**COLLEGE: CSS**

**DEPARTMENT: CIVICS**

**COURSE: RESEARCH METHODOLOGY**

**AUTHOR: GETACHEW W.**

**STUDENTS: 2ND YEAR, 2ND SEM**

CHAPTER ONE  
PHILOSOPHICAL FOUNDATIONS OF RESEARCH







* analyzing and interpreting the 





























**The Process of Proposal Development**

A research proposal is a written document prepared by the researcher(s) containing detailed description/plan of the proposed research activities which indicates that a specific course of action will be followed. It is a blueprint that guides the direction of the project. The main aim of the proposal is to justify that the intended research to be carried out /investigated is significant, feasible and the outcome(s) will be of value/benefit to the society. Research proposal is usually prepared before the implementation of the project. It usually presents a challenge for new researchers but is the most important aspect of a research project. Hence, a good understanding and knowledge of the subject area as well as insight into the focus of investigation is very important.

The intent of the written research proposal is to present a focused and scholarly presentation of a research problem and plan. A research proposal demonstrates competence and the work-plan to undertake research.

The objective in writing a proposal is to describe:

* What you will do (problem/theme, research question),
* Why it should be done (justification, goal, purpose, significance, relevance),
* How you will do it and (gathering data, methodology, analys), and
* What you expect will result.

Having such clear ideas about such issues from the beginning will help researchers complete their research in a timely fashion.

A good proposal can be judged according to the following main criteria.

* Is it adequate to answer the research question(s), and achieve the study objective?
* Is it feasible in the particular set-up for the study?
* Does it provide enough detail that can allow another investigator to do the study and arrive at comparable results?

**8.2. Components of Research Proposal**

Typical research proposal normally consists of all or most of the components indicated below:

A. **Title page:** The title of your research proposal should state your topic exactly in the smallest possible number of words. Put your name, the name of your department/faculty/college, the name of your advisor(s) and date of delivery under the title page of the proposal.

**B. Summary/Abstract:** The abstract is a one page (250-300 words) brief summary of the proposal where the researcher show a reasonably informed reader why a particular topic is important to address and how you will do it. It never contained information that is not in the main text of your research proposal. References, figures, or tables are not mentioned in the abstract. Instead, it includes research questions/hypothesis, rationale for the study, and the methods.

**C. Introduction/Background Information:** The introduction is the part of the proposal that provides readers with the background information for the research proposal. Its purpose is to establish a framework for the research, so that readers can understand how it is related to other research. This is a statement of something sufficiently interesting to motivate readers to read the rest of the proposal. The introduction should cite those who had the idea or ideas first, and should also cite those who have done the most recent and relevant work. You should then go on to explain why more work (your work) is necessary. The introduction provides a brief overview that tells what the proposal is about. It might be as short as a single page, but it should be very clearly written, and it should let one assess whether the research is relevant or not. Get specific about what your research will address what specific issue or question will your work address? What will one learn from your work? Why is this work important? What are the implications of doing it?

Introduction provides sufficient information to contextualize the topic and the problem. The introduction also should address the following points:

* Sufficient background information to allow the reader to understand the context and significance of the question you are trying to address.
* Proper acknowledgement of the previous work on which you are building.
* Sufficient references such that a reader could, by going to the library, achieve a sophisticated understanding of the context and significance of the question.
* It should be focused on the research question(s).
* All cited work should be directly relevant to the goals of the research.
* Explain the scope of your work, what will and will not be included.

D. **Statement of the Problem**

A problem might be defined as the issue that exists in the literature, theory, or practice that leads to a need for the study. The researcher should think on what caused the need to do the research (problem identification). The question that he/she should ask him/herself is: Are there questions about this problem to which answers have not been found up to the present? The problem statement describes the context for the study. It should be clear, concise and explain the problem within the framework of the theory that supports the study*.* Effective problem statements answer the question **“Why does this research need to be conducted.”** Involve with the identification of questions on the subject area to be investigated to which currently there is/are no answers or solutions – indicates the gap.

**E.Objective of the Study**

It maps the pathway for the investigation being designed. It should provide a specific and accurate synopsis of the overall purpose of the study. Indicate the hypotheses to be tested or the questions to be raised. Try to incorporate a sentence that begins with “The purpose/aim of this study is . . .” Example, the *aim of this research* is to assess the impacts of continious assessments on educational perfomance of wachemo University students.

In most cases, research objectives are classified into general objectives and specific objectives which are logically connected to each other. Specific objectives are commonly considered as smaller portions of the general objectives. It is important to ascertain that the general objective is closely related to the statement of the problem. General objective shows what exactly will be studied; specifying the desired outcomes of the proposed project. On the other hand specific objectives are specific statements summarizing the proposed activities and including description of the outcomes and their assessment in measurable terms. It identifies in greater detail the specific aims of the research project. Specific objectives should systematically address the various aspects of the problem as defined in the statement of the problem.

**F.Research Questions/Hypothesis**: The term question implies an interrogative statement that can be answered by data, which is logically related to the same conceptual framework, but which does not necessarily stem from that framework through logical deduction. A research question/s is a question/s that our research is going to answer. It is question form of the objectives of the research. Research questions provid for the researcher direction and coherence, delimits the research/ showing its boundaries, keeps focussed, and points to data that will be needed.

In research, the term hypotheses imply a derivation, within a hypothetic-deductive theoretical system of a particular assertion or prediction. The hypothesis is subject to test i.e. to confirmation or rejection on empirical grounds. Hypothesis is a statement of expected association/relationship between one or more independent variables and the dependent variable which the study will establish or nullify. We formulate hypothesis in most cases when we want to study or explain the causal relationship between independent and dependent variables. Researchers ought to clarify and careful distinction between the dependent and independent variables and be certain they are clear to the reader. Hypotheses are thus tentative statements that should either be acknowledged or rejected by means of research.

Questions are most often used in qualitative inquiry, although their use in quantitative inquiry is becoming more prominent. Hypotheses are relevant to theoretical research and are typically used only in quantitative inquiry. Deciding whether to use questions or hypotheses depends on factors such as the purpose of the study, the nature of the design and methodology of the research.

**G. Significance of the Study:** this part of the proposal explains the importance of your research in terms of theoretical and practical significance

**H. Scope of the Study:** the scope is about identification of the issues under scrutiny and specifying the place where the study is going to be conducted. It clearly describes issues/ variables that your research is targeting and the geographical location that the research is going to be undertaken.

**I. Definitions of Terms:** The Definition of terms applies to those words or group of words that need to be define for clarity conceptual or operational. It helps readers easily understand your report if unfamiliar words are clarified or have simplified meanings.

**J. Literature review:** This is a critical understanding of earlier works in the area of your research topic.

**K. Research Methods, Materials and Procedures**

This part of the proposal contains the following elements.

* **S**tudy area
* Study design
* Study subjects
* Eligibility Criteria (if any)
* Sample size
* Sampling methods
* Method of data collection
* Description of variables
* Data quality assurance

The processes of data quality assurance include activities like pre-testing research questionnaires, training of data collectors, supervision, re-interview, and consistency check.

**Ensuring the trustworthiness** of data can be done through the following ways**.**

* prolonged engagement in field or research site,
* adoption of well-established research methods,
* provide thick description of the issue under scrutiny
* use of peer debriefing and
* Triangulation of data from multiple sources and multiple methods.
* **Plan of data analysis**
* **Considering Ethical issues**

**L. Work plan:** it indicates what things are going to be accomplished in what time i.e. when researchers perform their tasks.This helps to manage their time and keep doing research on time.

**M. Budget:** Specifying the budget for your research is required.

**N. References:** This is the list of resource (books, journals, articles. etc) that are used for developing the research proposal.

**O. Appendices/Annexes:** these are attachments to support the proposal or research like questionnaires, checklists, interview guides etc.

**CHAPTER TWO**

**RESEARCH DESIGN STRATEGIES AND METHODOLOGIES**

**Meaning of Research Design and Design Strategies**

In conducting research, preparation of the design of the research project, popularly known as the “research design” is an important task. Preparing of research design involves activities such as decisions regarding what, where, when, how much, by what means concerning an inquiry or research study. It is the basic plan for a piece of research, and includes ideas like strategy, conceptual framework, question of who or what will be studied, and tools and procedures to be used for collecting and analyzing empirical materials.

The term methods and methodologies are often used synonymously. However, it seems appropriate to explain the difference between research methods and research methodology. A method is a particular research technique or way to gather evidence/data which are to be used as a basis for inference and interpretation, for explanation and prediction about a phenomenon. It refers methods which are used by the researcher during the course of studying his research problem. Methods are the specific research tools we use in research like surveys, interviews, participant observations.

Research methods can be put into the following three groups:

1. Those methods which are concerned with the collection of data. These methods will be used where the data already available are not sufficient to arrive at the required solution;

2. Those statistical techniques which are used for establishing relationships between the data and the unknowns, and

3. Those methods which are used to evaluate the accuracy of the results obtained.

Research methods falling in the above stated last two groups are generally taken as the analytical tools of research.

Methodology describes “the theory of how inquiry should precede” that “involves analysis of the principles and procedures in a particular field of inquiry.” It involves the researchers’ assumptions about the nature of reality and the nature of knowing and knowledge. It encompasses our entire approach. Research methodology is a way to systematically solve the research problem. It is a science of studying how research is done scientifically. Here various steps are generally adopted by a researcher in studying his research problem along with the logic behind them. It is knowing of which of these methods or techniques, are relevant and which are not, and what would they mean and indicate and why. It also includes understanding the assumptions underlying various techniques and they need to know the criteria by which they can decide that certain techniques and procedures will be applicable to certain problems and others will not.

The researcher has to specify very clearly and precisely what decisions he selects and why he selects them so that they can be evaluated by others also. Research methods do constitute a part of the research methodology. The scope of research methodology is wider than that of research methods. Thus, when we talk of research methodology we not only talk of the research methods but also consider the logic behind the methods we use in the context of our research study and explain why we are using a particular method or technique and why we are not using others so that research results are capable of being evaluated either by the researcher himself or by others.

