Research Design - Notes to help with dissertation.

By Creswell - Notes from study as well as any tips I have found to help with authoring my dissertation

# Chapter One - Selection of Research Approach

|  |  |
| --- | --- |
| Research Approach | Procedure of research from broad aspects to detailed assumptions |

## 3 Different research approaches

|  |  |
| --- | --- |
| Qualitative | * Exploring meaning people place onto such a topic. * Questions * Data collected from participants. * Derive meaning from data collected. * Flexible written structure * Report complexity of situation * Ethnography – description on societies function around a topic |
| Quantitative | * Testing objective theories * Relationships among variables * Analysed with statistical procedures. * Set report layout:   + Intro   + Literature and theory   + Methods   + Results   + discussion |
| Mixed Methods | * Both quantitative and qualitative data collection * Distinct report design may involve philosophical assumptions and theoretical frameworks. * Could yield more insight beyond by only one of the methods alone. |

## Three components involved with any approach:

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## Philosophical worldviews – need to make this explicit in research.

|  |  |
| --- | --- |
| **Postpositivist**  **(May be useful, but not in silo)** | * **Traditional form of research** * Used more in **quantitative research**. * Aka **the scientific method** * Recognises that we cannot absolutely be positive about our claims when studying the behaviour of humans. * Causes (probably) figures out outcomes. * Ideas into a small discrete set to test * Variables make up of hypothesis and research questions. * Based on careful observations and measurement * Idea to Begin with a theory, collect data to support or refute it, Makes earlier and conduct tests. * Knowledge is conjectural, absolute truth can never be found. * Research is process of making claims and refining for claims stronger. * Data, evidence and rational consideration shape knowledge. * Research aims to develop true statements to explain the situation. * Need to be objective. |
| **Constructivist (potential one for me ?)** | * **Qualitative research approach** * Seek understanding of the world in which they live and work! * Develop subjective meanings of their experiences. * Look at complexity of views, rather than narrowing meanings into a few ideas. * Rely on participants views as much as possible. * The more open-ended the questioning the better * Historical and cultural setting of the participant * Recognition the researchers own background may shape the interpretation. * Humans construct meanings as they engage with the world. * Keep open-ended questions. * Humans engage with the world and make sense of it based on historical and social perspectives. * Basic generation of meaning is always social within the human community. |
| **Transformative**  **(won’t be using this)** | * No uniform body of literature * Researchers may be more critical theorists. * Where constructivism did not go far enough * Research inquiry needs to be intertwined with politics and to confront social oppression. * Research has action agenda that may change lives of participants. * Specific issues need to be address based on current day social issues. * Supplies a voice for the participants. * Needs of groups and individuals in society that may be marginalised. |
| **Pragmatic**  **(Hot contender to use)** | * Arises out of actions, situations, and consequences, rather than antecedent conditions (like postpositivist) * On the concern of what works * Solutions to problems. * Instead of methods, emphasise the problem/question, and use all approaches available to understand the problem. * Mixed method study for sure. * Focus attention on the research problem, then use pluralistic approaches to derive knowledge about the problem. * Not committed to any one system * Freedom of choice that bests meet their needs. * Do not see the world as absolute unity. * More than one method to collect data. * truth is what works at the time. * focus on the “what “and “how “to research based on the situation. * research always occurs in social, historical political and other contexts. * stop asking questions about reality and laws, * opens doors to multiple methods different worldviews and different assumptions different forms of data collections., |

## Research Designs

The type of study used within the three-research method.

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Types of study in the selected area.

### Quantitative research designs

|  |  |
| --- | --- |
| **Survey research** | Quant description of trends or attitudes of a population by studying a sample size.  Using questionnaires, quizzes or interviews for data collections. To generalise from the sample of the population. |
| **Experimental research** | Cause and effect. A/B testing? random assignment of subjects to conditions. |

### Qualitative Research designs

|  |  |
| --- | --- |
| **Narrative Research**  **(Not using this)** | Studies lives of individuals and supply stories about their lives. |
| **Phenomenological Research**  **(Could be usable)** | Describes the lived experience of individuals about a phenomenon as described by participants. Experience of individuals affected by the phenomenon. Conducting interviews with participants. |
| **Grounded Theory**  **(Little time for this?)** | Derives a general abstract theory of process, action or interaction grounded in views of participants. multi stages of data collection, refinement and interrelation of categories of info |
| **Ethnography**  **(Not using this)** | Studies patterns of behaviour, language and actions of intact cultural group in natural setting over long time, observations and interviews |
| **Case Studies** | Creates an in-depth analysis on a case bounded by time and activity, Collect detailed information from variety of methods over sustained period. |

### Mixed Method Research Designs

Combining or integration of quantitative and qualitative research and data practices.

