

Holistic Approach of Research Work

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Abstract- A Research Design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy procedure. Research Design is needed because it facilitates the smooth sailing of the various research operations. Tools for data collection method, to give the result and testing hypothesis, my paper deals with the steps involve in Research Design, Need of Research Design, and Characteristic of Research Design, Features of Research Design, and the tools and techniques of data collection method. Report writing is a presentation of facts and findings. After collecting and analyzing the data, the researcher has to accomplish the task drawing Interference followed by report writing. This has do very carefully, otherwise misleading conclusion may be drown and the whole purpose of doing research may be violated. In this paper I had clearly sketch the outline of report writing from title to end page and also our sample of title page.

Index Terms- Research Design, Tools and Techniques, Data Collection. Report Writing, Bibliography

I. INTRODUCTION

Research design essentially refers to the plan or strategy of Rshaping the research, “design deals primarily with aim, purposes, intentions and plans within the practical constraints of location, time, money and availability of staff”. Data Collection: Collection of data constitutes the first step in a statistical investigation. Utmost care must be exercised in collecting data as because they form the foundation of statistical method. If data are faulty, the conclusion drawn can never be reliable. A report writing is a presentation of facts and finding, usually as a basis for recommendations, written for a specific readership, and probably intended to be kept as a record. When some people write a report that they do, write But the really successful writers only spend part of that time doing this, and then only towards the end, before that they are planning their report – thinking about this purpose, and who is going to reedit; deciding what to put in it, and fitting it into shape and even when they are finally writing it, they will probably spend just as much as time thinking above how best to present their ideas, as actually putting them onto them onto paper.

II. WHAT IS RESEARCH

The goal of research is to improve the level of living in society. The word research carries an atmosphere of respect. As

every object has got its own pros and cons, so does research. But the advantages of research have outnumbered the disadvantages of research and it has a place of its own in the field of study. In an academic environment, research activity is fivefold i.e. Master Dissertation; M.Phil Dissertation; PhD Thesis; D.Litt Thesis; and Assigned Research Project The research projects are different from that of academic research degree in regards to different scale of time, resources and extent, pioneering qualities and rigor. Research project actually involves a group work on a pre-assigned topic by the funding agency; it has wide scope in regards to the greater resource availability.

Definition of Research

Research is composed of two words “re” and “search”, which means to search again or it is a careful investigation to understand or re-examine the facts or to search for new facts or to modify older ones in any branch of knowledge. The term research is also used to describe an entire collection of information about a particular subject, but it is in general used by the students of higher schools. Research in common parlance refers to search for knowledge; one can also define research as a scientific and systematic search for pertinent information on a specific topic. Some people consider research as a movement, a movement from the unknown to known. It is actually a voyage of discovery. Thus research is an endeavor to discover, develop and verify knowledge. P. M. Cook attributes the research taking the clue from each initial alphabets of the word “**research**”.

R= Rational way of thinking;

E= Expert and exhaustive treatment;

S= Search for solution;

E= Exactness;

A= Analysis;

R= Relationship of facts;

C= Critical observation, Careful recording; Constructive attributes, and Condensed generalization.

H= Honesty and hard working.

The Webster International Dictionary defines research as “a careful critical enquiry or examination in seeking facts for principles, diligent investigation in order to ascertain something”. The Advanced Learner’s Dictionary of Current English lays down the meaning of research as “a careful investigation or inquiry specially through search for new facts in any branch of knowledge”. J. W. Best opined that research is not only specifically problem solving but is also closely associated with verification of truth underlying the observed data”. Thus research is an intellectual act that begins with the asking of

questions and progress through the critical examination of evidence that is both relevant and reliable to the reevaluation of the truth that is generalization and universal. (1)

Need of Research:

- ♣ To discover the truth, which is hidden and which has not been discovered as yet;
- ♣ To discover the solution of a problem;
- ♣ To expand the scope of theoretical knowledge;
- ♣ To discover the new application for old knowledge;
- ♣ To understand, analyze and explore the phenomena;
- ♣ To know the cause effect relationship;
- ♣ To improve the level of living in society;
- ♣ For professional and intellectual development of the researcher by gaining knowledge;
- ♣ To obtain prestige and respect by a person or by the institution;
- ♣ To obtain a research degree;
- ♣ As a means of livelihood by way of obtaining the source of finance.