Generally, research methodology answers the following and a host of similar other questions concerning a research problem:

* Why a research study has been undertaken?
* How the research problem has been defined?
* In what way and why the hypothesis has been formulated?
* What data have been collected?
* What particular method has been adopted?
* Why particular technique of analyzing data has been used?

A common distinction is made between two different design strategies in research, the one is using quantitative methodology and the other is using qualitative methodology. Apart from the simple distinction of the use of measurement or description as the main approach to collecting and analyzing data, there is also epistemological difference in the two approaches. The following table illustrates some of the differences that exist between the two strategies.

|  |  |  |
| --- | --- | --- |
| Line of differences | Quantitative Research | Qualitative Research |
| Orientation | Uses a deductive approach to test theories | Uses an inductive approach to generate theories |
| Epistemology | Based on a positivist approach inherent in the natural sciences. | Rejects positivism by relying on individual interpretation of social reality. |
| Ontology | Objectivist in that social reality is regarded as objective fact. | Constructionist, in that social reality is seen as a constantly shifting product of perception |

These distinctions are useful in describing and understanding social research; despite they are not to be seen as mutually exclusive. There are many examples of social research that do not conform to all of the conditions listed in the above table. There are also researches that combine the two approaches, usually to examine different aspects of the research problem.

The two different methodologies imply the use of different methods of data collection and analysis. Quantitative techniques rely on collecting data that is numerically based and amenable to such analytical methods as statistical correlations, often in relation to hypothesis testing. On the other hand, qualitative techniques rely more on language and the interpretation of its meaning, so data collection methods tend to involve close human involvement and a creative process of theory development rather than theory testing.

**Qualitative Design Strategies**

**I. Case studies:** Case researchis an in-depth investigation of a problem in one or more real-life settings (case sites) over an extended period of time. Data may be collected using a combination of interviews, personal observations, and internal or external documents. It is vital to discover a wide variety of social, cultural, and political factors potentially related to the phenomenon of interest that may not be known in advance.

The researcher explores in depth a program, an event, an activity, a process, or one or more individuals. The case(s) are bounded by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time. Cases are the units of investigation. They are often people who may be studied at different levels – as individuals, within communities, and within groups (such as trade unionists, or owners of small firms). But cases may also refer to other units of analysis, including organizations (schools, businesses, and political parties), localities, regions, countries. They may also include ‘incidences’ – political scientists for instance might focus upon political riots, sociologists might compare different instances of suicide, or police drugs raids, while business studies students might focus on company mergers or company closures.

Both quantitative and qualitative methods are appropriate for case study designs, and multiple methods of data collection are often applied.

**II. Phenomenology**: The researcher identifies the "essence" of human experiences concerning a phenomenon, as described by participants in a study. Understanding the "lived experiences" marks phenomenology as a philosophy as well as a method, and the procedure involves studying a small number of subjects through extensive and prolonged engagement to develop patterns and relationships of meaning. In this process, the researcher "brackets" his or her own experiences in order to understand those of the participants in the study.

**III. Ethnography:** This approach is based on the techniques devised by anthropologists to study social life and cultural practices of communities by immersing themselves in the day-to-day life of their subjects. Itis an interpretive research design inspired by anthropology thatemphasizes that research phenomenon must be studied within the context of its culture. The researcher studies an intact cultural group in a natural setting over a prolonged period of time by collecting, primarily, observational data. The purpose is to uncover the shared cultural meanings of the behavior, actions, events and contexts of a group or people. The research process is flexible and typically evolves contextually in response to the lived realities encountered in the field setting. This strategy requires an insider’s perspective. And the group must be observed and studied in its natural setting. Theresearcher is deeply immersed in a certain culture over an extended period of time (8 monthsto 2 years), and during that period, engages, observes, and records the daily life of the studiedculture, and theorizes about the evolution and behaviors in that culture. Data is collectedprimarily via observational techniques, formal and informal interaction with participants inthat culture, and personal field notes. Theresearcher must narrate his/her experience in great detail so that readers may experience thatsame culture without necessarily being there.

**VI. Grounded Theory:** In this type of research the researcher attempts to derive a general, abstract theory of a process, action, or interaction grounded in the views of participants in a study**.** Grounded theory does the research in order to evolve the theory. This gives rise to a specific style of procedure and use of research methods. The main emphasis is on continuous data collection process interlaced with periodic pauses for analysis. The analysis is used to tease out categories in the data on which the subsequent data collection can be based. This process is called ‘coding’. This reciprocal procedure continues until these categories are ‘saturated’, that is, the new data no longer provides new evidence.From these results, concepts and theoretical frameworks can be developed. This gradual emergence and refinement of theory based on observations is the basis for the ‘grounded’ label of this approach.

A grounded theory design is particularly suitable for researching unfamiliar situations where there has been little previous research on which to base theory.

**Critical theory (focus on Feminist Methodology)**

Critical research designs from a feminist perspective explore more interactive, dialogic, and reciprocal research methods that work toward transformative action and egalitarian participation. Feminist research is expected to adopt critical perspectives toward dominant intellectual traditions that have in the past ignored and/or justified women’s oppression.

Despite the fact that feminist method has been debated for a long time, there is a general consensus among feminist scholars in that feminist research should be not just on women, but for women and, where possible, with women. Feminist scholars generally identify the same key features, which include paying attention to the importance of gender as a central element of social life, challenging the norm of objectivity to incorporate subjectivity into research, avoiding the exploitation of women as goals that are usually informed by extensive reflexivity throughout the research process.

Feminist research is seen as being concerned with the issues of broader social change and social justice and committed to changing the condition of women. It is concerned with asymmetrical power relationships including hierarchical power relationships in the research process and the relationship between researchers and researched. The role of the researcher is thus to produce useful knowledge which contributes to global gender justice, to changing women’s subordination and to stopping all forms of social inequalities.

The overt ideological goal of feminist research in the human sciences is to correct both the invisibility and distortion of female experience in ways relevant to ending women’s unequal social position. In other words this aspect of a research project would also be subject to the ‘lens’ of feminist inquiry in that participants would be those who could contribute to an understanding of an area of experience that involves the aspect of male/female power imbalances. Without doing research that looks at social and educational constructs through the lens of feminist theory, inequalities will be continued, cemented and accepted as incontrovertible by successive generations of female teachers and researchers.

As the goals of feminist researches are sufficiently broad, they argue, many different research techniques may be employed in a manner consistent with feminist values.

Feminist methodology seeks to break down barriers that exist among women as well as the barriers that exist between the researcher and the researched. The methodology involves interviews with single mothers, teachers, girls; personal histories and narrative re-telling in the presentation of findings, along with researcher reaction and reflection in the light of the inquiry’s lens. There could also be a reading of women’s letters or diary entries from various time periods, or videos taken of women in various settings, or audio of women sharing memories of situations affected by their gender, etc.

**CHAPTER THREE: SAMPLING AND SAMPLING STRATEGY**

**THE NATURE AND MEANING OF SAMPLING**

A sample is a “subgroup of a population” that can be described as a representative “taste” of a group. The sample method involves taking a representative selection of the population and using the data collected as research information.

Sampling is the process of selecting a number of study units from a defined study population. Often research focuses on a large population that, for practical reasons, it is only possible to include some of its members in the investigation. You then have to draw a sample from the total population. In such cases the researcher must consider the following questions:

* What is the study population from which we want to draw a sample?
* How many subjects do you need in your sample?
* How will these subjects be selected?

A study population may consist of persons, villages, institutions, plants, animals, records, *etc*. Each study population consists of study units. The way you define your study population and your study unit depends on the problem you want to investigate and on the objectives of the study.

**Sampling Methods**

***I. Probability Sampling***

Probability sampling is defined as having the distinguishing characteristic that each unit in the population has a known, nonzero probability of being included in the sample. Probability sampling is meant that the probability of inclusion in the sample of any element in the population must be given a priori. Probability sampling requires that a listing of all study units exists or can be compiled. This listing is called the sampling frame. **Sampling frame** is the list that consists of the total population of your study out of which you select your sample. It is from this list that study subjects are going to be identified.

Probability sampling provides an advantage because of researcher’s ability to calculate specific bias and error regarding to the data collected. In quantitative research some of the techniques used in probability sampling include the following.

***Simple random sampling:*** The guiding principle behind this technique is that each element must have an equal and nonzero chance of being selected. This canbe achieved by lottery system, applying a table of random numbers, or a computergenerated random numbers to a numbered sampling frame.

***Systematic sampling:*** The systematic random sampling technique begins with selectingone element at random in the sampling frame as the starting point;however, from this point onward, the rest of the sample is selectedsystematically by applying a predetermined interval. Each member of the study population is either assembled or listed, a random start is designated, and then members of the population are selected at equal intervals. For example, inthis sampling technique, after the initial element is selected atrandom, every “Kth” element will be selected (Kth refers to the size ofthe interval—the ratio of the population to sample size) and becomeseligible for inclusion in the study.

***Stratified sampling:*** Stratified random sampling begins with the identification of somevariable, which may be related indirectly to the research questionand could act as a confounder (such as geography, age, income,ethnicity, or gender). This variable is then used to divide thesampling frame into mutually exclusive *strata* or subgroups. Oncethe sampling frame is arranged by strata, the sample is selectedfrom each stratum using simple random sampling or systematicsampling techniques. It is important that the sample selected withineach stratum reflects proportionately the population proportions;thus, you can employ *proportionate stratified sampling.*

***Cluster sampling***: It may be difficult or impossible to take a simple random sample of the units of the study population at random, because a complete sampling frame does not exist. Logistical difficulties may also discourage random sampling techniques (e.g., interviewing people who are scattered over a large area may be too time-consuming). However, when a list of groupings of study units is available (e.g., villages or schools) or can be easily compiled, a number of these groupings can be randomly selected. Then all study units in the selected clusters will be included in the study.