Qualitative side is usually open-ended with pre-determined responses. Whereas quant side does get closed-ended questions via surveys.

Check accuracy of one source form another (e.g., one db. used to check accuracy of another).

One database could help explain another.

One database could explain several types of questions to another.

One database could build on another.

|  |  |
| --- | --- |
| **Convergent mixed methods**  **(Sounds like I would use this)** | Researcher merges quant a qual data to supply a full analysis of the research problem. Collects all sets of data at the same time. integrates the information and interprets the overall results. Contradictions or incongruent findings are explained or further probed. |
| **Explanatory sequential mixed methods** | First conduct quantitative research, then builds on the results to explain in detail with qualitative research. Explanatory as the quant data is explained with qual data. Sequential as one phase is followed by the other. |
| **Exploratory sequential mixed methods** | Reverse of the above. Begin with qual phase, explores views of participants, data is analysed and used to build the quant phase. |

## Research methods

Involves the form of data collection, analysis and interpretation proposed in the study.

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## Example of research approaches to consider.

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## Example of different combinations of research approaches as worldviews designs and methods.

### Quantitative approach: Postpositivist worldview, experimental design, pretest and protest of attitudes (some elements useful I guess)

* Test theory by setting narrow hypothesis.
* Collection of data to support or refute it.
* Experimental design used to which attitudes are assessed before and after a treatment.
* Data collected to measure attitudes, and information is analysed using stat procs and hypothesis testing.

### Qualitative approach: Constructivist worldview, ethnographic design and observation of behaviour (not really)

* Researcher looks for set up meaning of phenomena from participants view.
* Culture sharing group.
* Shared patterns of behaviour over time’
* Collect data by seeing participants behaviour.

### Qualitative Approach: Transformative worldview, narrative design and open-ended interviewing (nothing like this for me)

* Examine issue related to oppression of individuals.
* Stories collected.
* Interviews to get experience from participants.

### Mixed Methods Approach: pragmatic worldview, collection of both quantitative and qualitative data sequentially in the design (the closest to me that makes sense)

* Bases on assumption that collecting diverse types best supplies a complete understanding (good)
* Starts with a broad survey to generalise results of a population (good)
* Then, focuses on open-ended interviews (maybe? maybe not).

## Criteria for selecting research approach.

Diverse types of problems, need diverse types of approaches:

1. A quantitative is best when:
   1. Id of factors that influence an outcome.
   2. Utility of an intervention
   3. Understanding the best predictors of outcomes
   4. Best when evaluating a theory or explanation
2. A qualitative is best when:
   1. Concept or phenomenon needs to be explored.
   2. Understanding needed when there is little out there due to an understudied topic.
   3. Does not know the important variables to examine.
   4. subject is new
3. Mixed methods are best when:
   1. When qualitative or quantitative - by itself – is inadequate.
   2. Strengths from both can supply the best understanding.

# Chapter Two – Review of the Literature

Needs to review the literature about the topic.

Helps determine whether the topic is worth studying. Helps ways which I can limit scope to a needed area of inquiry.

Have a working title , that can be revised as the project moves forward as it becomes an orienting device

My study is about Chatgpt and how it has enabled its users to expand their knowledge.

Keep the wording as simple as it can

Make the title more concise where possible.

Chatgpt: expanding knowledge for its users.

Could also pose the topic as a question?

“ Is chatgpt expanding the knowledge of its users?

Understanding how the literature is being used. seek the advice of advisor on how they would like to see the literature addressed . lit review in a project be brief and provide summary of major studies on the research problem initial lit review is 20-30 pages in length

A literature review can take several forms:

1. Integrate what others have done and said!
2. Criticize previous scholarly works.
3. Build bridges between related topics.
4. Identify the central issues in the field.

