INTRODUCTION TO RESEARCH

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CHAPTER 4

IDENTIFYING A RESEARCH TOPIC…

1. Direct experience and observation
2. Social contexts
3. Tradition and culture
4. Theories and previous research
5. The media

1. Direct experience and observation

1. We relate to topics revolving around personal issues i.e. Career opportunities, personal wellbeing, social belonging etc.
2. Direct experience and observation of your immediate environment, your social or student life, what happens at home etc. may generate topics of interest that you can research
3. What you observe around you is influenced by HOW you look at it (context)

2. Social contexts

1. Society is made up of social systems created through interaction between these systems i.e church, college,

2. Contexts are important and should relate to the contexts familiar to you i.e. VC as an educational institution (educational context), your friends as support network during your studies (psychological context)

4. Theories and previous research

1. Can use existing theories and previous research to help us find topics

2. Can use your research to prove a theory right or wrong in the South African context (may be right in the European context but not the SA context)

3. Can also try to prove/disprove previous research

The research problem as the golden thread

Identifying the research problem and providing a description that shows its exact nature are NB!!! to finding a solution

It is the heart of the research process telling us WHAT exactly to study. It provides a guideline for what you are going to do research on.

**The research problem as the golden thread

Ingredients for problem statement (typically but not limited)

1. What is the ideal situation versus what is the real situation?

How should AI be used to assist companies without taking away people's jobs? Is this how AI is used by companies? How is AI used by companies and what is the problem with that for employees?

**The research problem as the golden thread

2. What will your study aim to find out/restore/provide answers to?

What value can your study add to the current situation? How can it expose the problem or get people's opinions so everyone knows what these opinions are?

Research traditions and the research problem

POSITIVIST TRADITION

Main aim of positivists = predict, control show relationships between two things (i.e use of AI and employees losing jobs) in the company environment.

Relies on the causal relationships between dependent and independent variables *i.e. IF (a) happens, THEN (b) will be the result*

Research traditions and the research problem

POSITIVIST TRADITION

When you phrase your problem statement it should reflect **positivist jargon** i.e …

PROBLEM STATEMENT

The aim of the study is to determine if there is a relationship between the use of AI in the South African banking industry and business consultants losing their jobs = correlation or relationship

Research traditions and the research problem

POSITIVIST TRADITION

The aim of the study is to determine if the increased use of AI in the South African banking industry will contribute to business consultants losing their jobs = prediction

Research traditions and the research problem

INTERPRETIVIST TRADITION

Main aim of interpretivists = gain a deeper understanding of happenings and behaviour and how people interpret events around them. DO NOT predict and control

Relies on the why or how there is a relationship between dependent and independent variables

Research traditions and the research problem

INTERPRETIVIST TRADITION

PROBLEM STATEMENT

The aim of the study is to determine why an increase in the use of AI contributes to a loss of employment among business consultants in the banking industry in South Africa.

The aim of the study is to determine how an increase in the use of AI will affect business consultants' perceptions of technology in the banking industry in South Africa.

Research traditions and the research problem

CRITICAL REALIST TRADITION

Main aim of critical realists = bring about change, to question status quo and to create awareness of oppression.

Combination of both positivist and interpretivist problem statements + a desire to change the situation.

Criteria for formulating a research problem

Answerability – it must be **researchable** and provide **valid** data *i.e. difficult to research whether ALL women are better parents than men. Not ALL women nor ALL men are exactly the same.*

BUT… if you create a context you may be able to prove that ***when tired women and tired men have the freedom to choose between babysitting their noisy kids or visiting with friends, men will most of the time rather choose their friends***

SUGGESTIONS: BE SPECIFIC ABOUT CONTEXT

- NOT financial institution but banking industry such as FNB or ABSA etc.
- NOT insurance industry but Outsurance or Momentum etc.
- NOT IT or Telecoms industry but Vodacom or Cell C etc.

- NO vague/general references to men or women or employees but specific groups of men or women or employees in specific departments in specific positions i.e business consultants
- NO vague references to technology, but specific details about the type of technology such as AI or IoT or Big Data etc.

Criteria for formulating a research problem

Feasibility – the study should be manageable in terms of **time, sample size, methodology and cost**. Cannot include ALL business consultants in South African banks in your sample so choose 20%

Scope – the scope should not be too broad nor too narrow. Rather look at a select few banks rather than all of them. Positivists need large sample, interpretivist = small

FEASIBILITY

- NOT all 2nd year BCAD or BCOM students but those in public universities and specifically in Gauteng
- NOT all Vodacom branches nationally but branches in Tshwane etc.

