INTRODUCTION TO RESEARCH

Dr. Lizelle vd Walt

CHAPTER 12

QUANTITATIVE DATA COLLECTION

Has to do with Ha studies : correlation or relationships between dependant (B) and independent (A) variables or making predictions i.e

If AI is used in assignment writing the plagiarism similarity will be high

There is a direct relationship between using AI in assignment writing and plagiarism

RESEARCH DESIGNS

Research design defined

The research design is a framework for the research project i.e QUANTITATIVE OR QUALITATIVE.

The data required for the study, sampling, and research method to collect data forms part of the research design. The research design indicates the research methodology that will be followed in the study.

DIFFERENCE BETWEEN RESEARCH DESIGNS & RESEARCH METHODOLOGY

Research design	Research methodology
Focusses on the end product: What kind of study is being planned and what kind of result is aimed for?	Focusses on the research process and the kind of tools and procedures to be used.

QUANTITATIVE INSTRUMENTS FOR DATA COLLECTION

Instrument mostly associated with quantitative studies = questionnaires, survey research, experimental designs

SURVEYS are used most often and are carefully designed questions/statements measured with scales of agreement

The time frame of the study can impact the design

1. Cross-sectional = once-off data collection from a large group with a start and completion date in a short period of time

2. Before and after design = pre-test and post-test to measure a before and after result i.e

Before: blood glucose level measurement

eating chocolate

After: blood glucose level measurement

3. Longitudinal = to determine the long term effects over a few months or years i.e. if a new teaching method will improve student's marks over a period of 8 months

3 types of longitudinal studies

Trend studies – looks back in time to see what changes have taken place in trends over time i.e. fashion

Cohort studies – used when a different sample from the same population is studied at different points in time. Tracking over time

Panel studies – used same sample of people used every time a survey is repeated i.e. wanting to see if the same people stay motivated in their studies from 1st to 3rd year

TYPES OF SURVEYS

1. Mail surveys
2. Telephone surveys
3. Personal interviews (to gather stats)
4. Group administration questionnaire (class of students all fill out the questionnaire at the same time)
5. Surveys such as Likert Scale

SURVEYS & QUESTIONNAIRES

DIFFERENCES BETWEEN SURVEYS AND QUESTIONNAIRES

There are lists of DO's and DON'Ts regarding questions used in surveys and questionnaires… These are VERY important *(and will become applicable to YOUR studies in semester 2 IF you continue with proposal writing in semester 2)*

NB!!!!!! STUDY Table pp.175-177

See activity on pages 177-178 and do questions 1-10

SCALES IN A SURVEY

Gives respondents a choice (TD, D, N, A, TA)

Must be mutually exclusive = i.e each question/statement can measure only ONE thing such as one pillar of EQ and not all four at the same time i.e. Q1, Q3, Q10 = self-awareness and Q2, Q4, Q9 = self management

Must be exhaustive (ALL respondents' can only choose one option per question/statement in the survey…

SCALES IN A SURVEY

Difference between Totally Disagree and Disagree

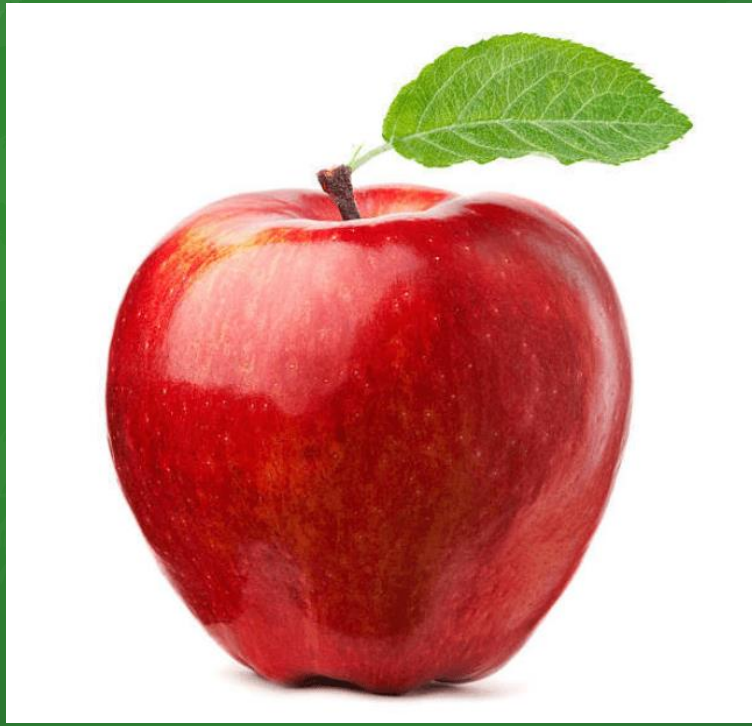
Totally disagree = 100% disagreement.
This is a donkey

