A Research/ Project Report

A research report is a precise presentation of the work done by a researcher while investigating a particular problem and whether the study is conducted by an individual researcher or by an Institution.

The findings of the study should be reported for several reasons. These are :-

- People learn more about the area of study,
- The discipline gets enriched with new knowledge and theories,
- Researcher and practitioners in the field can apply, test and retest the findings already arrived it,
- Other researchers can refer to the findings and utilize the findings for further research,
- Findings can be utilized and implemented by the policy makers or those who had sponsored the project.

Main Components of Research Report

The entire research report is mainly divided into three major divisions:-

- The Beginning,
- The Main Body, and
- The End

The Beginning

- Cover or Title Page
- Second Cover
- Preface
- Acknowledgement
- Contents
- List of Tables
- List of Figures
- Glossary
- List of Abbriviations

The Main Body

- Introduction
- Review of Literature
- Design of the Study
- Analysis and Interpretation of Data
- Main Findings and Conclusion
- Summary

The End

- Bibliography and References
- Appendices

Cover or Title Page

- Title of the Topic,
- Relationship of the Report to a Degree, Course, or Organizational Requirement,
- Name of Researcher,
- Name of Supervisor,
- Name of the Institution where the report is submitted, and
- The Date of Submission

Example of the Title Page

Awareness of Urban Couples About Female Foeticide: A Social Work Intervention Study

Sponsored by: Ministry of Social Justice and Empowerment

Director
Dr A K Bhartiya
Asst Professor
Department of Social Work
University of Lucknow
December, 2013

Preface and Acknowledgement

A Preface should include the reason why the topic was selected by the researcher. It may explain the history, scope, methodology and the researcher's opinion about the study.

The Preface and acknowledgement can be in continuation or written separately. This page follows the inner title page. It records acknowledgement with sincerity for the unusual help received form other to conduct the study. The acknowledgement should be non-emotional and simple.

Table of Content

A table of content indicates the logical division of the report into various sections and subsections. In other word, the table of contents presents in itemized form, the beginning, the main body and the end of the report. It should also indicate the page reference for each chapter or section and sub-section on the right hand side of the table.

Contents

Preface		i
Acknowledgement		ii
Table of Contents		iii
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List of Tables

The table of content page is followed by the page containing a list of tables. The list contains the exact title of each table, table number and the page number on which the table has appeared table.

Table	Title	Page
1	Age of respondent	5
2	Level of Education	12
3	Occupation Pattern	15
4	Marital Status of Respondents	19
5	Size of the Family	26
6	Income of the Family	29
7	Opinion of the Respondents	37

List of Figures and Illustration

The Page 'List of Figures' comes immediately after the 'List of Tables' page.

Figure	Title	Page
1	Conceptual Framework	7
2	Network Model	9
3	Communication Network	13
4	Implementation of Schemes	18
5	Organizational Chart	24
6	Staffing Pattern	33

Glossary

A Glossary is a short dictionary, explaining the technical terms and phrases which are used with special connotation by the author. Entries of the technical termed are made in alphabetical order. A Glossary may appear in the introductory pages although it usually comes after the bibliography.

List of Abbreviations

To avoid repeating long names again and again, a researcher uses abbreviation. Since abbreviations are not universal, it is necessary to provide the full form of the abbreviations in the beginning.

Example:

AIR - All India Radio

ASC - Academic Staff College

LU- Lucknow University

Writing Style

- The report should be very concise, unambiguous, and creatively presented. The presentation should be simple, direct and in short sentences.
- In the case of citations, only the last name of the author is used and in all cases academic and allied titles like Dr., Prof., Mr., Mrs., etc. should be avoided.
- Special care should be taken while using quantitative terms in a report. No sentences should begin with numerical like '20 students', instead should start as "Twenty students'. Commas should be used when numbers exceed three digits- 10,233 or 468,798.
- Language, grammar and usage are very important in research report.

