September 15, 2016

PS 300 – RESEARCH METHODS [4 Credits]

Fall Quarter 2016

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T 4:00-5:50 Bexell 102 (lecture)
R 4:00-4:50 Bexell 102 (lecture)
R 5:00-5:50 Cordley 3003 (lab)
Office hours: R 2:00-3:50 Gilkey 300E

There are no prerequisites required for this course. However, it is advisable to take the course as a sophomore or junior to best leverage the skill sets learned in other Political Science courses.

A. COURSE INTRODUCTION:
This course is designed to introduce students to the fundamental aspects of doing social science and public policy research. We will begin with a discussion of ***methodology*** (the philosophy behind research) and then move on to discussions about ***methods*** (techniques) of research. The primary focus of the course will be on research design, but considerable attention will be paid to elementary data analysis. All students are expected to use their ONID email account and the Canvas course website for this course.

B. COURSE OVERVIEW: The Scientific Method (see attached "8 Steps").
Scientific inquiry involves both theory (logic) and observation--we are interested in an understanding of why things occur (theory) and some evidence that they indeed occur this way (observation). In the process of doing social science research, we are constantly moving between the theoretical and empirical (observational) levels. The traditional model in social science starts at the theoretical level. Hypotheses (which are statements about the relationships between events) are derived from a theory, then subjected to empirical testing. This process is called deduction.

An alternative starting point is the level of observation. Researchers make observations, look for patterns in the data, then from these patterns come to some tentative findings. These findings are called empirical generalizations and are used to construct theoretical statements. This process is known as induction. The important point to remember is that in our search for knowledge, we will continue this process of observation and theorizing. Social scientific inquiry involves both deduction and induction and critically thinking about causal processes.

The Classical Approach or the Traditional Model: The traditional model of science starts as a deductive process, i.e., at the theoretical level. Theories are statements of invariant relationships between or among concepts. They are explanations of some aspect of our world, e.g., juvenile delinquency, socialization, or social movements. In order to assess the adequacy of our theories, we need to derive specific hypotheses from them to subject to empirical testing. Hypotheses are

propositions in testable form. They are statements of relationship between two or more variables. Before we can test our theoretical hypotheses (statements about concepts), we must specify the meaning of the concepts to be studied. Concepts can have different dimensions just as words can have different meanings. Say for example, that we are interested in studying political participation. What do we mean by "political participation?" I can think of several dimensions. One dimension entails conventional participation such as voting in an election. Another entails unconventional participation such as street demonstrations, boycotts, etc. The importance of critically thinking about the dimensions of concepts comes when you place these dimensions individually in your original hypothesis. You may find that what you think will cause participation in "conventional participation" will not have an impact upon "unconventional participation." The process of conceptualization, then, involves: (1) defining what your concepts mean (are there several dimensions?), and (2) determining how your theory would work for these dimensions. After stating your hypotheses and going through the process of conceptualization, you next need to decide how you will measure your variables. This is the process known as operationalization.

Inductive Approach (Grounded Theory): Whereas the deductive model starts at the theoretical level, an inductive approach begins with observations. Maybe a theory does not exist to adequately explain a particular phenomenon. Say for example that there was a dramatic increase in teenage drug abuse. To try and understand why drug abuse may vary over time, you could engage in a research project studying teens over a particular period. You would look for patterns, which affect drug use, e.g., unemployment, family circumstances, etc. When patterns are found, you make tentative conclusions about the factors affecting drug use and abuse. In this approach, we are trying to construct theories and develop concepts to explain something. Again, remember the circular process of the scientific method. After you construct a theoretical statement, it should then be stated in a hypothesis and tested empirically. After the empirical test you may need to think critically and make new generalizations and modify your theory. This process continues until you have found a theory, which indeed is made-up of statements that are invariant, i.e., laws.

Critical Thinking and the Scientific Method: According to the National Council for Excellence in Critical Thinking (1987), critical thinking involves:

"…the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness" (Source: https://www.criticalthinking.org/pages/defining-critical-thinking/766; accessed May 25, 2015).

