CHAPTER 2

LIST THE ***TWO*** MOST IMPORTANT ***VARIABLES***

Give brief reasons for your answer (4 marks)

- A ***variable*** is a ***characteristic*** or an ***attribute*** of the ***study object***.
- This ***study object*** may be ***individuals***, ***groups***, ***organisations***, ***human products*** and ***events*** or the ***conditions to which they are exposed***.
- ***Independent variables*** affect the ***dependent variable***.

Independent variable –

- ✓ The ***independent variable*** must have at least ***TWO levels*** in order to qualify as a variable.
- ✓ Is that ***factor*** which the researcher ***selects*** and ***manipulates*** in order to determine its effect on the observed phenomenon (the problem that is being investigated)
- ✓ The variable is considered to be ***independent*** because the researcher is interested in how *it affects the other variable(s) being studied*.
- ✓ In other words, the researcher seeks to find a cause and a resultant effect relationship, if it's present.

Dependent variable –

- ✓ Is the ***factor*** which the researcher ***observes*** and ***measures*** to determine how it was ***affected*** by the ***independent variable***.
- ✓ It is the ***factor*** *which* ***appears***, ***disappears***, *or* ***varies*** as the researcher introduces, removes, or varies the levels of the independent variable.
- ✓ The dependent variable changes as a result of variations in the independent variable and it is considered to be dependent because its value is assumed to depend upon the values of the levels of the independent variable.

EXAMPLE

- ***Fire*** (IV) causes ***smoke*** (DV) – the more a fire rages on a piece of land, the more smoke will occur. It can be illustrate as follows:
- In an organisation setting, we might want to measure if the ***driving skills*** (DV) of drivers improve after they attend a ***driving course*** (IV)
- A manager that good ***supervision*** and ***training*** will increase the **production level (output)** of the workers.

EXAMPLE

Independent variable (IV) – Management style of supervisors (two levels)

- ➢ iron-fisted style
- ➢ approachable style

Dependent variable (DV) – Management style of trainee supervisors

EXAMPLE

Independent variable (IV) – Gender amongst managers in the business world (two levels)

- ➢ Male managers
- ➢ Female managers

Dependent variable (DV) – Stress level

CHAPTER 2

WILL THE INVESTIGATION INVOLVE A ***DESCRIPTIVE, PREDICTIVE*** OR ***EXPLANATORY*** STUDY?

Give brief reasons for your answer. (3 marks)

- First have a look at the hypothesis

DESCRIPTIVE STUDY

- To explain phenomena such as human behaviour.
- To predict human behaviour

  - **WHEN, WHERE, BY WHOM, HOW OFTEN** is it committed.
  - NON-EXPERIMENTAL DESIGNS
  - Not trying to establish WHY there may be a difference – only testing a theory
  - Always testing a theory
  - 1 V defined in terms of another V
  - Cannot describe the CAUSE of the situation
  - Describes Data & characteristics of population
  - STUDYING A RELATIONSHIP BUT WITHOUT ANY INTERVENTION

EXAMPLE:
Research on c***rime*** is ***descriptive*** when it defines the kind of crime by stating ***WHEN, WHERE, BY WHOM*** and ***HOW OFTEN*** it is committed

EXPLANATORY STUDY

  - **WHY, HOW** something happened.
  - EXPERIMENTAL RESEARCH DESIGN
  - CAUSE AND EFFECT relationship
  - Non-directional Hypothesis: Do not predict direction

EXAMPLE. There is a ***relationship*** between ***job satisfaction*** and ***salary level***

PREDICTIVE STUDY: (likelihood of something happening)

- Scientists regularly use prediction in research as a fundamental of the scientific method, when they generate a hypothesis and **predict** what will happen.
- To predict whether (*training on management goal)* will improve (*job performance)*.
- Measurement of unit of analysis in respect of one or more variables at one point in time.
- These units of analysis are then measured later in terms of another variable.
- The independent variables are biographical, psychological and other variables that apply to the unit of analysis at the initial point in time.

- A predictive study has a time dimension.

  - **WILL BE** (wording will appear in hypothesis)
  - Researcher HOPES/WISHES to have changes after the intervention
  - It will state something like ... WILL BE successful....
  - EXPERIMENTAL RESEARCH DESIGN
  - Researcher starts with/leading to finding WHAT WILL happen, given some baseline already is known
  - Previous studies confident about difference in relationships.
  - Directional Hypothesis

EXAMPLE: Individuals in manufacturing company in Gauteng ***WILL BE*** successful

CHAPTER 2

FORMULATE THE *RESEARCH HYPOTHESIS*

(3 marks)

- A hypothesis is a tentative ***assumption*** or ***preliminary statement*** about the relationship between two or more things that needs to be examined.
- In other words, a hypothesis is a ***tentative solution*** or ***explanation*** of a ***research problem*** and the task of research are to investigate it.

- A research question differs from a hypothesis in that the ***research question*** is always expressed as a ***question***, while the ***hypothesis*** is expressed as a ***statement***.

    - ***Question*** format is appropriate for ***descriptive*** and ***inductive*** research.
    - ***Hypothesis*** is appropriate for ***explanatory*** or ***deductive*** research.

Non-directional hypothesis:

1) There is a difference between the ***organisational commitment*** of ***male employees*** and ***female employees***.

2) There is a relationship between ***job satisfaction*** and ***salary level***.

Directional hypothesis:

1) ***Female employees*** have a higher level of ***organisational commitment*** than ***male employees***.

2) There is a positive relationship between ***job satisfaction*** and ***salary level***.

Null hypothesis:

1) There is a no difference between the ***organisational commitment*** of ***male employees*** and ***female employees***.

2) There is no relationship between ***job satisfaction*** and ***salary level***.

A research problem

- To answer/solve a research problem, the researcher must be able to answer the following questions:
    1. What is the problem?
    2. What is the best way to solve the problem?

FORMULATE THE RESEARCH HYPOTHESIS

- Where possible, we should translate the research problem into a research hypothesis that states:
    1. a relationship
    2. between two or more variables
    3. in one (or more) population(s) (see chapter 4)

EXAMPLE: (Activity 2.4 on page31)

An improvement of ***working conditions*** *(IV)* and ***leave benefits*** *(IV)* will improve the ***morale of all the employees*** *(DV)*.

or

The ***moral of employees who do not have good side incomes*** *(DV)* will improve if their ***pay scales, working conditions*** and ***leave benefits*** improve.

EXAMPLE*:*

Case Study 1

The ***interpersonal skills*** (DV) of the ***experimental group*** will be ***RATED SIGNIFICANTLY HIGHER*** than the ***interpersonal skills*** (DV) of the ***control group*** after the experimental group has been exposed to the ***behaviour modelling programme*** (IV).

Case Study 2

There will be a ***SIGNIFICANT RELATIONSHIP*** between ***stress*** (DV) and ***role ambiguity*** (IV) as well as between ***stress*** (DV) and ***role conflict*** (IV) amongst ***employees at a banking institution in the Western Cape***

Case study (a)
Amongst a group of **medical staff members at a *specific hospital***, there is a ***HIGH CORRELATION*** between their ***attitudes towards AIDS*** (IV), ***their knowledge of AIDS*** (IV), and their ***attitudes towards prostitutes*** (DV).

Case study (d)
There is a ***SIGNIFICANT HIGH POSITIVE RELATION/CORRELATION*** between the ***speech quality*** (DV) and ***total preparation time*** (IV) of a group of speech-making **students at technikons**.

or

There is a ***SIGNIFICANT HIGH POSITIVE RELATION/CORRELATION*** between the ***speech quality*** (DV) and ***speech anxiety*** (IV) of a group of speech-making **students at technikons**.

CHAPTER 3
DESCRIBE THE ***SHORTCOMINGS*** IN THE ***LIST OF REFERENCES***
(3 marks)

1) Arrange ***references alphabetically*** in terms of the ***surname*** of the first author or ***title*** in case of no author.
2) Check if all ***citings*** are in the ***reference list***.
3) Check if all ***references*** are indeed ***cited*** in case study.
4) Check ***dates*** of all references.
5) Always give the ***names of all authors*** – ***never*** use "et al." in a reference list.
6) Use of ***capital letters***:
   - Article title – Only first letter and proper names are capitalised.
   - Journal title – First letter and every important word are capitalised.
7) Check if ***Journal*** and ***Book*** names & article names are written in ***ITALICS***, ***Capital letters*** used in names correctly.
8) Check if ***Publisher*** and ***Town*** are mentioned for books.
9) Check if ***Volume numbers*** for Journal articles is in *BOLD*

Journal articles: (**p.46**)

Eberhard, H. (1990). Induction guidance – what do the novices want? *South African Journal of Psychology,* **22**, 210-25.

Keenan, A. & Newton, T. (1999). Frustration in organisation: Relationships to role roles. *Journal of Occupational Psychology*, **57**, 80-100

Nieuwoudt, J.M., Plug, C. & Mynhardt, J.C. (1997). White ethnic attitudes after Soweto: A field experiment. *South African Journal of Psychology*, **16**(2), 1-12.

