Bloom Your Career

Bloom Your Life

Business Research Methodology

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Sampling

Relevant Terms

- *Population* refers to the entire group of people that the researcher wishes to investigate.

- An *element* is a single member of the population.

- A *sample* is a subset of the population. It comprises some members selected from it.

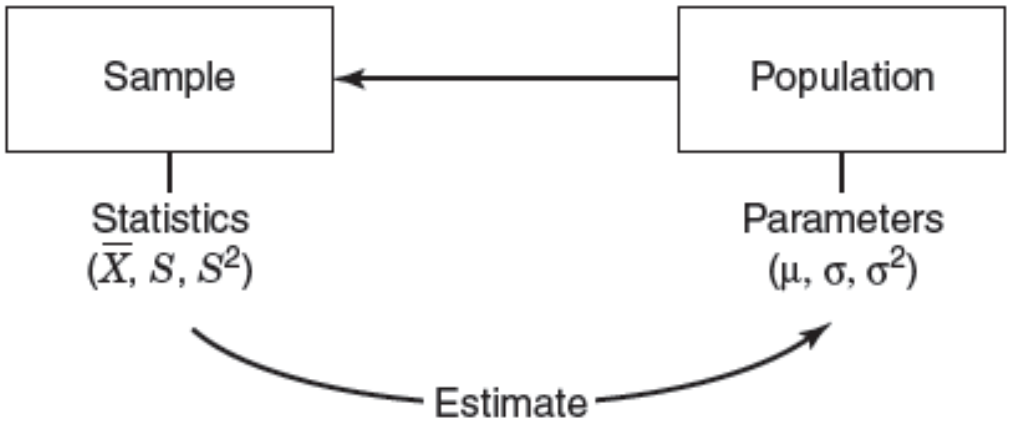
Sampling

- Sampling: the *process* of selecting a *sufficient* number of elements from the population, so that results from analyzing the sample may be *generalizable* to the population.
- Advantage of Sampling:
  - Less costs
  - Less time

Relevant Terms

- *Parameters:* the characteristics of the population such as μ (the population mean), σ (the population standard deviation).
- *Statistics:* the characteristics of the sample such as X (the sample mean), S (the sample standard deviation).

Statistics versus Parameters



The relation between sample and population

The Sampling Process

- Major steps in sampling:
  - Define the population.
  - Determine the appropriate sample size
  - Execute the sampling process

Sampling Techniques

- **Probability sampling**: elements in the population have equal probabilities to be chosen.
- **Nonprobability sampling:** the elements in the population do not have equal probabilities to be chosen.

Sampling Techniques

- Probability Sampling
  - Simple Random Sampling
  - Stratified Random Sampling
  - Cluster Sampling
- Nonprobability Sampling
  - Convenience Sampling
  - Judgment Sampling
  - Quota Sampling

Simple Random Sampling

- Procedure
  - Each element has a known and equal chance of being selected

- Characteristics
  - Highly generalizable
  - Easily understood
  - Reliable population frame necessary

Stratified Sampling

- Strata: is a level or class to which people are assigned according to their social status, job level, or income, etc..
- Procedure
  - Divide of population in strata (levels)
  - Include all strata
  - Random selection of elements from strata
- A president of a company is concerned about low motivational levels or high absenteeism rates among the employees.
- He can stratify the population of organizational members according to their job levels (managers, seniors, juniors).

Cluster Sampling

- Procedure
  - Divide of population in clusters
  - Random selection of clusters
  - Include all elements from selected clusters
- A specific type of cluster sampling is area sampling.
- If a company wants to survey its customers in Egypt.
- They can divide the entire country's population into cities (clusters)
- And further select cities with the largest customer number.

Sample size: guidelines

- In general: $30 < n < 500$
- Experiments: 15 to 20 per condition

Nonprobability sampling

- **Convenience sampling** refers to the collection of information from members of the population who are conveniently available to provide it.
- **Judgment sampling** design is used when a limited number or category of people have the information that is sought.
- **Quota sampling**, a second type of purposive sampling, ensures that certain groups are adequately represented in the study through the assignment of a quota.