References

Articles, papers, books, monographs etc. quoted inside the text should always accompany relevant references, i.e. the author and the year of publication e.g. (Bhartiya, 2012). If a few lines or sentences are actually quoted from a source, the page number too should be noted e.g. (Bhartiya, 2012: 46-49)

List of some important Abbreviations used in Footnotes and Bibliography.

Bibliography and References

- Research reports present both bibliographies and references.
- A Bibliography is a list of titles- books, research reports, articles, etc. that may or may not have been referred to in the text of the research report.
- References include only such studies, books or papers that have been actually referred to in the text of the research report.

There are mainly two style manuals detailing general form and style for research reports. Thee are: -

- American Psychological Association,
 Publication Manual, 3rd ed. Washington DC:
 American Psychological Association, 1983.
- The Chicago Manual of Style, 13th rev. ed., Chicago University of Chicago Press, 1982.

Style of Referencing

There are mainly two types of referencing:-

Arranging references in alphabetical order where the researcher has cited the name of author and year of publication/completion of the work in the text.

Arranging references in a sequence as they appear in the text of the research report. In this case, related statement in the body of the text is numbered.

- Verma, K. and Singh, B. (2012), Principles of Economics, Rawat Publication, Jaipur.
- Verma, K. and Singh, B. (2012). Principles of Economics. Jaipur: Rawat Publication.
- Verma, K., Agrawal, M. and Singh, B. (2012). Principles of Economics. Jaipur: Rawat Publication.
- Verma, K. (ed.). (2012). Principles of Economics. Jaipur: Rawat Publication.
- Verma, K. et. al. (2012). Principles of Economics. Jaipur: Rawat Publication.

Appendices

Appendices present the raw data, the true copy of the tools used in the study, important statistical calculation, photographs and charts not used inside the text. These are serially like Appendix 1, Appendix 2, Appendix 3, or Appendix I, Appendix II, Appendix III, or Appendix A, Appendix B, Appendix C.

Why write and publish research papers?

- Ideally
 - to share research findings and discoveries with the hope of improving knowledge base
- Practically
 - to get funding
 - to get promoted
 - to get recognition
 - for knowledge sharing and achievement

Getting a paper published

- Competition for space in journals is intense
- Cost of publication is high.
- Rejection rates vary
 - Journal X = 50%
 - Journal Y= 65%
 - Science, Nature = 90%

Tips

- 1. Know the journal, its editors, and submit the paper
- 2. Pay close attention to spelling, grammar, and punctuation
- 3. Make sure references are comprehensive and accurate
- 4. Avoid careless mistakes
- 5. Read and conform to "Instructions for Authors"

What constitutes good science?

Novel – new and not resembling something formerly known or used (can be novel but not important)

<u>Mechanistic</u> – testing a hypothesis - determining the fundamental processes involved in or responsible for an action, reaction, or other natural phenomenon

<u>Descriptive</u> – describes how things are but does not test how things work – hypotheses are not tested.

Bloom's Taxonomy of Publishing

BLOOMS TAXONOMY

EVALUATION

Assessing theories; Comparison of ideas; Evaluating outcomes; Solving; Judging; Recommending; Rating

Using old concepts to create new ideas;

Design and Invention; Composing; Imagining;

Inferring; Modifying; Predicting; Combining

SYNTHESIS

ANALYSIS

Identifying and analyzing patterns; Organisation of ideas; recognizing trends

Using and applying knowledge;

Using problem solving methods;

Manipulating; Designing; Experimenting

APPLICATION

COMPREHENSION

Understanding; Translating; Summarising; Demonstrating; Discussing

Recall of information;

Discovery; Observation;

Listing; Locating; Naming

KNOWLEDGE

Elsevier's Advise!

Choose the right journal



Do not just "descend the stairs"

Top journals

Nature, Science, Lancet, NEJM,

Field-specific top journals

Other field-specific journals



National journals



What constitutes a good journal?

Impact factor –

average number of times published papers are cited up to two years after publication.

Immediacy Index – average number of times published papers are cited during year of publication.

Lead time or incubation timeaverage time taken for paper from receipt to publication

ISSN- ISBN possessing international standard serial (or book) number, meaning recognized.

