the problem. The problem should be justified in terms of its contribution to educational theory or practice.

Data Collection, Tools and Techniques

Sources of data are referred to as primary or secondary. Primary sources constitute firsthand knowledge, such as eyewitness reports and original documents; secondary sources constitute secondhand information, such as a description of an event by other than any eyewitness. Primary data are the data that researcher generates; they can be considered to be specific to the research project at hand. An example is the collective responses to the questions in a
questionnaire (also called a survey instrument) that are acquired from a sample of voters. If you interview someone who witnessed an accident, that someone is a primary source; if you interview someone who did not witness an accident, but someone heard an account of what happened from someone else is a secondary source.

Secondary data, on the other hand, are data that were collected by someone else for different purposes. Examples include published economic or demographic statistics. Typically, secondary data are cheaper and quicker to gather. When gathering secondary data, remember that every source of information used must be identified in the paper. This means including a complete bibliographic citation, including page numbers for actual quotes you include in your paper.

**Steps in the Research Process**

Social research proceeds in a sequence of steps, although various approaches to research suggest slightly different steps. Most studies follow the seven steps discussed here. To begin the process, you select a topic - a general area of study or issue, such as domestic abuse, homelessness, or powerful corporate elites. A topic is too broad for conducting a study. This makes the next step crucial. You must then narrow down the topic, or focus the topic into a specific research question for a study (e.g, “Are people who marry younger more likely to engage in physical abuse of a spouse under conditions of high stress than those who marry older?”). As you learn about a topic and narrow the focus, you should review past research, or the literature, on a topic or question. You also want to develop a possible answer, or hypothesis, and theory can be important at this stage.

After specifying a research question, you have to develop a highly detailed plan on how you will carry out the study. This third step requires that you decide on the many practical details of doing the research (e.g, whether to use a survey or qualitative observing in the field, how many subjects to use, etc.). It is only after completing the design stage that you are ready to gather the data or evidence (e.g,
ask people the questions, record answers, etc). Once you have very carefully collected the data, your next step is to manipulate or analyze the data. This will help you see any pattern in it and help you to give meaning to or interpret the data (e.g., “People who marry young and grew up in families with abuse have higher rates of physical domestic abuse than those with different family histories”). Finally, you must inform others by writing a report that describes the study’s background, how you conducted it, and what you discovered.

The seven-step process shown in figure 1.1 is oversimplified. In practice, you will rarely complete one step totally then leave it behind to move to the next step. Rather, the process is interactive in which the steps blend into each other. What you do in a later step may stimulate you to reconsider and slightly adjust your thinking in a previous one. The process is not strictly linear and may flow back and forth before reaching an end. The seven steps are for one research project; it is one cycle of going through the steps in a single study on a specific topic.

![Figure 1.1 Steps in the Research Process](image-url)
Science is an ongoing enterprise that builds on prior research and builds a larger, collectively created body of knowledge. Any one study is a small part of the much larger whole of science. A single researcher may be working on multiple research projects at one, or several researchers may collaborate on one project. Likewise, one project may result in one scholarly article or several, and sometimes several smaller projects are reported in a single article.

**Research Designs**

A research design is a plan for a piece of research. In many ways, the design stage is the single most important component of any research project. The general goal of a research design is to anticipate and find solutions for every problem that could arise when actually doing the research. A good research design includes the answers to following three questions.

- What are you going to study?
- Why are you going to study this?
- How are you going to do the study?

In order to see how social scientists develop answers to these questions, we need first to consider the roles of concepts, generalizations, and theories of research.

**Approaches to Inquiry: Quantitative versus Qualitative**

In the case of empirical research, approaches normally fall into one of two categories or 'paradigms': quantitative and qualitative. The approach you adopt will depend partly on the academic discipline within which you are working and partly on the nature of your particular research project and the research questions you are attempting to answer.

A quantitative study is one in which the data you collect and analyse involves the accurate measurement of phenomena and, often, the application of statistical analysis. It is essentially concerned with numbers and anything that is quantifiable (or measurable) and as such uses methods such as psycho-metrics,
statistical modelling techniques, datasets and services, experimental design and statistical computing and methodology.

A qualitative approach, on the other hand, involves the collection of information and its analysis rather than the application of quantitative methods. As such it is less concerned with numbers and accurate measurement and more concerned with the depth of data. It will typically involve the collection of data via interviews, focus groups, participant observation, oral history and so on.

Ultimately, however, it is the 'problem' you are attempting to address in your research and the associated hypotheses you have constructed that will largely determine - even dictate - the type of methodological approach you adopt. In other words, during the process of reaching a decision about this crucial aspect of your project, you will need to ask yourself questions such as:

- What is the nature of the problem and what are my research questions?
  How can I express these as hypotheses?
- Which methodology (quantitative or qualitative) will best allow me to solve or shed light on this problem and address my research questions?
  Which will provide me with an effective tool for obtaining accurate and valid data and, where applicable, for testing my hypotheses?

Other more detailed methodological questions you will need to consider while planning your research include:

- What difficulties do I anticipate in carrying out my research?
- Which methods are most suited to and most commonly adopted in the kind of research I am undertaking?
- Which methods are the most reliable and promise to provide me with the kind of data I require?
- Which methods can work best in combination by acting as mutual checks and providing the most comprehensive coverage of the area/phenomenon under investigation?
Which methods are most practical if I need to collect my data within a limited time frame?

Which methods are going to subject me to the most/fewest constraints?

Which methods are likely to require replication?

Which methods are/are not ethically acceptable or could be considered 'grey areas'?

**Historical Research**

Historical research involves studying, understanding, and explaining past events. The purpose of historical research is to arrive at conclusions concerning causes, effects, or trends of past occurrences that may help to explain present events and anticipate future events. Historical research studies do not typically gather data by administering instruments to individual. They must seek out data that are already available. A major problem with much historical research is an excess of secondary sources, and scarcity of the primary sources.

**Methodology**

The methodology section of a research work describes how you conducted your study and the methods you used to collect and analyse the data. The term 'methodology' refers to the general approach taken to the research process, while 'methods' refers more specifically to the various ways in which data is collected and analyzed. Regardless of the field in which you are conducting your research, the overall aim of the methodology section is the same: to provide the reader with an overview of the methods employed so that a judgment can be made as to how appropriate they are given the objectives of the research, and how valid the data is that they have generated. You should discuss the details of individual methods and their suitability for your particular research with your supervisor.

The methodology you choose to use will serve as the underpinnings for your entire study, so your selection of the most suitable methodology is crucial. If you make bad choices at this early stage, they will have a ripple effect throughout
your research, weakening its integrity and leading to questionable findings. Remember: your research is only as valid (and therefore valuable) as the methodology upon which it is based. Of course, there are many other factors that can affect the overall validity of your research - for example, how effectively you apply your methodology and how logical the deductions are that you make from your data; nevertheless, a study that is sound at the conceptual level is of primary importance. Implementing a poorly conceived study is like building a house on sand rather than on a firm foundation: it will never be secure and will eventually fail and collapse, and all the time and effort put into constructing it will be wasted.

In this section, then, you should present your methodology and rationale accurately and completely, but also as concisely as possible. You should also mention those methodological tools you considered but did not employ (particularly if they were used in related studies) and give the reason(s) why you decided not to use them in your particular study.
CHAPTER - 2
ORGANIZING AND WRITING THE THESIS

Introduction

Once research data have been collected, tabulated, and analyzed, the researcher must then organize the information and choose a structure for presenting the findings of the study and his or her conclusions. There are may different ways to do this. One way is to use a chronological organization. A second approach is to use one that goes from the general to the specific, or from the specific to the general. The researcher could use the points in the definition of the study question or the research hypothesis as a discussion structure. This could mean starting a paragraph with a point or a hypothesis, then using material from the literature to show how the point is applied in practice.

It is recommended that the researcher avoid jumping around from one point to another with no underlying plan. Remember: A fundamental goal of your writing is that it be read. For that to happen, it must be interesting and readable. This requires adopting a structure and sticking to it.