Books and chapters: (**p.46**)

Du Preez, P. (1991). *A science of mind: The quest for psychology reality*. London: Academic Press.

McGrath, J.E. (1995). *Stress and behaviour in organisations*. New York: Wiley.

Valle, R.S., King, M. & Halling, S. (1989). An introduction to existential-phenomenological thought in psychology. In R.S Valle & S. Halling (Eds), *Existential-phenomenological perspectives in psychology* (pp. 3-16). New York: Plenum

Dissertation or thesis

Botha, M.P. (1990). *Television exposure and aggressiveness among high-school pupils: A follow-up study over five years*. Unpublished doctoral thesis, University of the Free State, Bloemfontein.

Book review

Haertel, E.H. (1978). Review of "Foundations of behavioural research" (3rd ed.) by F.N Kerlinger. *Contemporary Psychology*, **32**, 249-250.

Unpublished paper delivered at meeting

Strûmpfer, D.J.W. (1980, September). *One hundred and one years after Wundt*. Paper presented at the National Psychological Congress, Johannesburg.

Article in a newspaper

Botha, J. (1988, 1 Apr). Worst USA TV series also broadcast here. *The Star*, p.10.

Article in a newspaper without editor

Too much beer leads to temporary impotence. (1991, 7 Jan). *The Citizen*, p.5.

Letter to a newspaper editor

Mathibela, J. (1996, 1 Apr). The stars in black management [Letter to the editor]. *Sowetan*, p.12.

Reference to an Internet source

Department of labour. (2000). *Employment Equity Act*. http://www.labour.gov.za/docs/legislation/eea/forms/eea-eng.htm (date when document was accessed)

Reference to a CD-ROM

20th World Conference on Open Learning and Distance Education. (2001). [CD-ROM] Fern Universität, Germany.

10) Arrange in ***alphabetical order by the surname*** of the author or title in case of no author.
- ✓ Nel, T.J. *precedes* Nelson, A.M.
- ✓ Cronbach, L.J. (1980) *precedes* Cronbach, L.J. & Furby, L. (1970)
- ✓ Smit, T.J. *precedes* Smith, T.J
- ✓ MacArthur *precedes* McAllister *which in turn precedes* McCarthy

11) When a prefix is part of the surname, alphabetise accordingly.
- ✓ De Beer is listed under D
- ✓ Von der Ohe is listed under V

12) Authors with the same surname are arranged alphabetically according to their initials.

13) Names are listed in inverted order: surname followed by the initial(s). In the case of multiple authors, inverted order for all names is used, separated by commas and an "&"before the last name.

14) Heading for reference list*:* ***REFERENCES***

- ➢ Stands alone at end of an essay / article / thesis / dissertation; therefore the heading is not given a number following the main heading numbers in your text.

15) ***Several works*** by the ***same first author*** are cited according to the following rules:

- ❖ ***One author*** entries are arranged in the numerical order according to ***publication date:***
  - ✓ Christensen, L.B. (1991)
  - ✓ Christensen, L.B. (1994)
- ❖ ***Single author entries*** precede ***multiple author entries*** beginning with the same surname***:***
  - ✓ Mauer, K.F. (1987)
  - ✓ Mauer, K.F. & Watkins, M.L. (1994)
- ❖ References with the ***same first author*** and different ***second and/or third authors*** *are arranged* ***alphabetically*** according to the ***surname of the second author.***
  - ✓ Mauer, K.F., Marias, H.C. & Prinsloo, R.J. (1991)
  - ✓ Mauer, K.F. & Retief, A.I. (1985)
- ❖ Several references to the ***same author(s)*** are arranged chronologically according to the ***year of publication.***
  - ✓ Schmidt, F.L. & Hunter, J.E. (1980)
  - ✓ Schmidt, F.L. & Hunter, J.E. (1981)
- ❖ References to the ***same author published in the same year*** are arranged alphabetically according to ***title (excluding a or the).*** The ***letters a,b,c***, and so on, in parenthesis, are placed immediately after the year.
  - ✓ Terpstra, D.E. (1981a)
  - ✓ Terpstra, D.E. (1981b)

- ❖ ***Group authors are arranged alphabetically according to the first significant word.***
  Human Sciences Research Council
  Botha, M.P. (1990). *Television exposure and aggressiveness among high-school pupils*. Unpublished doctoral thesis, University of Free State, Bloemfontein

EXAMPLE OF HOW TO PHRASE YOUR ANSWER IN THE EXAM:

- Reference list is not in alphabetical order.
- Keenan, T. (1999): *Journal of Occupational Psychology* should be in **ITALICS** and not the title of the article.
- Pines, A.M. (1999): Publisher NOT MENTIONED
- The source Newcomb, T.M. & Hartley E.L. (1947). is outdated or incorrectly written in the reference list as date in case study is 2010.

CHAPTER 4

WHAT ARE THE ***UNITS OF ANALYSIS***

(2 marks)

- A population is the full set of cases from which a sample is taken.
- We refer to the members or elements of the population as the unit of analysis.
- In the human behavioural sciences, units of analysis typically refer to:
  1. Humans (Individuals)
  2. Groups (Example: couples married in a particular year; households in a particular geographic region; homosexual clubs; gangs, crime syndicates, and so on)
  3. Organisations or institutions; (Example schools, classes, congregations, hospitals, political parties. companies ...
  4. Human products or outputs (Example houses, paintings, articles published in a journal in a particular period, dramas, ...)
  5. Events (for example elections, riots, court cases, ...)

EXAMPLE:

1. **First-line supervisors** of a **manufacturing company in Gauteng**

CHAPTER 4

WHAT ***TYPE OF SAMPLING*** WAS USED IN THE CASE STUDY?

(3 marks)

1) *PROBABILITY SAMPLING*

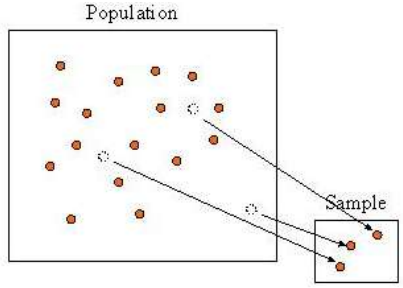
- *We can determine the probability that any elements or member of the population will be included in the sample.*
- *Advantage of probability sample is that it enables us to indicate the probability with which sample results deviate in differing degree from the corresponding population values.*
- Unlike non-probability sampling, probability sampling enables us to estimate sampling errors.

  - ✓ Representative of Population
  - ✓ Can estimate Sampling Error
  - ✓ Any element of member of Population will be included

(1.1) Simple random sampling

- Accurate and easy accessible
- Sample size = over 100
- Costs: High if large
- ***Sample Representative of Population*** *(each member has the same chance of being included).*
- No subdivisions of population like in gender, race, age, region, etc.
- Selecting samples randomly from population using random sheet

EXAMPLE:
- 100 multi-millionaires in SA.
- Select from the population of multi-millionaires irrespective of age, gender, race, etc.
- Irrespective of sex, race, age, region, etc each will have equal chance of being included.



(1.2) Stratified random sampling

- Selecting individuals rather than groups (as per cluster sampling)
- Strata (subpopulation) = Homogeneous (eg. Gender)
- Divided into ***RACE, GENDER, REGION, AGE*** (young adult teacher, old adult teacher)
- ***Sample Representative of Population*** *(each member has the same chance of being included).*
- 1st divide into strata, then select random sampling from strata.

***EXAMPLE*:**
- 100 multi-millionaires in SA.
- Divide into strata (subpopulations) such as ***Gender, Race***, etc.
- Select from each strata randomly.