Journal citation report

Journal	Impact Factor	Immediacy Index
Nature	30.979	06.679
Science	29.162	05.589
Hypertens	05.630	00.838
AJ P Heart	03.658	00.675
Physiol Rev	36.831	03.727
Am J Math	00.962	00.122
Ann Math	01.505	00.564

Things to consider before writing

1. Time to write the paper?

- has a significant advancement been made?
- is the hypothesis straightforward?
- did the experiments test the hypothesis?
- are the controls appropriate and sufficient?
- can you describe the study in 1 or 2 minutes?
- can the key message be written in 1 or 2 sentences?

"Those who have the most to say usually say it with the fewest words"

Things to consider before writing

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- are the controls appropriate and sufficient?
- can you describe the study in 1 or 2 minutes?
- can the key message be written in 1 or 2 sentences?

2. Tables and figures

- must be clear and concise
- should be self-explanatory

3. Read references

- will help in choosing journal
- better insight into possible reviewers

Things to consider before writing

- 4. Choose journal
 - study "instructions to authors"
 - think about possible reviewers
 - quality of journal "impact factor"
- 5. Tentative title and summary
- 6. Has considerable work been done to warrant a publication?
- 7. Aim and scope of the journal. Does it go with your definition?

Writing the manuscript



The hardest part is

getting started!

Kick Start!

Types of journal papers

- Letters to the editor/Commentary
- Science and technology articles
- Short communication
- Technical note/case study
- Original paper/research paper!
- Review Opinion, Brief notes.
- paper, Book Reviews.
- Monographs and Books.
- STP papers, Theme papers in special issues!
- Online journal paper articles.

Parts of an original research paper

Title

Abstract and

keywords

Introduction

Methods

Results

Discussion

Acknowledgements

References

Write in what order?

Title

Abstract and Keywords

Introduction

Methods

Results

Discussion

Acknowledgements

References

Theoretical Considerations

- Sometimes you need this section!
- Build a theory or buy a theory [Refer]!
- Give relevant formulae
- Give relevant equations with symbols defined
- Number them all in sequence
- Discuss parameters to be evaluated
- Justify your choices
- This should precede your experimental details or methods section!

Materials and methods

- Best to begin writing when experiments lead somewhere.
- Should be detailed enough so results can be reproduced by others.
- Reference published methods where appropriate.
- Include regulated use approval information (like toxic substances).
- Use descriptive subheadings
 - Starting materials
 - Synthesis
 - Materials characterization

Results

- Images and equations with continuity can be effective (representative descriptions)
- Tables and figures must be straight forward and concise
- Present main findings referring to tables/figures.
- Do not repeat results in the paper but they must be repeatable (by you) and reproducible (by others).
- Error bars, statistical details

Introduction

- Build case for why study is important/necessary
- Provide brief background
- State hypothesis / central question or theme
- Give a paragraph about what the investigation proposes to do

Discussion

- First answer questions posed in introduction
- Discuss the possible mechanisms
- Discuss weaknesses and discrepancies
- Explain what is new without exaggerating
- Do not repeat discussion or speculate too much

Conclusions/Summary

- Conclusions
- Summary
- Perspectives
- Implications
- Suggestions for future work

References

- Relevant references
- Be selective based on credibility
- Read the references before referring
- Do not misquote
- Use correct style and format for journal
- Cite patents carefully, don't misquote (IP rights)

Abstract

- Critical part of the paper
- State main objective
- Summarize most important results
- State major conclusions and significance
- Avoid acronyms
- Write and rewrite until flawless
- Provide the right keywords for indexing

Title

- Will determine whether paper gets read
- Avoid long titles (see journal rules)
- Avoid abbreviations
- Title format:
 - "The effects of heat on ice"
 - "Heat melts ice"
 - "The role of heat in melting ice"

Acknowledgements

Grant funding.
People who read the paper or contributed to discussion and/or ideas. People who gave tools e.g. probes
Technical and secretarial assistance

Revise, Revise and Revise

- All authors should participate, only one is the
 - corresponding author.
- Review order of data presentation
- Polish the writing style
- Double check references
- Look for typos
- Double check spelling (UK?, American?)