Structuring the Research Studies

The key step in organizing and presenting ideas in social science research work is to select a point of view. This involves deciding how you will structure the study so that the ideas flow smoothly from section to section. The chances of the study being read can often be improved by following a simple, standard structure and by using a writing style consistent with the writing in that field of study. Later, if the researcher tries to publish the research work, the format must meet the specific structure and style requirements of the selected journal. For now, researchers should concentrate on meeting as many of the requirements as possible.
Points of View for Research Studies

Different disciplines in the social and administrative sciences and the humanities often recommend a variety of ways to structure or organize the research work. A valuable overview of some of the different directions or points of view that researchers can take when planning and writing reports of their findings has been suggested by Sorrels (1984), who lists these seven different points of view (or "patterns") that are often chosen:

- The indirect pattern, which moves from factual parts to a general conclusion.
- The direct from, which reverse this order. With this form you move from a general conclusion to the facts that support it.
- A chronological pattern. In this organization form you take the reader through an order of events, such as a sequence of dates.
- A spatial pattern. An example of this method is a paper that moves the reader from one department or location to others in a logical sequence.
- An analytical organization, in which the whole is separated into its parts, with each part addressed completely before moving on to the next part.
- A comparative pattern. As the name implies, parts of a whole are compared point by point.
- A ranked method, where portions' of the paper are presented in the order of their importance or impact; the importance may be in ascending or descending order.

Components of a Research Studies

A dissertation or thesis will typically contain the following sections in the order they are listed:

- Preliminary section: Title page
  Abstract
  Acknowledgements
List of contents
List of tables, figures and illustrations

• Body of the work: Introduction
  Literature review
  Main body / descriptive section
  Findings / Analysis
  Conclusion and Recommendations

• Supporting section: Bibliography
  Appendices

Each of these sections will now be discussed in more details.

PRELIMINARY SECTION

Title Page

The title page of a research report /papers / thesis should not be numbered. The page of all other preliminary sections, however should be numbered using Roman numerals, with the page immediately following the title page being numbered as ‘i, ii, iii’….. The page of the main body of the text are normally numbered with numerals (1, 2, 3 …).

Abstract

Your abstract should be a summary of the essential elements of your research project. It should serve as an overview, providing the reader with a good indication of what he or she will find in the pages that follow. This is important because the abstract is the most read part of any research work, for it is frequently on the basis of the abstract that people decide whether or not the report is relevant to their own research (or other) interests and therefore worth reading. Typically, abstracts are between 250 and 300 words in length and should not go beyond one side of A4. An abstract will normally include:

• A statement of the main question or problem (i.e. the purpose of the research);
• The methods (s) used to address it;
• The results obtained;
• The conclusions reached.

Acknowledgments

The acknowledgments section is where you as the researcher and writer of the report thank those individuals and institutions that have assisted with or contributed to your research in some way. This may be through the provision of funding, facilities, services or data, or less directly via discussion and consultation, advice, motivation, and simply empathy and friendship during what can be a challenging time in your academic career. The one person who will almost certainly feature in the acknowledgments is your supervisor! It is considered a matter of courtesy to recognize these people and institutions........and to spell their names correctly!

List of Contents

It is important that your list of contents is detailed and reflects accurately the structure of the study. It should be arranged according to chapter/section numbers, incorporating all headings and sub-headings as they appear in the text, along with the page numbers on which they start. In order to indicate the status of different sections of the text, it is common practice to use a decimal numbering system.

List of Tables, Figures and Illustrations

Tables, figures and illustrations are normally numbered consecutively throughout the research report and completely independently of the decimal 'Figure 1, Figure 2, Figure 3' pattern, regardless of where they appear in the report. In the list of contents, however, it is important to indicate the page number on which each table, figure or illustration appears.
List of Acronyms and Abbreviations

It is quite common to find a list of acronyms and abbreviations at the start of a research work, usually following the List of Contents. Not surprisingly, researchers will typically draw on many written sources during the course of their projects and will consequently find it necessary to make reference to these in their writing. For the sake of convenience, rather than repeatedly writing out in full the names of source materials it is quicker and easier to refer to those materials using shortened forms - acronyms and abbreviations. The meaning of each acronym and abbreviation should be made clear after its first mention in the main text of the report. This allows for quick and easy reference on the part of the reader.

BODY OF THE WORK

Introduction

Here we will look more specifically at what an introduction to a research work needs to achieve, and therefore what elements it will typically include. These are as follows:

- The motivation for your research: you need to explain why you decided to embark on your research project. Your motivation could be an observation you have made directly during the course of your professional life, a 'knowledge gap' which you have noticed in the literature of your subject, or some other source of inspiration. The introduction, then, is that part of the work where you indicate the provenance of your research, put it in perspective and set-the scene for what is to come in the pages that follow.

- The nature of the investigation: this is where you should define clearly the research questions you intend to address in your investigation, the key constructs underpinning time, the variables that will be influential in your investigation.
- A brief description of how you approached your research questions: this component should be a concise account of how you carried out your investigation. It should serve as a preface to the main Methodology.

**Literature Review**

The literature review typically follows the introduction to your research report and its importance cannot be overestimated. It is where you present, in summary form, other work (books, articles, documents etc.) the content of which relates in some way to your own research. The purpose of the review is:

- To show where your study fits into the broader scheme of things; how it connects with the existing body of knowledge on the subject or on other related issues. In doing so, it also shows how your own research is original and promises to contribute to that pool of knowledge. In other words, along with the introduction, it helps to contextualize or 'position' your research by placing it within a broader framework. This also helps you to avoid reinventing the wheel by needlessly repeating the work (and mistakes) of others.

- To help you locate information that may be relevant to your own research.

- To increase and display your knowledge of the subject - to the examiners in particular - and to convince them and your peers of the need, relevance and importance of your research and the suitability of the methodology you have adopted. Presenting what has been researched and written on a subject is one way of showing what needs to be done. It can do this by indicating the inadequacies of previous studies, by building on the findings of previous studies by taking them a step further, by highlighting an area of inquiry as yet unaddressed or unrecognized, or simply by taking a completely different approach to a subject or problem. In doing so, it shows the significance and value of your own research.
➢ To identify seminal (key, influential) works in your area of study.
➢ To identify methods, approaches and techniques that could be relevant to your own research.
➢ To familiarize yourself with different and/or opposing views and to demonstrate your ability to critique and evaluate the work of other scholars.

**Main Body/ Descriptive Section**

Main body is usually divided into chapters. Each chapter in turn, may be divided into sub chapters or sections. Here, the important thing to note is that the arguments of the author must be presented in as logical a sequence as possible, and the research is developed accordingly.

**Finding / Analysis**

Once readers have been told what was researched and how it was done, it is time to tell them what the research revealed – what it accomplished. Sometimes this section is called the discussion section; or it is labeled simple results or findings. Whichever, this is where readers are shown the results of the effort; in the process, it explains the reasons for conducting the research in the first place.

This information must be presented clearly, factually and simply. It is not the place for the researcher to introduce opinions or reactions. This means that conclusions, judgments, or evaluations of the information should not be interjected into this action of the report. The job of the author is simply to explaining what the data reveal; nothing more.

Do not “editorialize” about the data in this section. Remain cool and objective; simply “tell it like it is”. Avoid negative opinions. Let your readers make their own evaluations and conclusion; never tell them how to think.

This is the section of your research work where you comment on the results you have obtained from your investigations and asses their significance in light of your objectives, stated hypotheses and the state of eh debate in the field as discussed in your literature review. This is a key section because (hopefully) it
constitutes the return on careful investment made in a lucid and revealing discussion of the literature earlier on, and in a sound research methodology.

**Conclusion and Recommendations**

This section is the final one of the text and states the author’s conclusions and recommendations, if any. The author may wish to qualify his findings by citing instances of incomplete or unverified data. The limiting remarks should precede the statement of the author’s conclusions. Moreover, the author may use the final chapter to indicate additional problems uncovered as a result of his investigation, problems requiring research beyond the scope of the study reported. The author is cautioned to avoid introduction of factual or analytical evidence, not already presented in the main body of the paper.

