**Glossary**

100 per cent bar chart: The 100 per cent bar chart is very similar to the stacked bar chart. The only difference is that in the former the subcategories of a variable for a particular bar total 100 per cent and each bar is sliced into portions in relation to their proportion out of 100.
Accidental sampling, as quota sampling, is based upon your convenience in accessing the sampling population. Whereas quota sampling attempts to include people possessing an obvious/visible characteristic, accidental sampling makes no such attempt. Any person that you come across can be contacted for participation in your study. You stop collecting data when you reach the required number
of respondents you decided to have in your sample.
Action research, in common with participatory research and collaborative enquiry, is based upon a philosophy of community development that seeks the involvement of community members in planning, undertaking, developing and implementing research and programme agendas. Research is a means to
action to deal with a problem or an issue confronting a group or community. It follows a cyclical process that is used to identify the issues, develop strategies and implement the programmes to deal with them and then again assessing strategies in light of the issues.
Active variable: In studies that seek to establish causality or association there are variables that can be changed, controlled and manipulated either by a researcher or by someone else. Such variables are called active variables.
After-only design: In an after-only design the researcher knows that a population is being, or has been, exposed to an intervention and wishes to study its impact on the population. In this design, baseline information (pre-test or before observation) is usually ‘constructed’ either on the basis of respondents’ recall of the situation before the intervention, or from information available in existing records, i.e.
secondary sources.
Alternate hypothesis: The formulation of an alternate hypothesis is a convention in scientific circles. Its main function is to specify explicitly the relationship that will be considered as true in case the research hypothesis proves to be wrong. In a way, an alternate hypothesis is the opposite of the research hypothesis.
Ambiguous question: An ambiguous question is one that contains more than one meaning and that can be interpreted differently by different respondents.
Applied research: Most research in the social sciences is applied in nature. Applied research is one where research techniques, procedures and methods that form the body of research methodology are applied to collect information about various aspects of a situation, issue, problem or phenomenon so that the information gathered can be utilised for other purposes such as policy formulation, programme development, programme modification and evaluation, enhancement of the understanding about a phenomenon, establishing causality and outcomes, identifying needs and developing strategies.
Area chart: For variables measured on an interval or a ratio scale, information about the sub-categories of a variable can also be presented in the form of an area chart. It is plotted in the same way as a line diagram with the area under each line shaded to highlight the magnitude of the subcategory in relation
to other subcategories. Thus an area chart displays the area under the curve in relation to the subcategories of a variable.
Attitudinal scales: Those scales that are designed to measure attitudes towards an issue are called attitudinal scales. In the social sciences there are three types of scale: the summated rating scale (Likert scale), the equal-appearing interval scale (Thurstone scale) and the cumulative scale (Guttman scale).
Attitudinal score: A number that you calculate having assigned a numerical value to the response given by a respondent to an attitudinal statement or question. Different attitude scales have different ways of calculating the attitudinal score.
Attitudinal value: An attitudinal scale comprises many statements reflecting attitudes towards an issue. The extent to which each statement reflects this attitude varies from statement to statement. Some statements are more important in determining the attitude than others. The attitudinal value of a statement refers to the weight calculated or given to a statement to reflect its significance in reflecting
the attitude: the greater the significance or extent, the greater the attitudinal value or weight.
Attribute variables: Those variables that cannot be manipulated, changed or controlled, and that reflect the characteristics of the study population. For example, age, gender, education and income.
Bar chart: The bar chart or diagram is one of the ways of graphically displaying categorical data. A bar chart is identical to a histogram, except that in a bar chart the rectangles representing the various frequencies are spaced, thus indicating that the data is categorical. The bar diagram is used for variables
measured on nominal or ordinal scales.
Before-and-after studies: A before-and-after design can be described as two sets of cross-sectional data collection points on the same population to find out the change in a phenomenon or variable(s) between two points in time. The change is measured by comparing the difference in the phenomenon or variable(s) between before and after observations.
Bias is a deliberate attempt either to conceal or highlight something that you found in your research or to use deliberately a procedure or method that you know is not appropriate but will provide information that you are looking for because you have a vested interest in it.
Blind studies: In a blind study, the study population does not know whether it is getting real or fake treatment or which treatment modality in the case of comparative studies. The main objective of designing a blind study is to isolate the placebo effect.
Case study: The case study design is based upon the assumption that the case being studied is atypical
of cases of a certain type and therefore a single case can provide insight into the events and situations
prevalent in a group from where the case has been drawn. In a case study design the ‘case’ you select
becomes the basis of a thorough, holistic and in-depth exploration of the aspect(s) that you want to find
out about. It is an approach in which a particular instance or a few carefully selected cases are studied
intensively. To be called a case study it is important to treat the total study population as one entity. It is
one of the important study designs in qualitative research.
Categorical variables are those where the unit of measurement is in the form of categories. On the
basis of presence or absence of a characteristic, a variable is placed in a category. There is no
measurement of the characteristics as such. In terms of measurement scales such variables are measured
on nominal or ordinal scales. Rich/poor, high/low, hot/cold are examples of categorical variables.
Chance variable: In studying causality or association there are times when the mood of a respondent or
the wording of a question can affect the reply given by the respondent when asked again in the post-test.
There is no systematic pattern in terms of this change. Such variables are called chance or random
variables.
Closed question: In a closed question the possible answers are set out in the questionnaire or interview
schedule and the respondent or the investigator ticks the category that best describe a respondent’s
answer.
Cluster sampling: Cluster sampling is based on the ability of the researcher to divide a sampling
population into groups (based upon a visible or easily identifiable characteristics), called clusters, and
then select elements from each cluster using the SRS technique. Clusters can be formed on the basis of
geographical proximity or a common characteristic that has a correlation with the main variable of the
study (as in stratified sampling). Depending on the level of clustering, sometimes sampling may be done
at different levels. These levels constitute the different stages (single, double or multiple) of clustering.
Code: The numerical value that is assigned to a response at the time of analysing the data.
Code book: A listing of a set of numerical values (set of rules) that you decided to assign to answers
obtained from respondents in response to each question is called a code book.
Coding: The process of assigning numerical values to different categories of responses to a question for
the purpose of analysing them is called coding.
Cohort studies are based upon the existence of a common characteristic such as year of birth,
graduation or marriage, within a subgroup of a population that you want to study. People with the
common characteristics are studied over a period of time to collect the information of interest to you.
Studies could cover fertility behaviour of women born in 1986 or career paths of 1990 graduates from a
medical school, for instance. Cohort studies look at the trends over a long period of time and collect
data from the same group of people.