WHATEVER TENSE IS USED, BE CONSISTENT AND DON'T SWITCH BACK AND FORTH IN THE SAME PARAGRAPH !!!

What you did can be in past tense but what you found out (eternal truths) must be in present tense!

Avoid long passive voices in technical writing!

Develop a good writing style

- •Read well written articles
- Try to get good writers to review
- •Learn from editing changes
- •Learn editing and correcting symbols
- Learn proof reading and correcting
- •Good copy-editing and formatting according to journal requirement!
- •Avoid plagiarism (copying other papers)

Self-Plagiarism from Copyrights!



Publish AND Perish! – if you break ethical rules

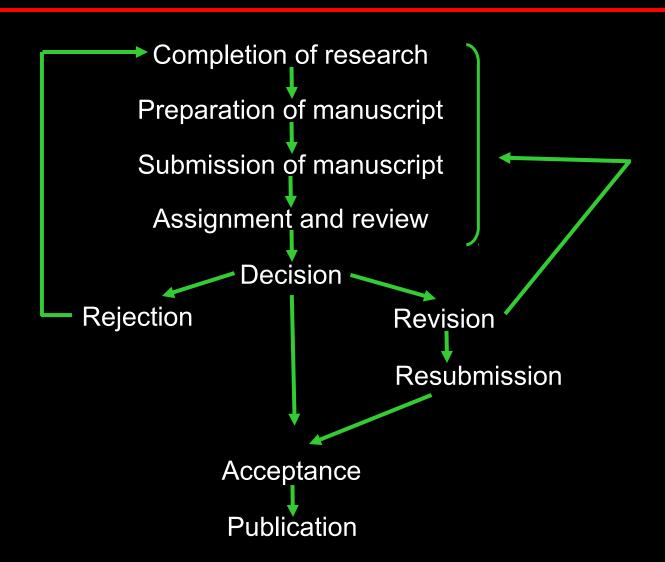
Journal Paper Formats

- American Chemical Society, Siva (1994), Alphabetical order.....
- Psychological Society Format, (Closer to Am. Ch.Soc format)
- Modern Language Association, Purdue University's OWL (On-line Writing Lab) format.
- American Ceramic Society [Ref. Nos. in square brackets]. Very popular!
- Vancouver Format, (Issue, Vol., pp, Year)
- Nature journals , Ref. Nos. in superscripts .

Submission

- 1. Read instructions carefully
- 2. Fill out all necessary forms (Some times before acceptance)
 - Copyright transfer
 - **Conflict of interest**
- 3. Write covering letter (suggest reviewers if possible)
- 4. Confirm receipt, follow up communication, acknowledge

Process of a Research Paper!