**Appendix or Appendices**

The appendix is the last component of a research work. The appendix is where to place any attachments that might relate to the study but that cannot or should not be placed in the body of the work itself. Any material that you feel would interrupt the flow of the main text and act as a distraction from your main arguments, thereby making their comprehension more difficult, should be put into one or more appendices. Material that typically appears in appendices includes lists, questionnaires, documents, tables, glossaries and so on. The reader can then be directed to the appendices at the appropriate point in the dissertation/thesis:

There are no limits to what can or what should be included in the appendices. More than one appendix may be labeled chronologically as follows: Appendix A, Appendix B, Appendix C, etc.
CHAPTER – 3
CITATION METHODS

Citation

This is where the researcher identifies all sources of information used in the conduct of the research project and preparation of the thesis. Typically, there are two parts to this section; an alphabetically listed compilation of all sources cited, studies, or examined during the study. The first part of this section is known as the notes or sources cited section and can be presented in the research work as endnotes, footnote, or in-text citations.

The second part is the references or bibliography section; it contains complete bibliographic information about all sources used in the study. Many different bibliographic styles are used in research writing. It is usually best to follow the style used by the most influential writers in research writing.

Writers may use footnotes, endnotes, or in-text citations to inform readers of the location of their information sources. “Location” information is needed for others to either replicate the study or test for flaws. However authors can not use the work of others as their own. Doing so is plagiarism, and plagiarism is theft. The practice is unethical, immoral, and in most cases, illegal. At some universities and colleges, students can be expelled for plagiarism or their research work might be rejected.

Footnotes

A footnote is a bibliographic reference indicated by a number in the text. The complete citation is then placed at the bottom (“foot”) of the same page. A footnote provides necessary information at a specific point (on the same page) in the text of the paper, whereas the bibliography is a compilation of all the reference sources used throughout the paper.
Endnotes

An endnote is a bibliographic reference indicated by number in the text. The complete citation is then placed at the end of the paper on a separate page labeled “Endnotes”. An endnote is identical in form to a footnote, except that the full citation is placed at the end of the paper rather than at the bottom of the page.

Bibliography

A bibliography is a complete list of references to the work you have consulted during the course of your research. A comprehensive and well laid out bibliography will be an important factor in how positively your work is evaluated by your peers, examiners etc. It shows that you are familiar with academic formatting conventions. A good bibliography will

- Indicate that you have consulted others' work and are aware of the debate, arguments and practices in your field, particularly as they relate to the subject of your own research;
- Add weight and credibility to your statements;
- Enable others to check the accuracy of your information and interpretations;
- Direct others to works you have found useful and to related publications;
- Acknowledge other people's work and ideas (see 'Plagiarism', above);
- Enable you and your readers to review the sources of your information;
Footnotes or Endnotes:

Whenever you include information in your paper from another source, you must give credit to that source. The Chicago Manual of Style (CMS) format uses reference citations that appear in three places: 1) in superscript numbers next to each quoted or paraphrased sentence, 2) either at the end of the paper (endnotes) or at the bottom of the passage (footnotes), and 3) in the bibliography at the end of the paper. Sources referenced in an endnote or footnotes are also included in the bibliography at the end of the paper. This format uses a raised (superscript) numeral in consecutive order at the end of every sentence where you quoted or paraphrased a source.

Book with one author:

Give the following information for a book:

Author's first name and last name in regular name order, Title: Subtitle (if any) (Place of publication: Name of publishing agency, year of publication), page number(s) of the specific citation.

Note Example:

Dee Brown, Bury My Heart at Wounded Knee: An Indian History of the American West (Toronto: Bantam Books, 1970), 249.

Bibliography Example:


Book with more than one author:

If there is more than one author, in the bibliography, use regular name order (first name first) for all except the first author. Two authors' names are connected with and. Three or more authors' names are separated by commas, with
and before the last author. (See the examples for an article in a scholarly journal.) If there are four or more authors, in the footnote or endnote, you may write just the first author's name and "et al."

**Note Example:**


**Bibliography Example:**


**Article or chapter in a book:**

A preface, foreword, introduction, chapter, appendix or similar part of a book begins with the name of the author of the specific part followed by its title in quotation marks. The author or editor of the whole book is given only if different from the author of the part.

Author's first and last names in regular name order, "Title of Chapter," in *Title of Book*, ed. Editor's first and last names in regular name order (Place of publication: Name of publishing agency, year of publication), page number(s) of the specific citation.

**Note Example:**


**Bibliography Example:**

Give the pages of the whole chapter after the editor's name.

Pamphlet:
If the work bears a publisher's imprint, it should be treated as published. Treat a published pamphlet as a book. Titles of unpublished material are put in quotation marks. Pamphlets do not have to be listed in the bibliography.

Article in an encyclopedia:
Omit the names of the authors, editors, and most publishing information. No page number is given when a work is arranged alphabetically; instead, the item referenced is named, and the abbreviation s.v. (sub verbo “under the word”) is used.

Title of Text, ed., s.v. “Title of Article.”

Note Example:

Bibliography Example:
Familiar reference works are not listed in the bibliography.

Article in a magazine:
Author’s name, “Title of Article,” Title of Publication, Date, page numbers.

Note Example:

Bibliography Example:

Article in a scholarly journal:
Author’s Name, “Title of Article,” Title of Publication, volume number (Date): page.

Note Example:
Bibliography Example:


Article in a newspaper:

Author’s Name, “Title of Article,” *Title of Publication*, Date, edition (optional).

Note Example:


Bibliography Example:

Newspaper articles are seldom listed in the bibliography. However, if a newspaper article is central to the main idea of your paper, or your instructor requires it, you may include a newspaper article in the bibliography, as follows:


Interview by the author of the paper:

Interviews are usually cited only in notes.

Interviewee's Name, interview by Author of the paper, Place of interview, Date of interview.

Note Example:


Electronic documents:

Distinguish between two main types of electronic media:

1. Stable sources based on print media such as e-books, CD- or DVD-ROMs, and databases
2. Unstable sources such as Internet sites

E-book and CD- or DVD-ROM:

Citations of e-books and CD- or DVD-ROMs follow the same general form as citations of printed materials: publication information of the printed source (usually a book), format.
Publication information of the printed source, format.

**Note Example:**


**Bibliography Example:**


**Database:**

Cite a database like the printed source (book, scholarly journal, magazine, or newspaper); then add the URL of the database and access date.

Author’s Name, “Title of Article,” *Title of Journal* volume number, no. issue number (Date): page number, internet address of database (accessed Date).

**Note Example:**


**Bibliography Example:**

Internet site:

For a Web site, give as much of the following information as is available:

Author of the site (a corporate author or owner of site may be used if there is no author), “Title of the Page,” title or owner of the site, URL (accessed Date).

Note Example:


Bibliography Example:


Video (VHS) or DVD:

Title, VHS or DVD, directed by or produced by Name if relevant, (Distributor's location: Distributing agency, year), scene, if relevant.

Note Example:

Blood and Oil: The Middle East in World War I, DVD, directed by Marty Callaghan (Pittsburgh: Inecom Entertainment, 2006).

Bibliography Example:

CHAPTER – 4

SUGGESTED TOPICS FOR THESESES

General

Participants of the courses are given complete freedom of choice to select topic for research. A suggested list of topics is given below, which you should consult. Participants are not allowed to write the theses out of the prescribed research topics. Topics chosen out of this list and may be written in order of preference on ‘Research Proposal Proforma’ given at the end of this chapter and submitted to DS Research. Please ensure that research question(s) related to first choice is / are clearly written on the proforma. Generally, first choice is entertained. Only in cases, where same topic is chosen by two or more participants that second or third choice of topic is allotted.

Research Topics for Theses 2011-12

Non Kinetic Warfare.