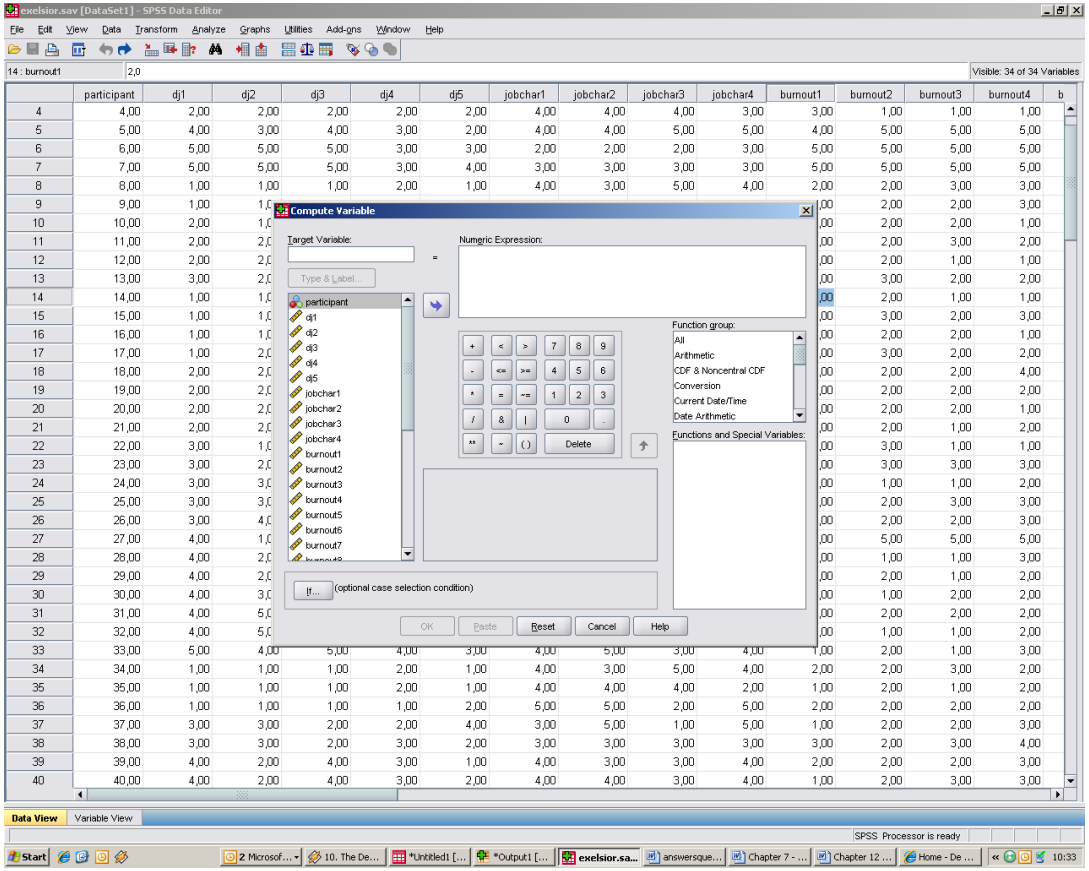
Quantitative Data Analysis

Getting the Data Ready for Analysis

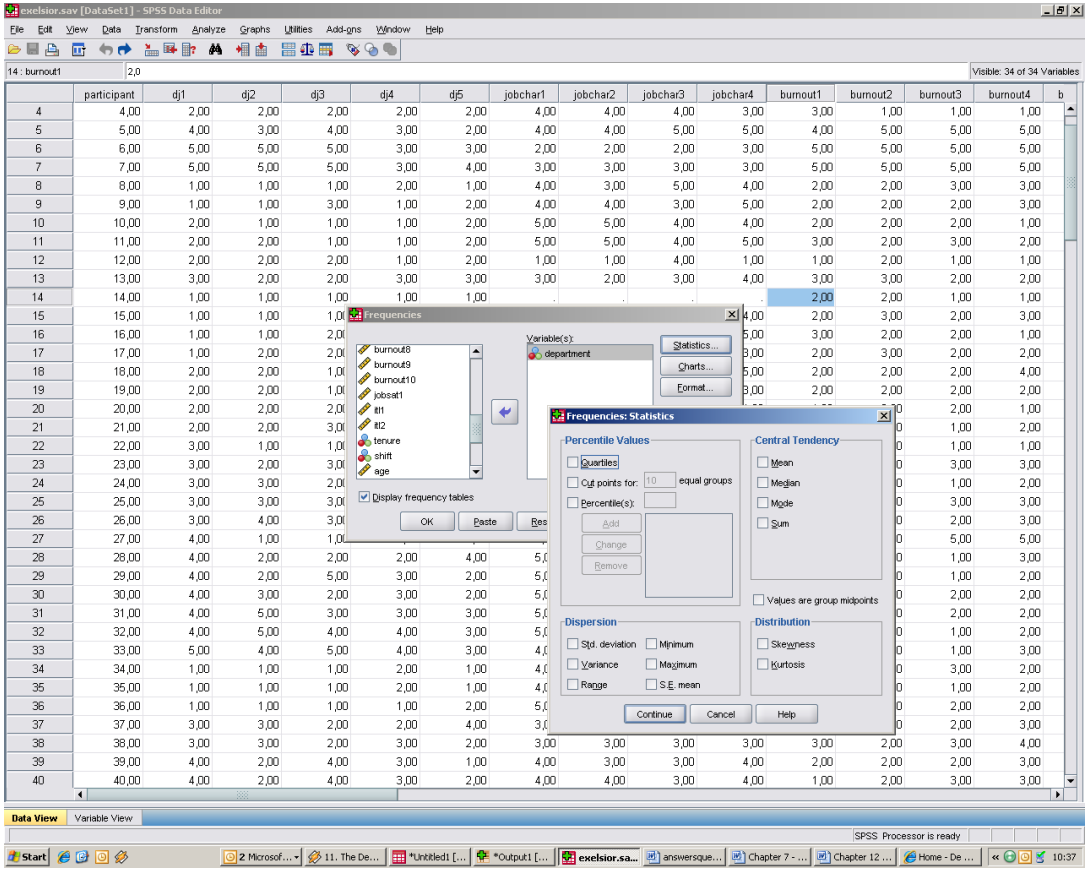
- Data coding: assigning a number to the participants' responses so they can be entered into a database.

