



POLICY GUIDELINES FOR WRITING

RESEARCH PROPOSAL AND THESIS

**School of Postgraduate Studies
University of Benin,
Benin City, Nigeria.**

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**Printed in Nigeria by
Most Virtue Publisher
#64, First East Circular Road,
Royal Shopping Mall, Benin City, Edo State
08056615116, 08107887257**

TABLE OF CONTENTS

CHAPTER 1

- 1.0 Introduction
- 1.1 What does research really mean
- 1.2 Questions for consideration by potential research students

CHAPTER 2

- 2.0 Some guiding thoughts for research students
- 2.1 What Scientist really mean when they say

CHAPTER 3

- 3.0 Types of research

CHAPTER 4

- 4.0 Stages in the development of research
- 4.1 Starting a research project

CHAPTER 5

- 5.0 Literature review
- 5.1 The search
- 5.2 Plagiarism
- 5.3 Current State of the Art

CHAPTER 6

- 6.0 The research design, conceptual framework and methodology
- 6.1 Conceptual framework
- 6.2 Methodology
- 6.3 Data collection
- 6.4 Sampling and Sample sizes

CHAPTER 7

- 7.0 Hypotheses, Assumption and Experimentation Hypotheses\
- 7.2 Hypotheses Formulation
- 7.3 Types of Hypothesis
- 7 -4 Assumptions
- 7.5 Experimentation

CHAPTER 8

- 8.0 Data Classification, Measurement,
- 8.1 Processing and Presentation

CHAPTER 9

- 9.0 Registration of Title 11
- 9.1 General Guidelines

- 9.2 Synopsis of Research
- 9.3 Abstract
- 9.4 Aim and Objectives
- 9.5 Methodology
- 9.6 Findings
- 9.7 Contribution to knowledge
- 9.8 References

CHAPTER 10

- 10.0 Preparing the Research
- 10.1 Presenting' Research Evidence
- 10.2. Major Divisions of Research Report

CHAPTER 1

1.0 INTRODUCTION

A thesis, as a requirement in the award of postgraduate degree in University of Benin, serves the primary purpose of training of the student in the process of scholarly research and writing under the guidance of a supervisor. Therefore the School of Postgraduate Studies has established format standards that a thesis must meet before it receive the final approval as a graduate requirement. This publication sets forth the thesis standard for university of Benin postgraduate programmes and provides guidance on a variety of matter related to the process of thesis preparation. It is expected that a thesis will be written in clear, grammatically correct English.

A Postgraduate degree, - M.Sc, MA, M.Phil or Ph.D - is a much higher degree than an undergraduate degree and requires a great deal of rigour, research and experimentation to be earned.

Earning any of these degrees is conditioned upon accomplishing two primary objectives.

- (a) mastering a specific subject/body of knowledge from its history to the current state of the art.
- (b) contributing to the body of knowledge by exploring, investigating, contemplating and experimenting, interpreting and deep understanding. This is called RESEARCH.

The end result of a Master or Doctor of Philosophy degree is a long, formal, comprehensive document called a THESIS or DISSERTATION. This is presented first to the relevant Faculty before submission to a panel of examiners in the school of Postgraduate Studies where the student defends his

1.1 What does research h really mean

Research is any scientific inquiry. It is the careful and painstaking inquiry into phenomena in order to discover:

1. New information,

2. Relationships that may exist between variables and phenomena,
3. Verify existing knowledge and/or
4. Expand existing knowledge.

As Rummel and Ballaine (1963) further argued, research is the manipulation of ideas, concepts, variables, symbols and other phenomena in order to arrive at generalizable conclusions that might constitute theory in future. The objective of any research whether library or field or experimental is to extend, correct and verify knowledge in order to aid the construction of a theory or the practice of an art. However, it must be emphasized that research is not looking up or searching for something in a standard reference book like an encyclopedia or compendium of facts and statistical data. It is the acquisition of new information, ideas and knowledge. For any work to qualify piece of research, it must contribute to knowledge.

Essentially, every research student must keep constantly in his inner recesses the following question:

Am I contributing to knowledge?

If so what is my contribution?

1.2 Questions for Consideration by Potential Research Students

Every potential research student must provide answers to a range of questions listed below before he commences the research. Where the answers are negative he must avoid embarking on the research. Along this line Allen (1970) has provided one of the most comprehensive list of the questions. The following general questions, which must be answered in the affirmative, give some insight into the need for adequate preparation to ensure successful work:

- (a) Is the research topic one that can be narrowed down in scope to produce a manageable research project?
- (b) Is the topic of current interest in my field of study?
- (c) Will the topic make a specific contribution to knowledge as defined by my supervisor?
- (d) Is the topic one that will have general applicability?

- (e) Has the topic received only minimal coverage in journals and other related academic publications?
- (f) Can I foresee all major problems that I might encounter and their tentative solutions, at this time?
- (g) Do I have sufficient interest in this topic now and can the interest be sustained throughout the duration of the research?
- (h) Will the literature search be manageable? (i) Is the research the type that will be defended?
- (j) Will the data that will be needed readily available and can it be easily collected?
- (k) Will I be able to minimize my bias towards the chosen topic?
- (l) Can I state the precise purpose, scope, objectives and limitations of the work?
- (m) Do I as a researcher have the necessary skills to complete the research? If not, can I readily obtain requisite assistance in areas in which I am deficient?

Every researcher must satisfy himself that answers to all of these questions are positive; otherwise the success of the research is jeopardized right from the start.

CHAPTER 2

1.0 SOME GUIDING THOUGHTS FOR RESEARCH STUDENTS

1. All research must have rigour and relevance, not rigour in spite of relevance (Gordon, 1976).
2. Research should attempt to bridge the gap between theory and practice in order to make reason a stronger
3. Any research worth its salt should be able to do at
 - (a) Explain phenomena;
 - (b) Enable the prediction of phenomena and
 - (c) Facilitate the control of phenomena.
4. The key to success in research lies in insisting on two or more independent bodies of data which, like a navigational fix on a target come at the same point from different angles and provide intersections of information that corroborate each other (Donaldson, 1969).
5. To be conscious that you are ignorant of the facts is a great step to knowledge (Disreli, 1889).
6. Plagiarism is the mortal sin of every researcher, better not to write at all than stand accused of such a humiliating offence (Osaze, 1983).

2.1 What Scientists Really Mean When They Say.....

1. "It has long been known..."
I have not bothered to look up the original reference.
2. "Three of the samples were chosen for detailed study../'
The others did not make sense so, I ignored them. The author has biased essentially the study.

3. "Typical results are shown..."
The best results are shown; others, if shown would mess up my work.
4. "It is believed that..."
I think, but I am not sure.
5. "It is generally believed that..."
A few other writers who also remain unsure believe so too.
6. "It is clear that much additional work will be required before a complete understanding is attained..." I do not understand it.
7. "These results are in error within an order of magnitude or to a certain degree..."
The results are wrong or unreliable.
8. "In conclusion the evidence indicates the soundness of our basic hypothesis..." The hypothesis was stated sufficiently vaguely in the first place.
9. "Our thanks go to Bob Osaze for assistance with the experiment and John Ayuba for valuable discussions..."

Osaze did the work and Ayuba explained what it meant in me (Extract from "A Glossary of Research Language" by Kemble Widmer Sciendaba, 1977).

CHAPTER THREE

1.0 TYPES OF RESEARCH: APPROACHES TO CONDUCTING RESEARCH

3.1 Introduction

Having satisfied himself of the potentiality of the work at this stage, the researcher must be familiar with the difference types of research that could be conducted. In other words, the different approaches that could be adopted in conducting the research work. This is the focus of this chapter.

Basically, there are three alternative approaches to conducting research. They are identified as follows:

(a) **Descriptive research**

Descriptive research is usually the very first step in the research process. This is because it describes and defines variables and phenomena as they exist in the field or as the researcher observes their behavior. Descriptive research only States what is happening, where it is happening and how it is happening in order to discover behavior patterns and possible trends. Descriptive research indeed provides the materials and raw data required for further analytical work that is associated with other types of research. It is merely a pre-requisite to further research. In a virgin field where little or no research has been conducted before, descriptive research proves probably the best approach since **phenomena** must be first known, described and their nature and behavior documented before any attempt is made at finding out why they behave the way they do (casual research) or how they are likely to behave in future -(prescriptive research).

(b) **Analytical/Casual research**

Casual research follows descriptive research in logical sequence. It is an in-depth study of phenomena and tries to reveal why phenomena/variables behave the way they do. Casual research establishes relationships between variables which may be dependent or independent of each other. For instance, sales and income respectively.