***Multistage sampling:*** Multistage cluster sampling is used when an appropriate sampling frame does not exist or cannot be obtained. Multistage cluster sampling uses a collection of preexisting units or clusters to “stand in” for a sampling frame. The first stage in the process is selecting a sample of clusters at random from the list of all known clusters. The second stage consists of selecting a random sample from each cluster. This is the further development of the principle of cluster sampling. It is used to select large primary sampling units such as states, then woredas, then towns or kebeles and finally certain families within towns or kebeles. This sampling is used in big inquires extending to large geographical area, say the entire country.

***II. Non Probability Sampling Strategies for Qualitative Studies***

These approaches to sampling result in the elements in the target population having an unknown chance of being selected into the sample. Qualitative research methods are typically used when focusing on a limited number of informants, whom the researcher select *strategically* so that their in-depth information will give optimal insight into an issue about which little is known. In non-probability sampling, units are selected deliberately to reflect particular features or groups within the sampled population. The main types of non-probability samples are judgmental (purposive) sampling, convenience sampling, snowball sampling, and quota sampling.

***Purposive sampling:*** In qualitative research, purposive sampling is widely used to identify and select information rich individuals or groups of individuals who are more informed and experienced with a certain phenomenon for the most effective use of limited resources. It enables the investigator to communicate experiences and opinions with participants in an articulate, expressive, and reflective manner. Participants are small in scale and purposively selected based on relevant criteria for the reason that they have particular features or characteristics, which enable detailed exploration and understanding of the issue to be studied. Purposive sampling is also selected based on the assumption that the investigator can able to select elements, which represent a typical sample from the appropriate target population.

***Convenience Sampling:*** it is the terminology used to describe a sample in which elements have been selected from the target population on the basis of their accessibility or convenience to the researcher. Convenience samples are sometimes referred to as ‘accidental samples’ for the reason that elements may be drawn into the sample simply because they just happen to be situated, spatially or administratively, near to where the researcher is conducting the data collection. The main assumption associated with convenience sampling is that the members of the target population are homogeneous so that there would be no difference in the research results. It is generally, choosing settings, groups, and/or individuals that are conveniently available and willing to participate in the study.

***Snowball sampling:*** In this technique the researcher starts to collect data with one or two information rich informants and then ask them if they know other persons who know a lot about the topic under study. Such individuals are considered to represent the characteristics that researchers are interested in.

***Quota sampling***: Quota sampling derives its name from the practice assigning quotes or proportions of kind of people to interviewers. To create a quota sample, there are **three steps:(a)** choosing the relevant stratification and dividing the population accordingly; **(b)** calculating a quota for each stratum; and **(c)** continuing to invite cases until the quota for each stratum is met.

Confusions are usually occurred between quota sampling and stratified probability sampling. However, there is a clear difference between the two techniques. Quota non-probability sampling and stratified probability sampling are different in that quota sampling allows the interviewer choice in the selection of the individuals for the sample.

**Representativeness of Samples and Sample Size**

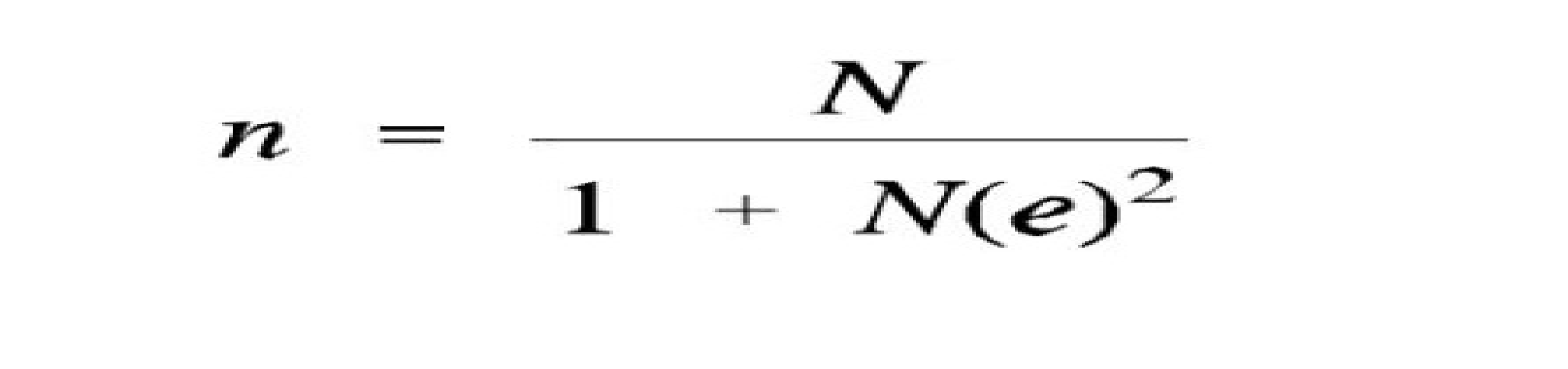
If researchers want to draw conclusions which are valid for the whole study population, which requires a quantitative study design, they should take care to draw a sample which is representative of that population. The representative sample is the one that each sampled unit will represent the characteristics of a known number of units in the population. In other words a representative sample has all the important characteristics of the population from which it is drawn. The key reason for being concerned with sampling is that of validity*—*the extent to which the interpretations of the results of the study follow from the study itself and the extent to which results may be generalized to other situations with other people or situation.

***External validity***: the extent to which findings of a study can be generalized to people or situations other than those observed in the study.

***Internal validity***: the extent to which the outcomes of a study result from the variables that were manipulated, measured, or selected rather than from other variables that are not systematically treated. Or it is the extent to which the interpretations of the results of the study follow from the study itself.

There are no fixed rules for sample size in qualitative research. The size of the sample depends on what the researchers try to find out, and from what different informants or perspectives they try to find that out. The primary emphasis of qualitative research is placed on saturation, which means obtaining a comprehensive understanding by continuing to sample until no new substantive information is acquired.

On the other hand, in conducting quantitative research, the investigator needs to fix the sample size to be included in the study. Accordingly, the following is a simple formula to determine the sample size in quantitative research.

****

Where N is the total population in the study area, n is the sample size and, e is the level of precision with an assumption of 95% confidence interval, 0.05 precision levels. For example, if a total number of populations are 20,000, the sample will be calculated as follows.

**n=**

n= = 392

**CHAPTER FOUR: MODES OF OBSERVATION AND DATA COLLECTION METHODS**

**MODES OF OBSERVATION**

Observation refers to the process of observing and recording events or situations. The technique is particularly useful for discovering how individuals or groups of people or animals (and in some instances inanimate objects) behave, act or react.

Observation studies involve observing and recording of behavior or trait or attribute as it occurs in its natural settings. It involves the observation and detection of invariants, or behavior patterns or other phenomena that exist in the real world. The most fundamental principle in observational study is that of noninterference. It is particularly useful when we know little or nothing about a certain subject. Observational study may be cross-sectional and longitudinal studies. In cross-sectional study, measurements are made on a single occasion. In a longitudinal study, measurements are made over a period of time. A longitudinal observational study may be retrospective- study present and past events or prospective- follow subjects for future events.

Generally;

* Observation, as a method of collecting research data, involves observing behavior and systematically recording the results of those observations;
* Observations are guided by the research questions. Therefore the observations are conscious and planned. They differ from casual everyday observations of behavior which are often casual, selective, and inaccurate;
* Observations are systematically recorded, often using an observation check list;
* Data are analyzed using both quantitative and qualitative data analysis methods, and
* Observation study is basically descriptive; although it can provide a somewhat detailed description of a phenomenon, it cannot tell us why the phenomenon occurred.
* Allows for insight into contexts, relationships, behavior
* Can provide information previously unknown to researchers that is crucial for project design, data collection, and interpretation of other data

**Experimental Research**

Experimental research involves making a change in the value of one variable – called the independent variable – and observing the effect of that change on another variable – called the dependent variable. In other words, it involves comparing two groups on one outcome measure to test some hypothesis regarding causation. The key element in true experimental research is scientific control and the ability to rule out alternative explanations. Experimental research differs from the other research approaches through its greater control over the objects of its study. The researcher strives to isolate and control every relevant condition which determines the events investigated, so as to observe the effects when the conditions are manipulated. Chemical experiments in a laboratory represent one of the purest forms of this type of research. The most important characteristic of the experimental approach is that it deals with the phenomenon of ‘cause and effect’.

An experimenter interferes with the natural course of events, in order to construct a situation in which competing theories can be tested. It is the best method when the purpose of research is to determine causal influences between variables. In experimental research, the researcher intentionally manipulates one variable to measure its effect on the other.

The purpose of experimental research is to investigate possible cause-and –effect relationship as well as to understand the nature of functional relationship between caused factors and affect to be predicted**.**

An experimental design involves the specifications of:

* Treatments that are to be manipulated;
* Test units to be used;
* Dependent variables to be measured, and
* Procedures for dealing with extraneous variables

**Survey Research**

Surveys gather data at a particular point in time with the intention of describing the nature of existing conditions, or identifying standards against which existing conditions can be compared, or determining the relationships that exist between specific events.

A survey is a data collection method based on the study of a given population. It is a systematic gathering of information from the people for the purpose of understanding or predicting some aspect of their behavior. It Include using questionnaires or structured interviews for data collection with the intent of generalizing from a sample to a population. The survey method gathers data from a relatively large number of cases at a particular time. It uses to scan a wide field of issues, populations, programs etc. in order to measure or describe any generalized features. It is concerned with generalized statistics that results when data are abstract from a number of individual cases. National population census is an example of survey

Survey method is useful in that it usually:

* Gathers data on a one-shot basis and hence is economical and efficient;
* Represents a wide target population
* Generates numerical data;
* Provides descriptive, inferential and explanatory information;
* Manipulates key factors and variables to derive frequencies, and
* Presents material which is uncluttered by specific contextual factors.