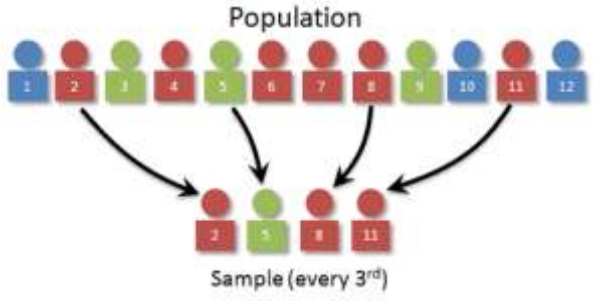


(1.3) Systematic sampling

- Used in Large scale opinion polls
- Include every *N/nth* element
- Simple, more convenient than random sampling
- Can be used in conjunction with Stratified random sampling

EXAMPLE:

- 100 multi-millionaires' in SA.
- Determine sampling size (eg. 10)
- Randomly select a number from the 1st 10 participants (e.g. 3)
- Choose 3 and then every 10th element (3, 13, 23,33,45 until max is reached)
- If 1st number (e.g. 3) is not selected randomly, then NON-PROBABILITY SAMPLE

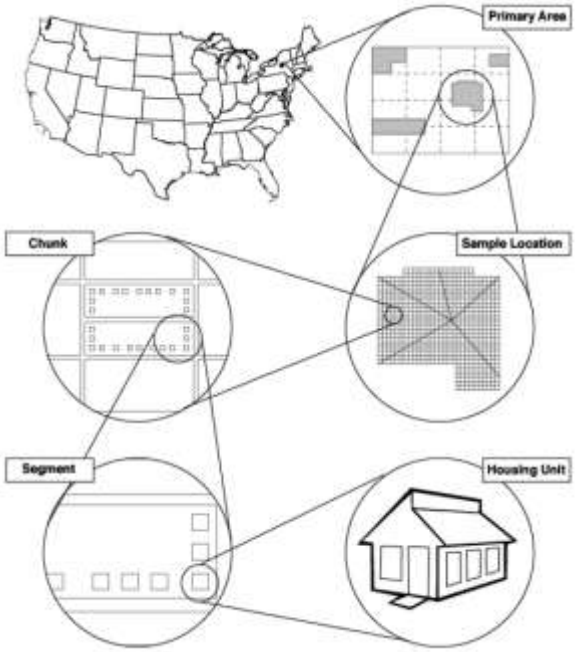


(1.4) Cluster samples

- SIMILAR TO STRATIFIED RANDOM SAMPLING but Researcher identifies natural occurring group units like neighbourhoods, schools, regions, NOT INDIVIDUAL SUBJECTS, then RANDOMLY select from these units.
- Large Scale Surveys – difficult to obtain lists of all members in a survey
- PRE-EXISTING GROUPS
- Heterogeneous groups = called CLUSTERS
- 1st draw PRE-EXISTING, HETEROGENEOUS groups (clusters)
- Then draw RANDOM sampling from members in clusters

***EXAMPLE*:**

- Opinion survey of reinstating the death penalty.
- 1st step: Draw samples from different the nine *provinces* or *regions* in SA.
- 2nd step: Draw number of *townships* and *cities* within each region.
- 3rd Step: Select a few *street blocks* within each of these townships or cities.
- 4th Step: Draw sample of *individuals* randomly within each street block



2) *NON PROBABILITY*

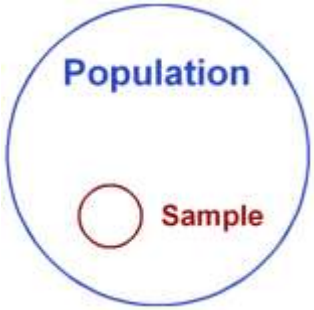
- We cannot specify *the probability that any elements or member of the population will be included in the sample.*
- Elements which have a chance of being included have a probability that exceeds zero.
- Cannot guarantee that any element have a chance to be included in Population.
- May there not be confident about our conclusions
- Less complicated, more economical (financial expenses & time)

(2.1) Accidental or Incidental sampling

- ***Most convenient collection*** of members of the population that is ***near and readily available***.
- *AGREED to PARTICIPATE*
- Has come to the researchers to let them know that they will participate.
- **Not Representative of Population (Low)**

EXAMPLE:

- Asked them for participation and then they let researcher know.
- Go to a company in region and ask for participants.



(2.2) Quotas sampling

- **Not Representative of Population**
- Look out for sex, age, language
- *Keywords: Accidental Sampling, Proportionally selected based on Age, Sex, Language*
- Term **PROPORTIONS** of the unit of analysis. If I see *Sex, Age* and *Language* and say... 240 male and 330 female, then I know it's this sample. But it can differ in some papers so remember to read everything in the case study, so that nothing is missed
- **Like STRATIFIED RANDOM SAMPLING BUT NOT RANDOMLY SELECTED**

***EXAMPLE*:**

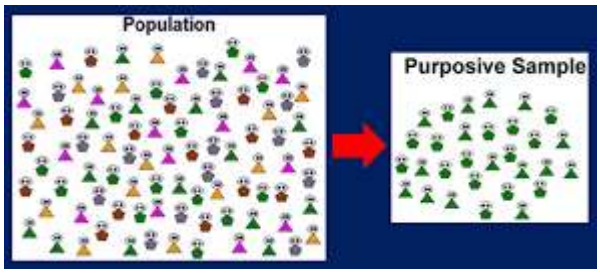
- Population of top mangers = 100 (80% men; 20% female)
- Quota sample (n = 10) – of which 8 are men (80%), and 2 are women (20%)
- Both these groups ACCIDENTALLY obtained/selected

	Chocolate Buyers	Respondent quota (sample size = 200)
Men	40%	80
Women	60%	120

(2.3) Purposive samples

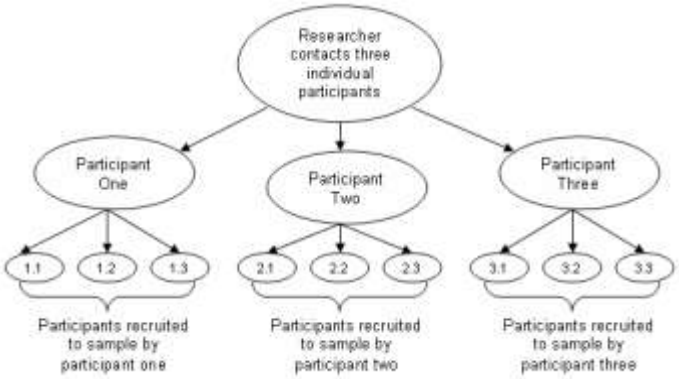
- **Not Representative of Population (Low)**
- Researcher rely on *Experience*, *Ingenuity* or *previous research findings* to deliberately obtain Units of Analysis in such a manner that the sample they obtain may be regarded as being representative of relevant population

***EXAMPLE*:**
Minister foreign affairs – Ask opinion of State President & Leaders of ANC, DA, IFP etc on a certain topic



(2.6) Snowball sampling

- **Non Representative of Population**
- Few individuals approached from relevant population. They then identify other relevant potential participants until sample size is reached

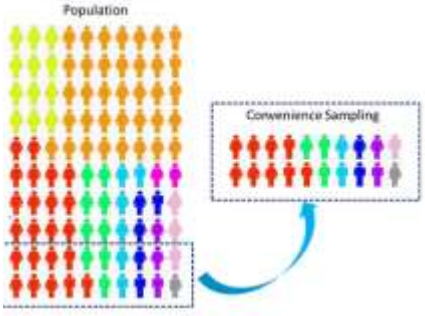


(2.4) Self-selection sampling

- **Non Representative of Population**
- **Self selective sampling =** we allow a case, individuals to identify their DESIRE TO TAKE PART in the research / individuals have VOLENTARY AGREED to take part in the research / investigation
- ***Publicise our need for cases**, either by **advertising** through appropriate media or by asking them to partake*.
- **Collect data from those who respond.**

(2.5) Convenience sampling

- **Non Representative of Population**
- Selecting cases that are easiest to obtain for our sample
- Person that is i**nterviewed at random** in shopping centre for TV program
- **Population approached by researcher randomly until sampling size is reached.**
- This sample is used widely and the sample can be biased. These cases are easy to obtain. in both these samples interviews can be used, but just approached differently



CHAPTER 5

WHAT ***TYPE OF RESEARCH DESIGN*** IS INVOLVED IN THE CASE STUDY?

Briefly explain your answer. (4 marks)

1) ***Experimental*** research - Quantitative research
2) ***Quasi-experimental*** research - Quantitative research
3) ***Non-experimental*** research - Quantitative research
4) Qualitative research - NOT for exam.

(1) EXPERIMENTAL RESEARCH DESIGN:

(1.1) True Experimental Research Design:

- **Internal Validity High (Control over NV and IV)**
- **External Validity Less Important**
- **Random Assignment of Unit of Analysis**
- **Causal Relationship**
- **Key words: Randomly assigned to groups, Groups matching, Simple Random Sampling**

- Involve some sort of ***INTERVENTION***.
- **Participants are exposed to something which they would not have been before**.
- Hypothesis – we express *INFLUENCE* that the IV is expected to have on the DV
- Pre- and Postmeasurement of DV
- ***Control group*** (not exposed to experimental intervention) & ***Experimental group***
- ***Laboratory or Field Study***

Characteristics of True Experimental Design:

1. Control over the independent variable (IV)
2. Random assignment of units of analysis to groups
3. Control over nuisance/irrelevant variables (third variable).

i. Control over the independent variable

- full control over the independent variable means that we may determine which levels of the variable we should use (Page 79 Example)

ii. Random assignment of units of analysis to groups

- **random assignment**: the term random refers to the way in which the groups are assigned to the different levels of the independent variable.

a. Randomized two-group design: participants are randomly assigned to two groups that are subsequently subjected to the two different levels of the independent variable.

b. Randomized multi-group design: extension of the randomized two group design, where you have more than two groups.

iii. Nuisance variables

- Are referred to as ***third variables*** or ***irrelevant variables***.

- A nuisance variable is any variable which *was not mentioned in the research hypothesis that may influence the dependent variable*.

- It is important to control the effect of the nuisance variables.