1. Soft Power – A Non Kinetic War Winning Tool.
2. Influencing the Population – A Facet of Irregular Warfare.
3. Inter agency relations in a whole of notion approach.
5. Creating Wedge between Public and Armed Forces – Another Kind of Warfare Tool.
6. Differing Approaches to countering terrorism – Extinction or Engagement.
7. Information warfare – A Warfare Tool to Captivate People’s Minds.
10. Media as a tool of War.
12. Application of traditional notions of military / operational strategy and their efficacy in 4th GW.
13. Constituents and spectrum of 5th GW.
14. Social and Cultural Wars- Prospects and Remedies
15. Media Wars-Economical way of winning through influencing the minds of target audience
16. Proxy Wars-Historical perspective and application in 21st century
17. Information and intelligence wars
18. Biological Wars-Prospects and Efficacy in Modern Day Warfare
19. Gang Wars
20. Narco Wars and the role of drug cartels
21. War by Deception-Mind control / Propaganda
22. Notion of Violence of Peace
23. The Notion of Just Wars
24. Sources and Nature of Conflict in 21st Century
25. Shock and Awe Doctrine-Efficacy in Future Wars
26. Creative Chaos Theory- Myth or Reality
27. Mind Control Sciences and Arts
28. Waters Wars- Prospects and Prevention
29. Concept of Security Sector Reforms (SSR)
30. National Security Governance and Role of Intelligence
31. Psychological and Propaganda Operations
32. Conflict at Sea (Maritime Zone)
33. The equation between Military’s Kinetic and Non Kinetic Capabilities
34. Cyber Warfare
35. Effect Based Operations (EBOs) and exercise of National Power
36. Role of Information Operations and Media on National Security
37. Impact of globalization on National Security
38. Ideological Wars; Islam vs West – Myth or Reality
39. Impact of Technology on State and Human Security
40. Information Warfare; Centre-piece of NKW
41. The theories of Mind Control Sciences and Arts; Relevance to NKW in Modern Timer
42. Psychological Operations; An effective method in NKW
43. The Equation between military’s Kinetic and Non-Kinetic capabilities, Methods and Approaches
44. The Emerging Role of Military in NKW; Preparing the militaries for 21st century warfare challenges
45. Effect Based Operation and the Exercise of National Power; A Classic parading in NKW
46. The place of Military Diplomacy in NKW, An effective Tool of state Policy and Statecraft
47. Cost of War; A case study of Kinetic and Non-Kinetic Operations in Iraq and Afghanistan – Lessons Learnt

Military History
48. Socio-Economic Causes of Alienation of People of East Pakistan (now Bangladesh) before 1971 War.
50. Role of Indian Army and RAW in the Training of Mukti Bhini before 1971 War.
52. Analysis of Defence Policy of Pakistan from 1966-1971 (End of 1971 War) and Lessons Learnt.
54. Analysis of Military Strategy of Pakistan Armed Forces during 1971 War, with particular reference to the doctrine “The Defence of East from the West” and lessons learnt.
55. A critical comparison of Pakistani and Indian operational strategy during 1971 War and lessons learnt

**International Affairs**

56. Reviewing Pak Afghan Transit Trade
57. Psychological operation by various Nations in Aftermath of WikiLeaks
58. Power Paradigm in China: Global Implications
59. Development of Good Relations with Islamic Countries to boost up growth of Islamic Countries
60. Pakistan – China Defence Cooperation: Opportunity and Challenges
61. Role of Pakistan Foreign Policy in Addressing Security Challenges in Post 9/11 Era
63. Security of Pakistan and GWOT; and its Affects on Pakistan
64. Logistic Support to Coalition Forces in Afghanistan and its Effects
65. Nuclearisation of Iran and its Implications for Pakistan
66. Escalating Indo-West Strategic Alliance and Pakistan’s Security Concerns
67. India’s bid for Permanent Membership of UN Security Council: Implications for Pakistan
68. US Endgame in Afghanistan
69. US Support to Indian Membership of NSG and other Non-Proliferation Regimes: Implications for Pakistan
70. Relevance of Pak-China Friendship and Partnership to the Evolving Geo-Political Landscape in the Asia Pacific Region
71. Prospects of recovery of Western economies
72. Prospects of Realization of Iran-Pakistan and Turkmenistan -Afghanistan-Pakistan-India Natural Gas Pipelines
73. Indian Nuclear Doctrine a Divergent Treatise – Implications on Pakistan’s Security
74. Indo – US Strategic Relationship and Effects on Pakistan’s Security
75. Intelligence System and Its Efficacy in GWOT
76. Repercussions of India’s increasing Influence in Afghanistan
77. Pakistan’s Policy on Kashmir Dispute – Way Forward
78. Changing Dynamics of Foreign Policy in the Emerging Multi-Polar World – Objective Study of Pakistan’s Foreign Policy
79. Global War on Terror and its Effects on the Socio-Economic-Political Fabric in Pakistan
80. Nuclear and Conventional Deterrence between India & Pakistan: Impact on Regional Environment
81. US Withdrawal from Afghanistan and its Implications for Pakistan’s Security
82. Pakistan-US Relations in the Aftermath of 9/11
83. Developments in Indian Strategic Thought and Impact on Pakistan
84. Kashmir Dispute: Prevalent Situation and Way Forward
85. Livestock’s Role in Climate Change
86. Major Threats to the Words Oceans
87. Climate Change Impacts: Adaptation and Vulnerability
88. Marine Ecosystem at Risk from Pollution and Climate Change
89. India’s Balancing Act: Relations with the US, Russia and China
90. Iran’s Growing Nuclear Politics: Is it Safe for the World
91. Changing Dynamics of India’s Neighbourhood Policy
93. Contemporary Environment – New World Order.
94. Indian Exploitation of Environment in Afghanistan to Target Pakistan.
95. Review of Technical Regulations in the light of New World Trade Order.
96. Deteriorating Conditions of Muslims in India.
97. Critical Analysis of Indo-Turkey Relationship.