**Field research**

Field research is a methodological approach to observe behavior under natural conditions. In the social sciences, the collection of raw data in situation, often – but not exclusively – occurs in a geographical and cultural context not familiar to the person collecting the data. Differently from other methodological approaches, field research in the social sciences allows the researcher to engage in detailed observation and conversations to elicit information about the data being collected.

Field research or fieldwork is the collection of information outside a laboratory, library or workplace setting. The approaches and methods used in field research vary across disciplines. For example, biologists who conduct field research may simply observe animals interacting with their environments, whereas social scientists conducting field research may interview or observe people in their natural environments to learn their languages, folklore, and social structures.

Field research involves a range of well-defined, although variable, methods: informal interviews, direct observation, participation in the life of the group, field experiments, surveys, collective discussions, analyses of personal documents produced within the group, self-analysis, results from activities undertaken off- or on-line, and life-histories.

The following are important reasons to conduct field research

**i.*Overcoming lack of data*:** Field research is often necessary to fill an information void related to the problem to be investigated.

**ii. *Understanding the context:*** Even in cases where there is a perfect set of available data to answer a research question, researchers opt to conduct complementary field research. Field research can thus provide a deeper understanding of the local situation, allowing the researcher to measure the origins, scope, and scale of a problem, as well as to gauge local opinions on the causes, consequences, and means to resolve a problem.

**iii. *Controlling data quality:*** Field research enables control of the accuracy of data collection through at least two mechanisms. First, it enables corroboration or confirmation of data via triangulation. Second, field research enables the researcher to select sensible questions for the specific cultural context being investigated.

**iv. *Opening new frontiers of knowledge:*** Field research puts researchers in contact with a situation that can open their eyes and enable them to initiate new lines of thinking. It provides an empirical basis (and in some cases, the only basis) for challenging conventional wisdom or for testing a research question, a theoretical proposition, or a hypothesis related to a pressing issue.

**Unobtrusive Research**

It is a research type where researchers do not have direct contact with people. Therefore, subjects' behaviors are not affected by the research itself. Unobtrusive research methods include non-reactive behavioral observation, the historical examination of pre-existing archives such as statistics or records, the study of physical traces, and the critical analysis of cultural content. Unobtrusive research includes content research, analysis of existing data (secondary data analysis), and historical/comparative analysis

**Methods and Tools of Data Collection**

**Collection of Primary Data**

In conducting research, the researcher can collect primary data by using different data collection instruments. The following are common.

***Observation***: refers to the process of observing and recording events or situations. The technique is particularly useful for discovering how individuals or groups of people or animals (and in some instances inanimate objects) behave, act or react. There are two main types of observation - participant and nonparticipant. Participant observation is usually limited to studies of human subjects. The researcher becomes part of the group studied and participates in their daily life and activities: observing their everyday situations and their behavior in these situations. In this case conversation is used in order to discover the subjects' own interpretations of events. In non-participant observation the researchers simply observe the activities without taking part themselves. Whilst this has the advantage of preventing the researcher from unduly influencing or becoming involved in activities they may not wish to take part in (for example dangerous or criminal actions). However, in such cases researchers are less likely to understand fully the meanings behind behavior in the group studied.

***Questionnaires:*** questionnaire is a type of survey where respondents write answers to questions posed by the researcher on a question form. A number of respondents are asked identical questions, in order to gain information that can be analyzed, patterns found and comparisons made. The commonest type of questionnaire involves closed choice or fixed questions where the respondent is required to answer by choosing an option from a number of given answers, usually by ticking a box or circling an answer. On the other hand, open ended questionnaires can also be used which allow respondents to formulate and record their answers in their own words. These are more qualitative and can produce detailed answers to complex problems.

* ***Interviews:*** Interviews are a type questions delivered by an interviewer and limited to cases where the subjects of study are humans. Interview is like a conversation and has the purpose of obtaining information relevant to a particular research topic. Interviews can be held through face to face, through telephone interviews, and internet assisted interviews. Interviews can be unstructured interview, semi-structured interview and structured.

Unstructured interviews are purely qualitative interview like an informal conversation. Here questions are asked in the natural course of interaction and arise from the particular context. In unstructured interview the researcher attempts to achieve a holistic understanding of the interviewees’ point of view. In this case:

* Participants are free to talk about what they deem important with little directional influence from the researcher;
* It gives a greater insight and more in-depth understanding of the topic researched;
* Requires more time and expertise, and
* It can be only used to qualitative research.

Semi-structured interview is the most common type of interview used in qualitative social research. These have specific questions already predetermined that are asked to the respondent in a particular order or topics and issues to be covered in the courses of the interview. This type of interview uses questionnaires with a mixture of questions with predefined answers as well as those where the respondent is free to say whatever is liked. In structured interviews on the other hand,the interviewer asks a series of questions and ticks boxes with the respondents’ response. These are used in quantitative. It maximizes reliability and easy to quantify. Purely quantitative interviews are like a closed ended questionnaire, formal and have fixed responses.

The following are important tips for carrying out interviews

* Begin with an explanation of who you are and what the survey is about
* Ensure confidentiality
* Achieve rapport with the respondent
* Be aware of the importance of body language
* Be familiar with your questions and ask them in a neutral manner
* Endeavor not to lead respondents to answer in a certain way
* Be aware of your role as an interviewer, which is to listen, not to speak
* Take a full record of the interview either through tape recording or note taking

***Focus Groups:***it is a type of interview that involves carefully selected individuals consists of 7-10 members alongside the researcher. These individuals are selected as they hold particular characteristics which the researcher believes are necessary to the topic of focus. Focus groups are extremely useful in providing qualitative data which gives an insight into attitudes and perceptions difficult to obtain using other procedures. The researcher acts as a moderator and listener posing predetermined open ended questions which the respondents answer in any way they choose.

***Schedule methods****:* This method of data collection is very much like the collection of data through questionnaire, with little difference which lies in the fact that schedules (proforma containing a set of questions) are being filled in by the enumerators who are specially appointed for the purpose. These enumerators along with schedules go to respondents, put to them the questions from the proforma in the order the questions are listed and record the replies in the space meant for the same in the proforma. In certain situations, schedules may be handed over to respondents and enumerators may help them in recording their answers to various questions in the said schedules. Enumerators explain the aims and objects of the investigation and also remove the difficulties which any respondent may feel in understanding the implications of a particular question or the definition or concept of difficult terms.

This method requires the selection of enumerators for filling up schedules or assisting respondents to fill up schedules and as such enumerators should be very carefully selected. The enumerators should be trained to perform their job well and the nature and scope of the investigation should be explained to them. The following are important distinctions between questionnaire and schedule methods.

* The questionnaire is generally sent through mail to informants to be answered as specified in a covering letter, but otherwise without further assistance from the sender. The schedule is generally filled out by the research worker or the enumerator, who can interpret questions when necessary.
* To collect data through questionnaire is relatively cheap and economical since we have to spend money only in preparing the questionnaire and in mailing the same to respondents. To collect data through schedules is relatively more expensive since considerable amount of money has to be spent in appointing enumerators and in importing training to them.
* Non-response is usually high in case of questionnaire as many people do not respond and many return the questionnaire without answering all questions. Bias due to non-response often remains indeterminate. As against this, non-response is generally very low in case of schedules because these are filled by enumerators who are able to get answers to all questions. But there remains the danger of interviewer bias and cheating.
* In case of questionnaire, it is not always clear as to who replies, but in case of schedule the identity of respondent is known.
* The questionnaire method is likely to be very slow since many respondents do not return the questionnaire in time despite several reminders, but in case of schedules the information is collected well in time as they are filled in by enumerators.
* Personal contact is generally not possible in case of the questionnaire method as questionnaires are sent to respondents by posts who also in turn return the same by post. But in case of schedules direct personal contact is established with respondents.
* Questionnaire method can be used only when respondents are literate and cooperative, but in case of schedules the information can be gathered even when the respondents happen to be illiterate.
* Wider and more representative distribution of sample is possible under the questionnaire method, but in respect of schedules there usually remains the difficulty in sending enumerators over a relatively wider area.
* Risk of collecting incomplete and wrong information is relatively more under the questionnaire method, particularly when people are unable to understand questions properly. But in case of schedules, the information collected is generally complete and accurate as enumerators can remove the difficulties.
* The success of questionnaire method lies more on the quality of the questionnaire itself, but in the case of schedules much depends upon the honesty and competence of enumerators.
* In order to attract the attention of respondents, the physical appearance of questionnaire must be quite attractive, but this may not be so in case of schedules as they are to be filled in by enumerators and not by respondents.
* Along with schedules, observation method can also be used but such a thing is not possible while collecting data through questionnaires.

**Collection of Secondary Data**

Secondary data means data that are already available i.e., they refer to the data which have already been collected and analyzed by someone else. Is the process of using any kind of document, films, television programs and photographs as well as written sources such as books, papers and letters for analysis in relation to a particular research questions. When the researcher utilizes secondary data, then he has to look into various sources from where he can obtain them. In this case he is certainly not confronted with the problems that are usually associated with the collection of original data. Secondary data may either be published data or unpublished data. Usually published data are available in the following ways.

* Various publications of the central, state are local governments
* Various publications of foreign governments or of international bodies and their subsidiary organizations
* Technical and trade journals
* Books, magazines and newspapers
* Reports and publications of various associations connected with business and industry, banks, stock exchanges, etc.
* Reports prepared by research scholars, universities, economists, etc. in different fields; and
* Public records and statistics, historical documents, and other sources of published information.

The sources of unpublished data are many; they may be found in diaries, letters, unpublished biographies and autobiographies and also may be available with scholars and research workers, trade associations, labor bureaus and other public/private individuals and organizations.