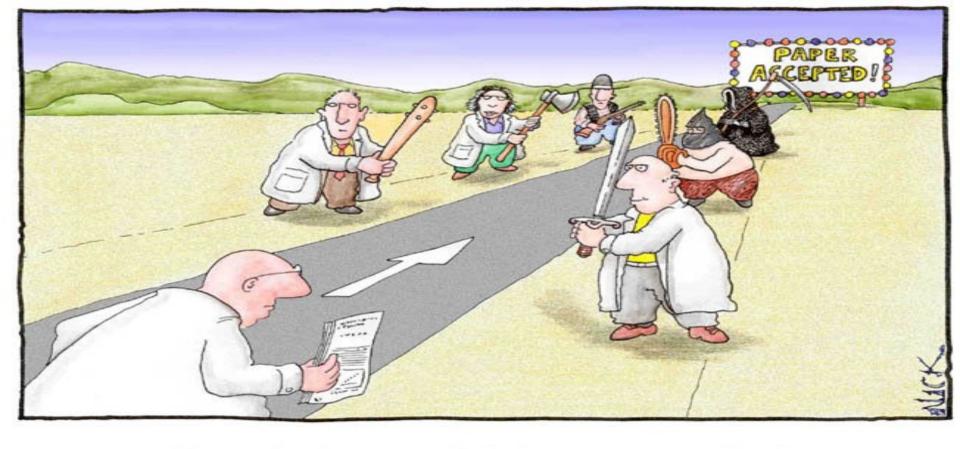
Responding to Reviewers

- 1. Carefully prepare your responses

 Each comment should be addressed

 Each change should be stated/highlighted

 Be enthusiastic
- 2. Reviewer may be wrong
- 3. Be tactful thank the reviewers
- 4. Do not respond to reviewers while upset
- 5. Get help from other authors
- 6. Address the corrections to the chief editor



Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'

Single blind & double blind review process!

Conference Papers

- International conference papers appearing in a special issue of a journal (reviewed)
- International conference papers in conference proceedings (reviewed), CD or hardcopy
- National conference papers (reviewed)
- International/national seminar papers
- International/national workshop papers
- Symposium papers
- Review meeting/Society AGM presentations

Technical reports

- Thesis, dissertation
- Funded project reports and documents
- Consultancy project reports
- Interim reports (Annual, bi-annual....)
- PG/UG project reports
- Mini project reports
- Case studies
- Feasibility reports

Research Proposal

- A **research proposal** is a document that provides a detailed description of the intended program.
- It is like an outline of the entire research process that gives a reader a summary of the information discussed in a project.
- The objective in writing a proposal is to describe what you will do, why it should be done, how you will do it and what you expect will result.

https://en.wikipedia.org/wiki/Research_proposal https://www2.hawaii.edu/~matt/proposal.html

Basic Components

- 1. Title
- 2. Abstract
- 3. Introduction
- 4. Review of Literature
- 5. Aims
- 6. Objectives
- 7. Questions and/ or hypotheses

- 7. Methodology
- 8. Plan for Analysis of Results
- 9. Bibliographic References
- 10. Gantt chart/Timetable
- 11. Budget
- 12. Annexes

Title of the Research

- It should be concise, descriptive informative and catchy.
- Titles should clearly indicate the independent and dependent variables.
- The title provides the "key words" for the classification and indexing of the project.
- It is important to specify what population or universe will be investigated

http://www.slideshare.net/soharashed/writing-a-health-research-proposal

Good and bad Titles

- Preoperative Anxiety (too brief)
- The effects of a counselling program by nurses on preoperative anxiety in children undergoing tonsillectomy. (concise but gives sufficient information)

http://www.slideshare.net/soharashed/writing-a-health-research-proposal

Abstract

- It is a brief summary of approximately 300 words.
- It should summarize all the central elements of the protocol, for example the rationale, objectives, methods, populations, time frame, and expected outcomes.

http://www.slideshare.net/soharashed/writing-a-health-research-proposal

Introduction

- The introduction provides the readers with the background information.
- It should have;
 - Topic area
 - Research question
 - Significance to knowledge

Al-Riyami A. How to prepare a Research Proposal. Oman Medical Journal 2008, 23 (2): 66-69 https://www2.hawaii.edu/~matt/proposal.html

Review of Literature

- In this section what is already known about the topic is written including the lacunae.
- You do not need to report on every published study in the area of your research topic.
- Choose those studies which are most relevant and most important.
- Reviews of the literature are not summaries, they are arguments (that there
 is a gap that needs filling; that you have sound reasons for believing your
 hypotheses are likely to be true; that your methods have been well thought
 through in relation to your research goals)

fppt.com

Review of Literature

- A Literature Review should;
- convince the reader that the research area is significant / important / interesting
- 2. convince the reader that we shouldn't be (completely) satisfied with the existing literature on the topic
- 3. convince the reader that your research will fill some important or interesting gap or address some important limitation or deficiency
- 4. explain and justify your research hypotheses / ideas
- 5. convince the reader that your research methods are well thought through

http://uq.edu.au/student-services/pdf/learning/lit-reviews-for-rx-students-v7.pdf

Aim

- The aim is about what you hope to do, your overall intention in the project.
- It's what you want to know.
- An aim is therefore generally broad.