These variables may also be exogenous or endogenous, as in the case of the effect of the general economic situation on 'management competence. -Essentially casual/analytical: research tries to draw conclusions from in-depth studies and makes recommendations thereon. Unlike descriptive research casual research relies rather heavily on statistical tools of analyzing, including measures of central tendency and measures of dispersion, analysis of variance, statistical test of significance and regression as well as multiple discriminant or canonical analyses.

(c) Prescriptive research

On the basis of descriptive and casual research, prescriptive research seeks to forecast trends and variables values. Thus, if it is revealed that variable X depends on variable Y, then prescriptive research attempt to find out what X will be in a future period if Y takes a particular value. Hence, prescriptive research is the most important for long range planning. One of the most celebrated pieces of prescriptive research is Altman's Multiple Discriminant Analysis (MDA) in Business Finance, which determines those variables that tended to predict business failure. Prescriptive research has found most of its application in scientific studies and econometric analyses.

3.2 Methodological categories of research

Whether a research is descriptive, casual or prescriptive in nature, it must lend itself to some methodology of data acquisition or aggregation, analysis and interpretation. Hence, three methodological categories of research have been identified and these are historical, survey and experimentation.

(a) Historical research

Historical research is essentially already collected and recorded data emanating from secondary sources in the, literature, the libraries, journals, periodicals, books, films and unpublished mimeograph, internet, monographs and other similar material sources. Data from historical sources facilitate the research process and reduce the expense of going into the field to collect the data. However, the researcher must exercise extreme caution in using historical sources for various reasons. In the first places, such data have been overtaken by recent events, new information, recent findings,

mor-5 advanced and more accurate techniques and methodology. Secondly, such pieces of research may have been time-bound. Thirdly, they may have been culture specific, which tends to limit their general applicability. Furthermore, historical data sources are often biased in favour of the vested interests of the sources. For example governments have been known to bias data and information to suit their various policies and programmes of actions, and companies quite often bias financial statement for various purposes like tax evasion and avoidance, boosting their stock value to attract investors or to conceal managerial incompetence.

(b) Survey research

Survey research involves the collection of first hand information and data from primary sources by the researcher. This could be done by interviews. It is usually more accurate than historical sources since accuracy of information so collected depends on the ability and competence of the researcher, his honesty and integrity and capability to relate questions asked to the objectives of the research. Survey data are also susceptible to sampling errors and respondent's errors, which the researcher must be constantly aware of. Quite often, the researcher operating in a non-literate environment may have to translate his questions or engage the services of translators to get his message across to the respondents in order to elicit accurate and usable information. This is quite often the case in developing environments like Nigeria. In that case, what the researcher must concern himself with in the translation process is not lexical comparability of the translation with the original text written in English but conceptual

(c) Experimentation

Experimental data usually come from a laboratory situation either in the field or in the pure science laboratory. In this case, the researcher is conducting experiments to discover trends, new phenomena or to confirm or disconfirm earlier work in the area. In the process of experimentation the researcher would have both an experimental group on which the research is being conducted and a control group to which experimentation is useful for hypothesis testing and determining relationship between/among variables. However, experimentation is subject to various errors. These include contamination of the control group by the experimental group. For example, if a company is trying to find out if buyers would purchase more of its

products when price is reduced and in the process uses one market as its experimental laboratory, the risk exists that buyers in other markets where price has not been reduced (control markets) would obtain information and cross over to the experimental market to take advantage of the lower prices there. There is also the problem of mortality of members of the experimental group. This occurs when a subject of the experiment dies or leaves the laboratory. This reduces the sample size and may necessitate the inclusion of a new subject. Experimentation creates a security problem since the competitors may become aware of the experiment and may consequently take precipitate action that would make the experiment redundant. Experimentation is not only costly but time consuming and the results from the experiment may not be realistic or generalizable to every member of the population. For example, the fact that one hundred rats or people reacted positively to a new drug does not mean that everyone would also react positively to the drug. Hence, extreme care and caution must be exercised in the use of experimental results. Indeed several iterations of the experiment may need to be conducted in order to assure the validity of the test results.

CHAPTER 4

1.0 STAGES IN THE DEVELOPMENT OF RESEARCH

There are certain basic logical sequences in the development of research. The first is observation whereby the researcher begins by observing the way phenomena behave or appear to behave. In the process of observation, he might also participate in the activity of the phenomena being observed. This is known as participant-observer method. The objective of observation is to collect data and describe the behavior of the phenomena being

The second logical step is the gathering of data from traditional beliefs and ways of life. This is more common in anthropological/sociological and social studies. However, the researcher must be able to sift the grain from the chaff since many traditional beliefs may be wrong. Hence, he needs to take his research a step forward by engaging in some speculation or philosophizing or even argumentation on the basis of the information gathered during observation and from traditional beliefs. However, according to Rummel et al (1963) speculation and argumentation are devoid of empiricism and cannot therefore be proved to be right or wrong.

The last stage in the development of research is the hypothesis testing and experimentation stage where prepositions are put to empirical tests and experimental analysis to determine if they hold or not or whether they only[^] hold under certain circumstances.

4.1 Starting a Research Project

a. Selecting a problem area

Research, ipso facto, suggests that there is a problem to be investigated. Hence, there must be a problem the nature of which must be clearly stated abinitio. It is the problem that guides the conduct of the research all through. Without a well stated problem, the researcher may end up just tabulating facts and respondents' answers and reciting data collected. There must be some analysis of these facts even in historical or descriptive research for the study to qualify as a research work.

How does a researcher find a problem area? The best way to find a workable problem area is to be familiar with the literature in a particular subject area, to be a specialist. The potential research student must read widely, discuss with colleagues and other knowledgeable people in the area and think critically. There is indeed no substitute for extensive and intensive reading. A study of the existing literature and other research works, projects thesis and dissertations will yield areas of controversy and disagreements as well as directions for further research. It is in these areas that the researcher would need to follow up ideas from which to formulate a research problem of particular interest to him and that will contribute in bridging the knowledge gap. As much as possible, the topic eventually chosen should be new, topical and of theoretical or applied practical significance. Students are likely to earn more marks for new areas instead of following old beaten path.

However, formulating a research topic is still one of the most difficult steps in the research process since it involves narrowing down the research topic to feasible and manageable proportions in the light of various constraints of time, financial, knowledge and supervision resources. It is very easy for a researcher to pick a research area that interests him but the problem is to be able to scale it down to a topic that will be viable. It is perhaps necessary to look at some of the fundamental mistakes researchers make in this regard. Often, the student falls into the trap of shelving the selection of a topic until he has completed most, if not all of his courses. The problem with this approach is that it compounds the time constraint issue such that when he does decide on a topic, he has very little time to digest it, embark on an adequate and extensive literature search and set the research design in motion. Furthermore, in view of the time pressure under which he is operating, Borg (1963) argues that the student often uncritically accepts the first research idea or proposal he thinks of or that is suggested to him by his supervisor who is only there to guide the research and not to impose his ideas. The fear of non-existent sanctions by the supervisor often leads the student to accept all or most of his suggestions without relating them to his capabilities or resources. Alternatively, the student selects a topic that is only too wide but also too vague for any meaningful investigation. Topics like "Financial Management in Nigeria" or "Marketing in Nigeria: Problem and Prospects" or "Toxicity in African Fauna" are cases in point. Clear, direction bound

topics like "The Problem of Managing Working Capital in the Nigerian Textile Industry" or "Toxicity Levels of the Food Intake of Selected African Rodents" are probably more precise and workable. In the same vein, some students and researchers also run into the problem of formulating fuzzy and untestable hypotheses and eventually fail to consider the analytical procedures that will be required in testing these hypotheses (Borg, 1963). Hence, in the formulation of a research topic, students and researchers must consider the full implications of the topic on the total research effort and objectives. This is why a research proposal is very important at the formulation stage. Below is a sample research proposal that students may find useful.

4.2 Project Proposal

- (a) **Title:** A description of the research must be made. **This** should however be a working/tentative title to be refined later as the research progresses or when it is finished.

- (b) **Immediate purposes of the research:** This should be a statement of the research question or hypotheses to be tested and should be quite clear and precise, e.g. The effects of penicillin on hypertensive white mice: The relationship between taxation and value of the firm:
The structure of a system which will tend to produce Y, etc.