**Peacekeeping**

98. Perspective from the field / Pakistan’s Experience (eg Sierra Leone success from Pak Force Commander, etc)

**Defence & Security**

99. Indian Defence Spending and Pakistan’s Response
100. Two-Front War (TFW) of Pakistan: An Analysis
101. Security of Pakistan; Threat and Response Options
102. Post GWOT and its Affects on Pakistan
103. Public Private Partnership in Development of the Defence Sector
104. Integration of National Industrial and S&T Policy as Per National Defence Requirements
105. Role of Indigenous Technology Development in Defence Production
106. Role of Research and Development Organizations in Strengthening the National Defence Capability
107. Conceptual Aspects of Deterrence
108. Information Warfare
109. AEW&C in Net-Centric Warfare
110. Joint Training of Armed Forces
111. PAF Response in Pro-Active Operations
113. Dynamics of Information Warfare and its Implications on National Security
114. Career Progression of Officers – Parallel Streaming: (A Case Study of Pak Army)
115. A Study of Complex Synergism between Regionalism, Terrorism and Islamic Fundamentalism
116. FATA’s Integration with Pakistan – Challenges and Solutions
117. Use of Pakistan’s Soil by Militants – Implications
118. National Counter Terrorism Authority – Perspective & Prospects
119. Restructuring of Pakistan Army to Fight Low Intensity Conflict
120. Improvements of Maritime Sector for Economic Prosperity
121. Analysis of Conventional and Nuclear Deterrence Interface
122. Concept of Ballistic Missile Defence (BMD) and its Implications on Geometric Strategic Balance of South Asia
123. Concept of Limited War under Nuclear Overhang in Indo-Pak Context
124. The Nature of Low Conflict (LIC) Threat Facing Pakistan
125. Risk Assessment for the Vital Strategic Installations along the Coastal Belt of Pakistan
126. Makers of Modern Strategy
127. Impact of Extremism on Pakistani Society and Armed Forces
128. Challenges and Opportunities for Pakistan in Present Day Geo-Strategic Environment
129. Importance of Geo-Spatial Data in National Planning and Development
130. Geographical Information System (GIS) – A Decision Making Tool
131. The Use of Satellite Imaging for Geographical Information System (GIS) Applications
132. Outsourcing & Military Organizations
133. Joint Training of Armed Forces – A Case Study of Pakistan
134. The Impact of Collateral Damage in the Aftermath of Floods 2010
135. Self Reliance is True Independence: Next Five Years Plan for Self Reliance of Pakistan Defence Forces
136. Indigenization Pakistan Defence Forces – Achievements in last Five Years and Goals for next Five Years
137. Resurgence of Nationalist / Regionalist Politics in Pakistan and its Implications
138. Post Operation Remedial Measures in Pakistan
139. Rehabilitation of War Hit areas of Khyber Pakhtunkha– A Herculean Task Ahead
140. Combined Maintenance Facilities of Defence Forces
141. Information Threats and Response
142. Integrated National Intelligence, Surveillance & Reconnaissance Capability
143. Study of the Role of Space Technology in Augmenting IAF / ERF Capabilities and Recommend Measures for PAF to Contest / Counter the Perceived Threats
144. Indian War Mongering and Recent Hostile Approach Towards Pakistan
145. Countering Hostile Propaganda against Armed Forces and ISI
146. Joint Employment of Electronic Warfare
147. Towards Greater Jointness amongst Pakistan Armed Forces
148. Role of Intelligence Agencies in Countering Religious Extremism
149. Present Export Procedure and Suggestions to Boost our Defence Exports
150. Non-Traditional Security Threats and Pakistan
151. Threat Analysis on Eastern and Western Borders
152. Welfare Measures in Pakistan Armed Forces; Need for Reconsideration
153. Systematic Approach in setting the Problem of Nuclear Terrorism
154. Tackling Nuclear Non-Proliferation
155. Differing Approaches to Counting Extremism – Extinction or Engagement
156. Rationalization/ Restructuring of Pakistan’s Higher Defence Organizations
157. Conventional and Nuclear Thresholds in Indo-Pak Scenario: An Analysis
158. Chances of Accidental Nuclear War between India and Pakistan
159. Threat Assessment to ascertain the level of Minimum Nuclear Deterrence
160. Fallout of Intense Engagement of Pakistan Army on Counter Insurgency Operations vis a vis Military Imbalance on Eastern Borders
161. Planning Joint Operations in Pakistan
162. Re-Structuring of PAF to meet Future Challenges
163. Tri-Services Integration in the field of Logistics
164. Pakistan Army’s Employment Strategy under Nuclear Environment
165. Motivation Theme for Armed Forces
166. Progressive Intellectual Growth of Army Officers Through Training Courses
167. Military Methodology at Tactical and Operational Levels – How to Bridge the Gap?
168. Alternative Military System for Pakistan
169. Gang, Turf, Ethnic, Sectarian Wars; Impact on NS of Pakistan, Challenges and response
170. Proxy Wars; Challenges, Risks and Response in the Context of Pakistan’s NS
171. Biological Wars; Genesis, prospects and Relevance in Contemporary Times
172. Creative Chaos Theory; Myth or Reality
173. Concept of Security Sector Reform (SSR); Efficacy and Prudence
174. Contemporary Ideological Wars; Islam Versus the West – Myth or Reality
175. Shock and Awe Doctrine; Concept, Application and Efficacy
176. Narco Wars; Role of Drug Cartels and Efficacy of International Control Mechanisms
177. Narco Wars; Challenges and Impact on Global, Regional and National Security
178. Contemporary Conflict at Sea (Maritime Zone); Impact on Security of States; Challenges and Response
179. The Notion of War by Deception
180. The Notion of Violence of Peace
181. The Notion of Just Wars; A case study of Current Situation in Arab Countries
182. National Security Governance and Role of Intelligence
183. Cyber Warfare; Threat, Challenges and Response

**Socio – Political**
184. Impact of 18th Amendment and Devolution of the Subjects of Labour Welfare and Industrial Relations to the Provinces in the Context of Pakistan’s International Obligations (Ratification of 34 ILO Conventions)
185. Ratification of 34 ILO Conventions by Pakistan and the Status of Implementation
186. Impact of Transportation on National Economy
187. Socio-Political Impact of War on Terror on Pakistan
188. The Significance of Benazir Income Support Programme (BISP) in Poverty Alleviation
189. Health Insurance through Social Protection in the Developing Work
190. Feasibility of Primary Health Care in Rural Areas through Telemedicine
191. Impact Assessment of Peoples Primary Health Care Initiative in Improvement of Primary Health Care
192. Major Changes in Biodiversity in Affection the Extinctions of Species
193. Assessment of Disappearing Forests
194. Disaster Management in Pakistan
195. National Cohesion and Integration in Pakistan
196. Feminization of Poverty: Evidence from Rural Area
197. Challenges / Issues in Implementation of 10% Quota Reserved for Women in Public Sector Employment at Federal Level
198. Extremism and its Impact on Women and Children
199. Situation Analysis of Honour Killing with Reference to Criminal Law (Amendment) Act, 2004
201. Public Policy & Governance in Pakistan
202. Provincial Disharmony in Pakistan
203. Pakistan National Cohesion & Integration: Problems & Prospects
204. Perilous Situation in Balochistan and the Way Forward
205. Lawlessness in Karachi and the Ways to Overcome it
206. Massive Exodus of Professionals from Balochistan – Likely Repercussions and Solutions
207. Current State of Centrifugal Tendencies in the Country and their Solutions
208. Political Uncertainty in the Country – Measures to Strengthen the Democratic Norms
209. Demand for Creation of New Provinces and their Pros and Cons
210. Incessant Disturbances in Tribal Areas – the Remedial Steps
211. Protracted Political Fragility in Azad Kashmir and its Effects on the Kashmir Freedom Movement
212. Religious Extremism and Pakistan – Critical Analysis and Future Strategy to Counter this Menace
213. Due Process of Law in Pakistan
214. Superior Courts: Jurisdiction Barred for Validation of High Treason
215. Security Situation in Balochistan and its Impact
216. National Integration – Current Status and Future Prospects
217. Balochistan Issue: Involvement of Foreign Hand
218. Natural Disasters Challenges for Pakistan and Role of various Institutions
219. Correcting Regional Imbalances
220. Improving Delivery of Public Services
221. Promoting Good Governance and Strengthening Institutions
222. Politics of Religious Minorities in Pakistan: Exploring the Relationship between Ideational Dynamics and Anarchy
223. Low Women Labour Force Participation in Pakistan; Factors & Way Forward
224. Multiple Polarizations in our Society – Factors, Implications for the Unity of Federation & Remedial Measures
225. Future of Religious – Political Parties
226. Future Role of Armed Forces in Nation Building Process
227. Impact on Society / Crimes Rate in Pakistan due to Availability at low Cost? of AK-47. Low cost Availability of Small Arms (AK 47%; Implications
228. Analysis of Maritime Pollution along the Makran Coast
229. Religion and Society in Pakistan
230. Identity Crisis in Pakistan
231. Perception Management and Image of Pakistan Army
232. Careerism vis-à-vis Professionalism
233. Joint Human Resource Management (HRM) in Pakistan Army
234. Present Socio-religious Unrest in the Society and its Impact on Metropolitans like Karachi
235. Growing Sectarianism and Religious Extremism
236. Migration Management for Regional Integration
237. Determinates of Illegal Migration
238. Pakistan: the Emerging 9th Power of the World
239. The Population Policy of Pakistan
240. The Population Welfare Program of Pakistan
241. Role of Non Governmental Organizations in Pakistan
242. NGOs’ Impact on Civil Society: An Evaluation
243. Demographic Dividend for Future Development of Pakistan
244. Health Services in Pakistan Army
245. Civil-Military Relations in Pakistan
246. Constitution of Pakistan and Role of Armed Forces