Before using secondary data, researchers must see the following characteristics:

1. ***Reliability of data:***The reliability can be tested by finding out the following things about the said data:

* Who collected the data?
* What were the sources of data?
* Were they collected by using proper methods?
* At what time were they collected?
* Was there any bias of the compiler?
* What level of accuracy was desired?
* Was it achieved?

***2. Suitability of data:***The data that are suitable for one enquiry may not necessarily be found suitable in another enquiry. Hence, if the available data are found to be unsuitable, they should not be used by the researcher. In this context, the researcher must very carefully scrutinize the definition of various terms and units of collection used at the time of collecting the data from the primary source originally. Similarly, the object, scope and nature of the original enquiry must also be studied. If the researcher finds differences in these, the data will remain unsuitable for the present enquiry and should not be used.

**3. *Adequacy of data:***If the level of accuracy achieved in data is found inadequate for the purpose of the present enquiry, they will be considered as inadequate and should not be used by the researcher. The data will also be considered inadequate, if they are related to an area which may be either narrower or wider than the area of the present enquiry.

From all this we can say that it is very risky to use the already available data. The already available data should be used by the researcher only when he finds them reliable, suitable and adequate. But he should not blindly discard the use of such data if they are readily available from authentic sources and are also suitable and adequate. Je they appeared reliable, suitable and adequate, it will not be economical to spend time and energy in field surveys for collecting information. At times, there may be wealth ofusable information in the already available data which must be used by an intelligent researcher butwith due precaution

**CHAPTER FIVE: PROCESSING AND ANALYSIS OF DATA**

**NATURE AND MEANING OF DATA PROCESSING**

Data are collection of facts represented in numbers, and words. Data processing is the conversion of raw data to meaningful information through a process. Data is manipulated to produce results that lead to a resolution of a problem or improvement of an existing situation. Data processing follows a cycle where inputs (raw data) are fed to a process to produce output (information and insights). The collected data have to be processed and analyzed in accordance with the outline laid down for the purpose at the time of developing the research plan. This is essential for a scientific study and for ensuring that we have all relevant data for making contemplated comparisons and analysis. Technically speaking, processing implies editing, coding, classification and tabulation of collected data so that they are amenable to analysis.

The term analysis refers to the computation of certain measures along with searching for patterns of relationship that exist among data-groups. Analysis of data in a general way involves a number of closely related operations which are performed with the purpose of summarizing the collected data and organizing these to answer the research question/s. The process of data analysis involves making sense out of text and image data. When data is analyzed by theme, it is called thematic analysis.

**Stages of the Data Processing Cycle**

The Data Processing cycle is a series of steps carried out to extract information from raw data.

A. ***Collection*:** is the first stage and is very crucial, since the quality of data collected will impact heavily on the output of the research work. The collection process needs to ensure that the data gathered are both defined and accurate, so that subsequent decisions based on the findings are valid.

**B. *Preparation*:** is the manipulation of data into a form suitable for further analysis and processing. Raw data cannot be processed and must be checked for accuracy. Preparation is about constructing a dataset from one or more data sources to be used for further exploration and processing.

**C. *Input***: is the task where verified data is coded or converted into machine readable form so that it can be processed through a computer. Data entry is done through the use of a keyboard, digitizer, scanner, or data entry from an existing source.

**D*. Processing*:** is when the data is subjected to various means and methods of manipulation, the point where a computer program is being executed, and it contains the program code and its current activity. The process may be made up of multiple threads of execution that simultaneously execute instructions, depending on the operating system. While a computer program is a passive collection of instructions, a process is the actual execution of those instructions. Many software programs are available for processing large volumes of data within very short periods.

**E**. ***Output and Interpretation*:** it is the stage where processed information is now transmitted to the user. Output is presented to users in various report formats like printed report, audio, video, or on monitor. Output need to be interpreted so that it can provide meaningful information that will guide future decisions of the company.

**F. *Storage*:** is the last stage in the data processing cycle, where data, instruction and information are held for future use. The importance of this cycle is that it allows quick access and retrieval of the processed information, allowing it to be passed on to the next stage directly, when needed.

**Processing Operations**

The following are important processing operations in research.

**1. *Editing*:** Editing of data is a process of examining the collected raw data (especially in surveys) to detect errors and omissions and to correct these when possible. As a matter of fact, editing involves a careful scrutiny of the completed questionnaires and/or schedules. Editing is done to assure that the data are accurate, consistent with other facts gathered, uniformly entered, as completed as possible and have been well arranged to facilitate coding and tabulation.

**2. *Coding:***Coding refers to the process of assigning numerals or other symbols to answers so that responses can be put into a limited number of categories or classes. Such classes should be appropriate to the research problem under consideration.

Coding is necessary for efficient analysis and through it the several replies may be reduced to a small number of classes which contain the critical information required for analysis. Coding decisions should usually be taken at the designing stage of the questionnaire. The list of topics/questions in your interview guide can serve as an initial set of codes. Coding can be made through computer tabulation, code in the margin with a colored pencil or transcribe the data from the questionnaire to a coding sheet.

**3. *Classification:***Most research studies result in a large volume of raw data which must be reduced into homogeneous groups if we are to get meaningful relationships. This fact necessitates classification of data which happens to be the process of arranging data in groups or classes on the basis of common characteristics. Data having a common characteristic are placed in one class and in this way the entire data get divided into a number of groups or classes.

**4*. Tabulation*:** When a mass of data has been assembled, it becomes necessary for the researcher to arrange the same in some kind of concise and logical order. This procedure is referred to as tabulation. Thus, tabulation is the process of summarizing raw data and displaying the same in compact form (i.e., in the form of statistical tables) for further analysis. In a broader sense, tabulation is an orderly arrangement of data in columns and rows.

**Qualitative Data Analysis**

Qualitative research involves processing of large amounts of textual data. This is usually done manually. Qualitative data analysis software is available, which can support data-processing. Qualitative Data Analysis is the range of processes and procedures whereby we move from the qualitative data that have been collected, into some form of explanation, understanding or interpretation of the people and situations we are investigating. Qualitative data analysis involves the identification, examination, and interpretation of patterns and themes in textual data and determines how these patterns and themes help answer the research questions at hand.

The ways that researchers choose to analyze data should stem from a combination of factors, which include the research questions being asked, the theoretical foundation of the study, and the appropriateness of the technique for making sense of the data. Analyzing qualitative data typically involves immersing oneself in the data to become familiar with it, then looking for patterns and themes, searching for various relationships between data that help the researcher to understand what he/she has, then visually displaying the information and writing it up.

Generally, qualitative analysis is:

* Not guided by universal rules;
* Is a very fluid process that is highly dependent on the evaluator and the context of the study, and
* Likely to change and adapt as the study evolves and the data emerges

It is important to note that qualitative data analysis is an ongoing, fluid, and cyclical process that happens throughout the data collection stage and carries over to the data entry and analysis stages. Data are summarized and new questions raised. Ideally in conducting qualitative research you have time to go back to the field to collect additional data or to verify conclusions.

**Statistical Analysis (Statistics in Research)**

Statistic is a numerical description of some feature of a variable or variables in a sample from a larger population. Analysis we mean the computation of certain indices or measures along with searching for patterns of relationship that exist among the data groups. Analysis, particularly in case of survey or experimental data, involves estimating the values of unknown parameters of the population and testing of hypotheses for drawing inferences. There are two major divisions in the field of statistics called **descriptive and inferential statistics** which accomplish different objectives.

1. **Descriptive Statistics**

*Descriptiveanalysis* is largely the study of distributions of one variable with the aim to describe data *numerically and graphically.*The concept of descriptive statistics refers to the collection, organization, summarizing and describing of large body of numerical data with singe number in the following forms:

* + - ***Frequencies*** – count the number of times a particular score or value is found in the data set
* ***Percentages*** – used to express a set of scores or values as a percentage of the whole
* **Mean –** numerical average of the scores or values for a particular variable
* **Median** – the numerical midpoint of the scores or values that is at the center of the distribution of the scores
* **Mode** – the most common score or value for a particular variable
* **Minimum and maximum values (range**) – the highest and lowest values or scores for any variable

**B. Inferential Statistics**

Inferential statistics are used to make predictions or comparisons about larger groups using information gathered about a small part of the population. Thus, inferential statistics involves generalizing beyond the data. Inferential statistics examine the differences and relationships between two or more samples of the population. These are more complex analyses and are looking for significant differences between variables and the sample groups of the population. Inferential statistics allow researchers to test hypotheses and generalize results to population as whole. Following is a list of basic inferential statistical tests:

**Correlation:** It is a statistical technique that represents the strength of the connection between pairs of variables. It determines the association of two quantities and represent the linear relationship between two variables. At the time of study of two variables, if the change in one variable effect the change in another variable, then the variables are said to be correlated. Variables are said to be uncorrelated when the movement in one variable does not amount to any movement in another variable in a specific direction. Correlation is used when the researcher wants to know that whether the variables under study are correlated or not, if yes then what is the strength of their association. Correlation can be positive, negative or zero. When the two variables move in the same direction, i.e. an increase in one variable will result in the corresponding increase in another variable and vice versa, and then the variables are considered to be positively correlated. For instance: profit and investment, and *Income and Expenditure of the certain family*. When the two variables move in different direction, in such a way, that an increase in one variable will result in a decrease in another variable and vice versa.this situation is negative correlation. **Example:** *Price and Demand of a commodity.* **On the other hand, i**f the change in one variable does not depend on another variable, then the correlation between these variables is said to be Zero Correlation. **Example:** *Heights of students and their marks.*

**Analysis of Variance (ANOVA)**: tries to determine whether or not the means of two sampled groups is statistically significant or due to random chance. For example, the test scores of two groups of students are examined and proven to be significantly different. The ANOVA will tell you if the difference is significant, but it does not speculate regarding “why”.