In qual research:

* Use literature in a manner consistent with assumptions of learning from the participants.
* Study is exploratory – not much has ben written about the toipic

Suggestion in using literature in planning any study is as follows:

* For qual studies, use literature sparingly in the beginning to convey an inductive design.
* Consider appropriate for literature in a qual studty , and base the decision for the audience for the project keep in mind the options
  + Placing at the beginning to to frame the problem.
  + Placing it into a separate section
  + Using it at the end to compare and contrast with the findings.
* Use lit in quant study deductively. - as a bisas for advancing research questions etc
* In quent study , use lit to intro the study advance a theory, descrbibe related lit in a
* In mixed methods, use lit in way that consistent with with the major type of strategy and the apoproach prevalent to the study

## Literature Design Techniques

Regardless off study, steps useful in conducting a literature review:

* A literature review – means locating and summarising the studies about a topic. Often are research studies but can include conceptual articles or opinion pieces that provide frameworks for thinking about topics. A recommended way in following bullets

1. Id key words
2. With key words in mind, begin searching databases for journals or books, focus at first on things related to your topic. Start with google scholar, web of science, EBSCO, ProQuest and JSTOR for broad range of disciplines, then ERIC Sociofile and PyscINFO for disciplines.
3. Try and locate at least 50 reports of research related to my topic, set priority of search on books and journal articles as they are easy to locate.
4. Skim the initial group of articles and collect those relevant to my topic, get a sense of whether will make a useful contribution to my understanding of the literature.
5. As I identify useful literature, begin a literature map, to show a visual picture of groupings in the literature on the topics that shows how my study will ad to existing studies and position your study within the larger body of research
6. As map is building, draft summaries of most relevant articles, these are combines to final literature review that I write for my proposal of research study, incline precise references using right style, so have complete reference to use at end of proposal.
7. After summing the lit, assemble the lit review structuring thematically or into important concepts. End review with summary of major themes and suggest how a particular study further adds to the literature. Could also add a advance a critique of past literature and point out deficiencies.

## Searching computerised databases.

ERIC – free online digital library

Google scholar

## Abstracting studies

* When writing review of litereature for proposed study locate articles and develop brief abstracts that compirse the review, summarises major elements of studyt to se basic features of article . need to condier what to extract and summarise from this for the reivew
* A good summary of a research study reported in a journal miught have:
  + Mentioned the problem being addressed
  + State the central purpose or focus of study
  + Briefly state info on sample
  + Review key results
  + Point out any tech or method flows found
* In results section , look for passages which reports info to answer or address each research question or hypothesis

## Definition of terms

Readers will need to understand a research project. A defninitoon of terms section maty be found separate to the lit review , in cluded as part of it , or placed in different sections of proposal.

Define terms that normal folk may not know that are beyond common language

# Chapter Three – The use of Theory

* What theories might be used to explore questions in a scholary study
* In Quantitative Study, test hypothesis stemming from theories
  + Entire section of research proposal could be devoted to presenting broader theory guiding the study hypothesis
* In qualitative the use of theory is more varied :
  + Could generate theory as final outcome
  + At the beginning to privde a lens as what is looked at and what is asked
* Mixed , can do both

## Quantitative theory use

### Testing causal claims in quant research

* Causality – would expect X to cause Y
* Also need to consider whether there is a unmeasured third variable (Z) may be cause of outcome - known as confounding variable
* May need to conduct a true experiment for the above to allow more control over confounding variables.
* if not, then surveys can test claims about hypothesised associations between variables.

### Variables in Quantitative Research

* variable – attribute or characteristic of person/org that can be measured or observed.
* Classed between two types:
  + Temporal order
    - Where one variable precedes another in time
    - Think in order of variables from left to right.
    - Provide order in research.
  + Measurement
* Types of variables:
  + Independent – that influence outcomes in experiments, independent of other influences than manipulation
  + Dependent – depend on independent variables. Outcomes from the influence
  + Predictor – to predict an outcome. Similar to independent, hypthesised to affect outcome of study.cannot manipulate
  + Outcome – aka criterion considered outcomes of predictor variables

### Definition of theory in Quantitative Research

* Viewing theory as scientific prediction or explanation for what is expected to be found.
* Kerlinger(1979) – “ a set of interrelated variables, definitions, and propositions to presetna systemic view by spec relations among variables.
* May appear as an argument
* Or a figure
* A rationale
* Conceptual framework