SCALES IN A SURVEY

Disagree = Not 100% sure but with low degree of possibility/probability. The picture below is that of a cow.

SCALES IN A SURVEY

Totally agree = 100% agreement. The picture below is that of an apple.



SCALES IN A SURVEY

Agree = Not 100% sure but with high degree of possibility/probability. The picture below is that of apples.

SCALES

We use scales mostly to statistically measure perceptions, beliefs or values

NOMINAL SCALE – to i.e. code questions, create structure and ensure exhaustiveness and mutual exclusivity. Not used to calculate any numbers or to get results, but merely to format and structure i.e. different questions from 1 – 20 for 200 respondents respectively so you can keep track of each respondent's answer

SCALES

Also to keep track of categories of measurement in the questionnaire i.e. 4 pillars of EQ = mutually exclusive and exhaustive

Q1 → Q10 = measures SELF AWARENESS

Q11 → Q20 = measures SELF MANAGEMENT

SCALES

Do the following:

Arrange the following types of murders from worst (first) to least bad/more acceptable (last)

- Pull a man on his face behind a truck over rugged, rocky terrain until he dies
- Cut an elderly person's throat with a can opener
- Leave a baby unattended and without food or water for 5 days

SCALES

ORDINAL SCALE – used to rank or arrange items in sequential order with regards to a common variable i.e. asking a panel of 10 respondents to put news articles you give them on crime committed in Gauteng in order of importance/significance i.e. most to least significant to them

1. Murder
2. Theft
3. Carjacking etc.

SCALES

INTERVAL SCALE – similar to an ordinal scale but have **intervals** to show statistical significance i.e if the same panel is given examples of weapons used in murders and they arrange the choice of weapons in order of **most to the least significant (successful)** murder weapons used:

	1	2	3	4	5
Gun	_	_	_	_	X
Knife	_	X	_	_	_
Blunt Object (bo)	_	_	X	_	_

Gun = 5
Knife = 2
Blunt object = 3
Difference between knife and bo both smaller than difference between gun and knife or bo

SCALES

RATIO SCALE – same as above but what are the respective characteristics of each weapon to justify the gun's significance

Weapon	No effect	Accurate	Penetration	Forceful	Effort
Gun		X	X	X	Low
Knife			X	X	Medium
Bo		X		X	Medium

SCALES

LIKERT SCALE – requires respondents to indicate their degree of agreement or disagreement with statements about specific topics i.e.

Statement	Strongly agree	Agree	Undeci-ded	Disagree	Strongly dis-agree
Murder is the worst crime in society					
Deliberately paralysing an elderly woman to steal from her is not as unacceptable in society today as it was in the past					

SCALES

LIKERT SCALE – can also be phrased as questions i.e

Do you think using guns to murder people are:

Very effective?
Effective?
No effect?
Little effective?
Not at all effective?

SCALES

SEMANTIC DIFFERENTIAL SCALE - used to indicate **polar opposites** i.e. hot and cold. Respondents then choose a scale closest to the word variable they feel applies.