- Data Entry: after responses have been coded, they can be entered into a database. Raw data can be entered through any software program (e.g., SPSS)

Transforming Data



Frequencies



Correlation

- Correlation Factor : -1 to 1
- Positive correlation greater than 0 and less then 1
- Negative correlation less than 0 and greater then -1

Testing Hypotheses about Two Unrelated Means

- Independent samples *t*-test: is done to see if there are any significant differences in the means for two groups in the variable of interest.

Comparing 2 groups

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.474	1.132		7.484	.000
	COMM_INTER	.820	.018	.977	45.479	.000

significant effect on difference

Testing Hypotheses for more than 2 groups

- *ANOVA*: examines differences between the means of more than 2 groups .

Comparing more than 2 groups

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.966	.934	.930	2.885

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10828.336	6	1804.723	216.862	.000
	Residual	765.624	92	8.322		
	Total	11593.960	98			

significant effect on difference

Correlation Coefficient

Correlations

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[DataSet3] C:\Users\Stephanie\Downloads\216data.sav
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Correlations

		Number of Older Siblings	Grade Point Average
Number of Older Siblings	Pearson Correlation	1	-.098
	Sig. (1-tailed)		.259
	N	46	46
Grade Point Average	Pearson Correlation	-.098	1
	Sig. (1-tailed)	.259	
	N	46	46

Qualitative Data Analysis

Analysis of Qualitative Data

- The analysis of qualitative data is aimed at making valid inferences from the often overwhelming amount of collected data.

- Steps:
  - data reduction
  - data display
  - drawing and verifying conclusions

Data Reduction

- Coding: the analytic process through which the qualitative data that you have gathered are reduced, rearranged, and integrated to form theory.

- Categorization: is the process of organizing, arranging, and classifying coding units.

Data Display

- Data display: taking your reduced data and displaying them in an organized, condensed manner.

- Examples: charts, matrices, diagrams, graphs, frequently mentioned phrases, and/or drawings.

Drawing Conclusions

- At this point where you answer your research questions by determining what identified themes stand for, by thinking about explanations for observed patterns and relationships, or by making contrasts and comparisons.

The Research Report

The Written Report

- Important to identify the purpose of the report, so that it can be tailored accordingly.