- (c) **Theoretical foundations and conceptual framework:** This should be an indication of the theoretical model upon which the study will be based, e.g.
Modigliani and Miller (M & M) Theory;
The Marketing Concept;
Maslow's Hierarchy of Needs Theory;
Systems Theory of Relativity or any other already published model.

- (d) **Relation to other research:** This is a statement of the study and how it would relate to other published or **ongoing** theoretical or empirical work in the same field. Would it replicate, disconfirm, confirm or add to existing studies?

- (e). **Research design:** This should describe the entities or phenomena/variables to be studied; the logic underlying the investigative procedures; data collection procedures; measurement techniques and statistical tools and techniques to be used.
- (f). **Implementation of the design:** How does the researcher hope to gain access to the research situation or gain the co-operation of entities to be studied?
- (g). **Overall schedule or logical flow chart for the study:** There should be specific dates and deadlines for each stage of the research work from conception to submission which the researcher must attempt to stick to religiously. It disciplines the researcher in terms of time keeping.
- (h). **Resources for the study:** How much money and time would be required to complete the study. What plans are there to obtain' these resources without any hitch that might jeopardize the research?
- (i). **Contingency Plans:** Every research is bound to experience problems at some stage, What are the probable problems that may arise? What are the plans that the researcher has developed for the project to be viable if initial plans fail at a critical stage?
- (j). **Possible Application of the Results of the Research:** Who are likely to be the end users of the results of the research? Indicate government, educational institute, and other researchers.
- (k). **Directions for further Research: What are the other** areas not covered in the original scope of the study but uncovered during the research that require further investigation in subsequent research?

CHAPTER 5

5.0 LITERATURE REVIEW

5.1 The Search

Obviously, in selecting a topic, the relevant field of knowledge must be thoroughly scanned. Scanning the field assumes further importance after the topic has been selected in order to find out what has been written in the same area or on the same topic that would either uncover areas of controversy or reveal some support for the position which the researcher is taking or intends to take. A review of the related and relevant literature should cover all published and unpublished works including seminar papers, manuscripts and speeches that are related directly and indirectly to the research topic. It is always a laborious process that proves fruitful in the end.

In a comprehensive review of the literature, the researcher should obtain a theoretical model or construct upon which the research will be based. This will serve as a guide to the study and will focus the literature search to a narrower field. The study should then discuss the relevant theory of the research topic/area. It is within this theoretical framework that a review of the major relevant and related research so far done in the area is undertaken. In the review process, the student/researcher must be bold enough to critique ideas, other research findings that are weak; he must identify loopholes as well as areas of controversy. Obviously in doing this, the researcher is saying that his research is going to resolve most, if not all of these loopholes identified. Hence the key is not just the identification of controversies in the literature but also an attempt at resolving them in the current research. Other unresolved issues identified in the literature but not covered in the scope of the student's work should be left to directions for further research. The directions for further research in existing works in the literature also provide some insight into unresolved issues, which the researcher must take note of and try to resolve in the process of his research. In the process of reviewing the relevant literature, the research topic gets farther refined. The researcher must also never forget to review methodologies and models since controversies in the literature may actually have arisen from inadequate methodologies and theoretical construct than from the research results themselves.

Very often, students conduct a hurried search of the literature. The result is that important studies, which would have improved the research, are overlooked. Furthermore, the student/researcher also concentrates his search on empirical findings when reviewing articles thus missing out valuable information on methodology, procedures and measurement techniques. Aside from relying too much on secondary sources of information, many students also overlook sources other than their own subject area or sources besides academic and professional journals. Quite often valuable information also exists in other fields of study beyond the subject area and in newspapers, popular magazines, periodicals and government papers.

In a literature search, the study must look far and wide and must be current and up to date, but it is still essential to define the limits of the literature search. Searching too broadly leads to superficial reviews and searching too narrow an area can result in overlooking "many articles that are peripheral to his research topic but contain information that would help him design a better study (Borg 1963). There has to be a balance between intensive and extensive search. The purpose of literature review is to obtain information that would buttress the findings of the research. The search must start from earlier work done in the field and conclude with a study of the current state of the art. There is need to integrate the findings from the literature review with empirical findings of the research being conducted. Finally, during the literature search, the student/researcher must ensure that bibliographical data are properly and correctly copied down. This is to facilitate the location of references when required; otherwise the whole search process may have to be initiated

5.2 Plagiarism

Plagiarism is the greatest offence that a researcher can ever commit. Indeed, in research activity, plagiarism is as grievous as committing murder. Plagiarism occurs when a researcher consciously or unconsciously "steals" and uses the ideas, work and writing of other authors and researchers giving the impression that those ideas are his own original work. According to the Chambers English Dictionary (1992), the word derives from the Latin word *plagium*, which means kidnapping.

In literature review, if a researcher copies down already published works verbatim or writes them in his own language without giving due credit to the original author by

proper referencing, he is guilty of plagiarism. It does not matter whether it is consciously or inadvertently done. Hence, in order to avoid this kind of embarrassment, all verbatim reportage must be put in quotes and referenced; all reconstructed ideas must also be adequately referenced. It is safer to be accused of having too much reference than run the risk of plagiarism.

However, leaving two-inch margins on either side of the page, thus, should indent all verbatim quotes containing more than fifty words:

"Plagiarism is the greatest offence that a researcher can ever commit. Indeed, in research activity, plagiarism is as grievous as committing murder..." (Osaze 1985).

All other quotes of less than fifty words may be incorporated in the regular text. Finally, do not assume that you are the only researcher with a piece of information or because it was published in Tahiti in 1820 you are unlikely to be detected. Someone, somewhere, sometimes, either now or even in twenty years time may read your work and compare with an earlier work only to accuse you of plagiarism. You may have published your results already; you may have been awarded a degree based on it or obtained a promotion as a result but if a case of plagiarism is successfully proved against you, your work will be disowned by the publisher, your degree will be withdrawn and you may indeed lose your job. Every researcher must resist the temptation of plagiarism no matter how well documented by the original author. If you have to use his results, give him due credit by referencing and quoting properly. This includes all published works - dinner speeches, speeches at Old Boys Association, Inter-House Sports, ideas in books, journals, magazines, newspaper, newsletter, circular, etc.

5.3 Current state of the Art

All reviews of the relevant literature must end with a review of the current state of the art in the current stage of the theory, methodology and research in the area of the study. It is a review of the viewpoints, findings, research results and postulations, prepositions and opinions up to date. It is the current state of the research situation. It is from the stage of the current state of the art that the researcher will explain where

he intends to go; in other words, the direction of this research. Is it going to add, confirm or disconfirm existing knowledge in the area? How does the current study being undertaken by the researcher propose to relate to existing knowledge in the field? Whatever the case, the guiding principle is that you must contribute to knowledge in the area. Postgraduate students prior to submitting their thesis to School of Postgraduate Studies should have their thesis certified by the relevant unit of the university and their thesis must be in compliance within acceptable limit of plagiarism test. The acceptable limit of plagiarism test for postgraduate thesis in the University is 15% for Ph.D, 15% for M.Phil and 20% for MSc

CHAPTER 6

6.0 THE RESEARCH DESIGN, CONCEPTUAL

The next logical step in the research process is the research design, conceptual framework and methodology for conducting the research. At this stage, the basic goals and objectives, which the research has set out to achieve, must be clearly stated. This guides and focuses the research effort. The research objectives are a logical extension of the scope of the study and must fall within it.

6.1 Conceptual Framework: Every research work must have a conceptual framework in the design stage. Indeed, what is common to all research is the conceptual framework and analytical approach, which the researcher brings to the entity or phenomenon being studied that which in a sense, constrains it as a basis for the investigation (Warmington, Lupton and Gronnom. 1977). The conceptual framework defines the outer limits and of the research. Most research studies that been conducted so far have traditionally taken two approaches. There is the descriptive literature, which ipso facto, describes the characteristics, problems and behaviour patterns of phenomena. This might be called best current practice and behaviour. At another level are the analytical writings, which have attempted to deal with the logic of why phenomena behave the way they do. A key characteristic of analytical writings is that they aim at an objective framework for evaluating changes that occur within a phenomenon/variable. This is the trend of current research work. The analytical approach tends to deal with issues normatively. Thus, how should variables behave under certain conditions both internal and external to them? What is the correct logical framework for dealing with the relevant considerations in a systematic and objective manner? This is often referred to as the development of a theory, conceptual framework or philosophical paradigm for the problem so that it could be integrated with other dimensions of generalized models in the arts or sciences. However, such a model building approach would be a retreat from the "real" world by simplifications and conceptualizations in order to introduce the available tools of logic. But this would appear to assume a more advanced state of the art than is actually the case, as Donaldson (1969) argues, there is still some doubt as to whether one can say with absolute certainty and conviction, especially in the social and management sciences

that here is a set of quantifiable corporate goals; here is the analytical framework; here are the relevant variables and the data upon which the decision should be based; and here are the analyses and results. The doubt arises from the gulf that exists between academic theory and business practice. The contention therefore, is that while analytical studies are rightly desirable, descriptive research also has its value. A researcher can safely opt for one or a combination of both methods in this study. What is desired is to be able to integrate the operational framework of the entity variable/phenomenon being studied with a theoretical framework that would serve as a basis for ensuring rigour and relevance in research activity.