Characteristic of Research:

- ♣ Research originates with a question or problem;
- ♣ Research requires a clear articulation of a goal;
- ♣ Research is guided by the specific research problem, question, or hypothesis or critical assumption;
- ♣ Research follows a specific plan of procedure;
- ♣ Research requires the collection and interpretation of data in attempting to resolve the problem that initiated the research;
- ♣ Research is, by its nature, cyclical; or more exactly, helical.

Meaning of Research Design:

A research design is an arrangement of the essential condition and analysis of data in a form that aims to combine relevance to research purpose with economy in the procedure. Such man a research design is not a highly specific plan to be followed without deviation, but rather a series of guide posts to keep one handed in the right direction. It is a decision regarding, what when how much by what means concerning an enquiry or a research study contribute a research design. So a research design or a plan is tentative outline of the proposal research work. The plan is not a very specific one. IT is simply a set of guideline to keep the scholar on the right track.

- ♣ Why is the study about
- ♣ Why is the study being made
- ♣ Where will the study be carried out
- ♣ What type of data is required
- ♣ Where can the required data is found
- ♣ What period of time will be required for study
- ♣ What will be the sampling design
- ♣ What are techniques used for data collection
- ♣ How will the data be analyzed
- ♣ Style of report writing

Needs for Research Design:

Research design is needed because it facilitates the smooth sailing of the various operations / it males the maximum information with minimum operations of expenditure, effort, time and money. It is similar that before constructing a house we need the blueprint of it. Which is prepared by the experts (or) architecture? Similarly we need a research design or a plan in advance of data collection and analysis of our research project. Keeping in view the objectives of the research and the availability of staff, time and money, preparation of the research design should be done with a great care as any error in it may upset the entire project, and Research design.

Even then the need for a well thought out research design is at time not realized by many. The importance in which this problem deserves is not given to it As a result many researcher do not serve the purpose of Research which they had undertaken. In fact even they may give misleading conclusion. There are some important points for the Need of Research Design:

- ♣ It may result in the desired type of study with useful conclusion.
- ♣ It reduced In Accuracy.
- ♣ t helps to get optimum efficiency and reliability.
- ♣ It minimize wastage of Time.
- ♣ It minimize certain confusion, practical haphazard associated any research problems.
- ♣ t helps in collection of data and research materials for tasking of hypothesis.
- ♣ It is a guide post for giving research in a right direction.

Features of a Good Research Design:

A good design is often characterized by adjectives like, flexible, appropriate, efficient, economical and so on. The design which minimizes bias and maximizes the reliability of the data collected and analyses in consideration as good design. The design which gives the smallest experimental error is supposed to be the best design in many investigations. A research design appropriate for a particular research problem usually involved consideration of the following points: (2)

- ♣ The means of obtaining information
- ♣ The availability and skills of the researcher and his staff
- ♣ The objective of the problem to be studied
- ♣ The nature of the problem to be studied
- ♣ The availability of time money for the research work.

Characteristic of Research design:

- ♣ Regularity: State character of fact of being regular
- ♣ Verifiability: To ascertain text, the truth or accuracy of any opens for verification
- ♣ Universality: A state or quality of being universal or general.
- ♣ Predictability: To predict or tell before with moderate accuracy.
- ♣ Objectivity: Not subject or unbiased

- ♣ Systematization: In a coherent or orderly manner.

Components of the Research Design:

A practical research has the following steps however these are not independent but rather they are interdependent and overlapping in a sense.

Title of the Study: The title or name of the topic of research should be brief. In order to sharpen the focus if necessary a subtitle may be added to the main title.