Economy
247. Deficiencies and Weaknesses in the Mechanism for Dispute Resolution in the Industrial Sector between Workers and Employers
248. Current Trends in Privatization of SOEs; Global, Regional & National Perspective
249. Privatization vs Restructuring: Policy, Practice and Effects on Economy
250. Turn Around of SOEs through Management Outsourcing; Policy, Legal Provisions and Analysis of Experiments
251. Post Privatization handling of SOEs in Pakistan; Issues, Legal Provision, Practices and Effectiveness of Responsible Forums
252. Pakistan’s Privatization Programme, Perspectives, Effects on National Economy and Future Prospects
253. Sector-wise Impact of Privatization (e.g. banking, cement, ghee etc.)
254. Public Private Partnership in Pakistan
255. Corporate Industrial Culture in Defence Production Establishment (DPEs)
256. Strategy for Indigenization in Pakistan
257. Self Sufficiency in Defence Production
258. Concept of Conversion of Defence Production Establishment (DPEs) into Public Limited Companies
259. Development of Gawadar Seaport; Policy Intervention Required
260. Expansion of Pakistan’s Industrial Base – China Centered; Need or Choice
261. Revenue Impact of the Tax Administrative Reforms at FBR – An Empirical Analysis
262. The Tax Buoyancy – An Empirical Evidence from Pakistan
263. Analysis of Tax / GDP Ratio of Pakistan
264. Does Pakistan need an Auto-Industry? Benefits and Costs of maintaining a Heavily Protected Auto-Industry
265. Support Prices for Crops: Efficiency, Cost and Impact on National Economy
266. Concessionary Finance to Export Sector: The Benefits and Drawbacks to Export Sector and National Economy
267. Removing Anti-export Bias in Governmental Policies: The Challenges and Response
268. Possible Impact of RGST on Pakistan’s Export
269. Reforming and Un-leashing the Potential of Domestic Commerce in Pakistan
270. Taxation in times of Crisis
271. Green Revolution in Pakistan
272. Impact of Increasing Import Duties on Industries Products Consumption and Welfare of People in Rural Areas of Pakistan
273. Impact of Trade Liberalization on Poverty Reduction, Employment and Inequality in Pakistan
274. Analyzing the External Sector Performance of Pakistan’s Economy
275. Empirical Analysis of Curve Trend of Devaluation in Pakistan
276. The Importance of Integrating the Value of Nature into Economic Practice and Policy
277. Research Study on Economic Production and Use of Hydrogen as Transport Fuel in Pakistan
278. Impacts of Climate Change on Pakistan Economy
280. Economy of Pakistan – An Historical Analysis
281. Economic Perils and the Ways to Overcome
282. Uplift of Private Sector in next Five Years Plan for Self Reliance of Pakistan Defence Forces
283. Achieving Sustainable Growth with the Human Face
284. Kerry-Lugar Bill; Are we Forced to Swallow the Pill?
285. Energy & Industrial Development
286. Industrial Backwardness of Pakistan: Causes & Remedial Measures
287. Effects of Agriculture Development on Industrial Development of Pakistan
288. Challenges & Opportunities posed by WTO for Pakistan’s Industrial Sector
289. Public Private Partnership; Is it a Viable Option?
290. Strategy to Achieve Export Diversification
291. Accelerated Industrial Growth; Strategy to Move Forward
292. Financing Options for Development of Industrial Sector> Merits & Demerits
293. Defence Industry; Challenges Under Global Security Environments
294. Exploring Defence Market to Enhance Exports
295. Development of Shipping Sector in Pakistan-Options and Proposed Strategy
296. Railway’s Strategic Role in Regional Economic Integration in South and Central Asia through Rail Linkages
297. Public Service Obligation and Business Imperatives - Model for Railways’ Management
298. Restructuring of Railways as a Way to Efficiency and Effectiveness
299. Private Participation in Railways: A New Paradigm for Development
300. Impact of Current Global Financial Crisis on Pakistan’s Foreign Trade
301. SAFTA: Prospects and Challenges for Pakistan
302. Impact of Trade Liberalization on Pakistan’s Export Competitiveness
303. Opportunities & Challenges of Expanding Trade between Pakistan and India
304. Possible Impacts of IMF Program on Pakistan’s Export Competitiveness
305. Economic Insecurity in Pakistan: Causation and Remedies
306. Global Economic Crises: Implications for Pakistan
307. Improving the Fiscal Scenario
308. Marketing Support Framework for Export Promotion
309. Promoting Cross-Border Regional Trade
310. Private Sector Development Strategy to Enhance Competitiveness of Pakistan in International Market
311. Public-Private Sector Dialogue in Energy Sector
312. Insolvency and Creditor Rights
313. Impact of Privatization on the Economy of Pakistan, (sector wise, eg Banking, Cement, Ghee etc)
314. Economic Diplomacy in Central Asia
315. Protectionist Measures Abroad and their Impact on Pakistan’s Sugar Sector
316. A Critical Review of Pakistan Domestic Trade Policy in Agriculture Sector
317. Impact of Regional Trade Agreements on the Import and Export of Agriculture Commodities in Pakistan
318. Industrializations in Pakistan - Public Sector, Private Sector, and Public Private Partnership Sector
319. Industrial Development in Public vis-à-vis Private Sector
320. How to bring Unorganized Sector into ‘Tax Net’?
321. Implications of the WTO Trade Related Investment Measures (TRIMS) Agreement on Industrial Growth in Pakistan
322. Non Technical Barriers to Trade (NTBS): Implication for Pakistan
323. Issues of Non-Agricultural Market Access (NAMA) and Sectoral Negotiations
325. Indigenous Engineering Resources; Away to Overcome Energy Crisis
326. Impact of Quality Industrial Infrastructure and Training of Manpower
327. Misuse of Financial Incentives in the Export Sector at the cost of Government Exchequer
328. Effectiveness of Global Export Processing Zones (EPZs) in simulating Export-led Economic Growth in post WTO Scenario
329. Growth Potential of Smart and Modern Enterprises (SMEs) in the Light Engineering Sector
330. Rural Industrializations and its Importance in Employment Growth and Poverty Alleviation
331. Potential of Agricultural Productivity through availability of Easy Access to Agricultural Credit
332. Globalization, International Trade, Market Assess and World Trade Organization
333. Role of Private Sector in Investment and Industrial Development
334. Privatization of Public Sector Engineering Industry
335. Bridging the Sectoral Divide – Success Stories in Public Private Partnership
336. Encouraging Women Entrepreneurship – Need for a Paradigm Shift
337. Upgradation of Human Skills for Enhancing Industrial Productivity
338. Importance of Reliable Industrial Statistics in National Accounts
339. Industrial Relations in Pakistan – Responsibilities of Stakeholders
340. Industrial Relations in Pakistan – Issues, Perceptions and Resolutions
341. Strategies for Productivity Improvement in Pakistan
342. Productive Employment and Poverty Reduction
343. Emerging Economic Trends in South Asia and Opportunities for Pakistan
344. Influence of International Financial Institutions (IFIs) in Policy Formulation of Pakistan
345. EU - Competitor or Collaborator of USA in Asia: Implications for Pakistan
346. Trade, Economic and Commerce Wars; Prospects, Relevance and Efficacy in Contemporary Times

**Information Technology**
347. Road Map for Next Five Year – Dependence of Army, Navy, Air Force on IT
348. Use of Broadband Networking Technology be Used for Pakistan’s Progress
349. Use of Mobile / Telephony Technology be Used for Pakistan’s Progress
350. Aerial & Satellite Scene Analysis
351. Vision Based Advanced Human Computer Interaction for Efficient Collaborative Planning
352. National Capacity Building in Microwave Engineering Field for Commercial and National Defence Applications
353. Production & Enhancement of Locally Skilled Manpower and Indigenous Development of WiMax or IFF Transponder

354. Modern Warfare and Technology – How Developing Nations Like Pakistan can Best Benefit from IT

355. Research & Development Funding Mechanisms

356. National Science & Technology Innovation System

357. Technology Management

358. Technology Transfer Mechanisms


360. Information Technology: A Catalyst for Economic Growth

361. Small and Medium Sized Enterprise in Pakistan: A Growth Engine for the Technology

362. Potential of Scientific and Technical Educational Institutions towards Pakistan’s Self Reliance

363. Strengthening of Accreditation, Certification Metrology & Standards Infrastructure for Rapid Economic Growth in Pakistan