The informal and formal writing assignments in PS 300 described below will directly involve critical thinking, as it is the core of scientific inquiry (also see the Eight Steps of the Scientific Process below). For example, a required Quantitative Research Term Paper will have students identify a political or policy problem that needs scientific research. This process involves identifying what the "problem" is and what possible policies may be used to address the problem. Often there is typically little societal consensus on what a problem is and how it should

be addressed through policy. Therefore, students will need to think critically on how different political interests and constituencies define policy issues. Next, students will need to think critically about how to conceptualize the policy issue (e.g., how to define key concepts such as "prejudice" or "hate" for affirmative action or crime policy). The next step involves students "operationalizing" concepts (i.e., how to measure concepts), which will involve critical thinking about what data and variables are needed to "measure" these concepts (e.g., verbal statements, behaviors, etc.). Students also will need to identify, understand and apply existing research and theories on the topic through a review of the existing literature. There are no dominant perspectives or theories on most political science topics, just conflicting causal explanations and methodological differences. Students will need to review these different perspectives and critically think about the most robust/representative explanations for their topics, even if they challenge their own preconceived notions of society and politics they have been taught. Finally students will need to collect and analyze data (i.e., observations) that will either support or contradict their hypotheses and theories. This final step involves "empirical generalizations," which means critical thinking about how the theory used fits the data gathered. This involves critically thinking about what has been observed, what the limitations of the observations may be, and what relevant policy and political implications for the findings might be.

C. COURSE/PROGRAM LEARNING OUTCOMES
Course Outcomes (all to be accomplished through in-class writing assignments and discussion, lab assignments, and a final quantitative term paper of at least 2,000 words):

At the completion of this course students will be able to:

- Political Science Program: Apply methods appropriate for accumulating and interpreting data applicable to the discipline of political science (evaluation rubric is attached).

- Course: Assess the usefulness of research methods for answering a variety of empirical questions. This will be accomplished through informal Canvas discussion blogs and class group discussions, and formally through the writing of a quantitative research paper that is theoretically based.

- Course: Construct and empirically test hypotheses. This will be accomplished through informal class exercises and formally through laboratory computer assignments and three lecture assignments.

- Course: Write up the results of empirical analysis in a manner that mirrors current writing in the field of political science. This will be done through informal in class exercises and formally through three lecture assignments, laboratory computer assignments, and a quantitative research paper.

- Course: The ability to think critically through the application of political science theory in informal and formal written assignments. This will be done through weekly informal Canvas discussion topics and formally through laboratory computer

assignments and a quantitative research paper.

D. BACC CORE LEARNING OUTCOMES:

This course satisfies the Writing Intensive Curriculum (WIC) requirement of the Bacc Core. WIC Outcomes (all to be accomplished through in-class writing assignments and discussion, lab assignments, and a final quantitative term paper of at least 2,000 words (evaluation rubric attached); a total of 5,000 words of writing in total is required for this course):

At the completion of this course students will be able to:

- Develop and articulate content knowledge and critical thinking in the discipline through frequent practice of informal and formal writing. This will be done through weekly informal Canvas discussion blogs and formally through laboratory computer assignments and a quantitative research paper.

- Demonstrate knowledge/understanding of audience expectations, genres, and conventions appropriate to communicating in the discipline. This will be done through weekly informal Canvas discussion blogs and formally through laboratory computer assignments, three lecture assignments, and a quantitative research paper.

- Demonstrate the ability to compose a document of at least 2000 words through multiple aspects of writing, including brainstorming, drafting, using sources appropriately, and revising comprehensively after receiving feedback on a draft. This will be accomplished through the writing of a quantitative research paper.

E. EVALUATION OF STUDENT PERFORMANCE
- We will be conducting an Oregon household survey this quarter. Each student will contribute to the design, implementation and analysis of the survey organized by work groups. (50 points participation points)

- To comply with WIC guidelines, students will be writing a quantitative research paper on a political science. Data and codebooks will be available at the course Canvas site that you will be given access too. You will be required to revise and resubmit at all stages of the paper development process. (200 points)

- Weekly class writing assignments summarizing important concepts are due each week and written on Thursday during the scheduled lecture hour (90 points)

- Nine weekly critical thinking discussion posts are required during the quarter. (ungraded). The instructor will propose a critical research issue and students will provide a 1 page response and provide constructive commentary on 1 other student's response.

- All students must complete Human Subjects (IRB) training during the first week: http://research.oregonstate.edu/irb/preparing-initial-submission/online-ethics-training-educational-requirement (10 points)

- Nine Lab exercises (5 points each for a total of 45 points possible).