Keys of controlling nuisance variables

- Determining the speculated effect of nuisance variables by doing a proper literature review.
- In a few cases it may be possible to eliminate them completely
- Building it unto the design as an additional independent variable.

- Attempting to keep their effects the same for all groups or holding them constant for all groups.

(1.2) ***Laboratory*** **Experiment or a** ***Field*** **Experiment?** Briefly explain your answer. (3 marks)

(**Hint : This is the distinction needed to be made for the ecological validity either field or laboratory.)**

Laboratory experiment

- ***Any venue (place or even the environment) that is specially equipped for the purpose of studying a particular phenomenon***, such as *individual* or *group behaviour*; or the *nature of a material*, qualifies as a laboratory.
    - Example: " ***training centre***"

- ***ECOLOGICAL VALIDATY = LOW***

- Allows ***Max Control*** over accidental ***Nuisance Variable*** by ***Eliminating*** them or by ***Equating*** them for all groups.

Field experiment

- Field studies are ***conducted in the actual environment*** in which a phenomenon was observed originally. In such studies, we randomly assign subjects to the ***experimental*** and ***control groups***, and the experimental intervention is affected in a *natural, everyday environment*.

- MANY EXTERNAL FACTORS (NV)
- ***UNCONTROLLED NUISANCE VARIABLE***
- MUCH MORE DIFFICULT TO CONTROL than Lab Experiment
- Experimental intervention – effected in natural, everyday environment

- ***If completing a questionnaire at work place = Field Experiment***
- ***Students attending classes and then participating = Field Experiment***

- ***ECOLOGICAL VALIDATY = HIGH***

****

(2) QUASI-EXPERIMENTAL DESIGN:

- ***KEYWORD: PRE-EXISTING GROUPS***
- NO RANDOM ASSIGNING OF UoA TO GROUPS (Only diff. To True Exp Design)
- INTERNAL VALIDITY HIGH
- EXTERNAL VALIDTY HIGH
- FIELD STUDY – NATURAL ENVIRONMENT
- Groups differ – by IV and NV
- 2nd Best to True Exp Design to eliminate NV

- We cannot randomly assign subjects to groups and therefore have to use pre-existent group (e.g. sex, occupation)
- It helps us draw conclusions about causal relationships.
- They can be divided into two non-equivalent control group design and interrupted time series designs**.**

(2.1) *Non-Equivalent Control Group (Ex post Facto Design):*

- ***KEYWORD: USE TWO PRE-EXISTING GROUPS (Control & Experimental)***
- **NO RANDOM ASSIGNING OF UOA TO GROUPS (Only difference to True Exp Design)**
- INTERNAL VALIDITY HIGH
- EXTERNAL VALIDTY HIGH
- FIELD STUDY – NATURAL ENVIRONMENT

- Pre-measurement prior to commencement of experiment
- Exp & Control group differ only at Postmeasurement (not pre-measurement)
- THREATS: Historical events, spontaneous development, instrumentation, stats regression

(2.2) ***Interrupted Time-Series Design:*** *(Improvement of Pre-Post Measurement Single-group Design)*

- ***SINGLE GROUP***
- ***NO CONTROL GROUP***
- More than one measurements of DV (if only 2 measurements = Pre-Post Measurement Single Grp D)
- Eliminates: Spontaneous. Development, historical events

****

(3) NON-EXPERIMENTAL RESEARCH

- NO PLANNED INTERVENTION
- ***NORMALLY FIELD STUDY (questionnaires completed at workplace)***
- ***NO RANDOM ASSIGNMENT TO LEVELS OF IV (subjects cannot be equated i to all other V)***
- ***RANDOM SELECTION FROM POPULATION***
- EXTERNAL VALIDITY HIGH
- INTERNAL VALIDITY LESS IMPORTANT
- NO CAUSAL RELATIONSHIP
- DESCRIPTIVE STUDIES
- V = age, gender, status, manufacturing sector, etc.

(3.1) SURVEY DESIGN

- Relationships between variables
- Although this term tends to be *associated with opinion surveys*, it covers a wider spectrum than opinion polls, include such surveys as counting traffic at road intersection or crossing, counting and searching library collection, recording the repair activities and interaction of computer service stations and computer users.
- Case study a survey research relationships between variables:
  - ✓ ***In this type of research we examine the relationships that occur between two or more variables without any planned interaction***
  - ✓ Variables such as age, gender, socio-economic status, manufacturing sector etc, are of great importance to non-experimental research in business and administrative sciences.

(3.2) NON EXPERIMENTAL RESEARCH DESIGNS INVOLVING MEASUREMENTS AT A SINGLE TIME

(3.2.1) *Correlation Design – Single Time*

- ***Single Group of UOA***
- ***UOA – obtained RANDOMLY AT SAME TIME***
- **No planned intervention**
- **No random assignment to groups**
- ***Each individual – measured on TWO or MORE VARIABLES* (eg. Gender, Qualification) at same time**
- **Relationship then analysed** .

> ***EXAMPLE***: Shoplifters
> Randomly selected from shoplifters
> Record Gender
> Record Qualification
> Record relationship between Gender & Qualification
> .
> ***EXAMPLE***: The violence ratings of prisoners' *favourite television programmes* were correlates with ratings of *their aggressiveness* by fellow prisoners. This study thus concerns the relationship between two variables in a single population

(3.2.2) *Criterion-Groups Design – Single Time*

- **Single Group of UOA – MEASURED SAME TIME**
- **RANDOMLY select from population representing diff levels of IV (gender, qualification)**
- **No random assignment to groups**
- ***Draw randomly from V (Male)***
- ***Draw randomly from V (Female)***
- **Then record highest qualification in both groups**

This variable therefore qualifies as a classification factor.
The intention is to investigate whether these groups differ in terms of the dependent variable.

(3.2.3) Cross-Sectional Design – Single Time

- Special case of the criterion-groups design.
- Different age groups (such as technikon, university or organisational year groups) = COHORT.
- These cohorts are examined in terms of one or more variables AT SAME TIME
- AGE

> ***EXAMPLE***: to investigate ages-related changes in racial prejudice, 18, 21, 24, and 27 year olds may be measured in terms at this phenomenon at about the same time.)

(3.3) Longitudinal Design – Over Period of Time

- Used instead of a cross-sectional design.
- Evaluating SAME GROUP at DIFF TIME INTERVALS.
- Investigate changes due the passage of time (WEEKS – YRS)

> ***EXAMPLE***: To investigate the above-mentioned problem longitudinally, the racial prejudice of the same group will have to be measured at the ages of 15, 18, 21 and 24)
> Select participants (different ages)
> Evaluate eg. 18 yers when 18, evaluate same individuals again when 21, and then when 24 again (in total 9 years)

(3.3.1) *Panel Design*

- SAMPLE – approx ***representative of the relevant*** population.
- Measurements are then obtained at different points in time on one or more dependent variable(s) for this sample.

> ***EXAMPLE***: In terms of our earlier example of the attitudes of whites to the ANC, we could have obtained the telephone numbers of a random sample of white Free Staters and assessed their attitudes towards the ANC in 1990, 1995, 2000, and 2005 telephonically.)

(3.3.2) Cohort Design

- SAMPLE – REPRESENTATIVE of population
- DIFF BETWEEN COHORT & PANEL D: Panel – intact groups as:
- Example: financial accountancy class that completed its studies in 1998 or the soldiers who began their military training at the Parachute Battalion at Tempe, Bloemfontein, in 1998.
- Such a group is then followed over several years and measured in respect of the same dependent variable.

(3.3.3) Trend Design

- DIFFERENT GROUPS @ DIFFERENT TIMES
- DIFF SAMPLES FROM SAME POPULATION (not same sample like panel & cohort)
- COULD BE HISTORICAL STUDIES OR DOCS

> ***EXAMPLE***: Condom sales before, during and after denouncement of AID

(3.4) PREDICTION STUDIES

(3.4.1) Retrospective design

- We know to which criterion groups individuals belong. We therefore wish to determine in terms of which predictor they different in the past. The use of this design resulted from the observation that already existing criterion groups may have differed previously in terms of one or more variables which may be used as predictor variables of current criterion status.

> ***EXAMPLE***: It may appear that a great proportion of juvenile delinquents come from broken homes. This observation may lead to the following hypothesis a broken home background will be a contributory cause of juvenile delinquent behaviour.

(3.4.2) Prospective design

- We initially measure units of analysis in terms of the supposed predictor variables and then establish their criterion group membership at a later point. This design is used to investigate the extent to which the future position of research participants on one or more variables, known as the criterion variables may be predicted on the basis of the participants original score on one or more predictor variables. We measure the scores of individual units of analysis on the presumed predictor variables and, some time later, we measure their scores on the criterion variable.