Hot ___ ___ ___ ___ ___ Cold

EXPERIMENTAL DESIGNS

Involved in these designs are the following components:

- Random selection of respondents
- Dependent/independent variables
- Pre-testing and post-testing
- Observations and testing over time
- Experimental and control groups
- Testing correlations between variables

Purpose is to see if Variable A does affect Variable B over time

TRUE EXPERIMENTAL DESIGNS

Example:

Independent variable

X1

To see if EQ training workshops to Sanlam Health managers will improve their relationships with their employees

Dependent variable

RANDOM selection

Experimental group	R	O1	X1	O3
Control group	R	O2		O4

Explanation in class

TRUE EXPERIMENTAL DESIGNS

Example:

Experimental group **R** **O1** **X1** **O3**

Pretest with Likert Scale to see what the current relationship is

Posttest with Likert Scale to see if X1 improved the relationship

Control group **R** **O2** **O4**

Pretest with Likert Scale to see what the current relationship is

Posttest with Likert Scale to see if the relationship improved by itself or is still the same

TRUE-EXPERIMENTAL DESIGNS

Threats related to the variables that could impact the internal validity of TRUE experimental designs (see pages 186-187)

Two design:

Pretest/posttest control group

R	O1	X1	O3
R	O2		O4

TRUE-EXPERIMENTAL DESIGNS

Solomon 4-group design (2x2 factorial design)

R	O1	X1	O3
R	O2		O4
R		X1	O5
R			O6

With true experimental designs you can definitively conclude that X did affect the results BECAUSE respondents were selected randomly

i.e EQ workshops did improve relationships between supervisors and employees

Jenkins and Madonsela (2017) found in a study conducted among second year students in the Faculty of Economic and Management Sciences at the Syracuse University in America, that students who receive life coaching early in the semester will score a higher average in their semester tests than those that do not receive life coaching.

Use a **true experimental** research design to test this Ha. Do the following:

1. Write the formula applicable to a two-group true experimental design and apply each component of the formula to this study.
2. Discuss and justify the instrument you will use as a pre- and post test to make a comparison between the two groups
3. What will the independent variable be?

QUASI-EXPERIMENTAL DESIGNS

Quasi-experimental designs = where respondents are not randomly selected and assigned to groups

QUASI EXPERIMENTAL DESIGNS

Example:

Independent variable

X1

To see if EQ training workshops to Sanlam Health managers will improve their relationships with their employees

Dependent variable

Experimental group	O1	X1	O3	NO random selection provides pseudo results
Control group	O2		O4	

QUASI-EXPERIMENTAL DESIGNS

Quasi-experimental designs = CANNOT say that X or X1 did definitely have an effect

Three designs to bring about acceptable results:

1. Propensity score matching
2. Regression discontinuity
3. Difference in difference

QUASI-EXPERIMENTAL DESIGNS

Propensity score matching (similar parameters)

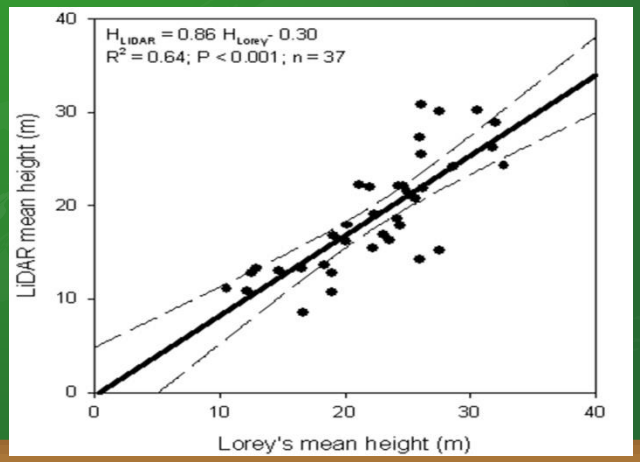
Propensity score matching (PSM) is a statistical **matching** technique that attempts to determine the effect of (X) by **accounting for the covariates** (similar characteristics in groups) that could predict a reliable outcome of those receiving the treatment. Parameters are important here.

i.e. The managers have similar parameters i.e female, 30-40 years old, in managerial position for 5-7 years etc. Similarity in parameters can justify/substantiate the post test results relating to X1

QUASI-EXPERIMENTAL DESIGNS

Regression discontinuity

Comparing instances above and below a certain threshold i.e. determine what is considered a good relationship between manager and employees (baseline). In pretest = how far below baseline are both groups. After X1 and during the posttest = EG is above baseline and the CG still below.