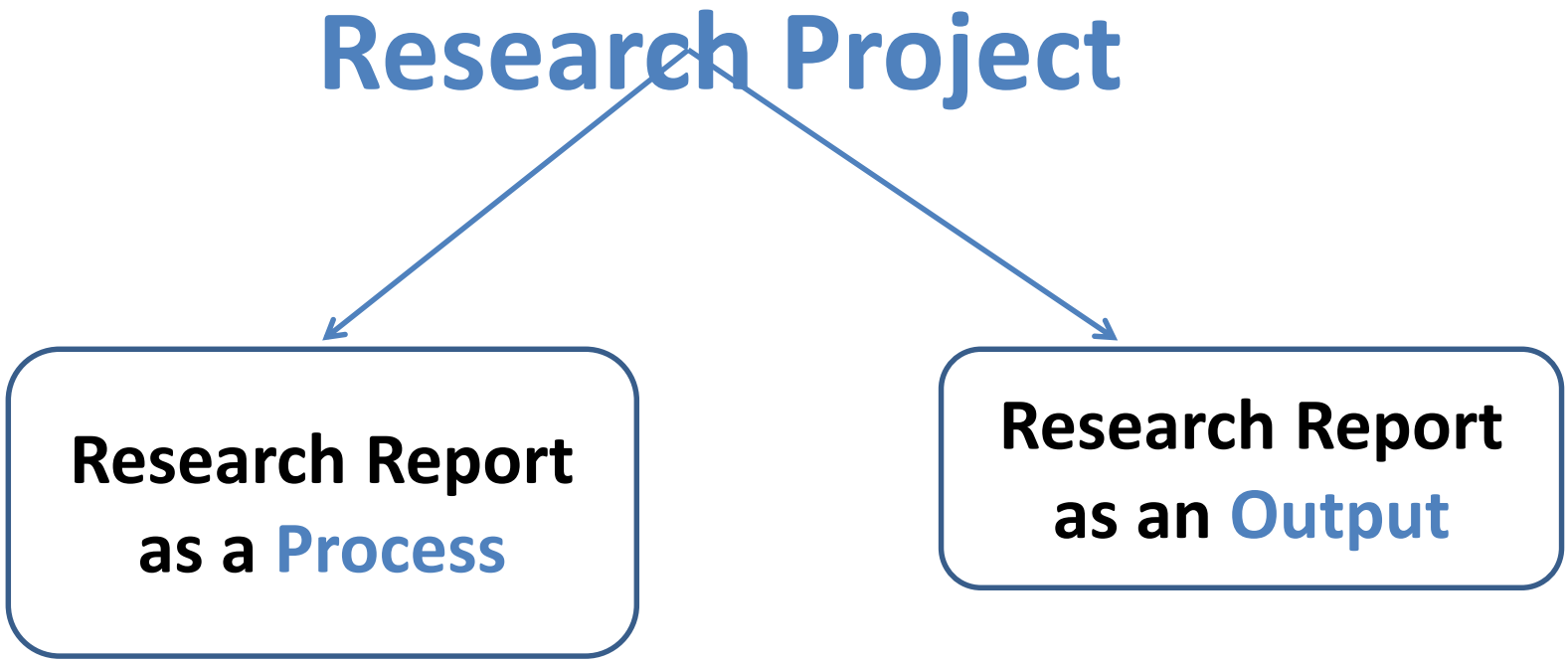
- Examples
  - Simple descriptive report
  - Comprehensive report, offering alternative solutions

Characteristics of a Well-Written Report

- Clarity
- Conciseness
- Coherence
- The right emphasis on important aspects
- Meaningful organization of paragraphs
- Smooth transition from one topic to the next
- Apt choice of words
- Specificity

The research document

- Title page
- Contents page
- Acknowledgements - personal thanks to those who have helped you
- Executive summary or abstract – why, how and what?
- Introduction
- Literature review – what others have said about this problem
- Research method – what considerations were made when choosing a way to conduct this study
- Data – what have you found from your primary data collection?
- Discussion – comparing literature to data section
- Conclusions - answers to your research questions, limitations and future study advice
- References - cited work - use appropriate referencing – APA 6.
  Bibliography - sources used but not cited
- Appendices
-


Research Project
Research Report as a Process
Research Report as an Output

Title of the research

- It should be concise, descriptive and informative.
- Titles should clearly indicate the independent, dependent and /or mediating variables.
- It is important to specify what population will be investigated.
- The aim of a title is to capture the reader's attention to the research problem being investigated

Example

The Impact of Employee Engagement on Employee Performance in the Egyptian Manufacturing Companies

A Dissertation Proposal
Submitted in Partial Fulfillment of the Requirement
For the DBA Degree

By:
Your Name

Supervised By:
Your Supervisor

2021

Content Page

- Consider setting up any Headers or Footers here
- Section the Report: Part I, Part II, Part III
- State what each part is about e.g. Part I – Overview of relevant Information Security Standards
- Use headings and sub-headings where applicable
- Include the Appendices e.g. Appendix I - Company Accounts, Appendix II - ……

Executive Summary/ Abstract

- Page Numbering starts here
- Executive Summary usually about one half or two thirds of a page
- **What is it?** It is a summary of the report
- **When do I write it?** When you have completed your report!
- **Who reads it?** It will be read by those who do not have time to read the full report