Collaborative enquiry is another name for participatory research that advocates a close collaboration
between the researcher and the research participants.
Column percentages are calculated from the total of all the subcategories of one variable that are
displayed along a column in different rows.
Community discussion forum: A community discussion forum is a qualitative strategy designed to
find opinions, attitudes, ideas of a community with regard to community issues and problems. It is one
of the very common ways of seeking a community’s participation in deciding about issues of concern to
it.
Comparative study design: Sometimes you seek to compare the effectiveness of different treatment
modalities. In such situations a comparative design is used. With a comparative design, as with most
other designs, a study can be carried out either as an experiment or non-experiment. In the comparative
experimental design, the study population is divided into the same number of groups as the number of
treatments to be tested. For each group the baseline with respect to the dependent variable is
established. The different treatment modalities are then introduced to the different groups. After a
certain period, when it is assumed that the treatment models have had their effect, the ‘after’ observation
is carried out to ascertain changes in the dependent variable.
Concept: In defining a research problem or the study population you may use certain words that as such
are difficult to measure and/or the understanding of which may vary from person to person. These
words are called concepts. In order to measure them they need to be converted into indicators (not
always) and then variables. Words like satisfaction, impact, young, old, happy are concepts as their
understanding would vary from person to person.
Conceptual framework: A conceptual framework stems from the theoretical framework and
concentrates, usually, on one section of that theoretical framework which becomes the basis of your
study. The latter consists of the theories or issues in which your study is embedded, whereas the former
describes the aspects you selected from the theoretical framework to become the basis of your research
enquiry. The conceptual framework is the basis of your research problem.
Concurrent validity: When you investigate how good a research instrument is by comparing it with
some observable criterion or credible findings, this is called concurrent validity. It is comparing the
findings of your instrument with those found by another which is well accepted. Concurrent validity is
judged by how well an instrument compares with a second assessment done concurrently.
Conditioning effect: This describes a situation where, if the same respondents are contacted frequently,
they begin to know what is expected of them and may respond to questions without thought, or they
may lose interest in the enquiry, with the same result. This situation’s effect on the quality of the
answers is known as the conditioning effect.
Confirmability refers to the degree to which the results obtained through qualitative research could be
confirmed or corroborated by others. Confirmability in qualitative research is similar to reliability in
quantitative research.
Constant variable: When a variable can have only one category or value, for example taxi, tree and
water, it is known as a constant variable.
Construct validity is a more sophisticated technique for establishing the validity of an instrument.
Construct validity is based upon statistical procedures. It is determined by ascertaining the contribution
of each construct to the total variance observed in a phenomenon.
Consumer-oriented evaluation: The core philosophy of this evaluation rests on the assumption that
assessment of the value or merit of an intervention – including its effectiveness, outcomes, impact and
relevance – should be judged from the perspective of the consumer. Consumers, according to this
philosophy, are the best people to make a judgement on these aspects. An evaluation done within the
framework of this philosophy is known as consumer-oriented evaluation or client-centred evaluation.
Content analysis is one of the main methods of analysing qualitative data. It is the process of analysing
the contents of interviews or observational field notes in order to identify the main themes that emerge
from the responses given by your respondents or the observation notes made by you as a researcher.
Content validity: In addition to linking each question with the objectives of a study as a part of
establishing the face validity, it is also important to examine whether the questions or items have
covered all the areas you wanted to cover in the study. Examining questions of a research instrument to
establish the extent of coverage of areas under study is called content validity of the instrument.
Continuous variables have continuity in their unit of measurement; for example age, income and
attitude score. They can take on any value of the scale on which they are measured. Age can be
measured in years, months and days. Similarly, income can be measured in dollars and cents.
Control design: In experimental studies that aim to measure the impact of an intervention, it is
important to measure the change in the dependent variable that is attributed to the extraneous and
chance variables. To quantify the impact of these sets of variables another comparable group is selected
that is not subjected to the intervention. Study designs where you have a control group to isolate the
impact of extraneous and change variables are called control design studies.
Control group: The group in an experimental study which is not exposed to the experimental
intervention is called a control group. The sole purpose of the control group is to measure the impact of
extraneous and chance variables on the dependent variable.
Correlational studies: Studies which are primarily designed to investigate whether or not there is a
relationship between two or more variables are called correlational studies.
Cost–benefit evaluation: The central aim of a cost–benefit evaluation is to put a price tag on an
intervention in relation to its benefits.
Cost-effectiveness evaluation: The central aim of a cost-effectiveness evaluation is to put a price tag
on an intervention in relation to its effectiveness.
Credibility in qualitative research is parallel to internal validity in quantitative research and refers to a
situation where the results obtained through qualitative research are agreeable to the participants of the
research. It is judged by the extent of respondent concordance whereby you take your findings to those
who participated in your research for confirmation, congruence, validation and approval: the higher the
outcome of these, the higher the credibility (validity) of the study.
Cross-over comparative experimental design: In the cross-over design, also called the ABAB design,
two groups are formed, the intervention is introduced to one of them and, after a certain period, the
impact of this intervention is measured. Then the interventions are ‘crossed over’; that is, the
experimental group becomes the control and vice versa.
Cross-sectional studies, also known as one-shot or status studies, are the most commonly used design
in the social sciences. This design is best suited to studies aimed at finding out the prevalence of a
phenomenon, situation, problem, attitude or issue, by taking a cross-section of the population. They are
useful in obtaining an overall ‘picture’ as it stands at the time of the study.
Cross-tabulation is a statistical procedure that analyses two variables, usually independent and
dependent or attribute and dependent, to determine if there is a relationship between them. The
subcategories of both the variables are cross-tabulated to ascertain if a relationship exists between them.
Cumulative frequency polygon: The cumulative frequency polygon or cumulative frequency curve is
drawn on the basis of cumulative frequencies. The main difference between a frequency polygon and a
cumulative frequency polygon is that the former is drawn by joining the midpoints of the intervals,
whereas the latter is drawn by joining the end points of the intervals because cumulative frequencies
interpret data in relation to the upper limit of an interval.
Dependability in qualitative research is very similar to the concept of reliability in quantitative
research. It is concerned with whether we would obtain the same results if we could observe the same
thing twice: the greater the similarity in two results, the greater the dependability.
Dependent variable: When establishing causality through a study, the variable assumed to be the cause
is called an independent variable and the variables in which it produces changes are called the
dependent variables. A dependent variable is dependent upon the independent variable and it is assumed
to be because of the changes.