> ***EXAMPLE***: Suppose we test the attitudes of all prisoners towards crime on their release from prison. After two years, we determine whether they have broken the law in the meantime. We could then correlate their original attitude scores with their criterion status to determine whether the attitude tests satisfactorily predict who will return to criminal behaviour

(3.5) **Opinion Polls (p.100)**

(3.5.1) Census (p.101)

CHAPTER 5

DOES THE RESEARCH DESIGN IN THE CASE STUDY INVOLVE A ***CAUSAL*** OR A ***CORRELATIONAL APPROACH?***

Briefly explain your answer. (3 marks)

CAUSAL:

- Experimental Research Designs (True Experimental D, Non-equivalent Control Group D, Interrupted Time-Series Design
- 1 V DIRECT CAUSE of another only if former precedes latter in time and changes of latter is related to changes only by former (not any other V)
- Look at description of the Hypothesis
- Explanatory (there is a relationship between .... and ...) and Predictive Studies (WILL BE words)

4 Ways of controlling NV:

- ✓ Literative Review
- ✓ Eliminate effect of NV (removing from sampling)
- ✓ Build in as additional IV
- ✓ All groups – similar as possible in terms of all V except IV
- ✓ Assign individuals randomly to groups receiving DV

EXAMPLE OF ANSWER:

Causal approach, because the researcher wanted to investigate a CAUSAL RELATIONSHIP between the *INDEPENTDANT VARIABLE* (behaviour modelling) and the *DEPENDANT VARIABLE* (Interpersonal skills)

CORRELATIONAL:

- NON-EXPERIMENTAL RESEARCH DESIGN (describing how things are)
- DESCRIPTIVE STUDY
- Cannot describe WHAT caused the situation
- Just studying the relationship between V
- We use correlations to describe relationships between variables such as income, age, and so on. For example, the relationships between the size of a city and its crime rate may be described with correlational analyses.
- Correlations estimate the extent to which the changes in one variable are associated with the changes in the other variable.
- Essentially a correlation coefficient is a number that summarises what we can observe from a scatter plot.
- A positive correlation reflects a direct relationship – one in which an increase in one variable corresponds is associated with a decrease in the other.
- We cannot consider correlational relationships to be causal. This means that we are usually not able to infer that one event is caused by another.

EXAMPLE OF ANSWER:

***Correlational approach*, because the researcher only wanted to investigate the RELATIONSHIP between the IV (role ambiguity and role conflict) and the DV (stress)**

CHAPTER 6

RATE THE EXTENT TO WHICH THE ***RESEARCH DESIGN*** IN THE CASE STUDY PROVIDES FOR ***THREATS*** TO ***INTERNAL*** AND ***EXTERNAL*** VALIDITY.

Refer critically to the following aspects: (6 marks)

INTERNAL VALIDITY and ***THREATS***

(1.1) Defining internal validity

- The degree to which changes in the DV are indeed due to the IV rather than something else.
- Internal validity is of critical importance in the case of experimental research.
- Two ways in which such a basis for comparison can be created, nl
  - Randomly assigning participants to two or more groups.
  - Matching participants in respect to other nuisance variables.

Random Assignment of Participants to Groups

- TRUE EXPERIMENTAL RD: Promotes Internal validity (eliminates NV, Control Group)
- PRE-, POST MEASUREMENT – Lack of Comparison – threat (no control group)
- NON-EXP D: - Less Internally valid necessary
- QUASI-EXP D: Internally Valid

(1.2) Pre-experimental designs

P.108

(1.3) FACTORS BEYOND RESEARCHER'S CONTROL:

(1.3.1) History threats

- Events that take place concurrently with experimental intervention (may affect DV)
- Studies that takes place over a long period of time

(1.3.2) Spontaneous change:

- Development – e.g stressfull situations influencing participants
- Deterioration – cannot control frustration
- Maturation – older people more aggressive due to age, or more experiences
- Recovery – eg. Medical patients recovering

(1.3.3) Other 3rd V problems

- Multivariate nature of human behavioural research.
- Strong relationship – 2 V but 3rd V
- Relationship X + Y – not knowing Z variable
-
- **Third variables** that could ***influence*** the ***results*** of the investigation. (4)

EXAMPLE:

Worker's PHYSICAL and PSYCHOLOGICAL MAKE-UP, the ORGANISATIONAL CLIMATE and the ABSENCE OF SOCIAL SUPPORT contribute to the level of environmental frustrations.

EXAMPLE:
Because the research design was a NON-EXPERIMENTAL CORRELATION DESIGN, there was NO CAUSAL RELATION between the IV (Role ambiguity and role conflict) and the DV (stress). Therefore 3Rd V or NV could have influenced the results. The INTERNALLY VALIDITY IS THEREFORE THREATENED

(1.4) FACTORS INFLUENCING RESEARCH CONTROL:

(1.4.1) Subject Effect:

- ❖ Hawthrone Effect – participants aware of participating in exp. – may deliberately frustrate researcher or sabotaging project
- ❖ John Henry Effect – members of control group – aware of performance – compare then to exp. Group
- ❖ Prevention:
  - o Control group – treat them the same as exp. Group
  - o Exp & Control group – not know to which group they belong
  - o Deception – mislead them of purpose of study
  - o Disguised exp – Exp & Control Group – not aware participating in project

(1.4.2) Experimenter Effect**:**

- ❖ Researcher certain expectations of project – influence results
- ❖ Researcher – expectations about data collection & his biographical attributes (gender, race)
- ❖ Researcher – rater & assessor – unintentially rate exp group higher than control group

(1.4.3) Pretest Sensitisation:

- ❖ Pre-Post Measurement Singe Group D – Participants react differently to exp. Intervention – remember questions.

(1.5) MEASUREMENT PROBLEMS (P120)

(1.5.1) Measurement Reactivity

(1.5.2) Instrumentation

(1.6) GROUP DIFFERENCES

- ❖ Pre-existing difference between exp & control group
- ❖ Sample not similar to wider population – cannot generalise results

(1.6.1) Selection

(1.6.2) Interaction between selection & spontaneous change:

- ❖ Even if groups are equal (DV & IV) initially, group may still show greater spont. Change, maturation, recovery, deterioration,
- ❖ groups may interact
- ❖ geographically spread – differ from region to region (some regions may have riots taking place)

(1.7) RANDOM ASSIGNMENT TO GROUPS

(1.7.1) Matching:

1. Precision Control – Subdivide participants into PAIRS (similar i t o NV), then RANDOMLY assigned to levels of IV
2. Multiple NV Matching – equate groups i to V
3. Frequency Distributed control – Means of NV (15,17,19,21,23 – group 1) (17,18,19,20,21 – group 2) means = 19 both groups

(1.8) UNPLANNED DEVELOPMENTS WITHIN AND BETWEEN GROUPS (P124)

(1.8.1) Communication between treatment groups
(1.8.2) Differential attrition of participants

EXTERNAL VALIDITY and ***THREATS***

Population Validity

- Refers to the degree to the degree which the findings obtained for a sample may be generalised to the total population to which the research hypothesis applies.

  The **population validity, sampling procedure and generalisation** of results

> ***EXAMPLE***:
>
> Population validity is *THREATENED*, because an *ACCIDENTAL SAMPLE* has been used which is NOT REPRESENTATIVE of the population and therefore the results CANNOT BE GENERALISED with confidence
>
> **or**
>
> Population validity is not *THREATENED*, because a *STRATIFIED RANDOM SAMPLE* was used which is *REPRESENTATIVE* of the population and therefore the results can be *GENERALISED* with confidence.

- ***RANDOM SELECTION OF UOA (Type of sampling)=*** EXTERNAL VALIDITY (POPULATION)
- Generalisation of results obtained to population to which hypothesis applies
- EXPERIMENT RD: Less important – Population validity
- VOLUNTEERS = affects population validity

Ecological Validity

- The ecological validity of the obtained results refers to the degree to which they may be generalised to all circumstances that are implied by the research hypothesis.

  The ***ecological validity***, ***sampling procedure*** and ***generalisation*** of the results (2)

- Generalised to situations other than the 1 in which the exp. has been carried out.
- *Lab situation to be generalised to real-life situations*
- ***FIELD EXPERIMENT: ecological validity NOT THREATENED.***
- ***LAB EXPERIMENT: ecological validity THREATENED***
- Factors influence ecological validity:
  - Subject effect
  - Exp Effect
  - Pretest sensitisation

> ***EXAMPLE***:
>
> ***Field experiment***: Ecological validity not threatened.
>
> **or**
>
> ***Laboratory experiment***: Unsatisfactory ecological validity due trivial results that cannot be generalised to real-life situations.