SCOPE

For positivist studies select 20% of total number of 2nd year students studying BCAD or BCOM at Gauteng public universities – want representative stats. Need LARGE sample

For interpretivist studies choose one university and 10 or 20 of the 2nd year students studying BCAD or BCOM – want opinions to point of saturation. Need SMALL sample

Criteria for formulating a research problem

Theoretical value – study should contribute to the advancement of knowledge *in your field of study = Epistemology*

Relevance – study should be relevant and should aim to **explore, explain or question certain phenomena**. *Axiology*

The problem statement

The problem statement = described in clear, detailed and understandable language

Should represent the single goal/the heart of your study. WHAT correlations are you investigating or WHAT explanations do you want to provide?

The problem statement

REMEMBER there is a difference in how you word a positivist (quantitative) problem statement from an interpretivist (qualitative) problem statement. See page 77 in textbook.

Use the correct jargon for each.

The problem statement

For your assignment, develop the problem statement section in more detail. This will automatically include sub-problems.

Use three paragraphs for this section in the assignment:

Par 1 (broad) = read books and articles on i.e the danger of AI in HR practices and employment in the banking industry across the world. In the USA or Europe etc.

Par 2 (local) = find newspapers or bizhub or biznews articles that touch on this problem in the South African context. Need to identify this as a problem in South Africa to justify your research study.

The problem statement

Par 3 = Phrase the problem statement for this study in either a positivist (quantitative) manner using quantitative jargon **OR** in an interpretivist (qualitative) manner using qualitative jargon. No more than 25 words

PROBLEM STATEMENT

According to Heathfield (2017), it is important to understand what motivates a programme developer in German companies most, as many companies in the USA experience problems in finding the right way to motivate them. Although programme developers within the workplace are motivated by extrinsic factors such as money (Lorence, 2018), Heathfield (2017) argues that internal incentives such as growth and development that builds self-esteem contributes more to their motivation.

General paragraph

According to News 24 (2019) the South African IT industry is very competitive and companies are willing to pay good salaries (extrinsic factor) for skills and expertise. **Because of this trend the local IT industry is not known for creating an environment for personal and emotional development (internal factors) among its programme developers**. **XXX** is a company in Morningside that has been identified as an innovative company that relies primarily on money to motivate their programme developers. **Recently a programme developer who has resigned from this company posted a review on *HelloPeter* to complain about the fact that staff's loyalty is bought by money**. This causes a problem for programme developers wanting to not only satisfy their financial needs but also their internal motivational needs for growth and development.

SA environment i.e contextual

The problem to be addressed by this study will be to find out whether programme developers at XXX Morningside are motivated more by money as an external incentive or by growth and development as internal incentives.

Problem for investigation

Consider a positivist (quantitative) problem statement for the following very short scenario

Irish researcher Jakes (2014) recommends that American teenagers in their senior years of school need to get at least nine hours of sleep per night, but most do not get that much sleep. One study in Ireland found that only 15% of the teenagers in schools in Munster reported sleeping 8½ hours on school nights. It appears only getting 5 to 6 hours of sleep a night impact scholars' future prospects at tertiary institutions since they underperform in school. Researchers Dunn and Knight (2014) want to determine if there is a relationship between Irish teenagers getting proper sleep and the grades they are getting in school vs those that do not sleep enough.

- Par 1 = what is the BROAD problem?
- Par 2 = What is the LOCAL problem in Ireland?
- Par 3 = What is the purpose/reason for study….?

Irish researcher Jakes (2014) recommends that American teenagers in their senior years of school need to get at least nine hours of sleep per night, but most do not get that much sleep. One study in Ireland found that only 15% of the teenagers in schools in Munster reported sleeping 8½ hours on school nights. It appears only getting 5 to 6 hours of sleep a night impact Irish scholars' future prospects at tertiary institutions since they underperform in school. Researchers Dunn and Knight (2014) want to determine if there is a relationship between Irish teenagers getting proper sleep and the grades they are getting in school vs those that do not sleep enough.

- Par 1 = what is the BROAD problem?
- Par 2 = What is the LOCAL problem in Ireland?
- Par 3 = What is the purpose/reason for study….?