Descriptive studies: A study in which the main focus is on description, rather than examining
relationships or associations, is classified as a descriptive study. A descriptive study attempts
systematically to describe a situation, problem, phenomenon, service or programme, or provides
information about, say, the living conditions of a community, or describes attitudes towards an issue.
Dichotomous variable: When a variable can have only two categories as in male/female, yes/no,
good/bad, head/tail, up/down and rich/poor, it is known as a dichotomous variable.
Disproportionate stratified sampling: When selecting a stratified sample if you select an equal
number of elements from each stratum without giving any consideration to its size in the study
population, the process is called disproportionate stratified sampling.
Double-barrelled question: A double-barrelled question is a question within a question.
Double-blind studies: The concept of a double-blind study is very similar to that of a blind study
except that it also tries to eliminate researcher bias by not disclosing to the researcher the identities of
experimental, comparative and placebo groups. In a double-blind study neither the researcher nor the
study participants know which study participants are receiving real, placebo or other forms of
interventions. This prevents the possibility of introducing bias by the researcher.
Double-control studies: Although the control group design helps you to quantify the impact that can be
attributed to extraneous variables, it does not separate out other effects that may be due to the research
instrument (such as the reactive effect) or respondents (such as the maturation or regression effects, or
placebo effect). When you need to identify and separate out these effects, a double-control design is
required. In a double-control study, you have two control groups instead of one. To quantify, say, the
reactive effect of an instrument, you exclude one of the control groups from the ‘before’ observation.
Editing consists of scrutinising the completed research instruments to identify and minimise, as far as
possible, errors, incompleteness, misclassification and gaps in the information obtained from
respondents.
Elevation effect: Some observers when using a scale to record an observation may prefer to use certain
section(s) of the scale in the same way that some teachers are strict markers and others are not. When
observers have a tendency to use a particular part(s) of a scale in recording an interaction, this
phenomenon is known as the elevation effect.
Error of central tendency: When using scales in assessments or observations, unless an observer is
extremely confident of his/her ability to assess an interaction, s/he may tend to avoid the extreme
positions on the scale, using mostly the central part. The error this tendency creates is called the error of
central tendency.
Ethical practice: Professional practice undertaken in accordance with the principles of accepted codes
of conduct for a given profession or group.
Evaluation is a process that is guided by research principles for reviewing an intervention or
programme in order to make informed decisions about its desirability and/or identifying changes to
enhance its efficiency and effectiveness.
Evaluation for planning addresses the issue of establishing the need for a programme or intervention.
Evidence-based practice: A service delivery system that is based upon research evidence as to its
effectiveness; a service provider’s clinical judgement as to its suitability and appropriateness for a
client; and a client’s preference as to its acceptance.
Experimental group: An experimental group is one that is exposed to the intervention being tested to
study its effects.
Experimental studies: In studying causality, when a researcher or someone else introduces the
intervention that is assumed to be the ‘cause’ of change and waits until it has produced – or has been
given sufficient time to produce – the change, then in studies like this a researcher starts with the cause
and waits to observe its effects. Such types of studies are called experimental studies.
Expert sampling is the selection of people with demonstrated or known expertise in the area of interest
to you to become the basis of data collection. Your sample is a group of experts from whom you seek
the required information. It is like purposive sampling where the sample comprises experts only.
Explanatory research: In an explanatory study the main emphasis is to clarify why and how there is a
relationship between two aspects of a situation or phenomenon.
Exploratory research: This is when a study is undertaken with the objective either to explore an area
where little is known or to investigate the possibilities of undertaking a particular research study. When
a study is carried out to determine its feasibility it is also called a feasibility or pilot study.
Extraneous variables: In studying causality, the dependent variable is the consequence of the change
brought about by the independent variable. In everyday life there are many other variables that can
affect the relationship between independent and dependent variables. These variables are called
extraneous variables.
Face validity: When you justify the inclusion of a question or item in a research instrument by linking
it with the objectives of the study, thus providing a justification for its inclusion in the instrument, the
process is called face validity.
Feasibility study: When the purpose of a study is to investigate the possibility of undertaking it on a
larger scale and to streamlining methods and procedures for the main study, the study is called a
feasibility study.
Feminist research: Like action research, feminist research is more a philosophy than design. Feminist
concerns and theory act as the guiding framework for this research. A focus on the viewpoints of
women, the aim to reduce power imbalance between researcher and respondents, and attempts to
change social inequality between men and women are the main characteristics of feminist research.
Fishbowl draw: This is one of the methods of selecting a random sample and is useful particularly
when N is not very large. It entails writing each element number on a small slip of paper, folded and put
into a bowl, shuffling thoroughly, and then taking one out till the required sample size is obtained.
Focus group: The focus group is a form of strategy in qualitative research in which attitudes, opinions
or perceptions towards an issue, product, service or programme are explored through a free and open
discussion between members of a group and the researcher. The focus group is a facilitated group
discussion in which a researcher raises issues or asks questions that stimulate discussion among
members of the group. Issues, questions and different perspectives on them and any significant points
arising during these discussions provide data to draw conclusions and inferences. It is like collectively
interviewing a group of respondents.
Frame of analysis: The proposed plan of the way you want to analyse your data, how you are going to
analyse the data to operationalise your major concepts and what statistical procedures you are planning
to use, all form parts of the frame of analysis.
Frequency distribution: The frequency distribution is a statistical procedure in quantitative research
that can be applied to any variable that is measured on any one of the four measurement scales. It
groups respondents into the subcategories in which a variable has been measured or coded.
Frequency polygon: The frequency polygon is very similar to a histogram. A frequency polygon is
drawn by joining the midpoint of each rectangle at a height commensurate with the frequency of that
interval.
Group interview: A group interview is both a method of data collection and a qualitative study design.
The interaction is between the researcher and the group with the aim of collecting information from the
group collectively rather than individually from members.
Guttman scale: The Guttman scale is one of the three attitudinal scales and is devised in such a way
that the statements or items reflecting attitude are arranged in perfect cumulative order. Arranging
statements or items to have a cumulative relation between them is the most difficult aspect of
constructing this scale.
Halo effect: When making an observation, some observers may be influenced to rate an individual on
one aspect of the interaction by the way s/he was rated on another. This is similar to something that can
happen in teaching when a teacher’s assessment of the performance of a student in one subject may
influence his/her rating of that student’s performance in another. This type of effect is known as the halo
effect.
Hawthorne effect: When individuals or groups become aware that they are being observed, they may
change their behaviour. Depending upon the situation, this change could be positive or negative – it may
increase or decrease, for example, their productivity – and may occur for a number of reasons. When a
change in the behaviour of persons or groups is attributed to their being observed, it is known as the
Hawthorne effect.