Objectives

- The objectives are the specific steps you will take to achieve your aim.
- The Aim is the WHAT of the research, and the objective is the HOW.
- Research objectives are the goals to be achieved by conducting the research.

Objectives should be:

- Logical and coherent
- Feasible
- Realistic, considering local conditions
- Defined in operational terms that can be measured
- Phrased to clearly meet the purpose of the study (relevant)

Objectives

- How should objectives be stated?
- Objectives should be stated using "action verbs" that are specific enough to be measured:
 - e.g. To determine ..., To compare..., To verify..., To calculate..., To describe..., etc.
- Do not use vague non-action verbs such as: To appreciate ... To understand... To believe

http://www.slideshare.net/soharashed/writing-a-health-research-proposal

General and Specific Objectives

- The general objective of the research is what is to be accomplished by the research project
- The specific objectives relate to the specific research questions the investigator wants to answer through the proposed study and may be presented as primary and secondary objectives

Example

 Title: "Humanitarian Assistance for Populations Affected by Floods and Malnutrition in the Atlantic Coast of Nicaragua."

General objective:

To evaluate changes in the food, nutritional and sanitation conditions in populations highly affected by floods in the North area of the Caribbean Coast of Nicaragua.

Specific objectives:

- 1. To assess the food and nutritional conditions of the participating families in the project and the impact of environmental elements on the deterioration, of conditions.
- 2. To identify the benefits obtained from the sowing and harvest of crops
- 3. To judge and evaluate the existing conditions in the communities and families with respect to hygiene promotion, supply and use of water filters.
- To identify strategic lines that help to define future interventions, both in terms of emergencies or linked to processes of long-term development.

Questions and/or hypotheses

- A hypothesis can be defined as a tentative prediction or explanation of the relationship between two or more variables.
- Unambiguous prediction of expected outcomes.

Al-Riyami A. How to prepare a Research Proposal. Oman Medical Journal 2008, 23 (2): 66-69

Methodology

 The methodology explains the procedures that will be used to achieve the objectives.

It covers;

- 1. Approach to the question
- 2.Research design
- 3. Research subjects
- 4.Inclusion or exclusion criteria
- 5. Sampling procedure

- 6. Controls or comparison groups
- 7. Data needs
- 8. Analytic techniques
- 9. Plan for interpreting results
- 10. Ethical issues

Methodology

- Overview of approach
- Data Collection
- Data Analysis
- Interpretation

https://www2.hawaii.edu/~matt/proposal.html

Gantt chart/Timetable

- A Gantt chart is an overview of tasks/proposed activities and a time frame for the same.
- You put weeks, days or months at one side, and the tasks at the other.
- You draw fat lines to indicate the period the task will be performed to give a timeline for your research study

Al-Riyami A. How to prepare a Research Proposal. Oman Medical Journal 2008, 23 (2): 66-69

Budget

- The budget translates project activities into monetary terms
- A proposal budget is with item wise/activity wise breakdown and justification for the same.
- Indicate how will the study be financed.

https://www2.hawaii.edu/~matt/proposal.html

Bibliographic References

References should be written in Vancouver style.

Citing References:

- Number references consecutively throughout the body of the text in the order in which they are first mentioned.
- Identify references in text, tables and legends by numerals in parenthesis e.g. (1), (2,3) or (3-6).
- Some journals require references to be indicated in superscript which makes typing more difficult.
- DO NOT include references in your abstract.

Annexes

- Include the appropriate appendixes in the proposal. For example:
- 1. Interview protocols,
- 2. sample of informed consent forms,
- 3. cover letters sent to appropriate stakeholders,
- 4. official letters for permission to conduct research.
- 5. Original scales or questionnaires
- if the instrument is copyrighted then permission in writing to reproduce the instrument from the copyright holder or proof of purchase of the instrument must be submitted.

Al-Riyami A. How to prepare a Research Proposal. Oman Medical Journal 2008, 23 (2): 66-69