Main Content

- Get the information across
- Critical account of the “truth”
- Presentation of facts
- Discussion and analysis
- Should expand on introduction and be foundation for conclusion
- The area where the majority of your references should be found

Main Content

- Diagrams & Graphs should be used to summarise complicated information
- Remember to cite any data and make clear where tables and diagrams are made by you!
- Complicated data should be put in the appendices
- Develop a research map – **Flow of your work**

The Introduction

- Setting the research problem/ background – Why? What? Who? Where? When? How?
- A statement of purpose(s), objectives or aims
- Background information on the report topic
  - Why is this report important etc.
  - What “problem” are you trying to solve
- Report structure statement at the end of introduction – how are you going to structure the “solution”

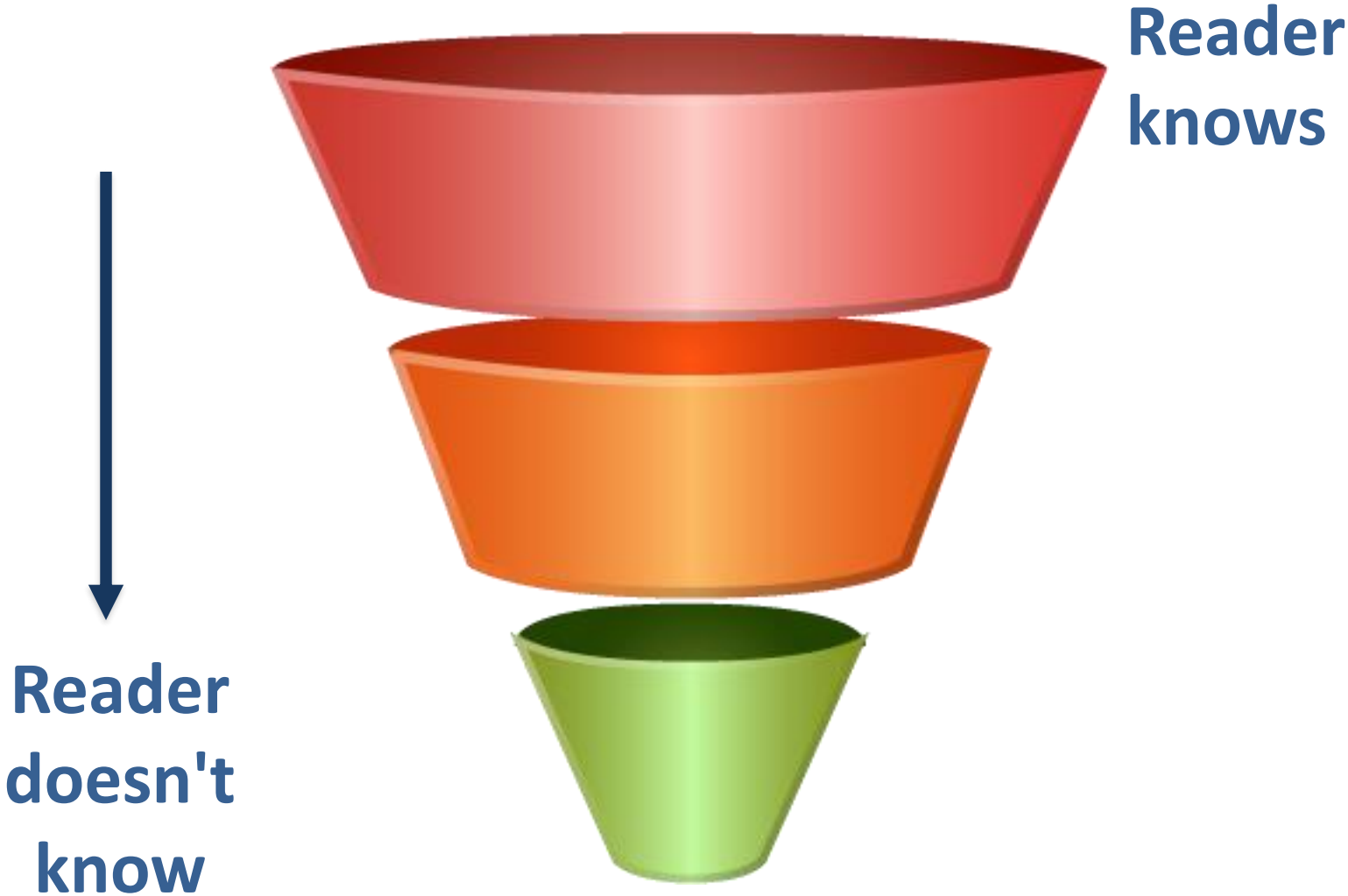
Literature review

- In this section what is already known about the topic is written including.
- You do not need to report on every published study in the area of your research topic.
- Choose those studies which are most relevant and most important.