Assignment Points and Dates

Task:	Points Possible:	Due Date:
Participation in Political Science Major Research Projects (surveys)	50 points total	TBA
Final quantitative research paper	200 points total (20, 40, 60, 80 points respectively)	>Outline and abstract due October 6 [20 pts] >Literature review due November 3 [40 pts] >First complete rough draft due November 10 [60 pts] >Final revised paper Due December 8 [80 pts]
Weekly class writing assignments (#9 plus CITI IRB training)	100 points total (10 points each)	Weekly assignments summarizing course topics each Thursday during scheduled lecture hour.
Weekly Canvas Discussions on class topics (#8); Weeks 2 to 9.	No points, but participation is required to pass the course.	Throughout Quarter: One initial posting by Wednesday (8:00 pm) and a response to another student's posting by Friday (8:00 pm) of the same week.
Computer lab assignments (#8)	40 points (5 points each week)	Weekly assignments
TOTAL =	**390 POINTS**	

F. FINAL GRADE DISTRIBUTION

Letter Grade	Percent of points possible
A	[95-100%]
A-	[90-94%]
B+	[87-89%]
B	[83-86%]
B-	[80-82%]
C+	[77-79%]
C	[73-76%]
C-	[70-72%]
D+	[67-69%]
D	[63-66%]
D-	[60-62%]
F	[0-59%]

G. LEARNING RESOURCES
- Babbie, Earl, *The Basics of Social Research*, 6th ed. (Wadsworth Publishing Co., 2014).
- Additional reading materials also are required and can be found under "Web Readings" or within each weekly assignment folder within the course Canvas site.

Statement Regarding Students with Disabilities:

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Student Conduct:

Link to Statement of Expectations for Student Conduct, i.e., cheating policies: http://studentlife.oregonstate.edu/studentconduct/offenses-0

H. TENTATIVE SCHEDULE:
The first weeks of class (approximately) will discuss epistemology, theories, the scientific approach, social science versus natural science, philosophy, etc. I consider this the most difficult portion of the course because there are no "right" answers--just "shades of gray." The remaining weeks we will discuss and use computers, some easy statistics, and various methods of research.

Please note, this syllabus follows the content and organization of E. Babbie, *The Basics of Social Research* textbook (6th edition).

Note: Canvas materials are under the "Course Documents" link.

Topics and Readings:
Week 1 - Human Inquiry and Science; what is science?
- PS 400 Introduction (Canvas)
- "8 Steps" (Canvas)
- Thomas Kuhn and Scientific Revolutions (Canvas)
- Babbie Chapter 1

Week 2 - Ethics and Politics of Research
- Babbie Chapter 3
- "Revenge of the Nerds" (Canvas)
- Zimbardo Prison Experiment video

Week 3 - Paradigms, Theory and Research Design
- Babbie Chapters 2 and 4
- Steel's Ideological Framework (Canvas)
- "Are Public Choice Theorists Different" (Canvas)
- "Models of the State" (Canvas)
- Abstract and peer review due

Week 4 - Conceptualization and Operationalization
- Babbie Chapter 5

Week 5 - Indexes and Scales, Research Design; Sampling; Survey Research
- Babbie Chapters 6, 7 and 9
- Steel's "Samples"

Week 6 - Experiments and Qualitative Field Research
- Babbie Chapters 8 and 10
- Assignment 2 due: Milgram "Obedience" Video
- Research design literature review due

Week 7 - Unobtrusive research
- Babbie Chapter 11

Week 8 - Evaluation Research
- Babbie Chapter 12

Week 9 - Data Analysis

- Babbie Chapters 13 and 14
- Rough draft of papers due

Week 10 – Writing Results
- Babbie Chapters 15
- Lecture Assignment #3 Due

FINAL PAPERS DUE DURING FINALS WEEK

Guidelines for the PS 300-Political Analysis Quantitative Term Paper

To comply with WIC guidelines, students will be writing a quantitative paper on some subfield topic in political science (American politics, public policy/administration, comparative politics, international relations, etc.). Data and codebooks will be available at the Public Policy Methods Canvas site that will be available for your use. The abstract and outline for your paper will be due by October 6 for *peer review* in class and by the professor. Next you will prepare a literature review of the paper by November 3. A complete first draft of the paper will be submitted to me for comments by November 10. The final paper is due December 8. You will be required to revise and resubmit at all stages of the paper development process. The instructor will provide feedback and edits within 1 week of submission, and students will have 1 week to revise and resubmit their work for additional review.

A student writing this paper should ask a specific research question, design a study (i.e., Research Design), acquire some data to investigate the question, and analyze the data in order to answer the question. Your research question will focus on a topic area of importance in political science. Your paper will be at a minimum 2,000 words in length; include 5 or more sources in the literature review (note: only peer reviewed research in academic journals may be used).

The evaluation rubric used to evaluate your paper is attached.

Outline for Draft Papers and Final Papers:

I. Introduction
This section gives an overview of the main themes in the paper and gives a brief preview of what the paper will cover. This section also clearly states the research question(s) that the paper will address and the organization of the paper.