CHAPTER 7

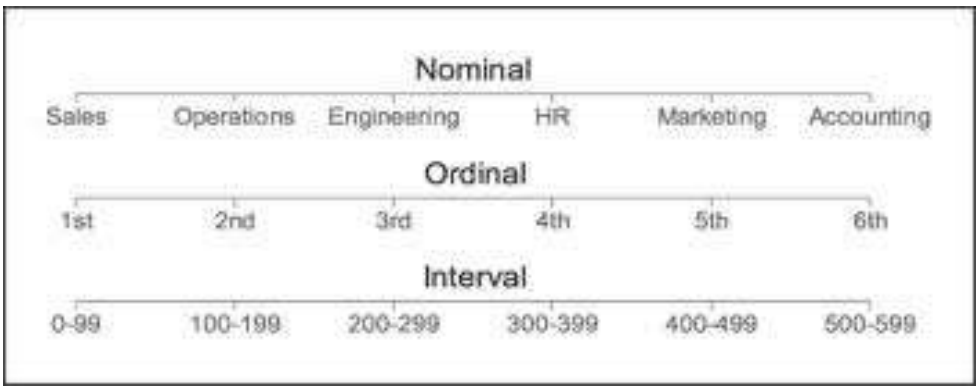
TYPE OF ***MEASUREMENT LEVEL*** (***NOMINAL, ORDINAL, INTERVAL OR RATIO MEASUREMENT***) IS INVOLVED IN THE MEASUREMENT OF THE ***DEPENDENT VARIABLE/INDEPENDENT*** **VARIABLE** IN THE CASE STUDY?

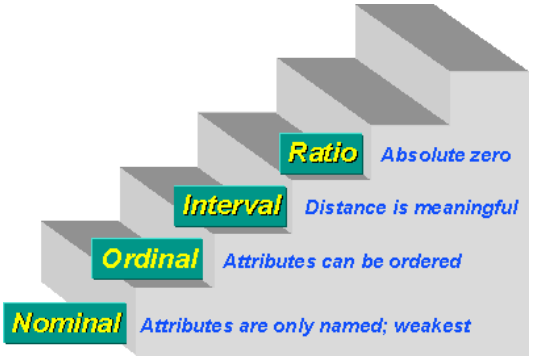
Briefly explain your answer. (2 marks)

In measurement we distinguish between ***different levels of measurement on the basis of four characteristics*** of numbers assigned in the process:

1. Distinguishability (the number 2 is different from the number 1)
2. Order of rank (2 has a higher rank than 1)
3. Equal intervals between successively higher numbers (0…1…2…3)
4. Absolute size (0 – 1 = -1 = 1 – 0 = 1)

1) As per diagram below nominal is simply a name and has no value.
2) Ordinal also has no real value but can be ranked (as per rank in the army)
3) Interval is meaningful (measurements on a ruler)
4) Ratio is absolute zero and anything in between ie. 1.60kgs…..





EXAMPLE

1. Nominal: Categorizing someone as extroverted (outgoing) or introverted (shy) is nominal.
2. Ordinal: If we categorize people bmo 1 = shy, 2 = neither shy nor outgoing, 3 = outgoing, then we have an ordinal level of measurement.
3. Interval: If we use a standardized measure of shyness (and there are such inventories), we would probably assume the shyness variable meets the standards of an interval level of measurement.
4. Ratio: As to whether or not we might have a ratio scale of shyness, although we might be able to measure zero shyness, it would be difficult to devise a scale where we would be comfortable talking about someone's being 3 times as shy as someone else

NOMINAL:

- The ***numbers we assign*** to individuals only serve to ***distinguishing*** *them in terms of the attribute being measured, e.g., 1 = male, 2 = female*
- Even though we are using the numbers 1 and 2, they do not denote quantity
- **Examples:**
    - MEAL PREFERENCE: 1=Breakfast, 2=Lunch, 3=Dinner
    - RELIGIOUS PREFERENCE: 1 = Buddhist, 2 = Muslim, 3 = Christian, 4 = Jewish, 5 = Other
    - POLITICAL ORIENTATION: 1=Republican, 2=Democratic, 3=Libertarian, 4=Green

- ***Numbers*** may be used to ***represent the variables*** but the numbers do not have ***numerical value*** or ***relationship***
- Distinguish between attributes measured ***(****number indicate differences among individuals and not rank order)*
- ***Used for variables like****: Gender, Marital Status, Work Status, Disability Status, Province, City, Day of Week, Cultural group, Language, Occupation, Age****.***

- **The mode:** The *score* achieved by the *greatest number of units of analysis.*
- ***Bar diagram & Pie Chart***
- **Correlation Coefficient**; A statistic to *measure the degree of association* between two variables.
    - *Phi coefficient*: Used when both variables are nominal, such as gender (male/female).
    - *Point*-biserial correlation: used when one variable is nominal and other is ordinal/interval/ratio.
- **Chi-squares** (χ^2): To determine if the difference between statistically expected and actual scores are caused by chance/accident:
    - Chi-square of independence – if one group is involved.
    - Chi-square of Mcnemar – if two groups are involved and they are dependent on each other.
    - Chi-square of homogeneity – if two independent groups are involved
- NO MEAN CAN BE CALCULATED
- Occupation = then count number of directors, managers, admin etc.

ORDINAL:

- ***Ordinal refers to order in measurement***.
- An ordinal scale *indicates direction*, in addition to providing nominal information.
- Low/Medium/High; or Faster/Slower is examples of ordinal levels of measurement.
- **Examples**:
    - RANK: 1st place, 2nd place, ... last place
    - LEVEL OF AGREEMENT: No, Maybe, Yes
    - POLITICAL ORIENTATION: Left, Center, Right

- *Same as nominal but only put into some order/rank*
- Distinguish between attributes measured (no specific value)
- ***Used for variables like****: Social Class, Attitudes, Ranking, Indicating high/low, junior/senior*
- **Dichotomous** data with dichotomous values such as ***'sick'*** vs. ***'healthy'*** when measuring **health**, ***'guilty'*** vs. ***'innocent'*** when making **judgments in courts**, ***'wrong/false'*** vs. ***'right/true'*** when measuring **truth value**

- **The median:** The *score* in the *middle of the list of ranked scores*.
- ***Bar diagram & Pie Chart***
- **Correlation Coefficient**; A statistic to *measure if the scores of one variable* correlate with the rank order positions for another variable.
    - *Spearman rank-order correlation*: Used when both variables are ordinal.
    - If variable is not ordinal but on an interval/ratio scale, the data must be converted into ranks.
- **Chi-squares** (χ^2): To determine if the frequencies on a nominal variable (example gender) are statistically significantly related to an ordinal variable:
    - Chi-square of independence – if one group is involved.
    - Chi-square of Mcnemar – if two groups are involved and they are dependent on each other.
    - Chi-square of homogeneity – if two independent groups are involved
- NO MEAN CAN BE CALCULATED
- **Tests of differences between distributions:**
    - Wilcoxon match pairs signed rank test, Mann-Whitney u test, and Kruskal-Wallis test.

INTERVAL:

- *Interval scales* provide information about order, and also possess equal intervals.
- Is a ***measurement*** where the ***difference between two values*** is meaningful.
- The difference between a temperature of 100 degrees and 90 degrees is the same difference as between 90 degrees and 80 degrees.
- **Examples**:
    - TIME OF DAY on a 12-hour clock
    - POLITICAL ORIENTATION: Score on standardized scale of political orientation
    - OTHER scales constructed so as to possess equal intervals

- ***Used in***: *Calendar time, Scores on abilities, standardised tests, attitude scales, self-constructed questionnaires. (Moral, Satisfaction, Experience).*
- Used when ***Likert Scale*** and ***Semantic Differentiation*** is used.

- **The mean:** The *average score* for a group (also called the *arithmetic mean*) and which is equal to the *total of individual scores divided by the number of scores*.
- ***Histogram or Box plot***
- **Pearson's product moment correlation:** A statistic to *measure the degree of association* between two interval or ratio variables (A scattered diagram may also be used).
- **Chi-squares (χ^2)**: To determine if the discrete classes into which an interval or ratio variable are grouped are statistically significantly related to another variable, and that the relationship is not caused by chance:
    - Chi-square of independence – if one group is involved.
    - Chi-square of Mcnemar – if two groups are involved and they are dependent on each other.
    - Chi-square of homogeneity – if two independent groups are involved
- **Tests of differences between distributions:**
    - T-test statistics and analysis of variance.
        - (t-test for related groups, t-test for independent groups, F-test, and Discriminant analysis)

- Distance is Meaningful – Like on a Ruler – Equal Difference between Consecutively Higher No.
- Human Characteristics
- STD DEVIATION – (s) – must be not more than 1 value higher than MEAN
- Nominal, Ordinal and Degree of difference between Individual Data
- Examples: interval of IQ scores of 100 and 115 exactly the same as interval between 110 and 125. But, cannot say IQ of 120 is twice as intelligent as IQ 0f 60

RATIO:

- Ratio scale has the *properties of an interval scale* together *with a fixed origin or zero point*.
- In addition to possessing the qualities of nominal, ordinal, and interval scales, *a ratio scale has an absolute zero.* (a point where none of the quality being measured exists).
- Using a ratio scale permits comparisons such as being twice as high, or one-half as much.
- Reaction time (how long it takes to respond to a signal of some sort) uses a ratio scale of measurement – time.
    - Ratio scales permit the researcher to compare both differences in scores and the relative magnitude of scores. For instance the difference between 5 and 10 minutes is the same as that between 10 and 15 minutes, and 10 minutes is twice as long as 5 minutes.
- ***Examples of variables*** which are ratio scaled include *weights, lengths* and *times.*
- **Examples**:
    - RULER: inches or centimeters
    - INCOME: money earned last year
    - GPA: grade point average

- Same as per INTERVAL but have A DEFINITE ZERO POINT.
- ***Used for***: *Age, Cost, Exact Income, Number of Children, Exam Results* (%)
- The ratio between numbers assigned at this level of measurement can therefore be interpreted meaningfully
- The advantage of using this scale is that any statistical analysis can be used on the data collected in this form.
- ***Examples***: *weight, height, distance, money values, population counts*

VALIDITY AND RELIABILITY OF MEASUREMENT

1. Validity – Is the extent to which the research findings accurately represent what is really happening in the situation
    - An effect or test is valid if it demonstrates or measures what the researcher thinks or claims it does.