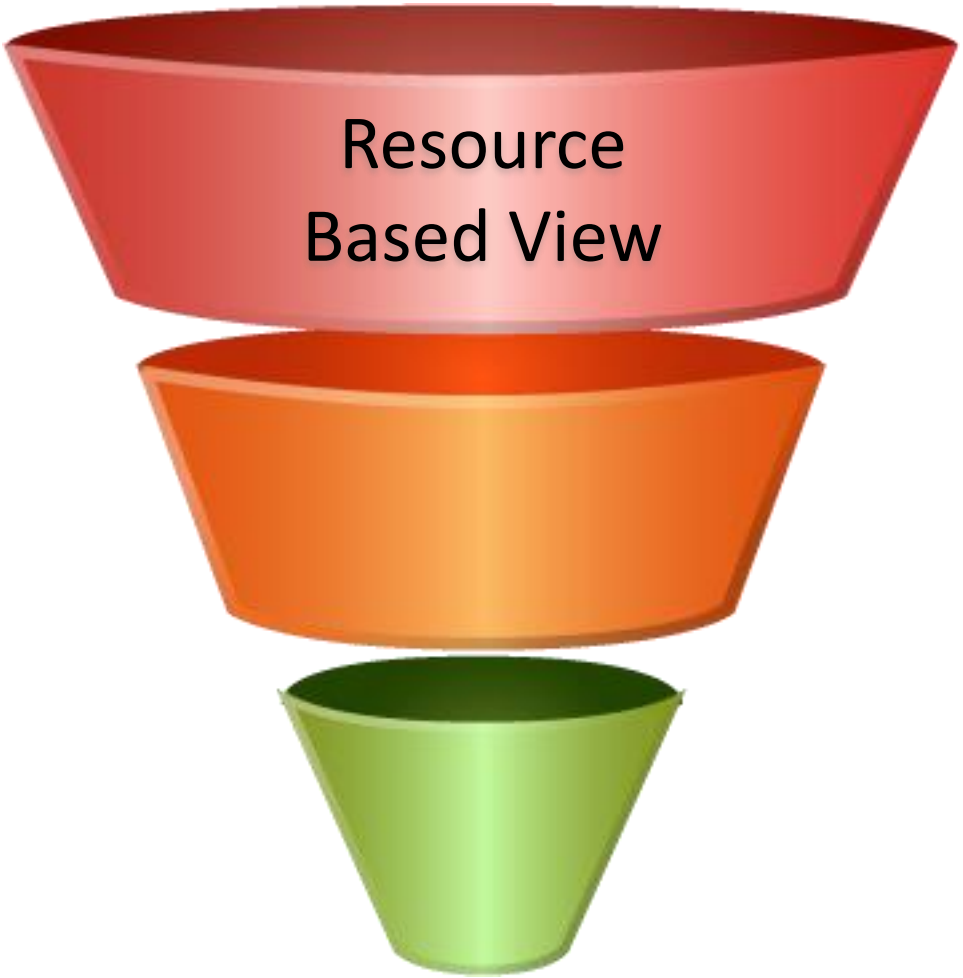
Literature review

- Reviews of the literature are not summaries, they are arguments that:
- There is a gap that needs filling;
- You have sound reasons for believing your hypotheses are likely to be true;
- Your methods have been well thought through in relation to your research goals.