### Forms of theory in Quantitative research

* State theories in diff ways:
  + Series of interconnected hypotheses
  + If then logic
    - How one may expect independent variables to affect depednant variables
  + Visual models
    - Translate variables into a visual picture.
    - Position dependent variables on right of diagram
    - Position independent variables on left of diagram.
    - Use one-way arrows from each variable to one dependant on it
    - Indicate strength of relationship, either positive or negative
    - Two headed arrows for unanalysed relationships between non dependant variables A picture containing text, line, screenshot, diagram

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### Writing a Quantitative Theoretical perspective

Writing the above into a research plan. To id a theory the explains relationship between variables

1. Look in discipline based lit for theory.
2. Examine prior studies that address the topic of closely related topic, including what theories did author use? Limit number of theories to find one overarching to explain central research question.
3. What explains why the independent variables would influence the dependent variable.
4. Script out the theory section:
   1. The theory I will use is \_(**theory here)\_\_.** It was developed by **\_(id source)\_\_,** and it weas used to study **\_(topics where theory is applied)\_\_.** This theory indicates that **\_(hypotheses or propositions in theory)**\_\_. As applied to my study, this theory holds that I would expect my independent variables \_**(state X variables)\_\_** to influence and explain the dependent variable **\_(state Y variable)\_** because \_**(give rationale based on logic of theory)\_**\_\_ .
5. Notes from example
   1. The theory planned to use
   2. Central hypotheses of theory
   3. Adaptation of theory to variables in study using if-then logic

## Qualitative Theory use

### Variation in theory use in qualitative research.

* Use theory in their studies in several ways.
  + broad explanation
  + Increasingly theoretical lens
  + Where theory or broad explanation becomes the end point
  + Don’t not employ any explicit theory.
* Research tips
  + Decide if theory is to be used in proposal.
  + If used, id theory and how will be used in study, as front up, in end point or advocacy lens.
  + Locate theory in proposal early in study or at the end.
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## Mixed Methods theory Use

Mix of both

# Chapter Four - Writing Strategies and Ethical Considerations

Before designing a proposal, need to have an ides on the gerenal structure of the topics and their order.be aware of good writing practices. Engage in ethical practices and antipicpate ethical issues.

## Writing the proposal

### Arguments presented in a proposal

Best to consider early the major points that need to be address in the proposal, should be interconnected. List of core argument by maxwell to be advanced in any proposal**. (gonna add my notes here and later in the proposal notes):**

1. What do readers need to better understand your topic?
   1. Be aware of the AI llm ( large language model) known as chatGPT
2. What do readers need to know about your topic?
   1. How chatgpt is used in different contexts since its inception
3. What do you propose to study?
   1. Whether the use of chagpt – in various settings – has enhanced the users knowledge further compared with conventional methods
4. What is the setting, and who are the people you will study
   1. The setting ??? . In terms of the study, will aim to examine a broad range of participants via collected data from a study, to hopefully receive a spectrum of particppants from different backgorunds, education and professions.
5. What methods do you plan to use to collect data
   1. I initially plan to release a survey/ questionnaire on how participants are ware of and use chatgpt, alongside characteristics, such as age, gender, profession, experience with chatgpt amongst over variables to measure
6. How will you analyse the data
   1. I aim to analyse the data via a python script, with additional visualisation based on the questions asked and their characteristics. I may also perform some form of segmentation on the collected data, to see any hidden patterns that clusters particular particpants together. Additionally - if appropriate , I may perform a classification model against the data to see if parcipants found would recommend chatgpt to others, or on if chatgpt would be adopted into their day to day activities.
7. How will validate the findings?
   1. Document any inconsistencies, compare with other similar studies to see if they produce similar results separate to my research.
8. What ethical issues would your study present
   1. Ensuring anonymity for participants, protected from harm, with full consent from them. There should be no impact to a participant as part of this research.
9. What do preliminary results show about the practicability and value of the proposed study ?
   1. Don’t know how to answer this question,

These questions above, gives a foundation for good research.

### Format for a quantitative proposal

Like journal articles. Follows similar to:

1. Introduction
   1. Statement of problem
   2. Purpose of study
   3. Research questions or hypothesis
   4. Theoretical perspective
2. Literature review
   1. Theory may be here instead of intro
3. Methods
   1. Type of research design (experiment / survey)
   2. Population, sample
   3. Participants data collection instruments
   4. Variables and materials
   5. Data analysis procedures
   6. Anticipated ethical issues in the study
4. Results
5. Discussion

### Designing sections of proposal

Tips that may help for overall structure of proposal:

* Specify sections early in the design of the proposal. Working on one prompts the next
  + Develop an outline
  + Then write something for each section rapidly
  + Then refine sections as you consider more detail
* Find proposals that others have done ask advisor for copies of proposals.