**Regression:** It is a statistical technique for estimating the change in the metric dependent variable due to the change in one or more independent variables, based on the average mathematical relationship between two or more variables. It reflects the impact of the unit change in the independent variable on the dependent variable. It describes how an independent variable is numerically related to the dependent variable. *Causal analysis* is concerned with the study of how one or more variables affect changes in another variable. It is thus a study of functional relationships existing between two or more variables. It used to forecast the past, present or future events on the basis of past or present events. For instance: On the basis of past records, a business’s future profit can be estimated. In regression analysis, there are two variables. The variable whose value is influenced it is called as “Dependent Variable” and the variable which influences the value of the other variable is called as “Independent Variable”. **Example:** *Controlling the supply of goods may affect the price of goods.* In simple linear regression is a statistical method that helps to summarize and study relationships between two continuous variables: one Dependent variable and one Independent variable. Multiple linear regression examines the linear relationships between one Dependent variable and two more Independent variables. This analysis is adopted when the researcher has one dependent variable which is presumed to be a function of two or more independent variables

Generally, regression used to determine whether one variable is a predictor of another variable. For example, a regression analysis may indicate to you whether or not participating in a test preparation program results in higher scores for high school students. It is important to note that regression analysis is like correlations since it shows the relationship between variables. But causation cannot be inferred from the analyses in correlation. Besides the difference lies for the fact that it can be used for prediction which is not true in correlation. The objective of this analysis is to make a prediction about the dependent variable based on its covariance with all the concerned independent variables.

**Types of Data and Measurements**

Data can be classified as either categorical (qualitative) or numerical (quantitative).

Categorical variables are typically measured on a nominal scale. Nominal level variables are those that can simply be grouped; there’s no underlying numeric order to them and any ordering is arbitrary or artificial. Nominal scale simply describes differences between things by assigning them to categories. These scales are used for variables or indicators that have mutually exclusive attributes. Examples include gender (two values: male or female), industry type (manufacturing, financial, agriculture, etc.), and religious affiliation (Christian, Muslim, Jew, etc.), eye color (green, brown, blue, etc.) and managerial level (supervisor, mid-level, executive).

Quantitative studies result in data that provides quantifiable, objective, and easy to interpret results. The data can typically be summarized in a way that allows for generalizations that can be applied to the greater population and the results can be reproduced. The design of most quantitative studies also helps to ensure that personal bias does not impact the data. Quantitative data can be analyzed in several ways. The data can typically be entered into a spreadsheet and organized or “coded” in some way that begins to give meaning to the data.

Numerical data is data that is on a numerical scale of some sort. Numerical data is measured on an ordinal, interval, or ratio scale.

**Ordinal scales:** are those that measure rank-ordered data, such as the ranking of students in a class as first, second, third, and so forth, based on their grade point average or test scores.

**Interval scales:** are those where the values measured are not only rank-ordered, but are also equidistant from adjacent attributes. For example, if you have a scale that asks respondents’ annual income using the following attributes (ranges): $0 to 10,000, $10,000 to 20,000, $20,000 to 30,000, and so forth, this is an interval scale, because the mid-point of each range is equidistant from each other.

**Ratio scales:** These scales have an absolute or true zero of measurement. That means they have a “true zero” point (where the value zero implies lack or non-availability of the underlying construct). Example variables such as age, tenure in an organization, and firm size (measured as employee count or gross revenues). For example, a firm of size zero means that it has no employees or revenues. Or the amount of minutes that runners take can be expressed as 0 minute, 10 minutes, 20 minutes, 30 minutes etc….

Scales can also be binary or likert. **Binary scales** are nominal scales consisting of binary items that assume one of two possible values, such as yes or no, true or false, and so on. **Likert scale** on the other hand**,** includes likert items that are simply-worded statements to which respondents can indicate their extent of agreement or disagreement on a five or seven-point scale ranging from “strongly disagree” to “strongly agree”.

**Measures of Central Tendency**

Measures of central tendency (or statistical averages) tell us the point about which items have a tendency to cluster. Such a measure is considered as the most representative figure for the entire mass of data. Measure of central tendency is also known as statistical average. Mean, median and mode are the most popular averages.

***Mean:*** *mean,* which isalso known as arithmetic average, is the most common measure of central tendency and may be defined as the value which we get by dividing the total of the values of various given items in a series by the total number of items. Every set of interval level and ratio level data has a mean. Mean is the simplest measurement of central tendency and is a widely used measure. Its chief use consists in summarizing the essential features of a series and in enabling data to be compared. It is amenable to algebraic treatment and is used in further statistical calculations. It is a relatively stable measure of central tendency.

Mean (M) = Σ(X)

N

Where Σ = Sum of data, X = Individual data points, N = Sample size (number of data points)

**Example**: To find the mean of the following data set: 3, 2, 4, 1, 4, 4.

M = 3+2+4+1+4+4 = 18/3= 6

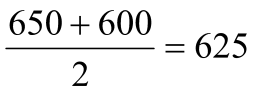
6

***Median***: is the value of the middle item of series when it is arranged in ascending or descending order of magnitude. It divides the series into two halves; in one half all items are less than the median whereas in the other half all items have values higher than median. If the numbers of data sets are even, the median is the average of the two middle numbers.

It can be computed for ratio level, interval level and ordinal data but not for nominal scale.

Example: Let say, our population consists of five workers earning income of 500, 650, 400, 700, and 600 birr per month. First when we arrange the data, it becomes 700, 650, 600, 500, and 400 birr. Then the median is 600 birr.

In the case of even numbers, (for example if 6 workers earning monthly income of 750, 700, 650, 600, 500, and 400 birr), we would no longer have a single middle case. Hence, the median is the average of the scores of the two middle cases.

Thus, median =.

***Mode: it is*** the most commonly or frequently occurring value in a series. The mode in a distribution is that item around which there is maximum concentration. In general, mode is the size of the item which has the maximum frequency. Like median, mode is a positional average and is not affected by the values of extreme items. It is, therefore, useful in all situations where we want to eliminate the effect of extreme variations. Mode is particularly useful in the study of popular sizes. For example, a manufacturer of shoes is usually interested in finding out the size most in demand so that he may manufacture a larger quantity of that size. The mode can be used when data is nominal scale, such as religious preferences, gender, or political affiliation.

Example: the Mode of in the income level of our respondents contain 4000 bir, 3500 bir, 5000 bir, 3500 bir, 6000 bir, **is 3500.**

**Measures of Variation**

Measures of variability express the spread or variation in responses. It provides a better understanding of our result. It shows are all respondents and responses similar to the mea? Are some very high or low? Did a few do a lot than the rest? This measurement includes range, mean deviation, and standard deviation.

***Range:***is the simplest possible measure of dispersion and is defined as the difference between the values of the extreme items of a series. Thus,

**Range = Highest value of an item in a series - Lowest value of an item in a series**

The utility of range is that it gives an idea of the variability very quickly. For example, in the set of data that contained 6, 4, 10, 8, 10, and, 12;

The range is: 12-4= 8

***Standard deviation:*** is most widely used measure of dispersion/variation of a series. Standard deviation is defined as the square-root of the average of squares of deviations, when such deviations for the values of individual items in a series are obtained from the arithmetic average. The standard deviation is the square root of the variance. The calculation of the variance requires the attributes of a variable to form a numeric scale. The variance indicates how close to or far from the mean are most of the cases for a particular variable. The smaller the value of the variance, the more the cases are concentrated around the value of the mean; the larger the value of the variance, the more spread out away from the mean are the cases.

**Variance=** ∑ **(xi-x)2**

**N - 1**

The calculation of the **variance** using a data set of just three cases have the values 2, 4, and 6 will be:

Step 1 (Mean) X = (2 + 4 + 6)/3 = 12/3 = 4

Step 2 (Xi-x) 2

(2-4)2 = 4

(4-4)2 = 0

(6-4)2 = 4

Step 3: ∑ (xi-x) 2, = 4+0+4+= 8

Step4: ∑ (xi-x) 2, 8/2= 4

N - 1

Therefore, the standard deviation of this case is = 2

**Measures of Relationship**

Measures of association/relationship provide a means of summarizing the size of the association between two variables. Most measures of association are scaled so that they reach a maximum numerical value of 1 when the two variables have a perfect positive relationship with each other. They are also scaled so that they have a value of 0 when there is no relationship between two variables. Some measures of association are constructed to have a range of only 0 to 1. Other measures have a range from -1 to +1. The latter provide a means of determining whether the two variables have a positive or negative association with each other.

**Analysis of Secondary Data**

Secondary analysis is a systematic method with procedural and evaluative steps. The process of secondary data analysis begins with the development of the research questions, then the identification of the dataset, and thorough evaluation the dataset.

There are two general approaches for analyzing existing data: the ‘research question-driven’ approach and the ‘data-driven’ approach. In the research question approach, researchers have an a priori hypothesis or a question in mind and then look for suitable datasets to address the question. In the data-driven approach researchers glance through variables in a particular dataset and decide what kind of questions can be answered by the available data. In practice, the two approaches are often used jointly and iteratively. Researchers typically start with a general idea about the question or hypothesis and then look for available datasets which contain the variables needed to address the research questions of interest. If they do not find datasets that contain allvariables needed, they usually modify the research question(s) or the analysis plan based on the best available data.

Secondary analysis is the cost effectiveness and convenience it provides. Since someone else has already collected the data, the researcher does not have to devote financial resources to the collection of data. When good secondary data is available, researchers can gain access to and utilize high quality larger datasets, such as those collected by funded studies or agencies that involve larger samples and contain substantial breadth.

**Some Problems in Data Processing**

We can take up the following two problems of processing the data for analytical purposes:

(a) *The problem concerning “Don’t know” (or DK) responses:* While processing the data, the researcher often comes across some responses that are difficult to handle. One category of such responses may be ‘Don’t Know Response’ or simply DK response. When the DK response group is small, it is of little significance. But when it is relatively big, it becomes a matter of major concern in which case the question arises: Is the question which elicited DK response useless? The answer depends on two point’s viz., the respondent actually may not know the answer or the researcher may fail in obtaining the appropriate information. In the first case the concerned question is said to be alright and DK response is taken as legitimate DK response. But in the second case, DK response is more likely to be a failure of the questioning process. How DK responses are to be dealt with by researchers? The best way is to design better type of questions. Good rapport of interviewers with respondents will result in minimizing DK responses.