The narrative of a good Literature Review

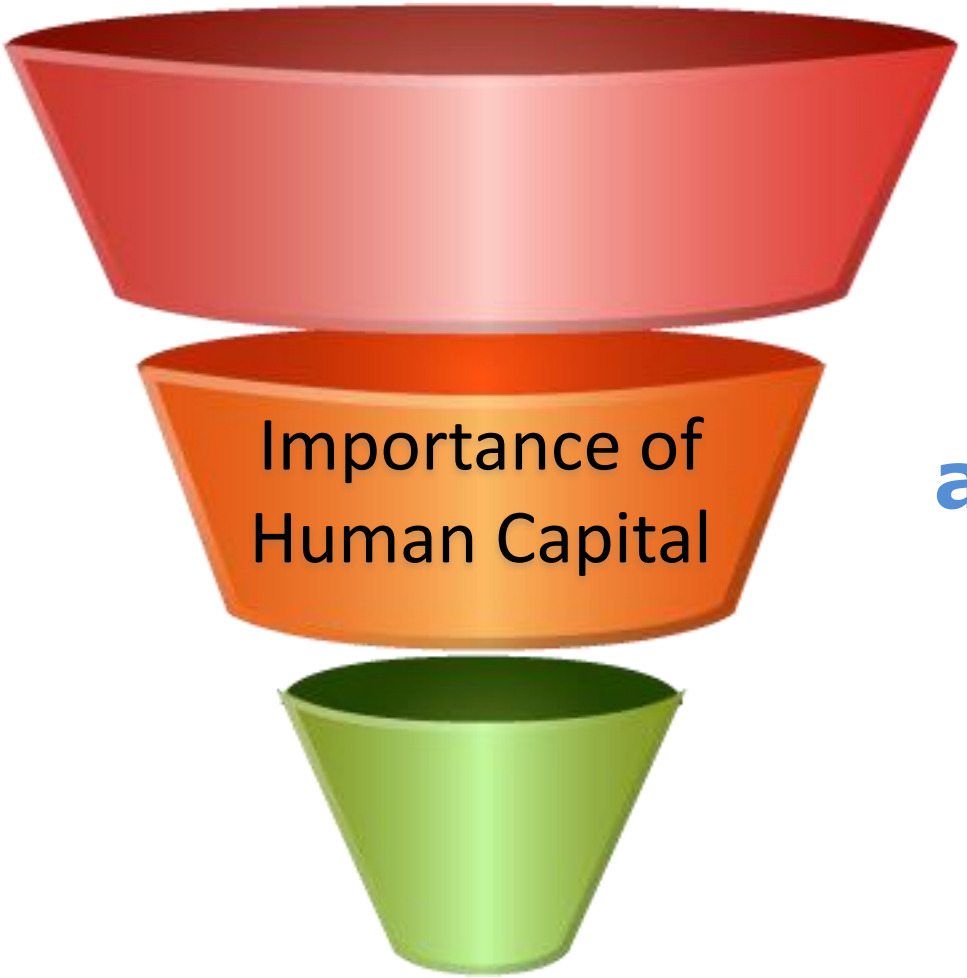


The narrative of a good Literature Review



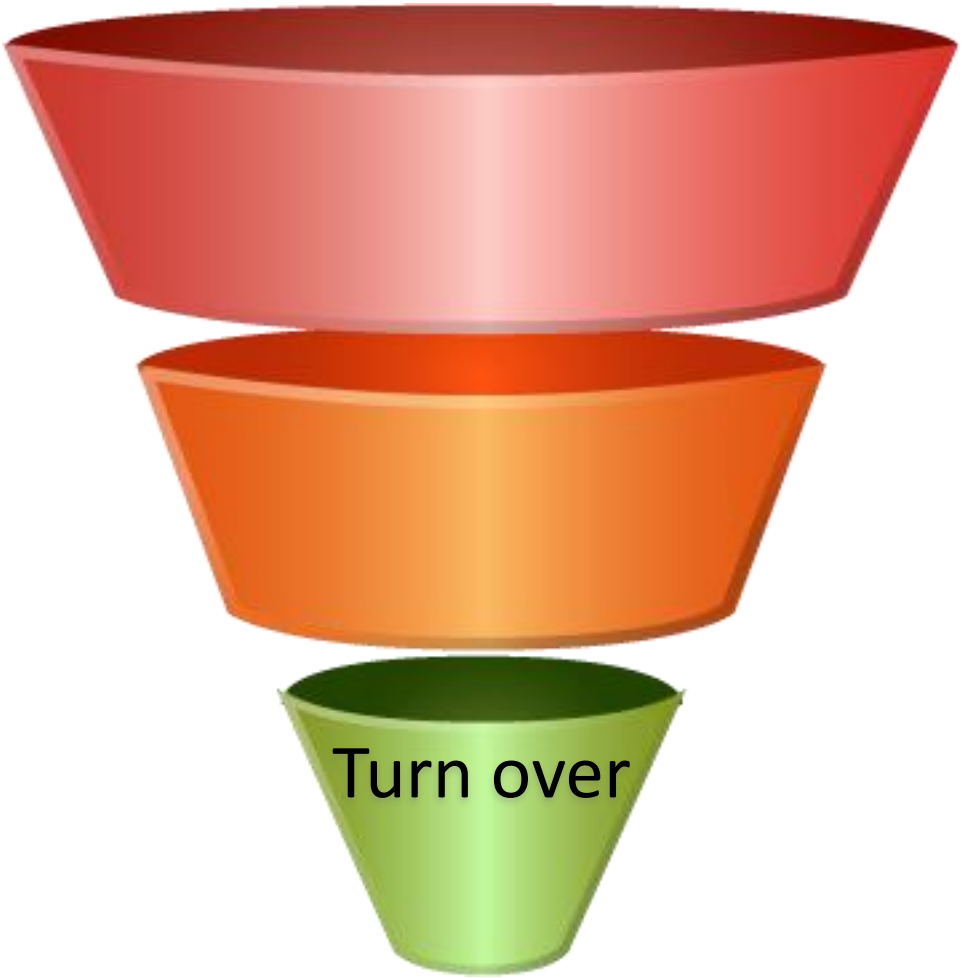
General Topic

The narrative of a good Literature Review



Focus on certain aspects in field of interest

The narrative of a good Literature Review



End with gap analysis

Aim / Purpose

- Two types of objectives
  - General/broad/overall;
  - Specific
- The aim is about what you hope to do, your overall intention in the project.
- It’s what you want to know.
- An aim is therefore generally broad.
- The Aim is the *WHAT* of the research, and the objective is the *HOW*.

Objectives

- The objectives are the specific steps you will take to achieve your aim.
- Research objectives are the goals to be achieved by conducting the research.

- Objectives should be:
  - Logical and coherent
  - Feasible and Realistic,
  - Contextual/consistent to the title
  - Distinctive, quantifiable, measurable
  - Expressed in simple language, precise, self explanatory

Objectives

- How should objectives be stated?
- Objectives should be stated using “action verbs” that are specific enough to be measured:
- e.g. To determine …, To compare…, To verify…, To investigate…, To describe…, etc.
- Do not use vague non-action verbs such as: To appreciate, To understand… To believe.

Example

- **General objective (Aim / Purpose):**
  - To examine the factors affecting employees turnover.
- **Specific objectives:**
  - To investigate the impact of employee engagement on employee turnover
  - To investigate the impact of employee satisfaction on employee turnover.
  - To investigate the role of mangers in employee turnover.

Significance of the study

- Academic Significance.
- Practical Significance.

Questions and/or hypotheses

- A hypothesis can be defined as a tentative prediction or explanation of the relationship between two or more variables.
- Unambiguous prediction of expected outcomes
- Null and Alternative Hypothesis
- Guide/lead the research

Questions and/or hypotheses

- Example:
- Ho (Null Hypothesis):
  - There is no relation between employee engagement and employee performance.