2. Types of validity (Dependent variable)

a) Construct validity – refers to the degree to which it measures the intended construct rather than irrelevant constructs or measurement error.

b) Criterion-related validity - refers to the degree to which diagnostic and selection measurement tests correctly predict the relevant criterion. It also refers to the variable that is to be diagnostic or on which success is to be predicted respectively.

3. **Reliability** – refers to the extent to which the obtained scores may be generalized to different measuring occasions, measuring / tests forms and measurement / test administrations.

MEASURING INSTRUMENTS

- ***Survey questionnaires, Standardised measuring instruments and Attitude scales***
    - Do not involve direct observations of the behaviour of subjects, but individuals' reports of their behaviour.
- ***Rating scales***
    - Require raters to assess the behaviour of participants.
- ***Indicators***
    - Such as inflations rate, consumer price index, retail sales, building plans passed, registered unemployment, etc
    - Compiled by and calculated by people such as actuaries in government, etc

(1) Unobtrusive measurement

1. Physical traces
    a. Measurements are based physical changes that take place over time.
    b. Distinguish between *measures of erosion* (wear and tear on materials) and *measures of accretion* (the formation of deposits on materials).
2. Personal documents and mass media material
3. Official statistics and archival sources

(2) Group contacts

- Collecting data from groups of people bmo

1. Survey questionnaires and Postal dispatch.
2. Standardised tests
3. Attitude scales
4. Rating scales and Situational tests
5. Response styles and how to prevent them

(3) Personal visits and communication by telephone

1. Personal visits
2. Telephonic interview
3. Interviews
4. Conducting structured and Semi-structures interviews

(4) Individual apparatus (measurements/tests)

(5) Direct observation (Checklist)

ATTITUDE SCALES

(1) The summated or Likert scale

- Used for *multidimensional* ***attitudes***.
- Consist mostly of a Five point scale
- Indicate the degree to which participants agree or disagree
- Example: Strongly differ/ Differ/ Undecided/ Agree/ Strongly agree



Likert Scales

Please fill in the number that represents how you feel about the computer software you have been using

I am satisfied with it

1	2	3	4	5
Strongly Agree	Agree	Neither	Disagree	Strongly Disagree

It is simple to use

1	2	3	4	5
Strongly Agree	Agree	Neither	Disagree	Strongly Disagree

It is fun to use

1	2	3	4	5
Strongly Agree	Agree	Neither	Disagree	Strongly Disagree

It does everything I would expect it to do

1	2	3	4	5
Strongly Agree	Agree	Neither	Disagree	Strongly Disagree

I don't notice any inconsistencies as I use it

1	2	3	4	5
Strongly Agree	Agree	Neither	Disagree	Strongly Disagree

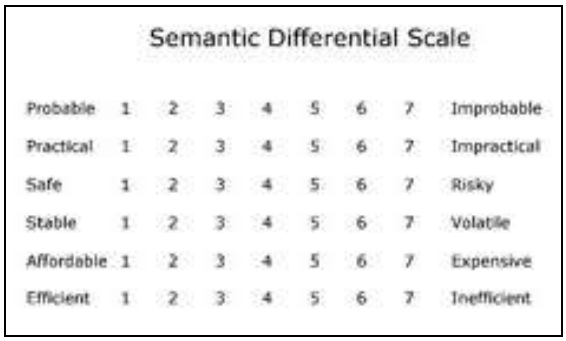
Construct a suitable ***graphical example*** of ***one scale*** item of the ***Likert scale*** that would probably be ***used to measure role ambiguity*** in the case study. (2)

I am not sure what is expected of me at work

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
5	4	3	2	1

(2) The semantic differential

- Each item consist mostly of a Seven-point scale
- Two end points are two opposite adjectives (Bipolar adjectives: probable – improbable)
- Measure the connotative meaning of objects, events, and concepts or attitudes.



Semantic Differential Scale

Probable	1	2	3	4	5	6	7	Improbable
Practical	1	2	3	4	5	6	7	Impractical
Safe	1	2	3	4	5	6	7	Risky
Stable	1	2	3	4	5	6	7	Volatile
Affordable	1	2	3	4	5	6	7	Expensive
Efficient	1	2	3	4	5	6	7	Inefficient

Construct a suitable ***graphical example*** of ***one scale item*** of the ***semantic differential*** (Tedium measure) that would probably be used to ***measure stress*** in the case study. (2)

What do you think of the Americans' behaviour in line with their TV programmes?

Good ☐ ☐ ☐ ☐ ☐ ☐ ☐ Bad

1 2 3 4 5 6 7

Mental Exhaustion

Never experienced _ _ _ _ _ _ _

CHAPTER 9

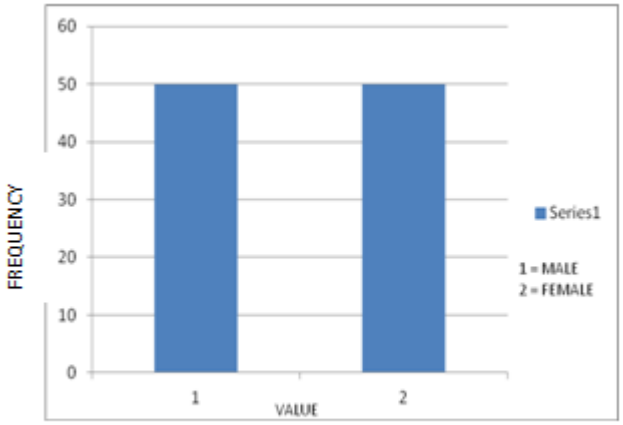
HISTOGRAMS, BAR DIAGRAMS AND PIE CHARTS

CONSTRUCT ***TWO SUITABLE BAR DIAGRAMS*** OF THE CHARACTERISTICS OF THE UNITS OF ANALYSIS IN THE CASE STUDY.

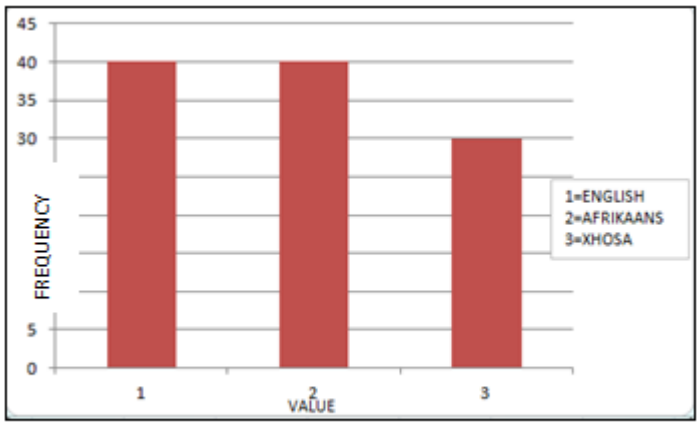
(3-6 marks)

- Histograms, bar diagrams and pie charts are diagrams in which columns or sections represent frequencies of the various rangers of scores or values of a quantity.
- This provides an overall image of the description of the units of analysis as a whole group.
- ***Histograms*** are used for ***interval data***, and
- ***Bar diagrams and pie charts*** are used for ***nominal data*** (biographical variables).