Having said that, it must be reiterated that a conceptual framework is essential in every research. In the management and social sciences for example, there are many interrelating variables that must be considered in their totality in order to arrive at correct explanations for observations made. Every study must recognize the contingent nature of several research variables since what is of interest is the unique set of interrelations that exist in the entity under investigation. Here, the systems perspective assumes critical importance. In the social sciences for example, especially in the study of any functional area of an organization, the researcher must recognize that the organization is composed of structures, processes and environments. It has its own technology, value system, ethos and corporate climate which all influence its behaviour and operational character. This is true also for the sciences and humanities. Therefore, the choice of a framework should be based on the main criterion of relevance to the investigation, and it should enable the researcher to examine and if possible to explain the influences of other variables on the behaviour of the phenomenon being studied. As Warmington et al (1977) further contend.

“In any given industrial organization and in any given investigation, the (systems) approach suggests these various systems and variables will have varying degrees of relevance to the needs of the investigator. More important than the kind of variable to be examined and included in a systems model of the organization is the philosophy of causation: that the variables will be related to each other in a rather complex iterative way and that it is the relations between the variables which are of most significance in generating the processes through which the characteristic and the recurrent patterns of behaviour in a particular, organization emerge. The systems framework thus provides

a method of investigating and formulating explanations about the organization in such a way that the relationship between the relevant variables in the particular organization is assumed to be of most interest and value to the investigator”.

Essentially, the systems framework, which has been found useful in many studies, is aimed at emphasizing the importance of taking a birds-eye-view of the variable or phenomenon, it is a system consisting of various interrelated subsystems. In studying one or a group of these subsystems, the researcher needs to remain constantly aware of the influences of others on his focus of interest. For Von Bertalanfy (1950) argues rightly.

“A system... behaves as a whole, the changes in every element depending on all the others... You cannot sum up the behaviour of the whole from the isolated parts... you have to take account of the relations between the various subordinated systems and the systems which are super-ordinate to them in order to understand the behaviour of the parts”,

Thus, in developing a conceptual framework, the systems approach proves a good paradigm. 6.2

6.2 Methodology: Having established the purpose of the study and its framework, the next step is to develop a methodology for data collection, aggregation, measurement, analyses and synthesis. In other the data sources, how much resources would be required. In essence, the methodology determines what is to be done, how it is to be done, when it is to be done, by whom it is to be done and the cost of doing it.

However, in order to provide a sound base for data collection and measurement it might be necessary to conduct pilot studies of the research or phenomenon. A pilot study is a preliminary study of a few isolated clinical cases that might assist in discovering trends and directions for more indepth research and for designing more comprehensive studies. Furthermore, values of a pilot study according to Donaldson (1969) include:

- (a) Testing the suitability of the research concept as a meaningful concern of the existing body of knowledge.

- (b) Testing the validity of the research approach and the feasibility of the project in terms of data availability; \
- (c) Testing the practicability of the research sampling process; and Generating suitable hypotheses for the study.

The research methodology should also cover specific issues including research entity being studied, the research locus, sampling and information sources, research techniques and procedures.

6.3 Steps in the Research Design Process

The following are useful steps, which can be adopted in a research design process.

- a) Obtaining a manageable definition of the research problem. This must be clear and concise.
- b) Obtaining and specifying information required, depending on the nature of the problem.
- c) Detailing both primary and secondary sources of data available, the quality, authenticity, adequacy, accessibility and cost of the data.
- d) Selecting a methodology and statistical techniques to be used while recognizing time, fiscal and other non-economic constraints that might be encountered.
- e) Selecting resources in terms of cost and availability.
- f) Preparing a formal plan of action stating what is to be done, how, when, by whom, where and the budget for each of these.
- g) Determining possible conclusions, recommendations and implications of the research.

6.4 Data Collection

Data collection is one of the crucial pillars in the research building. This takes such forms as interviewing questionnaire construction and administration or observation, documentary sources of information experiments and case studies. In collecting information for the research, the investigator must determine right from the beginning the mode of data collection and the sources of the data vis-a-vis the objectives and

methodology of the research. However, the purpose of this section to discuss the various methods of collecting information available to the researcher. These include; questionnaires, observation/interview, and case studies.

(a) Questionnaires

Questionnaires are prepared sets of questions that the researcher would administer to his potential respondents to solicit information on issues relating to the research questions (Questionnaires can either be structured or unstructured).

A structured questioning is one in which the researcher only wants specific, clear-cut answers to the questions posed. Only answers like "Yes" or "No" and "Agree". "Don't Agree", "Like", "Dislike" are- inquired. In a structured questionnaire there is no room for explanation or long answers by the respondents. These are easy to process but the researcher MUST be careful in constructing the questions in such a way that they actually obtain the answers he expects and no more. Quite often also the respondents may have very useful reasons for providing the answers he has given which may not come out in a structured questionnaire. In which case, the researcher stands to lose such important information.

The unstructured questionnaire on the other hand gives room to the respondent to explain his position and answer. Such questionnaire is often open-ended and the respondent has opportunity for free response. It provides opportunity for deep-rooted motives for the respondent's answers to be further explained. However, though very useful, unstructured questionnaire are difficult to process, time consuming and costly.

Thus, questionnaires can be constructed to solicit short, crisp Yes/No. Agree, Don't Agree, True/False answers or open-ended, multiple choice, explanatory answers. Questionnaires as much as possible must not be too long, as they can put off prospective but busy respondent. As a rule of thumb, anything longer than three foolscap pages is like to be bugged down by poor response rate. A questionnaire should be designed to facilitate processing. Furthermore, questions should be asked to test the validity of answers provided by respondents to earlier questions. These are called trip-wire questions. For instance, people are known to remain untruthful about their ages, especially women. Hence if a woman is asked about her age, a further

question should be asked about the number of children she has and how long she has been married. These three questions are more likely to elicit the correct information about her age since, on the average, a twenty five year old woman is unlikely to have six children with age ranging from thirteen to five. However, with sensitive issues like age and income, multiple choice answers should be provided in the questionnaire and they should be in ranges. For sample, an age range of 20 to 25; 26 to 30; 31 to 35 and so on should be provided. There should be a covering letter to every Questionnaire sent out by post and the letter should be as civil as possible, courteous and emphasizing the importance of the respondent's answers to the successful outcome of the project. Do not promise to results to the respondents Always promise anonymity promise. The researcher envelops to from passing on such important to follow up visits. Above also, the must be professional.

In questionnaire construction and administration, researchers often make many mistakes that should be pointed out at this stage. Quite often in order to obtain as touch relevant information as possible, the researcher needs la be skilled in the art of public relations. In other words, there is the need to pay sufficient "attention to establishing and maintaining rapport with his subjects" (Borg, 1963); Otherwise he might not get the cooperation necessary for a friction-free interview. Information thus obtained could lead to the reduction in the validity of tests and statistical measures. Often, only a limited number of questions can be asked at a time since respondents have pressing duties and only as limited attention span. Furthermore, questions pertaining to propositions well established in the literature and unlikely to generate new information and new challenges should be omitted. What is important is to frame questions for testing the consensus of the literature on impuissant issues where doubts and controversies are prominent. In effects, sufficient attention must be given to the construction of the questionnaire and as much as possible pre-tested with friends and colleagues. This goes for straight questionnaires and those used as guides for structure interviews. It is also essential to check a sample of non-respondents' for possible bias.

It should be borne in mind that not all relevant data are readily available from respondents. For instance, financial statements are not pieces of information that companies are willing to make readily available for research purposes. Furthermore,

due to the usual problems associated with reconstructing past decisions in respect of financial action or even to make explicit the current plans on financing, it may be necessary to adopt a research approach that would not place excessive reliance on any one sources of information. As Donaldson (1969) succinctly put it.