# Chapter Five - The Introduction

Five components to writing a good introduction:

1. Establishing the problem leading to the study
2. Reviewing the literature about the problem
3. Identifying deficiencies in the literature about the problem
4. Targeting an audience and noting the significance of the problem for the audience
5. Identifying the purpose of the proposed study

## Importance of introductions

* First passage in journal article.
* Provides readers with background information
* Establish framework for the research so reader understand how it is related to other research
* Establishes issue leading to the research by giving info about the problem.
* Needs to create reader interest in the topic, establish the problem that leads to the study, place study in larger context and reach out to a specific audience.
* Done in a concise set of a few pages.
* Research problem is different to the research question, the question in study help to answer the problem.

## An abstract for a study

* Abstract is summary on contents of the study.
* Roughly 250 words in length (between 150 - 250 words)
* Order of abstract:
  + 1. Start with the issue
  + 2. Indicate the purpose of the study ( and use the word purpose so it is clear) the paritcpants who will be studied and where the research will take place
  + 3. What data will be collected, minclude type of data, participants and where data will be collected.
  + 4. Indicate themes, stats results of integrative findings that will likely arise in study
  + 5.finish with mentioning practical implications of the study state what audience(s) will benefit from this study by reading it .

## Qualitative, Quantitative, and Mixed Methods Introductions

* All show the annocing of a problem, and justifies why it needs to be studied

## A Model for Introductions

* Could try deficiencies model of an introduction (builds on gaps in literature)
* Consists of 5 parts:
  + 1. State the Research problem
    - Needs a narrative hook
    - Write opening sentencen that will stimulate interest and covey the issue broadly
    - Refrain from quotations in leading sentence
    - Consider numeric information if needed
    - Clearly id the research problem
    - State why the problem is important by citing numerous references that study the problem that justifies the need for the study
    - Ensure problem is framed in consistent manner with approach to the research
    - Consider whether there is a single problem involved or multiple that lead to a need of a study
  + 2. Review studies that have addressed the problem
    - Not a complete lit review for this section, but should summarise large groups of istudies instead of singular ones
    - Setting the problem in ongoing dialogue of literature
    - Refer to lit by summarising groups of studies – to establish broad areas of research
    - Place references at end of paragrp about several studies
    - Review studies that used all approaches
    - Find recent literature within last 10 years
  + 3. Indicate deficiencies in the studies
    - Cirte several deficiencies to make case stronger for study
    - Id specific deficienes in other studies
    - Discuss how proposed study will remdy this overlooked area
  + 4. Advance the significance of the study for audiences
  + State the purpose statement ( in chapter 6)

# Chapter Six – The Purpose Statement

A purpose statement establishes the intent for the entire research study. Most important ad need to be clear. Often a separate section in a dissertation.

## Significance and meaning of a purpose statement.

* Why you want to conduct a study
* What you intend to accomplish

### Qualitative Purpose statement

* Contain info about the central phenomenon
* Use words like purpose, intent, study aim or objective.
* Set off as separate sentence or paragraph
* Focus on a single idea
* Use action verbs to convey how learning will take place
* Use neutral words or phrases no words suggesting an outcome
* Provide general working definition of problem, especially if not usually understood by broad audience
* Mention particpants in the study
* Id site of research

### Quantitative Purpose statement

* Differs from qual ones in terms og language and focus
* Includes variables in study and relationship
* If porpsed majpr variables in study and types’
* With visual model to id sequence
* And how variables will be measured
* The intent of using vairbles quant wise
* Include words to signal major intent
* Id theory , model or conceptual framework, maybe sep theoretical perspective
* Id inde and dep variabelsand any mediating or moerating variables
* Use word that connect variables together to indicate they are related
* Order variables from left to right
* Mentioned the specified strateg of inquiry
* Make reference to the participants
* Gerenally define each key variable ideally set and established definitions in lit