Stating Problem: Stating the problem which surrounds the specific problem will provide a focus on the chosen topic for research.

Review of Literature: A review of literature should be made.

Area of scope and study: The area and scope of the study should be stated (3)

Limitations of Research Design:

The following are some of the limitations of research design.

- ♣ Non availability of sufficient data
- ♣ Non availability of resources like Money, Manpower Etc.,
- ♣ In adequate time in the formulation of research design
- ♣ Poor skill and ability of the scholar
- ♣ Un frozen development during the course of design, which are uncontrollable.

Tools for Data Collection:

The data collection begins after a research problem has been defined and research design plan or chalked out. After deciding about the data collection the researcher must keep in mind the two types of data collection: (4) Primary Data Collection, and Secondary data collection

Primary data are those which has collected fresh and first time, and thus happen to be the original character.

Secondary data or those which has already been collected by someone else and which have been passed away through the statistical process.

III. METHODS OF DATA COLLECTION

Primary Source of Data Collection:

1) Observation Method, 2) Interview Method, 3) Questionnaire Method

1. Observation Method: The observation method is most common method specially in studies relating to behavioral sciences. In a way we all observe things around us, but this sort of observation is not a scientific observation. Observation become a scientific tool and the method of data collection for the research when it serves formulated research purpose, is systematically planned and recorded and its subjected to check and controls on validity and reliability under the observation

method the information is sought by way of investigator's own direct observation without asking from the respondent. This method is particularly suitable in studies which deal with subject (i.e. respondents) who are not capable of giving verbal reports of their feelings for one reason or the other. Observation method has various limitations, firstly it is an expensive method, secondly the information provided by this method is very limited, Thirdly sometime unfrozen factor's may interfere with the observation task. At times the fact that some people are rarely accessible to direct observation creates abstract for their method to collect data collectively.

2. Interview Method: This method involves presentation of oral verbal and reply in terms of oral verbal response. It can be used through personal Interview and if possible through telephonic Interviews.

2. 1. Personal Interview: It requires a person known as the Interviewer asking question generally in a face-to-face contact to the other person. This sort of Interview may be in the form of direct person investigation or it may be indirect oral investigation. In the case of direct personal investigation the Interviewer has to collect the information personally from the sources concerned. He has to be on the spot and meet the people from whom data have to be collected. This method is particularly used for intensive investigation.

3. Questionnaire Method: This method of data collection is quite popular, particularly in care of big enquiries, it is adopted by Private, Individuals. Research Workers, Private and Public Organizations, and even by Government. In this method questionnaire is sent usually by post to person concerned with a request to answer the question and return the questionnaire. It contains number of questions printed or typed in a definite order on a form or set of forms. The questionnaire is mailed to respondent who are expected to read and understood the question and write down the reply in the space, meant for the purpose in the questionnaire itself the respondent has to answer the question on its own. (5)

Secondary Data Collection:

Secondary data means the data which is already available, They refer to the data which have been already collected and analyzed by others. When the researcher utilize secondary data then he has to look into various sources from where he has obtain this. In some case he is certainly not confronted with the problems that are usually associated with the collection of original data secondary date may be either be published data or unpublished data.

Usually published data are available in

- ♣ Various publication of the central, state or local Government
- ♣ Various publications of foreign governments/of International bodies organizations.
- ♣ Technical and trade Journals
- ♣ Books Magazines and newspaper

- ♣ Report prepared by research scholars Universities, economists etc., in different fields.
- Secondary data may be unsuitable or may be inadequate in the context of the problem, which the researcher wants to study.