But what about the DK responses that have already taken place? One way to tackle this issue is to estimate the allocation of DK answers from other data in the questionnaire. The other way is to keep DK responses as a separate category in tabulation where we can consider it as a separate reply category if DK responses happen to be legitimate, otherwise we should let the reader make his own decision. Yet another way is to assume that DK responses occur more or less randomly and as such we may distribute them among the other answers in the ratio in which the latter have occurred. Similar results will be achieved if all DK replies are excluded from tabulation and that too without inflating the actual number of other responses.

(b) *Use or percentages:* Percentages are often used in data presentation for they simplify numbers, reducing all of them to a 0 to 100 range. Through the use of percentages, the data are reduced in the standard form with base equal to 100 which fact facilitates relative comparisons. While using percentages, the following rules should be kept in view by researchers:

1. Two or more percentages must not be averaged unless each is weighted by the group size from which it has been derived.

2. Use of too large percentages should be avoided, since a large percentage is difficult to understand and tends to confuse, defeating the very purpose for which percentages are used.

3. Percentages hide the base from which they have been computed. If this is not kept in view, the real differences may not be correctly read.

4. Percentage decreases can never exceed 100 per cent and as such for calculating the percentage of decrease, the higher figure should invariably be taken as the base.

5. Percentages should generally be worked out in the direction of the causal-factor in case of two-dimension tables and for this purpose we must select the more significant factor out of the two given factors as the causal factor.

**CHAPTER SIX: INTERPRETATION AND REPORT WRITING**

**MEANING OF INTERPRETATION**

Interpretation refers to the task of drawing inferences from the collected facts after an analytical and/or experimental study. In fact, it is a search for broader meaning of research findings.

The task of interpretation has the following two major aspects;

* The effort to establish continuity in research through linking the results of a given study with those of another, and
* The establishment of some explanatory concepts. “In one sense, interpretation is concerned with relationships within the collected data.

Since interpretation extends beyond the data of the study to include the results of other research, theory and hypotheses, it is the device through which the factors that seem to explain what has been observed by researcher in the course of the study can be better understood and it also provides a theoretical conception which can serve as a guide for further researches.

**Why Interpretation**

The usefulness and utility of research findings lie in proper interpretation. It is being considered as a basic component of research process because of the following reasons:

1. It is through interpretation that the researcher can well understand the abstract principle that works beneath the researcher’s findings. Through interpretation the researcher can link up his/her findings with those of other studies, having the same abstract principle, and thereby can predict about the concrete world of events.
2. Interpretation leads to the establishment of explanatory concepts that can serve as a guide for future research studies; it opens new avenues of intellectual adventure and stimulates the quest for more knowledge.
3. Researchers can better appreciate only through interpretation why his findings are? What they are and can make others to understand the real significance of his research findings.
4. The interpretation of the findings of exploratory research study often results into hypotheses for experimental research and as such interpretation is involved in the transition from exploratory to experimental research

**Techniques of Interpretation**

The task of interpretation requires a great skill and dexterity on the part of researcher. Interpretation is an art that one learns through practice and experience. The researcher may, at times, seek the guidance from experts for accomplishing the task of interpretation. The technique of interpretation often involves the following steps:

(i). Researcher must give reasonable explanations of the relations which he has found and he must interpret the lines of relationship in terms of the underlying processes and must try to find out the thread of uniformity that lies under the surface layer of his diversified research findings. In fact, this is the technique of how generalization should be done and concepts be formulated.

(ii). Extraneous information, if collected during the study, must be considered while interpreting the final results of research study, for it may prove to be a key factor in understanding the problem under consideration.

(iii). It is advisable, before embarking upon final interpretation, to consult someone having insight into the study and who is frank and honest and will not hesitate to point out omissions and errors in logical argumentation.

(iv). Researchers must accomplish the task of interpretation only after considering all relevant factors affecting the problem to avoid false generalization. They must be in no hurry while interpreting results, for quite often the conclusions, which appear to be all right at the beginning, may not at all be accurate.

**Significance of Report Writing**

Presentation and writing up are integral parts of the research process—no research is completed until it has been reported on. Writing of report is the last step in a research study and requires a set of skills. As a matter of fact even the most brilliant 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. Any one study may be reported in a variety of forms, each with a different purpose and directed at a different audience.

Where research participants have shared their experiences in good faith for the research to be used to create awareness of some issue or problem or to highlight implications for practice or policy, there is an added responsibility to report. Presentation and writing up are, of course, just part of the process of ensuring that research findings are directed in such a way that they make a difference to our understanding of particular issues or problems and to how we, as a society, respond to them.

In reporting findings researchers should draw clear, logical connections between the empirical data and your interpretations. Do not assume that your readers share your point of view. Take them by the hand, so to speak, and walk them through the data. Refer to the data as much as possible to support your arguments without overwhelming your readers with large, under-analyzed excerpts.

**Different Steps in Writing Report**

Research reports are the product of slow, painstaking, accurate inductive work. The usual steps involved in writing report are the following.

**i. Logical analysis of the subject matter:**It is the first step which is primarily concerned with the development of a subject logically or chronologically. The logical 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 the simple possible to the most complex structures. Chronological development is based on a connection or sequence in time or occurrence.

**ii. 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 constructed. They are an aid to the logical organization of the material and a reminder of the points to be stressed in the report.

**iii. Preparation of the rough draft:** Such a step is of utmost importance for the researcher now sits to write down what he has done in the context of his research study. He will write down the 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.

**iv. Rewriting and polishing of the rough draft:** 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 piece of writing. While rewriting and polishing, one should check the report for;

* Weaknesses in logical development or presentation
* Whether or not the material, as it is presented, has unity and cohesion;
* Does the report stand upright and firm and show a definite pattern?
* Give due attention to the fact that in his rough draft he has been consistent or not.
* Check the mechanics of writing—grammar, spelling and usage.

**v. Preparation of the final bibliography:**Next in order comes 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 pertinent 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 contain the names of books and pamphlets, and contain the names of magazine and newspaper articles.

**vi. Writing the final draft**: This constitutes the last step. The final draft should be written in a concise and objective style and in simple language, avoiding vague expressions such as “it seems”, “there may be”, and the like ones. While writing the final draft, the researcher must avoid abstract terminology and technical jargon. Illustrations and examples based on common experiences must be incorporated in the final draft as they happen to be most effective in communicating the research findings to others.

**Layout of the Research Report**

The layout of the report means as to what the research report should contain. A comprehensive layout of the research report should comprise preliminary pages, main text (introduction, methodology, analysis and conclusion/discussion), and end matters.

**Preliminary Pages:** this part contains a title and date, acknowledgements, table of contents followed by list oftables.

**Introduction:** It should contain a clear statement of the objectives of research i.e., enough background should be given to make clear to the reader why the problem was considered worth investigating. It also states summary of other relevant research (if any) in that context in terms of their research questions, data, and findings. The goal of the introduction section is to let your readers know what you are researching and what other researchers have said about your topic.

**The methodology:** This part of report tells the readers how you did your study. Specifically, it provides detailed about size of the sample, how and where did you collect the sample? And how did you analyze your data?

**The analysis**: this section presents your data and its interpretation with the goal of providing answers to the following questions:

* What is the empirical evidence for this study?
* What social processes are revealed by the data?
* How does it support the researcher’s claims about a particular sociological topic or process?

**The conclusion or the discussion:** Thissection of report writing includes the following:

* A brief summary of your project (the research question, methods, and findings)
* The social or political implications of your findings (i.e., how will your study be of interest to ordinary people or policymakers?)

**End Matter:**At the end of the report, appendices should be enlisted in respect of all technical data such asquestionnaires, sample information, mathematical derivations and the like ones. In addition, bibliography of sourcesconsulted should also be given.

**CHAPTER SEVEN: REFERENCE WRITING**

**What is referencing**

Referencing is acknowledging the source/s of the information, ideas, words, and images you have used in your assignment. You use referencing to distinguish between your ideas and words and those that belong to other people; to support what you are writing by referring to evidence; to enable readers to investigate ideas they find interesting/useful; to show your tutor exactly which sources you have read; and to avoid plagiarism.