### Mixed Method Purpose statement

# Chapter Seven - Research Questions and Hypotheses

## Qualitative Research Questions

* State research questions, not objectives or hypotheses
* A central question, followed by associated questions
* Ask one or two research questions
  + Central – broad – general issue to not limit views.
  + Ask no more than 5-7 subquestions in addition to central questions can be more specific but leave room for participant view
  + Realte central question to specific qual strat of inquiry
  + Begin queston with what or howto convey a open emerging design
  + Focus on single concept
  + Exploratory everbs, be nondirerectional with them
  + Expect the research question to evolve and change
  + Use open-ended questions without refs otherwise indicated
  + Specify participants and research sitefor the studsy

## Quantitative research questions

* Use quantitative research questions and hypotheses to shape and focus the study
* Relationships among variables
* Quantitative hypotheses – predictions the researcher makes about the expected outcomes of reltaionships between variables
* Test hypotheses employs stat procs to draw inference about the population
* Objectives - indicates the gfoals of the study
* Example script for quantitative research question desc outcomes for a variable:
  + What is the frequency and variation of scores on (name of variable) for (participants) in the study?
* Example script for research question based on examining relationship among variables.
  + Does (name of theory) explain the relationship between (independent variable) and (dependent variable), controlling for the effects of (mediating variable)
* Or a null hypothesis may look like:
  + There is no significant difference between (the control and experimental groups on the independent variable) on (dependent variable)
* Guidelines:
  + Use of variables limited to three basic principles
    - Research may compare groups on independent variable to see impact on dependent variable
    - Relate one or more independent variables to one or more depedient variables ( a survey that correlates variables.
    - Describe responses to independent, mediating or dependent variable
* Most vigorous form follows from a test of theory and spec of research questions or hypotheses the logically follow from the relationship among variables in the theory
* Independent and dependent variables must be measured separately, not measured on the same concept, to reinforce cause and effect
* Write only research questions or hypotheses, not both!
* If hypotheses, there are null (no difference) and alternative (prediction about outcome)
* Or non-directional hypotheses, a prediction is made, but the exact form of differences is not specified because the researcher does not know what can be predicted from past literature
* Use same pattern of word order in questions of hypotheses to enable a reader to id the major variables, repating key phrases, positioning independent vairbales first, then dependent after (left to right)

### Model for descriptive question and hypotheses

Based on writing descriptive questions, followed by inferential ( drawaing inferences from sample. Includes both independent and dependent variables , wrties questions for each variable.

# Chapter Eight – Quantitative Methods

## Defining surveys and experiments

* Survey design
  + Description of trends, attitudes and opnions of a population
  + Tests associationamong variables
  + Help answer three types of questions:
    - Descriptive
    - Relationships between variables
    - Question about predictive relationships between variables over time
* Experimental Design
  + Manipulates one or more variables to evaluate the impact on an outcome of interest
  + isolates effects of manipulation by holding all others constant.

## Components of a survey study plan

Checklist of question for designing a survey study plan:

* is the purpose of a survey design stated?
* What type of design will be used and why?
* Is nature of the survey cross sectional or longitudinal? Identified?
* Is the population and size mentioned?
* Will the population be stratified? And how If so?
* How many people in the sample? On what basis is the size chosen?
* What will be the procedure for sampling these individuals ( e.g. random/ nonrandom)
* What instrument is used for the survey, who developed it , how many items does it contain, and it reliable and valid, and what are the scale anchors?
* What procedure will be used to pilot the survey ?
* What is the timeline for administering the survey?
* How will measures be scores and converted to variables?
* How will variables be used to test research questions
* What specific steps will be taken in data analysis to do the following:
  + Analyse returns
  + Check for response bias
  + Conduct a descriptive analysis
  + Combine items into scales
  + Check for reliability into scales
  + Run inferential statistics to answer the research question or assess practical implication on the results?
  + How wil the results be interpreted

## Survey Design

* Describe rationale of design
* Id purpose of survey research
* State why a surveyis the preferred approach
* If its cross sectional ( data collected at one point in time) or longitudinal ( collectred over time)
* Specify form of data collection - internet
* Provide rationale for procedure of online survey

## Population and sample

Essential bits to describe in a research plan:

* Id population fo studyand sizeif it can be determined, may refer to availability in of sampling
* Sampling – whether single stage or multistage (simgle for me I think). Or cluster sampling when when not able to compile lis of elements composing the population. Single stage where researcher has access to names in population and can sample people directly. In multistage or clustering, first identifies clusters ob tains names of indivisduals within those clusters and then samples within
* Types of sampling – selection process for participants. Draw a random sample which each person has equal porbabuility of of being selected or precision equivalent sampling, where chosen a randomn start on list and select every x person from list . or convienciece sample. Based on conviencience and availability
* Stratificiation- id whterh study will involve this on population before selecting sample , requires cahracteristcs of population members be known so population can be stratified first before selection. Stratification means that specific cahracterstics ( gender for instance) are represented in sample, and reflects true proportion of the population with certain characteristics
* Sample size determination – how big- number of people in the sampleand procedures used to compute the number. A trade off – larger sample will give more accuracy, but nees more participants. Sometimes samples are chosen on a percentage of population ( 10%).but sample should really be based on analysis plans.
* Power analysis- estimated target sample size - look at this later

## Instrumentation

Survey intruemtns used in study:

* Name the survey instruments used to collect data ( survey monkey , csv from that and python to analyse)
* Validity of test score using instrument

## Variables in study

Useful to relates vairbales to specific question / hypothesies in methods section.

Plan to include a table that cross references the variables, research questions, and survey questions

## Data Analysis

Info about computer programs used and steps involved in analysing data.could use:

* Ibm spss stats
* JMP – from SAS
* Minitab stat software
* Syststat
* Stata
* Sas
* Present data analysis as series of steps to help reader follow along:
  + Report info on number of particiapants, who did and did not return the survey table with respondants / non respondants
  + Deicusses by which response bias will be determined
  + Discuss plan to provide descriptive analysis
    - Include means ,standard deviaitons , range, any missing data
  + Id stats and stat computer program for testing research questions and hypotheses. Provide rationale for for choice of stat test and mention assumptions associated
  + See if score in sample may be normally istributed via graph
  + Present results in tables or figures
  + Draft discussion section on the implications of the results how does research findgs address gaps in research previously.

# Grounded theory Notes

https://methods.sagepub.com/video/srmpromo/PDuI8U/an-introduction-to-grounded-theory

* Systemic approach to inquiry with key strat
* Purpose is to construct new theory for the collected data
* Favours theory construction over description
* Fresh concepts than over receiving theory
* Theorizing process over assuming stable structures
* Inductive and comparative interactive with data and participants
* Iterative, go back and forth between stuff.
* Abductive - surprising findings and all possible explanations
* First is coding
* Memo writing- about codes, analysis, gaps in coding
* Theoretical sampling - sampling for key categories outside norms, categories
* Theoretical sorting and integration.
* Logic:
  + Iterative and comparative logic- back and forth between data and abstract analysis, data with data codes with codes , codes with cats
  + Compare data from other people.
* Emerging grounded theory categories:
  + Consider all possible understandings of the data.
  + Construct tentative category.
  + Gather data to fill out properties of this category.
  + Check cat against new data.
* Why grounded theory is useful:
  + Conceptual understand of the study of data.
  + Analysing data
  + Break data apart and look at it closely than just together.
  + Focus and flexible.
* Constructivist Ground theory
  + Preserves start of original methods.
  + New epistemological foundation
  + Integrates methods from past 5 decades.
  + Open ended
  + Abductive logic
  + Action and meaning and pragmatism.
  + Answers criticisms
  + Flexibility
* Why was Constructivist Ground theory developed?
  + Places researcher, and process and product in social situational and interactive context
  + Acknowledged research subjectivity.

# Notes on planning and conducting research: select and define variables.

<https://methods.sagepub.com/video/srmpromo/PDuI8U/steps-in-planning-and-conducting-research?seq=4>

1. Choose a Topic
2. Generate a Hypothesis
3. Select and Define variables – important steps

* Good variables and defs makes diff from interesting results or not
* 2 types of variables:
  + Independent variable – active, manipulate e.g study effects of mood on memory , induce a mood state
  + Dependant variable – passive, inde variable acts upon, measuring as part of study e.e.g number of words they can remember – thing that gets measured
* Conceptual variables- more abstract gerneal
* Operational variables – more specific

# What to expect in a research paper

1. Abstract
   1. Consicse – summarise the research
2. Introduction
   1. Gives perspective on the study
   2. Explains why study is important
   3. Has a hypothesis or problem being addressed
3. Methods
   1. Detailed description of the procedure so the experiment can be repeated
   2. Look for how large the sample size is
   3. If the measurements are valid and reliable
   4. If subjects were randomly selected
   5. And if experiment controlled for possible influences
4. Results
   1. Presents data found
   2. If p value less than 5%, results are signifiant
5. Discussion
   1. Explain , not re-iterate the results
6. Acknowledgments
7. Literature cited

# Dissertation topic

I am interested into studying the impact of ChatGPT, and how it has enhanced the knowledge of its users.