"Great demands are made on the capacity of the researcher to execute a suitable and unbiased interview and to judge when he is getting an honest and perceptive responses. However, the key to the use of such evidence... lies in insisting on two or more independent bodies of data which, like a navigational fix on a target, come at the same point from different angles and provide intersections of information that corroborate each other".

(b) Observation/Interview

Data may also be collected through interviews and by observation of the research phenomena in action. By observation, the researcher is actually studying the entities as they behave in their-environment. It is a laborious and time-consuming exercise except the researcher has assistants skilled in the art of watching out for certain importation issues. Through observation, the researcher is able to compare what he observes the entities are doing with what they say or are said to be doing and consequently draw conclusions there from.

Hence it is perhaps to observe and interview in order to obtain the true and correct facts about any situation. This is essentially true for research in the social sciences and humanities. Interviews may be by telephone, hi which case the respondents must be those that have telephones or likely to be in the high-income brackets. On the other hand, interviews may also be personally conducted. Essentially, like the questionnaire method, the interview questions must be clear, concise and to the point to elicit desired information. Interviewer bias must be reduced to the barest minimum by ensuring that interviewers are well trained. Quite often, it is useful to combine the interview method with the questionnaire methods especially where more than one interviewer is involved in the data gathering process.

(c) Case studies

Quite often, the question arises as to whether it is better to have a case study or a sample. It often depends on the objective of the research, the resources of the

researcher and the state of knowledge of the research problem. If the topic has been thoroughly researched through surveys and sampling and the researcher wants to obtain in-depth knowledge of the behaviour of some variable, it might suit him to engage in a case study of only one or few entities. In this case, he has either a sample size of one or of one to five; it might suit him to engage in a case study of only one or few entities. But the emphasis of the case study approach is the total situation. It contrasts distinctly with the survey method, which uses statistical methods that often yield averages and departures from averages. In surveys, important observations of certain variables get lost in the process of averaging or generalizing about a whole population sample. The case study exposes new relationships that could be measured by statistical techniques. It can also be used for making generalizations about a population especially if the case is typical of cases in the population. Hence in surveys, phenomena are being studied extensively but in the case study they are being investigated intensively using one of a few samples. The question of representativeness ceases to be of any practical significance in a case study. Thus, case studies are as useful as surveys so long as there is an acceptable justification for their use. For instance, in a problem solving situation, a case study proves more useful than a survey especially in the management sciences. However, if the intention is to discover trends and patterns of behaviour, then a case study approach becomes inappropriate and a survey more useful. Quite often, it is argued that the case study does not really add to the corpus of knowledge and may indeed be a waste of time. However, cases have their value. The intense study of one or a few phenomena, the attendant facts, opinions of those involved with such phenomena and their prejudices... does provide greater insight to the behaviour of such phenomena. "It is difficult to accept that this approach wastes the relevant knowledge which is available, since presumably a considered analysis of the case presupposes a search of the relevant knowledge which is available" (Ray, 1975).

Ray (1975) further argues that the case study consists mainly of accurate observations of the behaviour of phenomena, which constitutes the first and vital step in systematic knowledge. Indeed, Dennis (1960) agrees with the need for careful and detailed reportage of selected facts and argues that one of the major inadequacies of contemporary social science work, for instance, is its lack of attention to the descriptive process. Hence, as Ray (1975) continues to argue "the additional steps in

developing systematic knowledge consists of selecting the salience and recurrent phenomena and in their classification and methodical explanation. The 'research case will therefore provide diagnosis to lead to conceptualization and generalization. The "research case" therefore has two parts. The first is descriptive of the total observed situation and the addition of the second part, the diagnosis of the situation, makes a permanently useful research document". Lupton (1970) concludes the case for the case study thus: "In trying to identify significant variables, it is useful to get close to the data, to know one organization well. Then if it appears possible to isolate and measure particular variables and to propose hypotheses about the relations between them, it might be work embarking upon wider comparative studies".

The research cycle would indeed remain incomplete until the normative implications of positive theory have been developed and tested in action possibly, a unique situation. If the proposition gets accepted that there has been a dependence upon a limited number of situation from which data were obtained in order to derive a conceptual framework, then it might be essential to recognize the research case as an integral element within the process of research and development in many disciplines, being both a primary source of data and a testing ground of ideas (Ray 1975).

Tabulated below are some commonly quoted case studies which have become the primary source of literary evidence and normative theory in the management sciences:

- | | |
|--|--|
| 1. Argyriesk, C., Human Problems Budgets
Controllershship foundation 1952 | Field investigation of 4 plants |
| 2. Cyert, .M. and March, J.G.A
Behavioural Theory of Firm: Prentice
Hal, 1967 | 4 case studies of decision in 3
business Firms and 2 studies, |
| 3. Gouldner, A.W. Patterns of Industrial
Behavioural Routedledge and Kegan Paul
1955 | One small factory employing 225
people over a period of 3 years |
| 4. Lawrence, R.R. and Lorch, J.W.
Organization and Environment; Harvard
Gradaute school of Business
Administration. Boston 1967 | 6 plastic firms; 2
Contianer firms; 2
Consumer firms. |
| 5. Woodward, Joan, Organizations, Theory
And practice: Oxford University Press
1965.\ | Survey of 100 firms plus 3 detailed
cases |

Source: Extracts from Ray, G.H. (1975) "The Use of Case Studies in the integration of Research and Teaching in Management Education" MANAGEMENT DECISION; Winter; p. 65 Vol. IX, No, 1"

6.5 Sampling and Sample sizes

It is essential to have an adequate sample of the population from which generalizations would be made in a survey. The issue of an adequate sample size is still a controversial one since one cannot say with confidence that the sample chosen is too small or too large or even adequate. What is adequate depends on the nature of the problem, the size of the population and the resources at the disposal of the researcher. However, most texts on statistics give some formula for determining adequate sample in a general sense. The problem which researchers face often involves using a sample too small to permit adequate analysis of the behaviour of interesting entities. Furthermore, there is the error of selecting a sample that is convenient rather than at random one that would reduce sampling errors. These are issues that the researcher MUST address himself to avoid making incorrect conclusions and more importantly, distorting knowledge.

The size of a sample would depend on the problem being investigated. In the first place, the population be defined and the significance of the research findings and results limited to that population. The determination of a sample size is often difficult and depends on number of factors, which include:

- i The homogeneity of the data and representativeness of the population by the elements that make up that population;
- ii. The types of groups involved; iii. The number and categories of the data required; and iv. The analytical method to be used in dealing with the data gathered. If the data are alike any in respects and elements similar in the population and only very few groups or categories of data need be aggregated, then a small sample would be quite representative of the population. However, where the elements are dissimilar in most respect, for instance, where there is a wide range of sizes of the elements, say, companies ranging in size from N500,000 to N20,000,000 by the turnover measure, then a large sample size

may be necessary to ensure that all size categories are fully represented in the study.

A review of previous studies, which have not been criticized in the literature on the grounds on sample size, can provide some guide as to what sample size the researcher should employ.

Types of Sampling

Having decided on the sample size, the next logical question is how to conduct the survey or spread the sample to ensure representativeness. Different types of sampling methods are available to the researcher. The first is random sampling where every element in the population has an equal chance of being selected. In this case, the researcher employs a method, either by lottery or using a Table of Random Numbers, for the selection of a sample that would yield randomness. The second method of sampling is the systematic sampling techniques where all the elements in the population are arranged in some order alphabetically or numerically, and every second, or every fifty, or every tenth element is selected in the sample. This method is useful in cases where the elements are classified into groups like into industrial categories already and every classification has a chance of being represented. The third type of sampling is Stratification, where the total population is classified into groups and a random sample is drawn of the groups from which another sample may be drawn from the group sample. For example, a demographer may group a city like Lagos into neighbourhoods - Aguda, Ikoyi, Surulere, Isale-Eko, Ikeja, Apapa, EbuteMetta, etc., from which he randomly selects, say, five neighbourhoods. From the sample of five he then randomly selects his final sample of people to survey. Other types of sampling including Quota, Area and Cluster, are variants of the first three discussed but are not as error free and as popular and are very seldom used.

CHAPTER 7

7.0 HYPOTHESES, ASSUMPTION AND EXPERIMENTATION

INTRODUCTION

This chapter introduces us to the definition, types and formulation of hypotheses, assumptions and experimentation.

7.1. Hypotheses

What is hypotheses?

A hypothesis is a proposition that is yet to be tested for its validity. A hypothesis may derive from theory or existing research as it provides a tentative explanation of relationships among variables. A hypothesis is thus the link between theory and fact, where theory is a supposition about the true nature of phenomena requiring verification. A hypothesis performs three major functions

- It tests theories for their validity;
- It suggests possible theories that may have general application, and
- It describes phenomena by providing further information about them.