Answerability – it must be researchable and provide valid data = teenagers in Ireland sleeping 5-6 hours per night and their academic performance compared to those sleeping 8 1/2 hours per night and their academic performance

Feasibility – the study should be manageable in terms of time, sample size, methodology and cost = can be measured over one semester by comparing test and exam results of both groups. Done in Munster, Ireland only and can be measured with an observation schedule

Scope – the scope should not be too broad nor too narrow = teenagers in senior grades in Munster, Ireland

Theoretical value – study should contribute to the advancement of knowledge (epistemology) = comparing two groups and the number of hours they sleep and their academic results adds epistemological value

Relevance – study should be relevant and should aim to explore, explain or question certain phenomena = i.e the importance of sleep in academic performance. Adds axiological value

Try your hand at your own problem statement relating to the topic you will do your assignment on

From research problems to research questions (RQ)

1. A RQ narrows down a broad topic to a focussed area that a study could address

2. A RQ and Ha should directly be related to the research problem statement and address a problem arising from the statement

From research problems to research questions (RQ)

3. A RQ should indicate what data needs to be collected and how the data could be interpreted

NB!!!! A research problem statement does not necessarily provide you with only one problem to research. There can be different problems BUT choose only one problem to investigate

From research problems to research questions (RQ)

CHOOSE YOUR QUESTION WORD CAREFULLY ALIGNED WITH YOUR PARADIGM

See page 79 in textbook

RESEARCH QUESTION WORDS FOR POSITIVISM

Exploratory Qs = WHAT are the most important characteristics of a good manager?

Descriptive Qs = HOW MANY articles... HOW CAN articles in Business Magazine about successful clothing retail entrepreneurs demotivate average clothing retail entrepreneurs reading the magazine?

EMPIRICAL RESEARCH QUESTIONS

Causal Qs = Does sugar affect kids' focus and attention?

Evaluative Qs = indicate the impact of A on B i.e. HAS THE USE of Twitter sparked student protests on public university campuses across South Africa?

EMPIRICAL RESEARCH QUESTIONS

Predictive Qs = effect of A on B i.e. DOES the student protests at public universities affect parents' decisions to enroll their children at Varsity College?

Historical Qs= WHAT contributed to democracy in South Africa ?

RESEARCH QUESTION WORDS FOR INTERPRETIVISM

Meta-analytical Qs = consider current debates on a topic i.e. How/ Why is religion perceived as important in the South African political debate regarding wrong and right?

Conceptual Qs = determine the meaning of constructs i.e. What is metro-sexuality defined as by young male adults in Parktown?

Both positivist and interpretivist studies will carry a research question.

Positivist studies = (1) Research question and (2) Ha with details

Interpretivist studies = (1) Research question and (2) Research question with more details

CHAPTER 5

THE AIMS OF RESEARCH

What is the aim or purpose of your research? How will you achieve what you set out to achieve?

See Table 5.1 on pages 91-92 in textbook

Types of research

Pure/Basic research

Aims to provide only answers and add to the existing knowledge using valid and reliable surveys or interviews. Interpretivism and positivism

Applied research

Aims to apply knowledge to real situations (using results from pure research) to propose solutions or resolve issues practically. Critical Realism

Types of research

1. Applied research (CR)
2. Exploratory research (P and I)
3. Descriptive research (P)
4. Correlational research (P)
5. Explanatory research (I)
6. Predictive research (P)
7. Pragmatic research (CR)

Types of research

1. Applied Research (pragmatic)

Investigate practical issues to find solutions that can be implemented in practice i.e.

- describe and assess needs of the group investigated
- assess existing policies and practices to see if they still apply
- recommend and implement change

Types of research

2. Exploratory Research

Usually study of an unknown area that develops with changes in the community or society, new developments and new technology

- obtain new insights i.e. role of AI in banking industry and job losses
- identify key concepts/reasons/characteristics
- can find reasons for opinions or behaviour

Types of research

3. Descriptive Research

To describe the characteristics between two variables or in specific relationships *i.e. characteristics of traditional relationships vs online relationships*

- provide info about a phenomenon *i.e. describing living conditions in mental hospitals in SA and its effect on the recovery of mental patients* ……

Types of research

4. Correlational Research

To find out if there is a direct relationship between A and B *i.e. academic performance and successful retail entrepreneurs*

Positive or negative correlations

Mostly used in positivist research

Types of research

5. Explanatory Research

Explain why certain things happen before finding solutions

In correlational research a relationship is proven between A and B. In explanatory research it is explained **why** this relationship exists between A and B and **how** it is important

Types of research

6. Predictive research

To predict outcomes accurately in given conditions for the purpose of…

- *Preventing undesired outcomes*
- *Promoting desired outcomes*
- *Anticipate probable outcomes*

i.e. If you binge drink regularly for 5 years then your risk of getting cancer increases by 50%

Types of research

7. Pragmatic research

Aims to find solutions to specific problems by utilising both qualitative and quantitative research methods (critical realism). Called mixed method approach.