QUASI-EXPERIMENTAL DESIGNS

Difference in difference

Here it is not about the difference between groups BECAUSE of the intervention but the SIZE OF THE DIFFERENCE in behaviour between the groups (less controlling of variables)

4 steps = (1) determine score of both groups before intervention (baseline). Then (2) score of both groups after intervention (endline), (3) the difference between the baseline and endline, (4) finding the average of the difference

Jenkins and Madonsela (2017) found in a study conducted among second year students in the Faculty of Economic and Management Sciences at the Syracuse University in America, that students who receive life coaching early in the semester will score a higher average in their semester tests than those that do not receive life coaching.

Use a **quasi-experimental** research design to test this Ha. Do the following:

1. How will the two-group formula used here look different?
2. Discuss how you will use both the Regression discontinuity and Difference in difference techniques to show how life coaching may contribute to the results you are looking for

TRUE-EXPERIMENTAL DESIGNS

Deliver more true results than quasi experimental designs due to the degree of control (random selection of participants sharing the exact same parameters)

In TRUE experimental designs you want to test if it is really X that causes an outcome, nothing else

In QUASI experimental designs you can hypothesise that perhaps X is the main reason for the outcome

TRUE-EXPERIMENTAL DESIGNS

See Table 12.5 on pages 189-191 for factors that influence internal validity

QUANTITATIVE CONTENT ANALYSIS

It is a research technique used to make replicable and valid inferences by interpreting and coding **textual material**

By systematically evaluating texts (e.g., documents, oral communication, and graphics), **qualitative data can be converted into quantitative data**

Cannot make assumptions about the meaning of a word. Have to operationalise/conceptualise it within context to give it meaning i.e

LOVE = vague and general without context

Love for pet OR love for chocolate defines love more specifically so it can be measured

CONTENT ANALYSIS

Research design

The same as with quantitative research i.e. Ha, sample, data gathering etc

Categories are developed to capture each statement being analysed mutually exclusively (one category) and exhaustively (one capture)

CONTENT ANALYSIS

Consider intercoder reliability

Quantification of the data

CA = seen as quantitative and therefore you have to express results numerically using frequencies to determine how many times themes and concepts occur i.e how many times employees make reference to or complain about incidents that show their resistance to change

Themes identified from literature: employees resistant to change

Factors of employee resistance

- **Neglect**
- **Absent from work**
- **Unproductive**
- **Tardy**

STATEMENTS	EMPLOYEE RESISTANCE			
	Neglect	**Absent**	**Unproductive**	**Tardy**
Statement 3	X			
Statement 4		X		
Statement 5	X			
Statement 8			X	
TOTAL	**2**	**1**	**1**	**0**

CONTENT ANALYSIS

Criteria for categories

1. Mutually exclusive (one category only)
2. Exhaustive (all statements should fit into a category. Remaining statements go into a diverse category)
3. Equivalent (each category must relate to the Ha in an attempt to answer it)

CHAPTER 13

QUALITATIVE DATA COLLECTION

Has to do with an interest in and understanding of the depth of human experience

These studies DO NOT convert observations into numerical form, nor do they study behaviour or experiences in isolation. Study it in context

AIM = to understand and describe…

QUALITATIVE DATA COLLECTION

3 main principles in qualitative research:

1. Study people in their natural environment looking at how they experience real life daily
2. Repeated interaction with people over time to see if the same experience occur
3. Developing theoretical concepts based on an in-depth understanding of the perspectives of people's environment (Inductive)

QUALITATIVE DATA COLLECTION

Fundamental concepts in qualitative research:

Self-reflexivity = considering people's different views and how that affect their interactions with others i.e perceiving friendship differently

Context = the environment and atmosphere in which i.e the interview takes place. Is it non-judgmental, unbiased, comfortable, relaxing etc.