7.2 Hypothesis Formulation

There are good and bad hypothesis. For Winter (1962), what is a good or poor hypothesis would depend upon the relative circumstances of the theory of body of knowledge from which it is derived. Hence what is adequate as a hypothesis in one situation may be come inadequate in another. The most important issue should be the amount of information that a hypothesis provides about the phenomena to be tested. Hypotheses must be clear, concise, testable and related directly to the research objectives. Hence a hypothesis like "There is a positive relationship between variables "X" and "Y" would be inadequate since it does not state which of the variables causes the other to change in value.

“As variable X increases, Y also increases in value" or "Increase in the value of X appears to lead to increase in the value of Y”.

7.3 Types of Hypothesis

Winter (1962) proposes three types of hypotheses. The first is the Research Hypothesis, which derives from the theory and body of knowledge about certain phenomena requiring further verification through empirical survey and analysis. The second type of hypothesis is The Null Hypothesis, which is the reverse of the research hypothesis. It is a hypothetical model used in testing research hypothesis. Hence one might say for the research hypothesis (H₁), Variables X₁ and X₂ have unequal means, i.e., H₁: $X_1 \neq X_2$. But the null hypothesis reverse would state the both variables have equal means, i.e., H₀: $X_1 = X_2$. Thus, depending on the nature of the results obtained from the research one might accept the null hypothesis and reject the research hypothesis, which would then mean that both variables have equal means probably come from the same population.

The third type of hypothesis is the Statistical Hypothesis, which is a statement about statistical populations, which on the basis of information obtained from the observed data can be supported or rejected (Winter, 1962). In this case, research observations are first reduced to numerical quantities and conclusions drawn about these quantities. For example, a statistical hypothesis could be that Group X has a higher average income than Group Y in the population on the basis of the take home pay of the individuals that constitute each group. The mean income levels of each group are computed and tested for equality differences.

7.4 Assumptions

In designing a research project and formulating relevant hypotheses, it may be necessary to make certain assumptions about the phenomena under investigation to serve as the confines within which the results of the research might be evaluated for validity. Hence, assumptions are very similar to hypotheses in the sense that they are tentatively accepted propositions required to facilitate the solution of a given problem. Assumptions are accepted without immediate need of proof or test.

They are limiting in nature and serve the function of holding the scope of the research within prescribed boundaries. Thus, an investigator in trying to prove the hypothesis

that "High profit yielding investments on the average are more attractive to investors than low returns investments" might make the following

- Man is a rational being;
- The investor has free and equal access to investment information with others;
- Corporate investments attempt to optimize profits always,
- All investors are, on the average, profit maximizing investors.

It is on the basis of these assumptions that the investigators can set about testing his hypothesis and upon which uses of the research results can rely on their validity. This is important because the reader or user of the result might be in an environment where the investors on the average are eccentric irrational millionaires to whom profit maximization has ceased to be important or where there is unequal access to corporate information. In this case, the research results will remain invalid to the user in such an environment. However, it must be noted that all research assumptions need to be reasonable and comprehensible. It is no use saying that there is no rainfall between the months of April and October in West Africa" in order to prove the hypothesis that: "The vegetation in West Africa is similar to the arid found in the Great Australian Desert". That would be an unreasonable type of invalid assumption. Suffice it to say that assumptions are often necessary ingredients of most research projects and must be properly conceived like the hypothesis to ensure complementarity, validity and usability.

7.5 Experimentation

Experimentation is similar to hypothesis testing since it is a test performed to demonstrate a proposition or known truth, to test the validity of a hypothesis or determined the efficacy of some phenomena of variable previously untried.

In experimentation, there must be an experimental (research group) and a control group to which nothing is done. As has been mentioned earlier on, there are such problems as contamination, mortality, compatibility and cost to contend with experimentation.

In essence, experimentation and assumptions are useful in hypothesis testing. Hypothesis testing means subjecting variables and phenomena to empirical scrutiny to determine if they are supported or rejected by observation or speculation. The prerequisites of hypothesis testing include the following:

- (a) There must be a real situation variable or phenomenon under investigation;"
- (b) The hypothesis must be testable empirical phenomena and must also be measurable. A hypothesis like "Juju is a major causative factor of mental illness in African societies" is not testable.
- (c) Data must be available and accessible to the research to test the hypothesis;
- (d) There must be decision rules and guidelines that would specify the condition" under which the hypothesis would be accepted or rejected. In other words, there must be an acceptable level of significance of the results obtained, levels of probability, adequate sampling distributions and reasonable assumptions,
- (e) The measurement techniques for testing the hypothesis must be valid and appropriate. These include correlation and regression techniques for specifying relationships, Chi-square for determining levels of significance. Students' "t" distribution for small samples, etc. In effect, the measurement techniques must measure what it is meant to measure.
- (f) The test measures must also be reliable over time known for specific situation and time only. Hence the sample to be used in any investigation must be a large enough sample. These issues are discussed in Beater detail later (Winter 1962).

CHAPTER 8

8.0 DATA CLASSIFICATION, MEASUREMENT, PROCESSING AND PRESENTATION

Once data have been assembled they may have to be classified and tabulated to facilitate analysis. Data presentation involves placing information and variables that have the greatest number of attributes that are similar. Data can be classified in terms of their general aspects; i.e., in appearance, size, form, or age. Rummel *et al*, (1963) also give other methods of classifying data. They can be classified by Components - various parts, members and elements, for instance, size, age, sex, or occupation, framework of the data. A further method of tabulation is by Dynamics, which are the faces or system operating within the data themselves. For example, if the data obtained is on Income Statement (Profit and Loss Accounts) the method of income appropriation, retained earnings etc. will constitute the dynamics of the data. Classification may also be in Progressive Stages; those are the trends, movements and directions of the data upward, downward, and stable or no change.

In classifying data, it is important to note large and significant differences or similarities in variables of the data and among the various classes of data to assist better analysis and the identification of finer distinction in the data. It is also worthwhile to group data in accordance with their possible consequences or to produce a common result.

Borg (1963) presents the following errors as those, which researchers tend to make rather often in data measurement and processing. The first is the assumption that the results of causal, comparative or co-relational research are proof of cause-effect relationship. Secondly, there is the error of using samples in causal-comparative research that differ on so many pertinent variables that group comparisons yield no interpretable results. Furthermore, the researcher may try to build a correctional study around conveniently available data instead of collecting the data needed for a worthwhile study. Fourthly, the researcher also selects for correlation variables, which have proved unproductive in previous studies. In addition to these points, there is the

current tendency to assume that the best method for interpreting and conveying research results is through the use of statistical techniques especially in the social sciences and humanities. However, there are many areas in which qualitative analyses are better than quantitative analyses. For example, certain areas in history, sociology, anthropology and the management sciences - especially in organizational behaviours - lack suitable method of quantification. In these areas statistical measures must be used sparingly to avoid spurious analyses. In any case, as has been argued earlier statistical correlations do not necessarily establish functional or casual relationships nor do they indicate which is the cause and which is the effect. (Bauer and Yamey, 1972). Secondly many of the significant variables influencing the behaviour of organizational variables for example developing countries are not very susceptible to meaningful numerical expression: there are socio-cultural economic and political phenomena, which fall within this category. But the difficulty or impossibility of submitting certain economic phenomena to quantitative treatment of the insufficiency of statistical information does not mean that the phenomena cannot be understood and analysed. Quantitative analyses and assessment are not always more precise and meaningful than qualitative analyses and evaluation, and it would be misleading if discussion and analyses were confined to that part of the data which can be conveniently expressed in quantitative terms". (Bauer *et al.*, 1972).

In terms of processing the data the researcher needs to establish right from the onset, a systematic procedure for scoring the recording data. This becomes valuable when computing facilities are to be used. This is where codes become useful. Thus, for the sex of the respondents in the questionnaire, males are, for instance coded 1 and females 2; for occupation, executives are code 3, civil servants 4, farmers 5, laborers 6, and so on. The researcher must however remember to record details and variations in scoring procedure when scoring data. This would enable him to recall what was done when called upon to explain the procedure in his thesis (Borg, 1963). It is also important to check scoring for errors.

During data analysis and processing, it is important to reconcile the findings of one's own research with the results of earlier studies in the same general area or topic. In doing so all areas of disagreement must be clearly stated and the reasons for such conflicts. These could be in the area of methodology, facts, content or general results.