364. Impact of Quality Improvement on Industrial Products

365. Problems and Perspective for Creating New Technology Based Enterprise in Pakistan

366. Role of Communication Infrastructure in Development of a Country with Special Reference to Pakistan

367. Impact of Information Revolution on State and Human Security

**Water & Energy**

368. Thar Coal – Limitations and Lack of Development, Reasons and Way Forward

369. Load Shedding Policy: An Analysis
| 370. | Challenges in Power Sector of Pakistan – Affordability, Sustainability and Way Forward |
| 372. | Analysis of Course of Actions Adopted by Public Sector of Aftermath of Floods 2010 |
| 373. | Analysis of Causes of Flooding of Charsada and Nowshera Floods: Suggested Measures of Food Risk Reduction |
| 374. | Influence of Kalabagh Dam on Flooding of Punjab and Sindh Provinces |
| 375. | Identification and Management of Drinking Water Sources in the Cholistan and Thar Deserts through GIS and other Scientific Techniques |
| 376. | Development of Solar Water Purification System |
| 377. | Hydrological and Geotechnical Investigation for Strategic Sites |
| 378. | Impact of Climate Change on Water Security in the Region |
| 379. | Water Crisis Management in Pakistan |
| 380. | Means to Resurrect the Flood-Ravaged Country |
| 381. | Energy Crisis in Pakistan Proposed Options for Alternate Energy Resources |
| 382. | Energy Crisis in Pakistan, its Implication on Pakistan’s Economy: Way Forward to Overcome it |
| 383. | Power Generation Crisis & its Proposed Remedial Measures |
| 384. | Solar Power Packs for Army Mobile Units |
| 385. | Use of Solar Electricity for Street and Traffic Lights in Cantonment Areas |
| 386. | Solar Water Heaters for Cooking, Potable Water and Water/Space Heating, for Hard Areas such as Siachen Glacier |
| 387. | Development of Strategy for Reuse of Drainage Effluents/Wastewater for Agriculture |
388. Refinement of Irrigation Systems at the Canal/Distributory Level through Irrigated Water Management
389. Awareness and Education on Water Quality Issues and Pollution Management
390. Development of Strategic Standards for the Implementation of Water Quality for the Provision of Safe Drinking Water
391. Range Land Development by using High Efficiency Irrigation System in Cholistan Desert
392. Impact of Global Climate Change on Western River Inflows
393. Corporate Strategic Management of Power Utilities
394. Trans Boundary Regional Electricity Markets in South Asia and Central Asia
395. Environment Protection by using Alternate Transport
396. Water Wars; Prospects and Prevention

Media
397. Media Activism in Pakistan
398. Media as a Stakeholder in Affairs of State
399. Media’s Role in creating Awareness about Duties and Rights of an Individual in a Civil Society
400. Media as an instrument to Curb Social Evils and Terrorism/Enhance Morale of Civil Society
401. Strategies/Approach Needed to Improve Media Activism/Public Relationship
402. Media Activision and Effectiveness of Regulatory Authorities
403. Role of Media as Watch-dog
404. Media as Fourth Pillar in a Democratic System
405. Media Ethics and Handling of False News
406. Regulatory Frameworks for Media
407. Role of Media in National Security
408. Role of Media in National War Effort
409. Role of Media in Pakistan
410. Freedom of Media viz-a-viz National Responsibility
411. National Policies as Code of Conduct for Media
412. Role of Media and Pakistan’s Foreign Policy
413. Media as an Instrument to Enhance Morale of Civil Society
414. Media’s Role in creating Awareness about Duties and Rights of an Individual in a Civil Society
415. The Role of Media, Propaganda and Challenges of bringing Terrorists to Justice
416. Media Wars; Shaping / Controlling Minds, People, Societies and destiny of nations
417. Media; A weapon of Mass Effect
418. Impact of Info and Social Media on National Security of Pakistan; Challenges and Response

Education
419. Facilities Available in the Country for Technical Training: Training Methods and Syllabi in 21st Century
420. Challenges to Pakistan’s Education System
421. Education and National Defence
422. Female education and its impact on male employment opportunities and income inequality in Pakistan
423. The Role of Basic Education in the Socio-Economic Development of Pakistan
424. The Role of Vocational and Technical Education in Poverty Alleviation in Pakistan
425. The Root Causes of Low Quality Education in the Country and Suggestions for Improvement
426. Impact of Foreign Aid on the Expansion and Development of Education in Pakistan
427. The Root Causes of Low Literacy in Pakistan and Devising Strategy for its Improvement
428. Enhanced Technical Education Base of Pak Army
429. Madrassa Education in Pakistan – Need for Reform
430. Free and Compulsory Education to Children of Five to Sixteen Years Age
431. Religious Education – Reformation / Substitution of Madaris
432. Restoring the Confidence of People in Public Schools System
433. How to make Pakistan’s Education System Market Oriented?
434. The Analysis of Monitoring and Evaluation System in Education in relation to International Development
435. Role of International Partners in Expansion and Evaluation of Education in Pakistan
436. Analysis of Education System in Pakistan in relation to National/International Requirements
437. Evaluation of Public School System with regard to Restoration of Confidence in General Public
438. Modern Trends in Research Methodology
439. Improving Academic Research Standards in Higher Institutes of Learning – A Way Forward
440. Why is ‘Research Base’, a Weak Area in Pakistan?
441. Removing the Subject of Education from Concurrent List: Pros and Cons especially in the context of National Uniformity in Standards of Education

442. Major Hindrances in the Way of Adopting Urdu as the Medium of Instruction at the Post Graduate Level and for the Education of Science & Technology

443. Impact of Adult Literacy Campaigns and Efforts towards Achieving Higher Literacy Targets in Pakistan

444. Constraints in Adopting Urdu as Official Language


446. Character Building and Value Education in Pakistan- Present Status, Needs and Requirements

447. Income Generating Skills Development Programs through Adult Literacy/Non-Formal Education-Integrated Approach

448. Universalizing of Primary Education Budget with special reference to Capacity Building of Provinces

449. Donor Assistance for Education Development for the last Five Years

450. Madarasa Reforms: Introduction of Formal Subjects for Integration

CHAPTER – 5
A SPECIMEN RESEARCH PROPOSAL
WATER WARS AND NAVIGATING PEACE OVER
INDUS RIVER BASIN*

Mr. Abdul Rauf Iqbal

Introduction:

Water – a source of life is threatened today because of extensive demographic growth, disordered urbanization, political actions and climatic changes etc. The human actions are and their unpredictable behavior is regarded as water’s primary enemy in most of the hydropolitics literature. States are confronted with numerous challenges in regard of water; the demand for water is ever-increasing and at the same time, supply of water is decreasing. This disparity in demand and supply of water is serious source of concern in the study of international relations. When it comes to the waters which cross political boundaries, additional complexities arises and strains the relationship of riparian states.\(^1\) Hence, sharing of transboundary water is extremely difficult task and may create both conflict and cooperation among the states and same is the case in South Asia.

South Asia – a home of more than one-sixth of the world’s population depends heavily on agriculture. Water in South Asia is not only vital for everyday needs, but also a critical resource for economic development.\(^2\) The increasing demand for water has surpassed supply and led to increased competition, tension,

\(^1\) This research proposal was submitted for M.Phil (Peace and Conflict Studies) at Faculty of Contemporary Studies. It is just a specimen and there is always a room for improvement.


and disputes among various economic sectors, provinces, and sovereign states.\textsuperscript{3} The politics of water-sharing arrangements have complicated inter-state relationships in the region\textsuperscript{4} as Peter Gleick has written in a report, “. . . one factor remains constant: the importance of water to life means that providing for water needs and demands will never be free of politics.”\textsuperscript{5}

Addressing the water disputes between Pakistan and India, both countries signed Indus Water Treaty (IWT) in 1960 under the mediation of World Bank which has survived three wars and other hostilities between the two nations. IWT is regarded as a remarkable example of conflict resolution and sets the path for future cooperation as Stephen P. Cohen has observed, “The Indus Waters Treaty is a model for future regional cooperation, especially on energy, environmental concerns, and even the management of the region’s impressive water resources.”\textsuperscript{6} Yet, recent Indian intentions of building chain of dams on Pakistani (western) rivers have once again brought the prospects of water conflicts among both countries. The recent stress and strain in the observance of treaty has had many analysts believe that water sharing will take a politically charged dynamic in the relations of two nuclear states.\textsuperscript{7}

**Aim of the Study:**

This research intends to add in to the existing academic debate on water by looking upon Indus River Basin by applying both conflict and cooperation theories. For the subject purpose following research questions has been identified:-

\begin{itemize}
  \item \textsuperscript{5} Peter H. Gleick, *Water Conflict Chronology*, Pacific Institute, December 2004, available online at http://www.worldwater.org/chronology.html.
  \item \textsuperscript{7} Pervaiz Iqbal Cheema, “Pak-India Water Disputes”, *The Post*, 26 February 2006.
\end{itemize}
What is the importance of Indus River waters and how it is contributing in overall economic development of the states?