Histogram: A histogram is a graphic presentation of analysed data presented in the form of a series of
rectangles drawn next to each other without any space between them, each representing the frequency
of a category or subcategory.
Holistic research is more a philosophy than a study design. The design is based upon the philosophy
that as a multiplicity of factors interacts in our lives, we cannot understand a phenomenon from one or
two perspectives only. To understand a situation or phenomenon we need to look at it in its totality or
entirety; that is, holistically from every perspective. A research study done with this philosophical
perspective in mind is called holistic research.
Hypothesis: A hypothesis is a hunch, assumption, suspicion, assertion or an idea about a phenomenon,
relationship or situation, the reality or truth of which you do not know and you set up your study to find
this truth. A researcher refers to these assumptions, assertions, statements or hunches as hypotheses and
they become the basis of an enquiry. In most studies the hypothesis will be based either upon previous
studies or on your own or someone else’s observations.
Hypothesis of association: When as a researcher you have sufficient knowledge about a situation or
phenomenon and are in a position to stipulate the extent of the relationship between two variables and
formulate a hunch that reflects the magnitude of the relationship, such a type of hypothesis formulation
is known as hypothesis of association.
Hypothesis of difference: A hypothesis in which a researcher stipulates that there will be a difference
but does not specify its magnitude is called a hypothesis of difference.
Hypothesis of point-prevalence: There are times when a researcher has enough knowledge about a
phenomenon that he/she is studying and is confident about speculating almost the exact prevalence of
the situation or the outcome in quantitative units. This type of hypothesis is known as a hypothesis of
point-prevalence.
Illuminative evaluation: The primary concern of illuminative or holistic evaluation is description and
interpretation rather than measurement and prediction of the totality of a phenomenon. It fits with the
social–anthropological paradigm. The aim is to study a programme in all its aspects: how it operates,
how it is influenced by various contexts, how it is applied, how those directly involved view its
strengths and weaknesses, and what the experiences are of those who are affected by it. In summary, it
tries to illuminate an array of questions and issues relating to the contents, and processes, and
procedures that give both desirable and undesirable results.
Impact assessment evaluation: Impact or outcome evaluation is one of the most widely practised
evaluations. It is used to assess what changes can be attributed to the introduction of a particular
intervention, programme or policy. It establishes causality between an intervention and its impact, and
estimates the magnitude of this change(s).
Independent variable: When examining causality in a study, there are four sets of variables that can
operate. One of them is a variable that is responsible for bringing about change. This variable which is
the cause of the changes in a phenomenon is called an independent variable. In the study of causality,
the independent variable is the cause variable which is responsible for bringing about change in a
phenomenon.
In-depth interviewing is an extremely useful method of data collection that provides complete freedom
in terms of content and structure. As a researcher you are free to order these in whatever sequence you
wish, keeping in mind the context. You also have complete freedom in terms of what questions you ask
of your respondents, the wording you use and the way you explain them to your respondents. You
usually formulate questions and raise issues on the spur of the moment, depending upon what occurs to
you in the context of the discussion.
Indicators: An image, perception or concept is sometimes incapable of direct measurement. In such
situations a concept is ‘measured’ through other means which are logically ‘reflective’ of the concept.
These logical reflectors are called indicators.
Informed consent implies that respondents are made adequately and accurately aware of the type of
information you want from them, why the information is being sought, what purpose it will be put to,
how they are expected to participate in the study, and how it will directly or indirectly affect them. It is
important that the consent should also be voluntary and without pressure of any kind. The consent given
by respondents after being adequately and accurately made aware of or informed about all aspects of a
study is called informed consent.
Interrupted time-series design: In this design you study a group of people before and after the
introduction of an intervention. It is like the before-and-after design, except that you have multiple data
collections at different time intervals to constitute an aggregated before-and-after picture. The design is
based upon the assumption that one set of data is not sufficient to establish, with a reasonable degree of
certainty and accuracy, the before-and-after situations.
Interval scale: The interval scale is one of the measurement scales in the social sciences where the
scale is divided into a number of intervals or units. An interval scale has all the characteristics of an
ordinal scale. In addition, it has a unit of measurement that enables individuals or responses to be placed
at equally spaced intervals in relation to the spread of the scale. This scale has a starting and a
terminating point and is divided into equally spaced units/intervals. The starting and terminating points
and the number of units/intervals between them are arbitrary and vary from scale to scale as it does not
have a fixed zero point.
Intervening variables link the independent and dependent variables. In certain situations the
relationship between an independent and a dependent variable does not eventuate till the intervention of
another variable – the intervening variable. The cause variable will have the assumed effect only in the
presence of an intervening variable.
Intervention–development–evaluation process: This is a cyclical process of continuous assessment of
needs, intervention and evaluation. You make an assessment of the needs of a group or community,
develop intervention strategies to meet these needs, implement the interventions and then evaluate them
for making informed decisions to incorporate changes to enhance their relevance, efficiency and
effectiveness. Reassess the needs and follow the same process for intervention–development–
evaluation.
Interview guide: A list of issues, topics or discussion points that you want to cover in an in-depth
interview is called an interview guide. Note that these points are not questions. It is basically a list to
remind an interviewer of the areas to be covered in an interview.
Interview schedule: An interview schedule is a written list of questions, open ended or closed, prepared
for use by an interviewer in a person-to-person interaction (this may be face to face, by telephone or by
other electronic media). Note that an interview schedule is a research tool/instrument for collecting data,
whereas interviewing is a method of data collection.
Interviewing is one of the commonly used methods of data collection in the social sciences. Any
person-to-person interaction, either face to face or otherwise, between two or more individuals with a
specific purpose in mind is called an interview. It involves asking questions of respondents and
recording their answers. Interviewing spans a wide spectrum in terms of its structure. On the one hand,
it could be highly structured and, on the other, extremely flexible, and in between it could acquire any
form.
Judgemental sampling: The primary consideration in this sampling design is your judgement as to
who can provide the best information to achieve the objectives of your study. You as a researcher only
go to those people who in your opinion are likely to have the required information and are willing to
share it with you. This design is also called purposive sampling.
Leading question: A leading question is one which, by its contents, structure or wording, leads a
respondent to answer in a certain direction.
Likert scale: The Likert scale, also known as the summated rating scale, is one of the attitudinal scales
designed to measure attitudes. This scale is based upon the assumption that each statement/item on the
scale has equal attitudinal ‘value’, ‘importance’ or ‘weight’ in terms of reflecting attitude towards the
issue in question. Comparatively it is the easiest to construct.