- H_A: Alternative Hypothesis
  - There is a relation between employee engagement and employee performance.
  - There is positive relation between employee engagement and employee performance

Methodology

- Overview of the selected approach
- Sampling design.
- Justify your method choice.
- Instrumentation and Operational definitions of terms used.
- Unit of Analysis.
- Data Collection techniques.
- Data processing, analysis, interpretation techniques.
- Interpretation.

Writing conclusions

- Conclusions referring to
  - research questions
  - research objectives (outputs)
  - research aims (outcomes)
- Recommendations
  - who are your findings aimed at and who do you want them to be used?
  - How are you suggesting to resolve the research problem?
- Limitations of your study
- Suggestions for future work in the area
- Reflection on the research process adopted

Basic writing skills

- Top down:
  - Start with a draft structure and fill out the sections and paragraphs
- Bottom up:
  - Write and then re-format and re-structure to present a logical flow of your work
- **PDCA:**
  - Pre-write
  - Draft
  - Check
  - Act “Submit your work"

Writing style

- Reports are written in third person form, that is, the use of “I” or “We” and their respective cases are not used
- Instead of writing “*I found that ….*” write *“It was evident that ….” “The statistics revealed that ….”*
- There are exceptions such as personal reflections etc

APA referencing

- Difference between referencing and bibliography
- Author (year) – citation (Author, year)
- E.g. Bell (2010) in the text and make a full reference at the end of the document:
  - Bell, F. (2010) Learning to reference. Hannagan 5th edition: London
- Full reference at the back of your report
- Free tools available that can help:
  - Medley
  - End Note

Last sections of your report

- References
- Bibliography
- Appendix

Plagiarism

- Citing others work is good – evidence of research
- Using someone else's work without attribution – very bad practice and carries substantial penalties
- Learn to paraphrase and reference your sources