Thick descriptions = detailed accounts by the participants, open-ended questions and prompting questions to get as much info as possible to analyse

DESIGN PERSPECTIVES

Phenomenology = real word experiences everyday i.e being stuck in traffic with constant loadshedding making motorists selfish and impatient at crossings. Interviews, focus groups, field notes, participant observation See Table 13.2 on page 205

Narratology = Story telling. Interviews, focus groups, field notes

Ethnography = social phenomena (people behaviour or interactions) for a longitudinal period of time . Interviews, focus groups, field notes, participant observation

DESIGN PERSPECTIVES

Grounded theory = results lead to a new discovery and as such to a new theory i.e why a disaster such as covid lockdown destroyed or improved marital relationships . Interviews, focus groups, field notes, participant observation

Case study = studies an individual or a programme or an event in-depth for a defined period i.e the effect of covid lockdown during levels 5 and 4 on the mental health of claustrophobic people or how Pres Ramaphosa handled the covid pandemic and what he based his decisions on. Interviews, focus groups, field notes, participant observation

METHODS/INSTRUMENTS

Field research

Ethnography – involves the description of a particular culture (?) that a researcher is interested in exploring

It provides an understanding of the *way of life* of a particular group

FIELD RESEARCH

1. ETHNOGRAPHY

Anthropological – obtain an insider view of cultural customs, rituals and interactions of a group. *Field notes, journals and interviews* are instruments used

Audience – explore how audiences make sense of or derive pleasure from their interaction with their favourite TV or radio show - **observation**

Street – study of people who live on the streets, or who visit clubs, hotels, bars etc. Often has to become part of the culture – **participant observer.** Danger is personal bias

FIELD RESEARCH

Auto – study about the cultural connection between researcher and others i.e. researcher **describe personal experience** as inmate in prison or as political refugee in foreign country

Virtual – to understand people's behaviour in cyberspace. **Observes and participates** in a specific cybergroup's interactions

Institutional – to see how the workplace is shaping the experiences of individuals who see themselves as oppressed

FIELD RESEARCH

2. GROUNDED THEORY

Instead of drawing on theories from existing studies through lit review, theory is *grounded in* the data the researcher is collecting inductively

Used when theories on certain topics are scarce and theory emerges from the data. Mostly used to study human behaviour to generate a new theory i.e analysing the behavior of sheep when shown a picture of an angry person and finding they respond to nonverbal behavior in the same way people do

FIELD RESEARCH

3. CASE STUDIES

Detailed description of a social phenomenon that occurred in the real-world context to a real person or company

It recounts a real-life situation by describing the scenario in which the phenomenon occurs/ed i.e. Listeria at Enterprise and the damage caused to its reputation

FIELD RESEARCH

Types of case studies

Illustrative/typical – to understand what happened in a specific case. Descriptive account of the main characteristics in each event or each day i.e daily experiences of depressed people during COVID lockdown levels 4 and 5

Exploratory – description of the case within its broader context to understand the nature of the case i.e. SABC as propaganda tool for political parties

Explanatory – explain circumstances to consider during research i.e street kids using drugs while interacting with them for your research

FIELD RESEARCH

4. PARTICIPATION IN FIELD RESEARCH

The researcher can take on the role of observer/onlooker, partial participant or full participant (see Table 13.3 page 212)

Benefits to this kind of involvement:

1. Active involvement (participation) allows experience of the same reality as the subjects = greater understanding

FIELD RESEARCH

2. Actual happenings are understood within the context in which they occur
3. The more taboo or forbidden behaviours can be observed and reported on
4. May find discrepancies between what participants say and do
5. Allows you to observe and report on actual everyday behaviour