Literature review: This is the process of searching the existing literature relating to your research
problem to develop theoretical and conceptual frameworks for your study and to integrate your research
findings with what the literature says about them. It places your study in perspective to what others have
investigated about the issues. In addition the process helps you to improve your methodology.
Longitudinal study: In longitudinal studies the study population is visited a number of times at regular
intervals, usually over a long period, to collect the required information. These intervals are not fixed so
their length may vary from study to study. Intervals might be as short as a week or longer than a year.
Irrespective of the size of the interval, the information gathered each time is identical.
Matching is a technique that is used to form two groups of patients to set up an experiment–control
study to test the effectiveness of a drug. From a pool of patients, two patients with identical
predetermined attributes, characteristics or conditions are matched and then randomly placed in either
the experimental or control group. The process is called matching. The matching continues for the rest
of the pool. The two groups thus formed through the matching process are supposed to be comparable
thus ensuring uniform impact of different sets of variables on the patients.
Maturation effect: If the study population is very young and if there is a significant time lapse between
the before-and-after sets of data collection, the study population may change simply because it is
growing older. This is particularly true when you are studying young children. The effect of this
maturation, if it is significantly correlated with the dependent variable, is reflected at the ‘after’
observation and is known as the maturation effect.
Maxmincon principle of variance: When studying causality between two variables there are three sets
of variable that impact upon the dependent variable. Since your aim as a researcher is to determine the
change that can be attributed to the independent variable, you need to design your study to ensure that
the independent variable has the maximum opportunity to have its full impact on the dependent
variable, while the effects that are attributed to extraneous and chance variables are minimised. Setting
up a study to achieve the above is known as adhering to the maxmincon principle of variance.
Narratives: The narrative technique of gathering information has even less structure than the focus
group. Narratives have almost no predetermined contents except that the researcher seeks to hear the
personal experience of a person with an incident or happening in his/her life. Essentially, the person tells
his/her story about an incident or situation and you, as the researcher, listen passively, occasionally
encouraging the respondent.
Nominal scale: The nominal scale is one of the ways of measuring a variable in the social sciences. It
enables the classification of individuals, objects or responses based on a common/shared property or
characteristic. These people, objects or responses are divided into a number of subgroups in such a way
that each member of the subgroup has the common characteristic.
Non-experimental studies: There are times when, in studying causality, a researcher observes an
outcome and wishes to investigate its causation. From the outcomes the researcher starts linking causes
with them. Such studies are called non-experimental studies. In a non-experimental study you neither
introduce nor control/manipulate the cause variable. You start with the effects and try to link them with
the causes.
Non-participant observation: When you, as a researcher, do not get involved in the activities of the
group but remain a passive observer, watching and listening to its activities and interactions and
drawing conclusions from them, this is called non-participant observation.
Non-probability sampling designs do not follow the theory of probability in the selection of elements
from the sampling population. Non-probability sampling designs are used when the number of elements
in a population is either unknown or cannot be individually identified. In such situations the selection of
elements is dependent upon other considerations. Non-probability sampling designs are commonly used
in both quantitative and qualitative research.
Null hypothesis: When you construct a hypothesis stipulating that there is no difference between two
situations, groups, outcomes, or the prevalence of a condition or phenomenon, this is called a null
hypothesis and is usually written as H0.
Objective-oriented evaluation: This is when an evaluation is designed to ascertain whether or not a
programme or a service is achieving its objectives or goals.
Observation is one of the methods for collecting primary data. It is a purposeful, systematic and
selective way of watching and listening to an interaction or phenomenon as it takes place. Though
dominantly used in qualitative research, it is also used in quantitative research.
Open-ended questions: In an open-ended question the possible responses are not given. In the case of a
questionnaire, a respondent writes down the answers in his/her words, whereas in the case of an
interview schedule the investigator records the answers either verbatim or in a summary describing a
respondent’s answer.
Operational definition: When you define concepts used by you either in your research problem or in
the study population in a measurable form, they are called working or operational definitions. It is
important for you to understand that the working definitions that you develop are only for the purpose
of your study.
Oral history is more a method of data collection than a study design; however, in qualitative research,
it has become an approach to study a historical event or episode that took place in the past or for gaining
information about a culture, custom or story that has been passed on from generation to generation. It is
a picture of something in someone’s own words. Oral histories, like narratives, involve the use of both
passive and active listening. Oral histories, however, are more commonly used for learning about
cultural, social or historical events whereas narratives are more about a person’s own experiences.
Ordinal scale: An ordinal scale has all the properties of a nominal scale plus one of its own. Besides
categorising individuals, objects, responses or a property into subgroups on the basis of a common
characteristic, it ranks the subgroups in a certain order. They are arranged in either ascending or
descending order according to the extent that a subcategory reflects the magnitude of variation in the
variable.
Outcome evaluation: The focus of an outcome evaluation is to find out the effects, impacts, changes or
outcomes that the programme has produced in the target population.
Panel studies are prospective in nature and are designed to collect information from the same
respondents over a period of time. The selected group of individuals becomes a panel that provides the
required information. In a panel study the period of data collection can range from once only to repeated
data collections over a long period.
Participant observation is when you, as a researcher, participate in the activities of the group being
observed in the same manner as its members, with or without their knowing that they are being
observed. Participant observation is principally used in qualitative research and is usually done by
developing a close interaction with members of a group or ‘living’ in with the situation which is being
studied.
Participatory research: Both participatory research and collaborative enquiry are not study designs per
se but signify a philosophical perspective that advocates an active involvement of research participants
in the research process. Participatory research is based upon the principle of minimising the ‘gap’
between the researcher and the research participants. The most important feature is the involvement and
participation of the community or research participants in the research process to make the research
findings more relevant to their needs.
Pie chart: The pie chart is another way of representing data graphically. As there are 360 degrees in a
circle, the full circle can be used to represent 100 per cent or the total population. The circle or pie is
divided into sections in accordance with the magnitude of each subcategory comprising the total
population. Hence each slice of the pie is in proportion to the size of each subcategory of a frequency
distribution.
Pilot study: See Feasibility studyPlacebo effect: A patient’s belief that s/he is receiving the treatment plays an important role in his/her
recovery even though the treatment is fake or ineffective. The change occurs because a patient believes
that s/he is receiving the treatment. This psychological effect that helps a patient to recover is known as
the placebo effect.