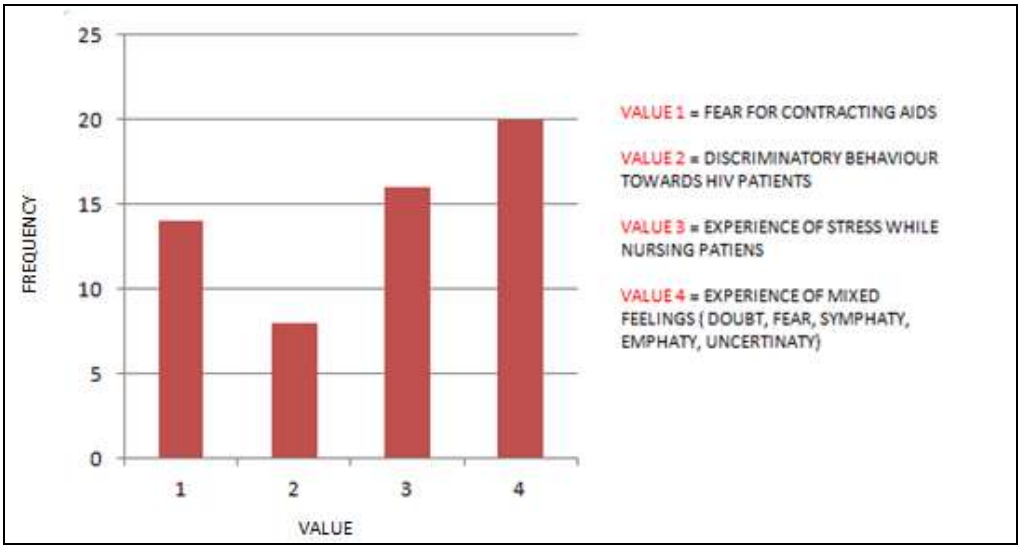
Bar diagram



VALUE



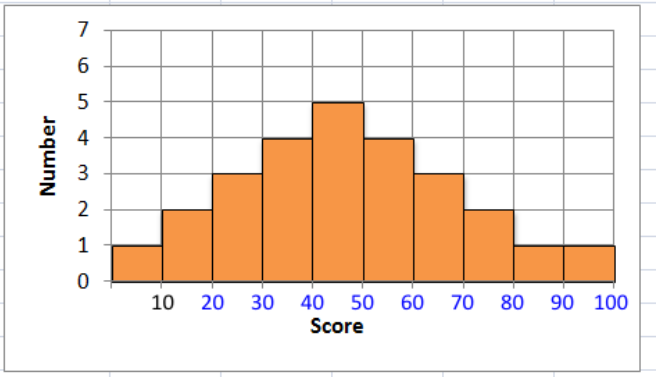
VALUE



Histogram

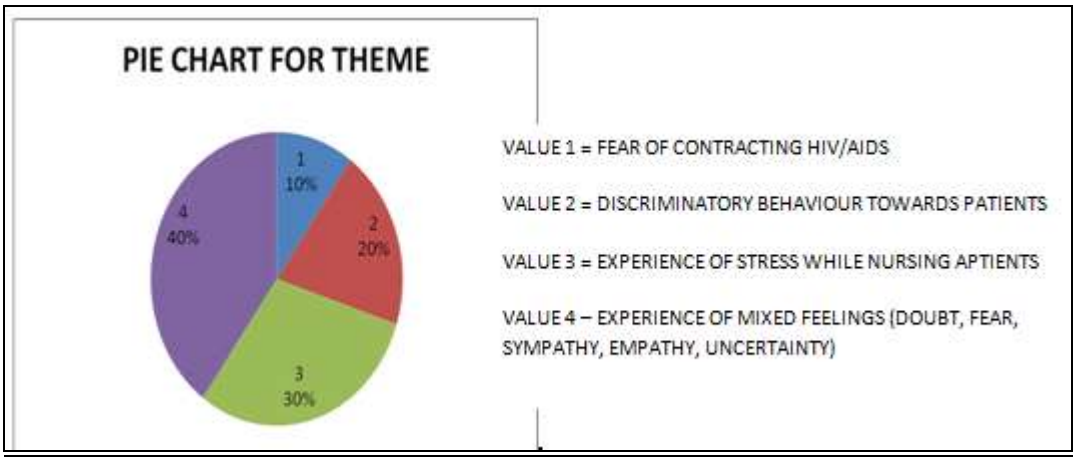


Score	Count
0-9	1
10-19	2
20-29	3
30-39	4
40-49	5
50-59	4
60-69	3
70-79	2
80-89	1
90-99	1



Pie Chart





CHAPTER 10

COMPLETE THE RESEARCH REPORT (CASE STUDY) BY WRITING DOWN THE LAST SECTION, NAMELY ***DISCUSSION AND CONCLUSIONS***.

PAY SPECIAL ATTENTION TO THE ***RESULTS***, ***GENERALISATION OF RESULTS***, ***HYPOTHESIS***, POSSIBLE ***SHORTCOMINGS*** AND ***FUTURE RESEARCH***.

(10 or 11 marks)

DISCUSSION (must include the following):

(1) Describe the *results* in detail
(2) Check whether the results *confirm theory* and *research of the in literature review or not*
(3) State whether the *sample* was *representative* and whether the *results can be generalised or not*.

DISCUSSION WORDING EXAMPLE:

(1) According to the results of the investigation, there is a significant (positive) correlation between STRESS and ROLE AMBIGUITY (r = 0,94) but no significant correlation between STRESS and ROLE CONFLICT (r = 0,05).

(2) Therefore the THEORY OF JACKSON AND SCHULER (1997) regarding the relationship between STRESS and ROLE AMBIGUITY has been confirmed, but not their theory regarding STRESS and ROLE CONFLICT.

(3) The researcher used an ACCIDENTAL SAMPLE and therefore the sample was NOT REPRESENTATIVE of the population (employees at a banking institution). The results cannot be generalised to the rest of the population with confidence.

DISCUSSION WORDING EXAMPLE:

Discussion:

(1) The results in *table 1* indicate there is a significant (no significant) correlation/relationship between the *stress levels* of the respondents, *female managers (80.30)* experience significant higher *stress levels* than *male managers (63.00)*.

(2) There is a significantly *high (low)* correlation/relationship between *stress levels* and *gender amongst managers in the business world*.

(3) The sample of *managers* in this investigation *was (not) representative* of all the members of the relevant population (*managers from large companies in South Africa*), because a *stratified random sample* was used. Therefore *the results can be generalised* (one cannot confidently generalise the results) to the *other business managers in South Africa*.

CONCLUSION (must include the following)

(1) State the *hypothesis* and whether it can be *accepted or not*
(2) Describe the *shortcomings* (if any) of *the internal and external validity* of the investigation
(3) Future research: state how these shortcomings can be overcome in future research

CONCLUSION WORDING: HYPOTHESIS EXCEPTED & SAMPLE NOT REPRESENTATIVE

Conclusion:

(1) The research hypothesis, *that there is a correlation between stress and role ambiguity* has been confirmed, but not the hypothesis *that a correlation exists between stress and role conflict*.

(2) A *correlational design* has been used and therefore the *internal validity* of the investigation is *threatened* by the *third variables* such as *age, physical and psychological factors, organisation climate, absence of social support,* and so forth. As far as *population validity* is concerned, a representative sample such as a stratified random sample should be used to enhance the population validity of the investigation.

(3) In future the problem should be studied by means of a *true experimental design to eliminate third variables.*

CONCLUSION WORDING: HYPOTHESIS EXCEPTED & SAMPLE REPRESENTATIVE

Conclusion:

(1) The results support the notion of the hypothesis that the *stress level of female managers* will be significantly higher than the *stress level of male managers* in *large companies in South Africa*.

(2) However the nuisance (third variables) such as *different managerial positions, environmental frustrations and role conflict* could still have an influence on the research.

(3) For future research it is recommended that the influence of *stress on gender amongst managers in the business world* be evaluated over a longer period of time and also be investigated in *small companies in South Africa*.

CHAPTER 10

WRITE AN ***ABSTRACT*** OF THE ***RESEARCH REPORT*** IN NOT MORE THAN 120 WORDS.

(6 marks)

The abstract should consist of:

1) Purpose of investigation
2) Type of research design
3) Sample used
4) Measurement instrument
5) Results
6) Hypothesis/Hypotheses
7) Generalisation of results

(1) The purpose of the investigation was to establish whether a positive relationship (significant difference) exists between *STRESS* and *ROLE AMBIGUITY* and between *STRESS* and *ROLE CONFLICT*.

(2 & 3)

(Experimental = True Experimental D; Quasi-Exp D = Non-equivalent Control Grp, Interrupted Time-Series D; Non-exp D = Single time – Correlational D, Criterion-Grp D, Cross-Sectional D; Longitudinal time- Panel D, Cohort D, Trend D)

A *CORRELATIONAL DESIGN* has been used, while the subjects were selected by means of an *ACCIDENTAL SAMPLE.*

(Probability = Simple Random, Stratified Random, Systematic, Cluster; Non-probability sample = Accidental, Quota, Purposive, Self-selection, Convenience).

(4) The STRESS LEVELS of the respondents were measured by means of the *TEDIUM MEASURE*, *role ambiguity* and *role conflict* by means of *LIKERT SCALES***.**

(5) The results show a significant correlation between *STRESS* and *ROLE AMBUIGUITY* but no correlation between STRESS and *ROLE CONFLICT*.

(6) The hypotheses can be accepted as far as *STRESS* and *ROLE AMBUIGITY* are concerned but not with regard to *STRESS* and *ROLE CONFLICT*.

(7 – Population sampling) The results CAN (NOT) BE GENERALISED because the sample is (NOT) REPRESENTATIVE (depends on what population sampling was selected as mentioned in paragraph 2) (probability = representative; non-probability – non-representative)

In an abstract answer each of the following questions:

- What was the research problem?
- How was the problem investigated?
- What has been found?
- What are the implications and the meaning of the findings for the original problem?