Researcher must be very careful in using secondary data. He must make a minute scrutiny because it is just possible that the

Advantages & Disadvantages for Data Collection Methods:

Methods	Advantages	Disadvantages
Questionnaire	<ol style="list-style-type: none"> 1. Provides answers to a variety of questions 2. Can be answered anonymously 3. Allows time before responding 4. Can be administered to many people, at distant sites, simultaneously 5. Imposes uniformity by asking all respondents the same thing 	<ol style="list-style-type: none"> 1. Are not as flexible as interviews 2. People can often express themselves better orally than in writing 3. Getting people to complete questionnaires can be difficult 4. Good questions take time to develop and test
Interview	<ol style="list-style-type: none"> 1. Can be used for non-native speakers or those who might have difficulty with the wording of written questions 2. Permits flexibility and allows the interviewer to pursue unanticipated lines of inquiry 3. Appropriate to get in-depth information for sensitive topics 	<ol style="list-style-type: none"> 1. Is time consuming 2. Sometimes the interviewer can unduly influence the responses of the interviewee 3. Limits sample size
Observations	<ol style="list-style-type: none"> 1. Can be valuable if self-report measures may not be accurate 2. Can be seen as a report of what actually took place presented by a neutral outsider(s) 	<ol style="list-style-type: none"> 1. Presence of observers may alter what takes place 2. Time to develop the instrument and train observers 3. Time to conduct sufficient number of observations 4. There are usually scheduling problems 5. Limits sample size
Records	<ol style="list-style-type: none"> 1. Often viewed as objective and therefore credible 2. Set down events at the time of occurrence, rather than in retrospect 3. Can be unobtrusive 4. Can have a low impact on staff time and resources if records are already kept for purposes other than the evaluation 	<ol style="list-style-type: none"> 1. May give incomplete data examining them and extracting relevant information can be time – consuming 2. There may be ethical or legal constraints in examining certain records 3. If records are kept only for the purpose of evaluation, may be seen by staff as burdensome
Meetings	<ol style="list-style-type: none"> 1. Good for formative evaluation 2. Can be low cost 3. Permit flexibility 	<ol style="list-style-type: none"> 1. Possible bias if participants feel unable to be candid.

Table 1; Advantages & Disadvantages for data collection methods

Research Supervisor & Evaluation of Research Report:

a) **Research Supervisor:** “Although supervisors want their students to succeed, there are clearly limits to the amount of help which they may provide for their students”. Supervisors’ role includes:-

- ♣ Tutorial about research work in general;
- ♣ Advice on research methodology and design;
- ♣ Advice on structuring the thesis;
- ♣ Reading the thesis and finding out its pitfall;

Supervisors also have the experience of examining other thesis as well, so he/she can have a fair idea about the possible questions regarding the thesis, and will communicate the same to

the scholar, so that he / she can prepare for it in advance. If a supervisor disagrees about some content in the research report, only a little scope is left in the hands of the researcher to discuss it in length to arrive at a definite answer. If such a thing happens it would be better if the researcher tries to explain his/her position in front of the supervisor.

b) **Research Monitoring Agency:** Monitoring means keeping track with the overall progress and achievement of objectives of the ongoing research work and progress in the use of allocated fund to support the management task and timely decision making.

c) Evaluation of Research Report: In case of any research work, evaluation is a process of determining the worth or significance or value of the work in regards to the objectives, the efficacy of design, resource use and the sustainability of results. It should also enable the incorporation of lessons learned, credible and useful thought to help the funding agencies to make correct judgment. Evaluation leads to decision-making process and probable implementation of the research result. The supervisor(s) are not normally involved in the approval process of a thesis. There will usually be both two or three examiners, and at least one from other institutes / organizations to which the thesis was submitted. The role of research evaluator includes the following:

- ♣ **Social Engineer:** The evaluator is a social engineer, and is neutral;
- ♣ **Controller:** They attempt to hold the implementing agencies responsible for their decision and actions.
- ♣ **Advisor:** He / She is the advisor to the researcher;
- ♣ **Mediator:** The research evaluator is the mediator between the research findings and its applicability, between the researcher and the implementer.
- ♣ **Facilitator:** By way of supporting the results.