Furthermore, areas of agreement must also be emphasized as it assists in strengthening the theory. In the process of reconciliation, the research must either prove or disprove previous work with adequate evidential support. Inferences must be drawn and these could either be deductive or inductive. In deductive reasoning, the researcher is trying to reason logically from the facts available to him while inductive reasoning is reasoning from the particular to the general in other words, proving a case first with strong evidence and relying on that proof to prove others are well. In the process of reconciling your research with those of other evidence is very important not only from your research but also from support from the body of knowledge. It is better to have too many references than too few. Where issues cannot be conclusively proved, they should be referred to directions for further research.

CHAPTER 9

REGISTRATION OF TITLE THESIS

9.0 General Guidelines

A synopsis is a summary of research already concluded. A properly written synopsis gives an overview of the research. The submission of a synopsis to the Board of the School of Postgraduate Studies is an indication that the student has completed writing the thesis and is ready to be examined by an oral examination panel. Associated with the submission of a synopsis is the registration of the title of the thesis. The major headings of the synopsis are:

- Front Page
- Abstract
- Aim and Objectives
- Methodology
- Findings
- Contribution to knowledge
- Certification page

Note the following:

1. No title must contain more than twenty –two words.
2. The contents of the synopsis should be in Times New Roman font.
3. The general font size should be 12 points, except for the front page which should be in size 14,
4. Paragraphs could be indented or in block form, but there should be consistency throughout the synopsis.
5. Starting from page 2, all except the major headings stated above must be justified
6. All pages are to be numbered serially starting from the front page (which is 1), although the page number should not show on the front page.
7. The line spacing for Abstract should be 1 ½ .
8. Starting from 'Aim and objectives' the line spacing
9. The top, bottom, right and left margins should be 1 inch.

10. Probability value should be written in the form $P < 0.001$.
11. A space should be placed between a value and its unit unless for degrees (e.g. "C) ;nul percentages (e.g. 17%),
12. A space should be left between values and the plus/minus symbol (e.g. 23
13. All major headings in the-synopsis must be capitalized, boldfaced and centred.
14. The synopsis should be reported, that is, written in the past tense. The person of the author must be suppressed, that is, must be neutral and not written in the first person.
15. As for spelling, either the British or American system could be adopted; but there should be consistency in the spelling system used.
16. The binomial (scientific names) of plants, animals, microorganisms must be italicized.

9.1 FrontPage

This page is titled 'Synopsis of Research'¹ and should be centred. Below is an example of the Front Page.

A typical outline for the presentation of synopsis of research is.given in the following section:

SYNOPSIS OF RESEARCH

TITLEOFTHESIS: Impact of Modelling and Solution-Focused Brief Therapies on Adolescents' Self-Conception in Edo State

NAME OF STUDENT: **Agboola James ODUNAYO**

MATRICULATION NUMBER: PG/EDU0815297

SESSION OF ADMISSION: 2011/2012

FACULTY: **Education**

DEPARTMENT: **Educational Evaluatio and Counselling psychology**

DEGREE IN VIEW: **P.hD**

TIME BASIS:

Note the following key points:

1. The font size for this page should be 14 points of Times New Roman.
2. Title should be in single-line spacing; and between key entries, spacing should be double-line.
3. Everything to the *left* of the column is boldfaced.
4. The first letters of key words in the title are capitalized. The first letters of prepositions and conjunctions are not to be capitalized.
5. The surname of the candidate comes last and is
6. No title (e.g. Sir, Chief, Dr., Engr., Pharm., Mrs.) should be used as prefixes to names.
7. Only the slash that comes after PG is allowed in the matriculation number.
8. The area of specialization (e.g. Counselling Psychology) should not be added to the degree in
9. Although numbering starts from this page, the page

9.3 Abstract

This is a summary of the entire synopsis. It should be written as prose in three paragraphs. The first paragraph should provide the background and the aim/purpose of the study. The background should be one or two sentences on what is known or unknown about the study. The second paragraph contains a description of the types of data used in the research, mode of procedure for data collection and generation, and the methods used to analyse the data. Third paragraph summarizes the findings/results and ends with concluding statement(s). The following should be noted as well:

1. References should not be inserted.

2. Studies that are evaluative should contain some quantitative description in the results.
3. Total word count should be less than or equal to 500.

9.4 Aim and Objectives

An opening statement such as this should be used: "The aim of the study was to...." or "The study was aimed at...." This is followed by another line of paragraph with a stem statement such as: "The objectives of the study were ..." or "The following were the objectives of the study ...". Also note the following:

1. If the stem statement does not make complete sense such that it ends with a verb or conjunction or a preposition, the Arabic numbered objectives that follow must each begin with small letter-words because they flow from the stem sentence.
2. For the avoidance of doubt, the 'Aim' is the main reason why the study was embarked upon while 'Objectives' are the ways employed in achieving the 'Aim'.

9.5 Methodology

1. These should contain subheads for brief description of the methods employed. As much as possible, detailed descriptions should be avoided. Instead, references can be cited to support the method.
2. Only the key words in each subhead should begin with capital letters.
3. For science-based studies, the last subhead should be 'Data Analysis'. This should explain the descriptive and inferential statistics employed.
4. Total number of pages under methodology should not exceed 3 for the Master and 5 for the PhD degree.

9.6 Findings

This begins with a stem sentence such as "The findings from this study are as follows:" or "The following are the findings from the study". The findings are thereafter listed using Arabic numerals. The following should be noted in addition:

1. As much as possible not more than three lines should be used for any finding.
2. Discussion of the findings and copious citing of references are not allowed.

3. The listed findings should not be more than the stated objectives. It is expected that each finding addresses a specific objective.

9.7 Contribution to Knowledge

Note that a contribution to knowledge is something that is now known as a result of the research and was not known before it. Contribution to knowledge outlines the significance of the findings of the research. The stem statement could be: "The study has contributed to knowledge in the following ways:" "The contribution to knowledge includes: The stem statement is followed by listing the contributions.

Note:

1. Contribution does not imply relisting of the findings using different word combinations.
2. It is supposed to project the way the study has filled the gap in knowledge. As a guide, it can be sourced from the aim of the study.

9.8 References

1. These should be limited to those cited in the synopsis. Therefore no reference should be listed if it had not been cited (primarily under methodology).
2. The Harvard-style referencing should be used. The Harvard style features an author/date system in text, and an alphabetical reference list at the end of the work. Within the text, the author's surname and year of publication are cited in the form Philips and Whisnant (1995). or (Philips and Whisnant, 1979), and the full citation included in a final section titled 'References', the format for which is outlined in #7 below.
3. For in-text referencing "et al" should be written in italics and in the form "...described by Omozuwa *et al.* (1998)" and "...using a previously reported method (Izekor *et al.*, 2010)".
4. All the authors should be listed in a reference.
5. Single-line spacing should be used for references.
6. Double-line spacing should be used between one reference and another.
7. The first author's name and initials should be bold faced to further suggest that a new line of reference has begun.

8. Name of journals; title of books, conference proceedings, conferences and theses should all be written in full and italicized.

9. The format for citing references should be:

(a) Journal article

Ozolua RI, Omogbai EKI, Ebeigbe, AB and Asagba, S. (2003). Increased superoxide dismutase and Na², K⁺-ATPase activities in aortic strips from potassium-adapted rats: implications for altered vascular reactivity. *Comparative Biochemistry and Physiology, Part C: Pharmacology, Toxicology* 135:61 -65.

Stent, G (1975). Limits to scientific understanding of *man*. *Science* 187; 1052-1057.

(b) Chapter in an edited book

Philips, SJ and Whisnant, J.P. (1995). Hypertension in stroke. In: JH Laragh and BM Brenner (eds). *Hypertension: Pathophysiology, Diagnosis, and Management*. 2nded. New York: Raven Press. Pp 465 -478.

(c) Book, with personal author(s)

Winiiecki, J. (2002). *Transition economies and foreign trade*, London: Routledge.

Ringsven, M.K. and Bond, D. (1996). *Gerontology and leadership skills for nurses*. 2nded, New York: Delmar Publishers. Pp 123 125.

(d) Book, editor(s) as author

Norman, LJ. and Redfern, S.I. eds. (1996). *Mental health care for elderly people*. New York: Churchill Livingstone. Pp 89-92.

(e) Book, Organizations as author and publisher UN **Department of Economic and Social Affairs** (1974). *Petroleum in the 1970s: Report of the ad hoc panel on projections of demand and supply of crude petroleum and products*. New York: UN Department of Economic and Social Affairs.