FOCUS GROUPS

This is a group interview used to determine the attitudes, behaviour, preferences and dislikes of participants who are interviewed simultaneoulsy by a facilitator

Consists of between 6 – 12 people in the group + the facilitator

Open questions are mostly asked and broad themes are identified that lead the discussion among participants

FOCUS GROUPS

Research = conducted in a natural, unstructured way and participants are free to express their views and opinions about the topic at hand

See ADVANTAGES in textbook on page 215

FOCUS GROUPS

CONDUCTING A FOCUS GROUP MEETING

1. Start by asking general questions about the participants, making them feel at ease
2. Record the meetings and transcribe the discussions
3. Control domineering group members who tend to take over
4. Use open-ended questions and prompt for more explanations + elaboration

FOCUS GROUPS

KEY CONSIDERATIONS DURING THE PROCESS OF CONDUCTING FOCUS GROUP MEETINGS

1. **Involvement of the researcher** (respect the participants and their feelings and views)
2. **Build rapport** (participants should feel comfortable with you. They will volunteer info more easily)
3. **Bias of the researcher** (be impartial during the focus group interview. Don't force answers to achieve a specific outcome. Don't appear judgmental or biased)

IN-DEPTH INTERVIEWS

It is a qualitative method which allows you to ask questions to participants with the aim of learning more about their views, opinions and beliefs about a phenomenon

Different TYPES OF INTERVIEWS:

Informal, conversational – no predetermined Qs but rather allow the interview to progress as it goes along

General interview – conversational approach BUT certain themes are addressed by predetermined questions

IN-DEPTH INTERVIEWS

Standardised, open-ended interviews – asking the same set of open-ended Qs to all the participants. This info is analysed more easily

KEY CONSIDERATIONS

1. Qs should move from broad to narrow on the topic. Broad for general info and narrow for detailed info
2. Do not only rely on purely pre-panned Qs. Let the interview flow and adapt
3. Formulate clear and simple Qs that is easily understood so they can give you the correct data

IN-DEPTH INTERVIEWS

4. Do not ask leading Qs where an anticipated answer is provided i.e. Did the experience make you feel happy? RATHER How did the experience make you feel?
5. Avoid double-barrel Qs. Only ask about one topic at a time
6. Ask truly open-ended Qs. The participant should have the opportunity to answer in a variety of ways as he/she chooses

QUALITATIVE CONTENT ANALYSIS

- Also called **textual** analysis
- It is the subjective interpretation of the content or text through a systematic classification process of coding and identifying of themes
- It does not include the counting of words or themes (different from quantitative) …rather it picks up on recurring themes
- Used to analyse interviews, documents, visual images etc.

Themes identified from literature: employees resistant to change, employees in support of change

Themes of employee resistance

- **Neglect**
- **Absent from work**
- **Unproductive**
- **Tardy**

STATEMENTS	EMPLOYEE RESISTANCE			
	Neglect	**Absent**	**Unproductive**	**Tardy**
Statement 3	X			
Statement 4		X		
Statement 5	X			
Statement 8			X	

HISTORICAL RESEARCH

Based on the analysis and description of events that occurred in the past

Conduct historical research when you want to…

- Identify patterns in the past behaviour of people
- Identify relationship that past has with the present and future
- Record and evaluate successes or failures of people or countries over time

HISTORICAL RESEARCH

4 Main types of Historical evidence

- **Primary sources** – items from the past that survived i.e. diaries, declarations
- **Secondary sources** – accounts that are created after the event has taken place
- **Records** – diaries, memos, yearbooks
- **Oral history** – interviewing people who have had either direct or indirect experience about a topic

CHARACTERISTICS ACTION RESEARCH

- (1) Taking action, based on research results, (2) and research the actions taken i.e.

1. Stats show students who do practical activities in class perform better

2. Different practical activities are now used in class to see which one leads to most improved performance