"ChatGPT: how it has enabled the advancement of knowledge for its users."

some initial hypothesis /research question within roughly:

how has ChatGPT been used?

has ChatGPT aided in knowledge over other conventional methods.

Is ChatGPT being incorporated in more day-to-day activities for the user

Research questions (quantitative):

1. Is ChatGPT being used?
2. Has ChatGPT enhanced a participant’s knowledge?
3. Based on the use of ChatGPT and the enhancement of knowledge, has ChatGPT being incorporated into a user’s routine for knowledge acquisition?

Hypotheses:

1. If ChatGPT has been used, it is more likely it has enhanced a user’s knowledge on topic
2. If ChatGPT has enhanced a user’s knowledge, it is more likely that the users will adopt ChatGPT as part of their routine in terms of knowledge acquisition.

# Initial thoughts on how plan my dissertation

## Research method

I believe my dissertation would receive help from a **Quantitative** research.being that a survey will be conducted as well as a review of any related literature doing similar methods in this apce.

## Philosophical Worldview

I believe I would intend to use a **Pragmatic** approach - in that – it can incorporate any different approaches, depending how the research develops as my dissertation both intends to discover more about a new topic as well providing and gaining experiences uncovered so far , and assumptions on how this topic could be taken forward dependant on the topics future use.

## Research Design

I think – as this is using a mixed method research approach - I may be choosing between either a **Convergent mixed method** or **Explanatory/ Exploratory sequential mixed methods.** My reasoning being that I would attempt to create a survey via say a social media post to collect responses based on a mixture of open and closed-ended questions, then afterwards to explore as to whether there is additional research available within journal articles that have been that helps to enrich the consensus of what has been seen in the survey results.

# Questions to ask, to help with structure

https://methods.sagepub.com/video/srmpromo/PDuI8U/what-advice-do-you-have-for-writing-up-my-research-project?seq=1

* So what if your research question about? Answered by:
  + Title
  + Abstract
  + Introduction
  + Research question
* Why are you interested in that research question?
  + Rationale
    - Why it’s important
    - Why it is significant.
    - Why you weill be interested in whatr I have to say.
    - What is the impliocation of doing the research?
* What do you hope to achieve
  + Aims and objectives
    - This is what I hope to find
    - This is what I hope to achieve
* I don’t know much about the topic, can you give me some background?
  + Context
    - About situation
    - What the problem is
  + Literature review
    - What other researchers found in this space
    - Fins space for my research
* How do you go about doing your study
  + Mthod approach
  + Methods
    - Data and information
    - Limitations – show me the holes and tellmme why its good
* So what did you find
  + Results
    - Tables graphs
    - themes
  + discussion
    - analysis
    - interpretation
    - meangins findings

# Notes for proposal

Need to ensure that I cover.

1. The philosophical worldview proposed for study.
2. A definition of basic ideas in worldview
3. Worldview shaped the approach to research.
4. Indicate but not actively state an approval or disapproval.
5. If mixed methods, a purpose for mixing and rationale for mixed approach
6. Likely to use a form of survey research in my dissertation.
7. Write for your audience in mind – researchers, data folks and public.
8. Write theory in separate section so reader can clearly see it from other stuff
9. Write as if you are writing to an audience

# Glossary

Worldview – set of beliefs that guide action / paradigms.

Research problem - an issue or concern that needs to be addressed.

Erudite – having or showing great knowledge or learning

Thematically - in a way that relates to the subjects or themes of something.

Causality – would expect X to cause Y

confounding variable – where variable can be positively associated with both X and Y

variable – attribute or charactieristic of person/org that can be measured or observed

epistemological - relating to the theory of knowledge, especially with regard to its methods, validity, and scope, and the distinction between justified belief and opinion.

Misc

What research has been done in this area?

What was found from the research?

The narrowed down area most interested in discussing.

Most recent research in this area (most closely related to my topic