II. Literature Review (Theory)
This section provides an organized exposition of the ideas and scholarly sources that the student used to develop her/his own ideas for the paper. The literature review should provide a summary of what scholarly work has been done on the student's area of research (i.e., theory) and also should demonstrate *how* the student's work compliments or fits into this existing body of knowledge.

III. Hypotheses
Based on your literature review, you should derive 2-3 bivariate hypotheses that you will test in this paper.

IV. Data and Methods
In this section, the student writes a description of the data that she/he gathered for the project along with a description of the methodology used to analyze the data and sampling procedure.

V. Empirical Findings
This section is the heart of a tradition research paper. Here you will report the findings from

your data analysis. In this part of the paper, you need to draw clear connections between your original research question and the empirical findings. What is the result? How do these empirical findings answer your question(s)?

In this section you also should address any conflicting evidence or limitations in your study. While students think that this weakens their work, it actually strengthens it. By humbly acknowledging the limitations of your work, the reader gets a "truer" picture of your research.

VI. Conclusion

This section should summarize your paper and its major findings. You should also speculate about the directions future research ought to take in light of your findings.

**IMPORTANT: Your conclusion should also devote some significant space to a discussion of the implications of your work for decision makers or decision making in the topic area. For example if your paper found that there is a relationship between civic engagement and economic development what implications does that have for decision makers interested in promoting economic development? What implications does it have for policy designed to enhance civic engagement? What are the broader implications for the field of political science.

PS 300-Political Analysis
Final Empirical Paper Rubric for WIC

Student _____

I. Meeting Assignment Goals

1. The specific research question is political science in nature. Score_____

Sophisticated 5	Competent 3	Unsatisfactory 1
The question is eminently clear, interesting, political science relevant, and testable using social science methods.	The question is adequately clear, political science relevant, and testable using social science methods.	The question is not stated clearly, isn't political science relevant, and couldn't easily be tested using social science methods.

2. A political science theory/framework is summarized (in general terms) in a manner that reveals mastery. Score_____

Sophisticated 5	Competent 3	Unsatisfactory 1
The writer clearly presents the central theoretical concepts associated with a theory/framework and does so using key quotations from relevant primary readings.	The writer adequate presents some of the central theoretical concepts associated with a theory/framework; uses some quotations from primary readings but does so awkwardly or in a limited manner.	The writer does not present the central theoretical concepts associated with a theory/framework, and does not use quotations from primary readings or does not do so effectively.

3. Specific concepts or ideas from a political science theory are meaningfully applied to the research question. Score_____

Sophisticated 5	Competent 3	Unsatisfactory 1
The writer selects at least one theoretical concept, and insightfully and creatively demonstrates how it could be utilized to make sense of their research question. Relevant quotations from primary readings are used in a thoughtful manner.	The writer selects at least one theoretical concept, and adequately demonstrates how it could be utilized to make sense of their research question. Quotations from primary readings are used in a limited manner.	The writer does not select a theoretical concept and/or adequately demonstrate how it could be utilized to make sense of their research question. Quotations from primary readings are not used or are not used effectively. .

II. Ideas and Content: Score_____

Sophisticated 5	Competent 3	Unsatisfactory 1
The paper is clear, logical, focused and interesting. The writer makes connections, excellent transitions, and presents insights into the topic.	The paper is adequately clear, logical, and focused, but lacks interesting insight specific to the author.	The paper lacks a central idea, purpose, and idea development.

III. Support: Score_____

Sophisticated 5	Competent 3	Unsatisfactory 1
The writer supports the thesis well with relevant details, citations or other pertinent, well-chosen information. Good use of primary and secondary readings overall.	The writer provides some support, but it is too limited, insubstantial, or too general/vague. Limited use of primary and secondary readings.	Details are sketchy or evolve from clichés or stenotypes. Information is limited or simply unclear. Poor or limited use of primary and secondary readings.

IV. Writing/Mechanics: Score_____

Criteria	Sophisticated 5	Competent 3	Unsatisfactory 1
Introduction and Conclusion Score_____	The introduction is interesting and draws the reader in. The conclusion leaves the reader with a sense of resolution.	The introduction and conclusion are recognizable, but are incomplete or not connected.	There is no clearly identifiable introduction or conclusion, or no connection to the body of the text.
Paragraph Topic Sentences Score_____	Topic sentence conveys a comprehensive "story" line.	Topic sentences convey a partial "story" line without the remainder of the paragraph sentences.	Story of essay cannot be ascertained from only the topic sentences.
Word Choice Score_____	Words convey the intended message in an interesting, precise and natural way. The writing is interesting, but concise.	The language conveys the message adequately, but is not precise or interesting. Lacks detail and precision.	The language is vague, redundant, or lacks detail. Excess use of non-descriptive nouns, verbs, or pronouns.