(f) Article in electronic form

Morse, S.S. (1995). Factors in the emergence of infectious diseases. *Emerging Infectious Diseases* [serial online]. Available from

[URL:http://www.cdc.gov/ncidod/EID/eid.htm](http://www.cdc.gov/ncidod/EID/eid.htm). Accessed 25 August, 2015.

(g) Conference Proceeding

Kimura, and Shibaski, (1996). Recent advances in clinical neurobiology. *Proceedings of the Kf^d International Congress of Clinical Neurophysiology*, October 15 - 19, 1995, Kyoto Japan. Elsevier, Amsterdam.

(h) Conference paper

Bengston, S and Solheim, B,G. (1992).Enforcement of data protection, privacy and security in medical informatics. In: Lun, K.C., Degoulet, P, Piemme, TE and Rienhoff, O (eds) MEDINFO 92. *Proceedings of the 7 World Congress on Medical Informatics'*, September 6- 10, 1992. Geneva, Switzerland.

(i) Thesis

Kaplan, S.J. (1995). *Post-hospital health care: the elderly's access and utilization.. Ph.D thesis*, Washington University, St Louis.Pp 78-80.

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I Certificate page

The page should contain the names, signatures of the supervisors) and the Faculty Postgraduate School Representative.\

Note

1. The Dean or Head of Department does not sign this page.
2. The page should be formatted in a way that gives it elegance. For example if there are three names/signatories, two can be at the same level while one is placed centrally below them.
3. A continuous line should be placed above the name and designation of each signatory

CHAPTER 10

10 PREPARING THE RESEARCH REPORT

Preparing the research report is the last and often the most difficult part of the research activity and care must be taken in the write up to include all relevant information in a systematic fashion. However, many errors also emerge at this stage and Borg (1963) lists eight of them. In the first place the researcher fails to prepare draft copies of information, which he will later include in report when it is still fresh in his memory. Secondly he often reserves all work on the thesis until the study is completed. Furthermore, the researcher may make the error of organizing his literature review chronologically instead of arranging his research articles into related topics. Fourthly, he may also treat each study referred to in the literature in such a mechanical fashion, devoting about the same time and space to each regardless of relevance and importance. Fifthly, the researcher fails to integrate the findings of his review of the literature together with the findings of his study in order to determine where he confirms or disconfirms existing knowledge or makes a new finding. In the sixth place, he "discusses minor findings that can be presented better in a table and fails to emphasize important findings". He may also provide "an inadequate description of the research sample and measures used" as well as adjustments made to data collected. Finally, the researcher, in order to demonstrate his knowledge and familiarity with the field, uses too many quotations and selects quotations that do not make their point as well as the student could make it using his own words".

10.1 Presenting Research Evidence

The presentation of research evidence can take various forms. It can be Textual in which case there is running commentary narrative of the facts findings and conclusions in a descriptive fashion with supporting graphs, tables and charts. This is the most popular method of presenting research evidence especially in the arts, humanities and social sciences. In presenting facts in this manner, the researcher should ensure that the narrative flow and read fluently like an interesting novel. Chapters and sections must be linked naturally, otherwise it would appear as if each chapter is separate from the rest. Hence, if one chapter is ending it should be

concluded with a paragraph like "Having stated the background of the research problems and the framework for studying it, the desire is to now discuss what the relevant literature has to offer in this topic and the general area. This is the focus of the following chapter". This way, the leader is prepared for what is to come next. Of course, the opening paragraph of the following chapter must also refer to the summary and conclusions of the previously chapter to remind the reader of what has been discussed previously.

Furthermore, when presenting facts and drawing conclusions there from the researcher must never make categorical statements like "from the evidence adduced so far, shorts men are more self-assertive than tall men", unless every short man in the total universe was sampled. Since sampling the total population in the universe is a near impossible the researcher can only conclude from his small sample. In that case, the safest thing to say is that", it would appear from the evidence in the study that shorter men are more self-assertive than taller men and if the evidence is not very convincing, then it is only fair for the researcher to so admit in the test that" from the evidence in this study, it would appear that shorter men are more self-assertive than taller men, although the evidence is not conclusion and further work may be required in this area to clarify this issue..." There is nothing as important as intellectual honesty in any piece of research and this must be the primary guiding principle of every research work.

Researcher evidence may also be presented in a tabular format and this is quite common in science based studies, and in quantitative studies. Tables must be carefully laid out and must contain the essential evidence and facts of the study. In other words, the tables must be complete and meaningful with little or no textual explanations and backup.

On the other hand, where an informal table is used which requires textual backup, it must be integrated into the text discussion but without a number or title. In any case, every table should be able to tell its own study by mere observation. In addition, graphs and other pictorial presentations might to necessary where facts indicated changes over time, trends and longitudinal analyses arc emphasized.

10.2 Major Divisions of a Research Report

There are five major divisions of any research report:

Part I covers the background to the study, including the *raison d'être* of the research, the research problem, the scope and objectives of the study.

Part II should deal with the review of all relevant and related literature to the topic and research problem.

Part III covers the research framework, theoretical model, conceptual framework and methodology, the research entities and variables, research hypotheses, assumptions, experimental design, types of data required, data sources, data analysis or processing.

Part IV would include a discussion and presentation of the research evidence and the analyses thereof.

Part V finally deals with the conclusion drawn from the study and analyses and any possible policy implications for both theory and practice. In writing any research report, the researcher must ensure that he writes a draft of the final report first. This way, he can correct any error's make adjustments and changes where necessary. It is on the basis of this corrected version that a final clean copy that is to be submitted is prepared.

10.3 Abstract

Every research work must have an Abstract which appears at the very beginning of the Thesis/Dissertation. An abstract is a summary of the research work. It should clearly and concisely state the nature, aims and objectives of the study, the period covered, the methodology and conceptual framework employed. It should end with the results obtained and contribution to extant knowledge.

An abstract should start with a clear statement of the objective or purpose of the work done. The objective of the abstract is to furnish the reader who may not be intimately

concerned with the details of the study, its purpose, results and important conclusion and recommendation. An abstract must not exceed 500 words maximum and should contain no headings, tabular material, chemical/mathematical formula, symbol, Greek letters or foot notes. Abstract should not contain references.

References

- Ahmadu Bello University Postgraduate School (1982). "Guidelines for the Preparation of Theses and Dissertation", Unpublished mimeograph.
- Allen, G. (1976). *The Graduate Students' Guide to Theses*; All and Unwin, London.
- Bauer, P.T. and B.S. Yamey (1972). *The Economics of Underdeveloped Countries*, Cambridge University Press, London.
- Bennis, W.G. (1960) "The Case Study", *Journal of Applied Behavioural Science* Vol. 4, N. 2. Borg, W.R. (1963) *Educational Research; An Introduction*; David McKay Co. Inc., New York.
- Chambers English Dictionary (1992) W & R Chambers Ltd., Edinburgh.
- Donaldson G. (1969) *Strategy for Financial Mobility*; Bureau of Research, Graduate School of Business Administration, Harvard University. Boston.
- Gordon, R.A. (1976) "Rigour and Relevance in a Changing Institutional Setting"/ *American Economic Review*, (March) Pp. 1-14.
- Lupton, T (1970). *Management and the social Sciences*, Penguin P. 47.
- Osaze, B. E. (1985). *Guidelines for writing project. Thesis and Dissertations* Excel Books, Benin City.
- Osaze, B.E. and F. Izedonmi (2000). *Guidelines for Writing theses and Dissertations for Postgraduate Students in Africa*¹ Revised Edition Dayco Ltd. Islington, London.
- Osaze, B.E. (2011) *Guidelines for writing thesis and dissertations for postgraduate students*. Pp. 48
- Ray, G.H. (1975) "The Use of Case Studies in the Integration of Research and Teaching in Management Education" *Management Decision*, VoU4, No.1 Pp.65-68.
- Rummel G. and K. Ballainea (1963) *Research for Business and Social Science*, McGraw-Hill Book Co. P.80.
- University of Ibadan (2004). *Guidelines to writing A Doctoral Thesis*", The Postgraduate School, Ibadan.

Von Bertalanfy, L. (1950). "An Outline of General Systems Theory; British Journal of the Philosophy of Science.

Warmington, A., T, Lupton and C. Griobbiun (1911). *Organizational Behaviour and Performance: An Open System Approach to Change*. Macmillan, London Pp. 10-16.

Widmer, Kemble (1977). "A Glossary of Research

Winter, B.J. (1962). *Statistical Principles in Experimental Design* McGraw-Hill Book Co.