Placebo study: A study that attempts to determine the extent of a placebo effect is called a placebo
study. A placebo study is based upon a comparative study design that involves two or more groups,
depending on whether or not you want to have a control group to isolate the impact of extraneous
variables or other treatment modalities to determine their relative effectiveness.
Polytomous variable: When a variable can be divided into more than two categories, for example
religion (Christian, Muslim, Hindu), political parties (Labor, Liberal, Democrat), and attitudes (strongly
favourable, favourable, uncertain, unfavourable, strongly unfavourable), it is called a polytomous
variable.
Population mean: From what you find out from your sample (sample statistics) you make an estimate
of the prevalence of these characteristics for the total study population. The estimates about the total
study population made from sample statistics are called population parameters or the population mean.
Predictive validity is judged by the degree to which an instrument can correctly forecast an outcome:
the higher the correctness in the forecasts, the higher the predictive validity of the instrument.
Pre-test: In quantitative research, pre-testing is a practice whereby you test something that you
developed before its actual use to ascertain the likely problems with it. Mostly, the pretest is done on a
research instrument or on a code book. The pre-test of a research instrument entails a critical
examination of each question as to its clarity, understanding, wording and meaning as understood by
potential respondents with a view to removing possible problems with the question. It ensures that a
respondent’s understanding of each question is in accordance with your intentions. The pre-test of an
instrument is only done in structured studies. Pre-testing a code book entails actually coding a few
questionnaires/interview schedules to identify any problems with the code book before coding the data.
Primary data: Information collected for the specific purpose of a study either by the researcher or by
someone else is called primary data.
Primary sources: Sources that provide primary data such as interviews, observations, and
questionnaires are called primary sources.
Probability sampling: When selecting a sample, if you adhere to the theory of probability, that is you
select the sample in such a way that each element in the study population has an equal and independent
chance of selection in the sample, the process is called probability sampling.
Process evaluation: The main emphasis of process evaluation is on evaluating the manner in which a
service or programme is being delivered in order to identify ways of enhancing the efficiency of the
delivery system.
Programme planning evaluation: Before starting a large-scale programme it is desirable to investigate
the extent and nature of the problem for which the programme is being developed. When an evaluation
is undertaken with the purpose of investigating the nature and extent of the problem itself, it is called
programme planning evaluation.
Proportionate stratified sampling: In proportionate stratified sampling, the number of elements
selected in the sample from each stratum is in relation to its proportion in the total population. A sample
thus selected is called a proportionate stratified sample.
Prospective studies refer to the likely prevalence of a phenomenon, situation, problem, attitude or
outcome in the future. Such studies attempt to establish the outcome of an event or what is likely to
happen. Experiments are usually classified as prospective studies because the researcher must wait for
an intervention to register its effect on the study population.
Pure research is concerned with the development, examination, verification and refinement of research
methods, procedures, techniques and tools that form the body of research methodology.
Purposive sampling: See Judgemental samplingQualitative research: In the social sciences there are two broad approaches to enquiry: qualitative and
quantitative or unstructured and structured approaches. Qualitative research is based upon the
philosophy of empiricism, follows an unstructured, flexible and open approach to enquiry, aims to
describe than measure, believes in in-depth understanding and small samples, and explores perceptions
and feelings than facts and figures.
Quantitative research is a second approach to enquiry in the social sciences that is rooted in
rationalism, follows a structured, rigid, predetermined methodology, believes in having a narrow focus,
emphasises greater sample size, aims to quantify the variation in a phenomenon, and tries to make
generalisations to the total population.
Quasi-experiments: Studies which have the attributes of both experimental and non-experimental
studies are called quasi- or semi-experiments. A part of the study could be experimental and the other
non-experimental.
Questionnaire: A questionnaire is a written list of questions, the answers to which are recorded by
respondents. In a questionnaire respondents read the questions, interpret what is expected and then write
down the answers. The only difference between an interview schedule and a questionnaire is that in the
former it is the interviewer who asks the questions (and, if necessary, explains them) and records the
respondent’s replies on an interview schedule, while in the latter replies are recorded by the respondents
themselves.
Quota sampling: The main consideration directing quota sampling is the researcher’s ease of access to
the sample population. In addition to convenience, a researcher is guided by some visible characteristic
of interest, such as gender or race, of the study population. The sample is selected from a location
convenient to you as a researcher, and whenever a person with this visible relevant characteristic is
seen, that person is asked to participate in the study. The process continues until you have been able to
contact the required number of respondents (quota).
Random design: In a random design, the study population groups as well as the experimental
treatments are not predetermined but randomly assigned to become control or experimental groups.
Random assignment in experiments means that any individual or unit of the study population has an
equal and independent chance of becoming a part of the experimental or control group or, in the case of
multiple treatment modalities, any treatment has an equal and independent chance of being assigned to
any of the population groups. It is important to note that the concept of randomisation can be applied to
any of the experimental designs.
Random sampling: For a design to be called random or probability sampling, it is imperative that each
element in the study population has an equal and independent chance of selection in the sample. Equal
implies that the probability of selection of each element in the study population is the same. The
concept of independence means that the choice of one element is not dependent upon the choice of
another element in the sampling.
Random variable: When collecting information from respondents, there are times when the mood of a
respondent or the wording of a question can affect the way a respondent replies. There is no systematic
pattern in terms of this change. Such shifts in responses are said to be caused by random or chance
variables.
Randomisation: In experimental and comparative studies, you often need to study two or more groups
of people. In forming these groups it is important that they are comparable with respect to the dependent
variable and other variables that affect it so that the effects of independent and extraneous variables are
uniform across groups. Randomisation is a process that ensures that each and every person in a group is
given an equal and independent chance of being in any of the groups, thereby making groups
comparable.
Ratio scale: A ratio scale has all the properties of nominal, ordinal and interval scales plus its own
property; the zero point of a ratio scale is fixed, which means it has a fixed starting point. Therefore, it
is an absolute scale. As the difference between the intervals is always measured from a zero point,
arithmetical operations can be performed on the scores.
Reactive effect: Sometimes the way a question is worded informs respondents of the existence or
prevalence of something that the study is trying to find out about as an outcome of an intervention. This
effect is known as reactive effect of the instrument
Recall error: Error that can be introduced in a response because of a respondent’s inability to recall
correctly its various aspects when replying.
Regression effect: Sometimes people who place themselves on the extreme positions of a measurement
scale at the pre-test stage may, for a number of reasons, shift towards the mean at the post-test stage.
They might feel that they have been too negative or too positive at the pre-test stage. Therefore, the
mere expression of the attitude in response to a questionnaire or interview has caused them to think
about and alter their attitude towards the mean at the time of the post-test. This type of effect is known
as the regression effect.