Wants to find real solutions to problems

In the article provided, identify the following:

1. The paradigm (with 3 examples from the article)
2. The problem statement
3. The direction of reasoning i.e inductive or deductive? (provide an example from the article)
4. The type of research (provide an example from the article)

CHAPTER 6

FORMULATING HYPOTHESES

Positivist (quantitative)

What is a hypothesis?

- A tentative statement about the relationship between variables (IF A THEN B)
- A statement you aim to accept or reject
- A statement to assist in your research and to predict outcomes

Theories, laws and HYPOTHESES

HYPOTHESES – you need a hypothesis when you answer **YES** to the following questions:

1. *Does the research approach require quantitative methods (stats, facts)?*
2. *Are you using an experimental design or questionnaire or survey?*
3. *Do you aim to predict an outcome or find a correlation between two or more things?*

Types of HYPOTHESES

Alternative Hypothesis - predicts an expected outcome where the aim is to show there is a relationship (positive or negative) between A and B i.e. IF 7-year old hyperactive boys consume 10ml of red food colouring THEN they will show increased hyperactivity within one hour

Null Hypothesis – makes a prediction that NO relationship exists between A and B i.e. There is no relationship between consuming red food colouring and increased hyperactivity in 7-year old boys

HYPOTHESES and variables

In a Ha you will aim to show that there is a relationship between A and B i.e. if A happens then B will be the result.

One will be the dependent variable and the other the independent variable. WHICH IS WHICH?

HYPOTHESES and variables

DEPENDENT VARIABLE = (B) is affected by (A). How B is affected DEPENDS on how A acts/change. B is often the result or potential problem presented or predicted because of A. B is dependant on what A does

INDEPENDENT VARIABLE = the thing (A) does that affects (B) or causes B to react in a certain way.

HYPOTHESES and variables

See table 6.2 on page 99 in textbook

- A cause the reaction in B. Thus B carries the effect
- A does something beforehand to which B responds afterwards
- A does something (input) and B responds (output)
- A manipulates the situation or can be replaced with another A to get different effects from B whose reactions are measured because of A's actions
- What is done by A and what you get as response from B

Not true that the first variable mentioned is always independent (A) and the second variable is always dependent (B)

i.e.

Ha = Students who source information from the Internet is more likely to plagiarise

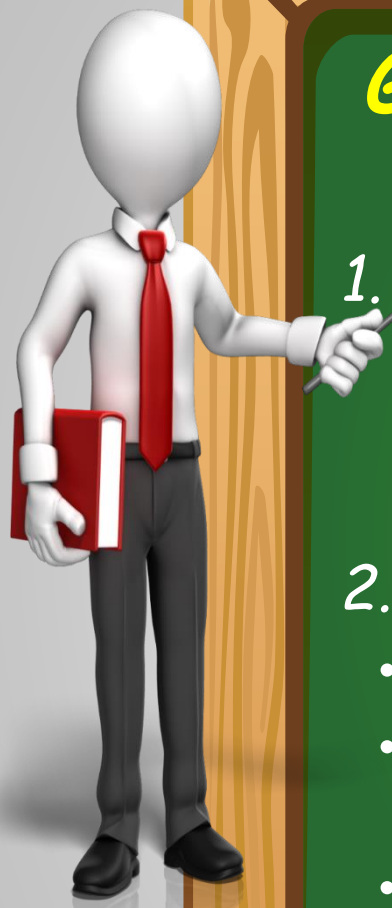
Ha = Students plagiarise more when they source information from the Internet

- My health improves during times when I drink green tea.
- Cacti experience more successful growth rates than tulips when grown on Mars.
- **See page 104 in textbook. Do questions 3, 4, 5 and 6**

Formulating a HYPOTHESIS

NB!!!!!!!!!!! Your Ha MUST

Relate to your research question and research problem statement. The same words should be used.



GUIDELINES TO FORMULATE A Ha …

1. Write your hypothesis using the IF and THEN phrase. State your independent variable (A) first followed by the dependent variable (B)
2. Consider the following criteria:
   - Is your Ha <u>based on your research problem</u>?
   - Does your Ha <u>logically link to your research question</u>?
   - Can your Ha be <u>tested</u>?
   - Do you have both <u>in/dependent variables</u>?