The evaluator in general judges the value of the thesis in regard to the following:

- ♣ **Inputs:** Human, physical and financial resource that are used to undertake the research;
- ♣ **Outcome:** Consequence / results of an intervention;
- ♣ **Output:** Results for implementation;
- ♣ **Performance:** Whether the results are justified in comparison to different performance indicator;

Before the oral interview, the researcher should read the thesis fully; anticipate the question that may be asked. Once the thesis is approved by the examiners, a copy of the thesis is usually sent to the university / college library. In case of thesis, it is good to see that only two options are left in the hands of the examiners, either he / she have to accept it or otherwise reject it. The degree is only offered to the candidate, who have critically investigated and evaluated an approved topic by using the research methods appropriate to the chosen field, and makes an independent and original contribution to the existing knowledge base and has presented and defended the research work in the oral and verbal examination to the satisfaction of the examiner(s).

IV. SIGNIFICANCE OF REPORT WRITING

Research report is considered as a major component of the research study for which the research task remains Incomplete till the report has been presented or written. As a matter of fact even the most hypothesis, highly well designed and conducted research study, and the most striking generalizations and findings are of little value unless they are effectively communicated to others. The purpose of research is not well served unless the findings are made known to others. Research results must invariably enter the general store of knowledge.

Materials and Structure

Most writer Imagine that their report will be the major event in the reader's day, when, in reality the poor fellow is awash with reading matter, drawing in facts, figures and opinions. What he wants to easily digested is the information and then only enough to help him reach a decision so the content of our report and its structure, must be very carefully planned.

Selection of Material

These are two golden rules to follow when deciding what to put into a report are:

- ♣ Simplify and be ruthless about it, Reject the irrelevant, agonize over the doubt, and make sure you have got the essential.
- ♣ Justify your conclusion with facts, and state their resources. Build the facts into a logical and consistent case, so as to lead the reader to the same conclusion as your own.

Planning the Structure

The facts themselves should therefore be a set of directions, which will lead and guide your reader along a route has to be planned before you write your report, perhaps as follows.

Turn a large sheet of paper sideways, and work across it. Work horizontally, so that you can see the whole plan of your report at one time.

First divide it into major sections every subject can be broken down in this way, and the headings will probably become the headings in your report.

Make a list under each heading of all the points you would like to mention note the information that you will need to support them. Now mark the most important points, the essential steps in your reasoning.

Next mark the least important ones, points your reader would find irrelevant, these you will probably reject.

The points that remain – the unmarked ones, are the doubt files, some you may want to use as examples, or to include in the appendices. But some of these also you may reject.

Lastly arrange the points in a final, logical sequence, so as to meet your objective. Some people write them out on scraps of paper as this stage, and shift them around until they get the order right. A plan like this will show you what information you will need for the body of the report, and what should go in the appendices, once written, you draw out your conclusions. And lastly you add your title page, summary, contents list, and Introduction. These eight terms make up the conventional structure of a report dealt with in more detail below. (4)

Different steps in writing report:

The usual steps involved in writing report are:

- ♣ Logical analysis of subject matter.
- ♣ Preparation of the final Outline
- ♣ Preparation of the rough draft
- ♣ Rewriting and polishing of the rough draft.
- ♣ Preparation of the final bibliography.

Logical Analysis of subject matter:

It is a first step which is primarily concerned with the development of subject. There are two ways to develop the subject first Logically and then Chronologically. The logically development is made on the basis of mental connections and associations between the one thing and another by means of analysis logical treatment often consists in developing the material from one simple possible to the most complex structure. Chronologically development is based on a connection or sequence in time or occurrence. The direction for doing or making sometimes usually follows the chronological order. Preparation of the final outline, It is the next step in writing the research report. "Outlines are the framework upon which long written works are consulted. They are an aid to the logical organization of the material and a reminder of the points to be stressed in the report". (5)

Preparation of rough draft:

It follows the logical analysis of the subject and the preparation of the final outline. This is the most important step for the researcher. Now the researcher has to study the context of the study. He will write down with procedure adopted by him in collecting the material for his study along with various limitations faced by him, the technique of analysis adopted by him, the broad findings and generalizations and the various suggestions he wants to offer regarding the problem concerned.