Reflective journal log: Basically this is a method of data collection in qualitative research that entails
keeping a log of your thoughts as a researcher whenever you notice anything, talk to someone,
participate in an activity or observe something that helps you understand or add to whatever you are
trying to find out about. This log becomes the basis of your research findings.
Reflexive control design: In experimental studies, to overcome the problem of comparability in
different groups, sometimes researchers study only one population and treat data collected during the
non-intervention period as representing a control group, and information collected after the introduction
of the intervention as if it pertained to an experimental group. It is the periods of non-intervention and
intervention that constitute control and experimental groups.
Reliability is the ability of a research instrument to provide similar results when used repeatedly under
similar conditions. Reliability indicates accuracy, stability and predictability of a research instrument:
the higher the reliability, the higher the accuracy; or the higher the accuracy of an instrument, the higher
its reliability.
Replicated cross-sectional design: This study design is based upon the assumption that participants at
different stages of a programme are similar in terms of their socioeconomic–demographic
characteristics and the problem for which they are seeking intervention. Assessment of the effectiveness
of an intervention is done by taking a sample of clients who are at different stages of the intervention.
The difference in the dependent variable among clients at the intake and termination stage is considered
to be the impact of the intervention.
Research is one of the ways of finding answers to your professional and practice questions. However, it
is characterised by the use of tested procedures and methods and an unbiased and objective attitude in
the process of exploration.
Research design: A research design is a procedural plan that is adopted by the researcher to answer
questions validly, objectively, accurately and economically. A research design therefore answers
questions that would determine the path you are proposing to take for your research journey. Through a
research design you decide for yourself and communicate to others your decisions regarding what study
design you propose to use, how you are going to collect information from your respondents, how you
are going to select your respondents, how the information you are going to collect is to be analysed and
how you are going to communicate your findings.
Research objectives are specific statements of goals that you set out to be achieved at the end of your
research journey.
Research problem: Any issue, problem or question that becomes the basis of your enquiry is called a
research problem. It is what you want to find out about during your research endeavour.
Research questions: Questions that you would like to find answers to through your research, like
‘What does it mean to have a child with ADHD in a family?’ or ‘What is the impact of immigration on
family roles?’ Research questions become the basis of research objectives. The main difference between
research questions and research objectives is the way they are worded. Research questions take the form
of questions whereas research objectives are statements of achievements expressed using actionoriented words.
Retrospective study: A retrospective study investigates a phenomenon, situation, problem or issue that
has happened in the past. Such studies are usually conducted either on the basis of the data available for
that period or on the basis of respondents’ recall of the situation.
Retrospective–prospective study: A retrospective–prospective study focuses on past trends in a
phenomenon and studies it into the future. A study where you measure the impact of an intervention
without having a control group by ‘constructing’ a previous baseline from either respondents’ recall or
secondary sources, then introducing the intervention to study its effect, is considered a retrospective–
prospective study. In fact, most before-and-after studies, if carried out without having a control – where
the baseline is constructed from the same population before introducing the intervention – will be
classified as retrospective-prospective studies.
Row percentages are calculated from the total of all the subcategories of one variable that are displayed
along a row in different columns.
Sample: A sample is a subgroup of the population which is the focus of your research enquiry and is
selected in such a way that it represents the study population. A sample is composed of a few
individuals from whom you collect the required information. It is done to save time, money and other
resources.
Sample size: The number of individuals from whom you obtain the required information is called the
sample size and is usually denoted by the letter n.
Sample statistics: Findings based on the information obtained from your respondents (sample) are
called sample statistics.
Sampling is the process of selecting a few respondents (a sample) from a bigger group (the sampling
population) to become the basis for estimating the prevalence of information of interest to you.
Sampling design: The way you select the required sampling units from a sampling population for
identifying your sample is called the sampling design or sampling strategy. There are many sampling
strategies in both quantitative and qualitative research.
Sampling element: Anything that becomes the basis of selecting your sample such as an individual,
family, household, members of an organisation, residents of an area, is called a sampling unit or
element.
Sampling error: The difference in the findings (sample statistics) that is due to the selection of
elements in the sample is known as sampling error.
Sampling frame: When you are in a position to identify all elements of a study population, the list of
all the elements is called a sampling frame.
Sampling population: The bigger group, such as families living in an area, clients of an agency,
residents of a community, members of a group, people belonging to an organisation about whom you
want to find out about through your research endeavour, is called the sampling population or study
population.
Sampling strategy: See Sampling designSampling unit: See Sampling elementSampling with replacement: When you select a sample in such a way that each selected element in the
sample is replaced back into the sampling population before selecting the next, this is called sampling
with replacement. Theoretically, this is done to provide an equal chance of selection to each element so
as to adhere to the theory of probability to ensure randomisation of the sample. In case an element is
selected again, it is discarded and the next one is selected. If the sampling population is fairly large, the
probability of selecting the same element twice is fairly remote.
Sampling without replacement: When you select a sample in such a way that an element, once
selected to become a part of your sample, is not replaced back into the study population, this is called
sampling without replacement.
Saturation point: The concept of saturation point refers to the stage in data collection where you, as a
researcher, are discovering no or very little new information from your respondents. In qualitative
research this is considered an indication of the adequacy of the sample size.
Scale: This is a method of measurement and/or classification of respondents on the basis of their
responses to questions you ask of them in a study. A scale could be continuous or categorical. It helps
you to classify a study population in subgroups or as a spread that is reflective on the scale.
Scattergram: When you want to show graphically how one variable changes in relation to a change in
the other, a scattergram is extremely effective. For a scattergram, both the variables must be measured
either on an interval or ratio scale and the data on both the variables needs to be available in absolute
values for each observation. Data for both variables is taken in pairs and displayed as dots in relation to
their values on both axes. The resulting graph is known as a scattergram.
Secondary data: Sometimes the information required is already available in other sources such as
journals, previous reports, censuses and you extract that information for the specific purpose of your
study. This type of data which already exists but you extract for the purpose of your study is called
secondary data.
Secondary sources: Sources that provide secondary data are called secondary sources. Sources such as
books, journals, previous research studies, records of an agency, client or patient information already
collected and routine service delivery records all form secondary sources.
Semi-experimental studies: A semi-experimental design has the properties of both experimental and
non-experimental studies; part of the study may be non-experimental and the other part experimental.
Simple random sampling: This is the most commonly used method of selecting a random sample. It is
a process of selecting the required sample size from the sampling population, providing each element
with an equal and independent chance of selection by any method designed to select a random sample.