- What reasons/ actions have inflicted the tensions in the basin?
- Identification of water scarcity and management in the basin.
- Is the Indus basin leading towards water war?
  - Are there any other reasons for war other than water in the region?
  - How much water will be a factor in the future wars of the region?
- What is the link between water and peace?
- What would be the future scenario of Indus river basin; conflict or cooperation?

**Scope of the Study:**

Although numerous hydropolitical interpretations exist in the international relations yet interest in the study of international waterways is increasing. Indus water dispute is a hot issue between two Pakistan and India as P. I. Cheema writes that “no dispute generated so much bitterness as did the one over the flow of waters.”8 Starting from the very quotation, this research intends to compare conflict and cooperation factor over waters of Indus. The study will not only be an addition to the existing literature but also provides policy measures for well being of both states.

**Literature Review:**

The field of hydropolitics focuses on the conflict potential of international waters. Scholars like Westing, Gleick, Homer-Dixon, Remans, and Samson and Charrier stress the dangers of violence over international waters while others including Libiszewski, Salman and de Chazournes, and Wolf argue more strongly

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for the possibilities\textsuperscript{9} and historic evidence of cooperation between co-riparians. Both the conflict and cooperation factor is highlighted below in order to create justification for this research.

**Water and Conflict**

Water is a resource vital to all aspects of a nation’s survival and the scarcity of water leads to forceful political pressures, often referred to as “water stress,” a term coined by Falkenmark.\textsuperscript{10} Moreover, international law is equally obscure, vague and contradictory in terms of water which is a critical and non-substitutable resource.\textsuperscript{11} May be in this premise, Ismail Serageldin, vice president for Environmentally Sustainable Development at the World Bank went on saying that “if the wars of this century were fought over oil, the wars of the next century will be fought over water.”\textsuperscript{12}

Keeping in view the critical importance of water, it is unsurprising to know that water is more often associated with war. Bulk of literature describes water as a future cause of interstate warfare. Westing suggested that “competition for limited fresh water leads to severe political tensions and even to war.”\textsuperscript{13} Gleick described water resources as military and political goals.\textsuperscript{14} Remans used case studies from the Middle East, South America, and South Asia as “well-known examples” of water as a cause of armed conflict.\textsuperscript{15} Samson and Charrier wrote that “a number of conflicts linked to fresh water are already apparent” and suggested that “growing


\textsuperscript{11} As described in more detail in Wolf 1997


\textsuperscript{13} M. Falkenmark, “Fresh waters as a factor in strategic policy and action”, pp. 85–113.


conflict looms ahead.”\textsuperscript{16} Butts suggested that “history is replete with examples of violent conflict over water”.\textsuperscript{17} Finally, Homer-Dixon, came to the conclusion that “the renewable resource most likely to stimulate interstate resource war is river water.”\textsuperscript{18}

A critical evaluation of this literature reveals that the whole school of thought has been built upon the assumption of considering water as a ‘scarce resource’ or overemphasizing on water as an economic ‘commodity’. Internal disputes and the conditions in which water is identical to the dispute are missing from their analysis.

\textbf{Water and Cooperation}

Besides the hue and cry of water wars, there also exists an impressive history of water dispute resolution, in the academic literature. The Food and Agriculture Organization (FAO)\textsuperscript{19} of the United Nations has identified more than 3600 treaties relating to international water resources, dating between 805 and 1984, the majority of which deal with some aspect of navigation.\textsuperscript{20} Since 1814 about 300 international treaties have been negotiated to deal with nonnavigational issues of water management including flood control, hydropower projects, and allocations for consumptive or nonconsumptive uses in international basins. Water as a source of cooperation has been analyzed in a greater detail in Hamner and Wolf.\textsuperscript{21}

\begin{table}
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\begin{tabular}{|c|c|}
\hline
\textbf{Source} & \textbf{Description} \\
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\hline
A. Wolf and J. Hamner, A., \textit{“Patterns in International Water Resource Treaties: The Transboundary Freshwater Dispute Database"}. & \\
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\end{tabular}
\caption{Water Treaties Overview}
\end{table}

\textsuperscript{17} Kent Butts, “The Strategic Importance of Water”, \textit{Parameters}, Spring 1997, pp. 65-83.
\textsuperscript{21} A. Wolf and J. Hamner, A., \textit{“Patterns in International Water Resource Treaties: The Transboundary Freshwater Dispute Database"}. 
The underlined argument of this theory relies in water ‘management’. It opposes the concept of scarcity as envisaged in water war theory and relates the water-problems with the mismanagement.

**Indus River Waters**

Waters of Indus river system daily finds a special place in the leading newspapers of the region because of ongoing water problems. Hundred of articles have been written on water issues and numerous works have already been carried out focusing on Indus River system. But the dichotomy with the existing literature is that it is more of diverse in nature. Scholars have touched various aspects of the issue starting from economic importance, technical problems, climate change and violation of the treaty to potential of conflict, cooperation and mediation factor.

**Room for New research**

The concept of water wars seems more realistic and may impress the general public but historical evidences do not support this concept as one can hardly find a single war fought on the exclusively water issues. On the other hand, cooperation over water seems illusionary concept but the history is full of water related arrangements. Moreover, literature is full of criticism on both the approaches and resultantly no consensus has been yet evolved on the reasons behind water-

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problems. Coming over to Indus waters, all the studies touch different dimensions and author has not found a single and comprehensive study involving both theories of conflict and cooperation over Indus River waters.

In this premise, this research intends to further enhance the academic debate by looking upon Indus River Basin from both conflict and cooperation prism. The study will be a new addition to the existing literature on water and suggestions would be made at the end on usage of the waters of Indus River Basin for the best of all stakeholders.

**Methodology:**

The study is very precise and comprehensive in the nature as it takes Indus River Basin as a case study. It is a deductive research in nature as already existing theories have been tested in a particular case. The study requires both technical and theoretical data which is available in documentary sources. For the said objective, both primary and secondary sources will be utilized involving government documents, books, scholastic journals, newspaper articles and internet articles. Major reliance has been made on the books and journal’s articles keeping in view their originality, credibility and importance factor in the academia. Besides, both theoretical prisms are employed in order to remain as neutral as possible as the researcher also resides in the same Basin.

**Organization of the study:**

The study would be divided into three parts. Part I will be introduction, Part II will focus on theoretical debate of water wars and concept of cooperation over water and Part III will consist of application of theories on Indus River Basin along with suggesting some policy measures for the future scenario. The tentative chapterization of the study would be as followed:-
Part I – Introduction

Chapter 1: Introduction
   Indus River Basin
   Indus Water Treaty
   Recent Tensions and Present Situation

Part II – Theoretical Debate

Chapter 2: Resource Scarcity
   Water War Theory
   Reasons behind Water Wars
   Limits of Water War Theory

Chapter 3: Resource Management
   Water and Peace
   Factors behind Cooperation over Water
   Limits of Theory

Part III – Application of Theoretical Debate

Chapter 4: A Case Study of Indus River Basin
   Indus River Basin
   Water as a Source of Conflict in the Basin
   Water as a Cooperation Factor in the Basin
   What actually Water is in the Basin?
   Conclusion
   Suggestions
Tentative Bibliography:

• Waslekar, S. *The Final Settlement: Restructuring India-Pakistan Relations* (Mumbai: Strategic Foresight Group, 2005)