Basically, there are three main types of referencing styles. These are

1. **The APA(American Psychological Association) reference system**

Two points must be considered in all referencing formats. These are:

1. In-text citations (within the body of your paper): Each in-text citation gives just enough information on a particular source to “point” the reader to the corresponding, more detailed entry on the reference list.
2. The reference list (on a separate page at the end of your paper): This is the list of sources you used and cited in your paper

**In-Text Citations**

**The Three Elements to be considered in an In-Text Citation?**

1. author’s last name
2. year of publication
3. year of publication

**How do we Format the Three Elements?**

**There are two choices**

|  |  |  |
| --- | --- | --- |
|  | Format 1  Put all 3 elements in parentheses at the end of the sentence. Use commas to separate the elements. | Format 2  Use the author’s name and year of publication in your sentence, and place the page number in parentheses at the end. |
| Paraphrase | One researcher emphasized the necessity of flexible thinking for coping with rapidly changing technology (Lee, 2007, p. 82). | Lee (2007) emphasized that flexible thinking is vital for coping with rapidly changing technology (p. 82). |
| Short quotation (up to 39 words) | One researcher stated that “the ability to think critically is needed in this revolutionary age of technological change” (Lee, 2007, p. 82). | Lee (2007) stated, “The ability to think critically is needed in this revolutionary age of technological change” (p. 82). |

What If the Source Has More Than One Author?

|  |  |  |
| --- | --- | --- |
|  | Format 1 | Format 2 |
| 2 authors | ----- (Smith & Jones, 2004, p. 93).  use & between names | Smith and Jones (2004) found that ----- (p. 93).  use “and” between names |
| 3-5 authors | The first time you cite the source in your paper:  ----- (Simpson, Stahl, & Francis, 2004, p. 9).  notice the comma | The first time you cite the source in your paper: Simpson, Stahl, and Francis (2004) argued that ----- (p. 9).  notice the comma |
| Every other time you cite that same source:  ----- (Simpson et al., 2004, p. 18).  notice the period and comma | Every other time you cite that same source:  Simpson et al. (2004) argued that ----- (p. 18). |
| 6+ authors | ----- (Kallai et al., 2011, p. 121). | Kallai et al. (2011) noted that ----- (p. 121). |

**What If One of the Three Elements Is Missing?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Missing Element | What to Do | Format 1 | Format 2 |  |
| No page numbers, and the source has NO headings | Identify the paragraph where the information appears | ----- (Enmax, 2017, para. 7). | According to figures reported by Enmax (2017), ----- (para. 7).   |  | | --- | |  | | |
| No page numbers, and the source has headings | Use the heading, and identify the paragraph below the heading where the information appears | ----- (Lachs, 2019, ProposedSolution, para. 2).  notice the capital letters  NOTE: Long headings should be shortened to a few words. If you shorten a heading, use quotation marks around it.  ----- (Lachs, 2019, “Ways,” para. 2). | Lachs (2019) suggested that ----- (Proposed Solution, para. 2).  Lachs (2019) suggested that ---- (“Ways,” para. 2). | |
| No author’s name | Use the title of the source | ----- (“Plastic Bags,” 2019, para. 3). | The article “Plastic Bags in Green Bins OK in Ottawa as of Today” (2019) noted that ----- (para. 5).  NOTE: Use quotation marks and capital letters for all major words. | |
| No date | Use n.d. | ----- (Liu, n.d., para. 3) | Liu (n.d.) emphasized ----- (para. 3). | |

**What If the Author Is an Organization, Not a Person?**

|  |  |  |
| --- | --- | --- |
|  | Format 1 | Format 2 |
| Organization without a commonly used abbreviation | ----- (Calgary Meals on Wheels, n.d., para. 3). | Calgary Meals on Wheels (n.d.) provides ----- (para. 3). |
| Organization WITH a commonly used abbreviation | The first time you cite the source in your paper:  ----- (World Health Organization [WHO], 2018, para. 4). | The first time you cite the source in your paper:  World Health Organization (WHO, 2018) warned that ----- (para. 4). |
| Every other time you cite that same source:  ----- (WHO, 2018, para. 4). | Every other time you cite that same source:  WHO (2018) warned that ----- (para. 4). |

1. **The reference list**

**Books**

**Book without DOI**

**Author(s)→year of publication →book title in italics →publisher**

**Example:**Barkway, D., &O’Kane, D. (2020). *Psychology: Introduction for health professionals.* Elsevier.

**Book with DOI**

**Author(s) →year of publication → book title in italics → publisher → DOI**

**Example:** American Psychological Association. (2020). *Publication manual of the American Psychological Association: The official guide to APA style* (7th ed.). <https://doi.org/10.1037/0000165-000>.

**ONLINE BOOK**

**Author(s) → year of publication→ book title in italics →publisher → URL**

**Example: National Health Committee. (2015).The introduction of fit for purpose omics-based technologies–Think piece.Ministry of Health.<https://www.health.govt.nz/publication/introduction-fit-purpose-omics-based-technologies-think-piece>.**

**Chapter in an Edited Book**

**Chapter author→ year of publication→ chapter title don’t forget “in” → book editor(s)→ book title in italics**

**Example:** Chand, N. (2019). Standardized turmeric and curcumin. In R. C. Gupta, A. Srivastava, & R. Lall (Eds.), *Nutraceuticals in veterinary medicine* (pp. 3-24). Springer.<https://doi.org/10.1007/978-3-030-04624-8>.

**Journal Articles**

**Author(s) →year of publication →article title→journal title in italics→volume in italics→issue(No) → page**

**Example:** Foxall, D. (2013). Barriers in education of indigenous nursing students: A literature review. *Nursing Praxis in New Zealand*, *29*(3), 31-37

**Webpages**

Author(s)**→** Year of publication **→**Web page title**→** Website name**→** URL

Example: Cuncic, A. (2019). *The Mandela effect.*Verywellmind. https://www.verywellmind.com/what-is-the-mandela-effect-4589394.

**B. HARVARD REFERENCING FORMAT**

BOOKS

|  |  |  |
| --- | --- | --- |
| Number of authors | In-text citation | Reference list |
| 1 | Andreasen (2001) stated that…  or  It is suggested that… (Andreasen 2001). | Andreasen, NC 2001, Brave new brain: conquering mental illness in the era of the genome, Oxford University Press, Oxford. |
| 2-3 | Schneider, Whitehead and Elliot (2007) showed that ….  or  …is demonstrated (Schneider, Whitehead & Elliot 2007). | Schneider, Z, Whitehead, D & Elliott, D 2007, *Nursing and midwifery research: methods and appraisal for evidence-based practice,* 3rd edn, Elsevier Australia, Marrickville, NSW.  *Note: Within each entry author names should be listed in the order in which they appear on the source or as displayed on the title page.* |
| 4-6 | Belenky et al. (1986) explains that knowing is…  or  …and therefore knowingness can be … (Belenky et al. 1986). | Belenky, M, Clinchy, B, Goldberger, N &Tarule, J 1986, Women’s ways of knowing, Basic, New York. |
| 7 and more | Davis et al. (2003) found…..  or  This has indicated… (Davis et al. 2003). | Davis, M, Charles, L, Curry, MJ, Shanti, P, Prasad, S, Hewings, A et al. 2003, Challenging spatial norms, Routledge, London. |

|  |  |  |
| --- | --- | --- |
|  | In-text citation | Reference list |
| Book chapter | Ferres (2001) discussed the television episode…  or  The television episode…(Ferres 2001). | Ferres, K 2001, ‘Idiot box: television, urban myths and ethical scenarios’, in I Craven (ed.), Australian cinema in the 1990s, Frank Cass, London, pp. 175-88. |
| journal article | Younger (2004, p. 46) stated that the … | Younger, P 2004, ‘Using the internet to conduct a literature search’, Nursing Standard, vol. 19, no. 6, pp. 45-51. |
| proceedings | Chang, Liaw and Ruppenhofer (eds 2000) stated that… | Chang, SS, Liaw, L, &Ruppenhofer, J (eds) 2000, Proceedings of the twenty-fifth annual meeting of the Berkeley Linguistics Society, February 12-15, 1999: general session and parasession on loan word phenomena. Berkeley Linguistics Soc., Berkeley. |
| thesis / dissertation | Fayadh (2015) showed that… | Fayadh, KH 2015, The legal regulation of assisted reproductive technology in Iraq: lessons from the Australian approach, thesis, Penrith, Western Sydney University, viewed 24 November 2015, Research Direct database. |
| web page | Este et al. (2008) suggest that… | Web pages and documents on the web include the following elements:  - Author/editor/compiler  - Date of page/date of document  - Title of document (incl. version no.)/Title of page  - Name of sponsor of the source  - Date of viewing  -URL |

**C, CHICAGO REFERENCING STYLE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Number of authors** |  | | **Foot note** | **Reference list** |
| **1** | **book** | | **1. Sylwester, Adolescent Brain, 89.** | **Sylwester, Robert. The Adolescent Brain: Reaching for Autonomy. Heatherton, Victoria: Hawker Brownlow Education, 2008.** |
| **2-3** | **2. Anderson and Poole, Assignment and Thesis Writing, 65.** | **Anderson, Jonathan, and Millicent E. Poole. Assignment and Thesis Writing. 4th ed. Milton, Qld.: John Wiley & Sons, 2001.** |
| **4 and above** | **3. Anders et al., Mass Communication Research Methods, 104.** | **Hansen, Anders, Simon Cottle, Ralph Negrine, and Chris Newbold. Mass Communication Research Methods. Basingstoke: Macmillan, 1998.** |
|  | **Book chapter** | | **7. Ferres, “Idiot Box,” 179.** | **Ferres, Kay. “Idiot box: Television, Urban Myths and Ethical Scenarios.” In Australian Cinema in the 1990s, edited by Ian Craven, 175-88. London: Frank Cass, 2001.** |
|  | **journal article** | | **9. Younger, “Using the Internet,” 45-47.** | **Younger, Paula. “Using the Internet to Conduct a Literature Search.” Nursing Standard 19, no. 6 (2004): 45-51.** |
|  | | **unpublished works or documents** | **33. Matthews to Whitlam, 1 September 1985, Letter.** | **Matthews, Race. Letter and photographs from the Hon Race Mathews, MLA to Hon. E.G. Whitlam AC, QC, September 1, 1985. Accessed October 21, 2009. http://cem.uws.edu.au/R/YHLSR23PA4CH-00346?func=results**  **-jump-full&set\_entry=000005.** |
|  | | **web page** | **37. Este et al., Life in the Clickstream.**  **38. Developing an Argument.**  **39. “Swim with whales.”** | **Document on the internet:**  **Este, J., C. Warren, L. Connor, M. Brown, R. Pollard and T. O’Connor. Life in the Clickstream: The Future of Journalism. Media Entertainment and Arts Alliance, 2008.** [**http://www.alliance.org.au/documents/foj\_report**](http://www.alliance.org.au/documents/foj_report)  Document on the internet, no author, no date:  *Developing an argument.* Princeton Writing Centre. Accessed May 12, 2014. http://web.princeton.edu/sites/writing/Writing\_Center  /WCWritingResources.htm.  **Web page on the internet, no author no date:**  **“Swim with Whales: An Unforgettable Wildlife Encounter.” WDCS International. Accessed November 18, 2014. http://whales.org/encounters/big\_whales.** |