Snowball sampling is a process of selecting a sample using networks. To start with, a few individuals
in a group or organisation are selected using purposive, random or network sampling to collect the
required information from them. They are then asked to identify other people in the group or
organisation who could be contacted to obtain the same information. The people selected by them
become a part of the sample. The process continues till you reach the saturation point in terms of
information being collected.
Stacked bar chart: A stacked bar chart is similar to a bar chart except that in the former each bar shows
information about two or more variables stacked onto each other vertically. The sections of a bar show
the proportion of the variables they represent in relation to one another. The stacked bars can be drawn
only for categorical data.
Stakeholders in research: Those people or groups who are likely to be affected by a research activity
or its findings. In research there are three stakeholders: the research participants, the researcher and the
funding body.
Stem-and-leaf display: The stem-and-leaf display is an effective, quick and simple way of displaying a
frequency distribution. The stem and leaf for a frequency distribution running into two digits is plotted
by displaying digits 0 to 9 on the left of the y-axis, representing the tens of a frequency. The figures
representing the units of a frequency (i.e. the right-hand figure of a two-digit frequency) are displayed
on the right of the y-axis.
Stratified random sampling is one of the probability sampling designs in which the total study
population is first classified into different subgroups based upon a characteristic that makes each
subgroup more homogeneous in terms of the classificatory variable. The sample is then selected from
each subgroup either by selecting an equal number of elements from each subgroup or selecting
elements from each subgroup equal to its proportion in the total population.
Stub is a part of the table structure. It is the subcategories of a variable, listed along the y-axis (the lefthand column of the table). The stub, usually the first column on the left, lists the items about which
information is provided in the horizontal rows to the right. It is the vertical listing of categories or
individuals about which information is given in the columns of the table.
Study design: The term study design is used to describe the type of design you are going to adopt to
undertake your study; that is, if it is going to be experimental, correlational, descriptive or before and
after. Each study design has a specific format and attributes.
Study population: Every study in the social sciences has two aspects: study population and study area
(subject area). People who you want to find out about are collectively known as the study population or
simply population and are usually denoted by the letter N. It could be a group of people living in an
area, employees of an organisation, a community, a group of people with special issues, etc. The people
from whom you gather information, known as the sample n, are selected from the study population.
Subject area: Any academic or practice field in which you are conducting your study is called the
subject or study area. It could be health or other needs of a community, attitudes of people towards an
issue, occupational mobility in a community, coping strategies, depression, domestic violence, etc.
Subjectivity is an integral part of your way of thinking that is ‘conditioned’ by your educational
background, discipline, philosophy, experience and skills. Bias is a deliberate attempt to change or
highlight something which in reality is not there but you do it because of your vested interest.
Subjectivity is not deliberate, it is the way you understand or interpret something.
Summated rating scale: See Likert scaleSystematic sampling is a way of selecting a sample where the sampling frame, depending upon the
sample size, is first divided into a number of segments called intervals. Then, from the first interval,
using the SRS technique, one element is selected. The selection of subsequent elements from other
intervals is dependent upon the order of the element selected in the first interval. If in the first interval it
is the fifth element, the fifth element of each subsequent interval will be chosen.
Table of random numbers: Most books on research methodology and statistics have tables that contain
randomly generated numbers. There is a specific way of selecting a random sample using these tables.
Tables offer a useful way of presenting analysed data in a small space that brings clarity to the text and
serves as a quick point of reference. There are different types of tables housing data pertaining to one,
two or more variables.
Thematic writing: A style of writing which is written around main themes.
Theoretical framework: As you start reading the literature, you will soon discover that the problem
you wish to investigate has its roots in a number of theories that have been developed from different
perspectives. The information obtained from different sources needs to be sorted under the main themes
and theories, highlighting agreements and disagreements among the authors. This process of structuring
a ‘network’ of these theories that directly or indirectly has a bearing on your research topic is called the
theoretical framework.
Theory of causality: The theory of causality advocates that in studying cause and effect there are three
sets of variables that are responsible for the change. These are: cause or independent variable,
extraneous variables and change variables. It is the combination of all three that produces change in a
phenomenon.
Thurstone scale: The Thurstone scale is one of the scales designed to measure attitudes in the social
sciences. Attitude through this scale is measured by means of a set of statements, the ‘attitudinal value’
of which has been determined by a group of judges. A respondent’s agreement with the statement
assigns a score equivalent to the ‘attitudinal value’ of the statement. The total score of all statements is
the attitudinal score for a respondent.
Transferability: The concept of transferability refers to the degree to which the results of qualitative
research can be generalised or transferred to other contexts or settings.
Trend curve: A set of data measured on an interval or a ratio scale can be displayed using a line
diagram or trend curve. A trend line can be drawn for data pertaining to both a specific time and a
period. If it relates to a period, the midpoint of each interval at a height commensurate with each
frequency is marked as a dot. These dots are then connected with straight lines to examine trends in a
phenomenon. If the data pertains to an exact time, a point is plotted at a height commensurate with the
frequency and a line is then drawn to examine the trend.
Trend studies: These studies involve selecting a number of data observation points in the past, together
with a picture of the present or immediate past with respect to the phenomenon under study, and then
making certain assumptions as to the likely future trends. In a way you are compiling a cross-sectional
picture of the trends being observed at different points in time over the past, present and future. From
these cross-sectional observations you draw conclusions about the pattern of change.
Type I error: In testing a hypothesis, many reasons you may sometimes commit a mistake and draw the
wrong conclusion with respect to the validity of your hypothesis. If you reject a null hypothesis when it
is true and you should not have rejected it, this is called a Type I error.
Type II Error: In testing a hypothesis, for many reasons you may sometimes commit a mistake and
draw the wrong conclusion in terms of the validity of your hypothesis. If you accept a null hypothesis
when it is false and you should not have accepted it this is called a Type II error.
Unethical: Any professional activity that is not in accordance with the accepted code of conduct for that
profession is considered unethical.
Validity: The concept of validity can be applied to every aspect of the research process. In its simplest
form, validity refers to the appropriateness of each step in finding out what you set out to. However, the
concept of validity is more associated with measurement procedures. In terms of the measurement
procedure, validity is the ability of an instrument to measure what it is designed to measure.
Variable: An image, perception or concept that is capable of measurement – hence capable of taking on
different values – is called a variable. In other words, a concept that can be measured is called a
variable. A variable is a property that takes on different values. It is a rational unit of measurement that
can assume any one of a number of designated sets of values.
Working definition: See Operational definition