Rewriting and polishing of the rough draft:

This step to be the most difficult part of all formal writing. Usually this step requires more time than the writing of the rough draft. The careful revision makes the difference between a mediocre and a good pieces of writing. While rewriting and polishing, one should check the report for weaknesses in logical development or presentation. The researcher should also see whether or not the material, as it is presented. Has unity and cohesion; does the report stand upright and firm and exhibit a definite pattern, like a marble arch? In addition the researcher should give due attention to the fact that in his rough draft he has been consistent or not. He should check the mechanics of writing – grammar, spelling and usage.

Preparation of final bibliography:

The task of the preparation of the final bibliography. The bibliography, which is generally appended to the research report, is a list of books in some way patient to the research which has been done, It should contain all those works which the researcher has consulted. The bibliography should be arranged alphabetically and may be divided into two parts: The first part may contain the names of books and pamphlets, and the second part may contain the names of magazines and newspapers articles. Generally, this pattern of bibliography is considered continent and satisfactory from the point of view of reader.

V. RULES AND GUIDELINES

The following rules and guideline relate to conventional structure of a report some organizations lay down their own.

- a) Title page: This normally carries the title, sub-title, date, author's name and position, and distribution

list. It may also carry a reference number or other classification. But don't over crowd the page, a clear simple layout is always the best.

- b) Summary: A necessity if the report is a long one. It gives busy, people the gist of the report without their having to read it all; but if attractively written, it may whet their appetite, and stimulates them to read the whole thing.
- c) Content list: The content of short reports may be shown on the title page, or not at all. More extensive ones should always have a separate page, listing the major sections or chapters, sub-section if any, and appendices, and giving their page numbers. It should be laid out clearly so as to show the relationship between them.
- d) Introduction: This gives the background to the report, and usually shows why it was necessary. It usually states the objectives of the report (in formal terms), who called for it, and the scope and treatment. The shorter it is the better.
- e) Body of the report: This contains your detailed facts and findings, shows how they were arrived at, and indicates the interferences to be drawn from them, all in accordance with your horizontal plan.
- f) Conclusion: Here you draw out the main points of your report and present a considered judgment on them.
- g) Recommendations: Finally, set down any recommendations, relating them clearly to what has gone before. In a good report, the reader is carried along by the arguments, so that by the time he reaches the end, he will need to further convincing.
- h) Appendices: Some reports need detailed supporting information, or perhaps information that only some readers need all this goes in the appendices. In some cases you may also need to include:
 - i) Bibliography and / or References: This lists either the books or articles consulted as a basis for the report or those you want to suggest as further reading or both – Make clear which they are.
 - j) Glossary or Nomenclature: This can be help if your readers include non expert as well as experts. When writing on a specialist subject for non experts alone, define any technical terms as you go along.

TITTLE

By
NAME OF STUDENT AUTHOR

Name of faculty advisor, Advisor

A thesis submitted in partial fulfillment of the requirement for the

Doctor of Philosophy

In

Library and Information Science

Bharathiar University

Coimbatore (TN) India

DATE

Figure 1; Example of a Thesis Title Page

VI. CONCLUSION

There are several Research design and the researcher must decide in advance of collection and analysis to which design would prove to be more appropriate for his research project. In this paper I had clearly sketch the Research Design its need and characters and also methods utilize for data collection. I had chosen two major steps for data collection which are Primary Data Collection and Secondary Data Collection, and also difference between the techniques utilized for the Data Collection methods. It is become customary to conclude the research report with a very brief summary. Resting in brief the research problem, the methodology, the major findings and the major conclusion drawn from the research results. In this paper I have clearly mention the report writing from Preliminary page to

the End page. Even though I want to tell that in spite of all that has been stated above, one should always keep in view the fact report-writing is an art which is learnt by practice and experience, rather than by mere doctrination.

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