Sentence Fluency Score_____	The writing has an easy flow and rhythm when read aloud. Sentences are consistently strong and have varied structure.	The text works for the most part, but there are occasional awkward sentences that force the reader to slow down or reread text.	The paper is difficult to read aloud. Sentences are choppy, incomplete, and/or very awkward.

Paragraphs Score_____	Paragraphs are logical using a simple topic sentence clearly supported by other sentences.	Paragraphs are logical using a simple topic sentence, but many have disjointed supported sentences.	Sentences in paragraph are not clearly related. Sentences may be choppy, incomplete, or very awkward.
Conventions Score_____	The writer demonstrates a good grasp of standard writing conventions such as grammar, capitalization and punctuation.	There are few errors in grammar, capitalization, and punctuation.	There are frequent errors in grammar, capitalization, and punctuation.
Spelling Score_____	There are no spelling errors	There are few spelling errors	Spelling errors are frequent
Citations Score_____	Sources are cited appropriately.	There are few errors in citing references and sources.	Sources are not properly cited.

Final Score _____

PS 300-Research Methods
Final Assignment Rubric for Political Science Program

At the completion of this course students will be able to: "Apply methods appropriate for accumulating and interpreting data applicable to the discipline of political science."

	Well Done	**Needs Work**	**Inaccurate/student incapable**
Description *Identifies Independent (IV) & Dependent Variable (DV) & describes data in the table*	IV & DV correctly identified (*as variables*); Data are described correctly without interpretation	IV & DV identified but description of data is incorrect; Description is correct but IV & DV are not identified or identified incorrectly	IV & DV incorrectly identified and description of data is incorrect; provides interpretation instead of description
Interpretation *Understands relationship between Independent Variable & Dependent Variable in the table*	*Relationship* between the IV & DV is described correctly & completely	Identifies relationship correctly but interpretation of the data is incorrect or incomplete	Relationship is not correctly identified and interpretation of the data is incorrect and incomplete
Analysis Uses political science hypothesis/theory to explain the data in the table	Uses an appropriate political science hypothesis/theory to explain the relationship between the IV & DV; Demonstrates understanding of how to use theory in an analysis	Attempts an explanation but does not use an appropriate political science/hypothesis/ theory or uses the theory incorrectly or attempts an explanation using theory but does not use theory correctly.	Attempts an explanation but does not use a political science hypothesis/ theory

FINAL EVALUATIONS ARE GIVEN ON A TEN POINT SCALE
Every paper is graded on a 30 point scale, giving ten points each to Description, Interpretation, and Analysis of the data. Papers could, therefore, receive as many as 90 points total (see below).

We considered total scores from +75 to +90 to be "well done"; scores ranging from +63 to +74 "need work" and scores less than +62 are indicate a student in incapable of doing the assignment.

Rubric Scoring Criteria

Description **Out of 10 points possible**	
Failure to formulate an appropriate hypothesis	(-1 to -4)
Failure to properly examine the frequency of responses and list the data	(-1 to -4)
Failure to demonstrate understanding of the Independent/Dependent Variable	(-2)
Implied understanding, but failure to list Independent/Dependent Variables	(-1)
Failure to list the coded responses	(-1)
Interpretation **Out of 10 points possible**	
Failure to properly identify the relationship (Includes interpretation of incorrect values to reach conclusion)	(-4)
Failure to properly identify significance (Includes interpretation of incorrect values to reach conclusion)	(-2)
Failure to interpret all the appropriate values	(-1 to -4)
Analysis **Out of 10 points possible**	
Failure to meaningfully analyze the data beyond simple interpretation	(-1 to -6)
Analysis was attempted but is mistaken or inaccurate	(-1 to -4)

COURSE OVERVIEW: EIGHT STEPS TO SCIENTIFIC INQUIRY

Step 1: THEORY
Start with a general theoretical framework (a general view of how the world works); a literature review with the help of a reference librarian or a university researcher would be a useful starting point. Remember that there are a variety of perspectives for most research topics and that university researchers often have strong preferences (biases) concerning the validity of each perspective.

Be careful not to confuse normative theory ("what should be") with empirical theory ("what is").

Step 2: HYPOTHESES
Based upon your particular world view (theory), you next need to develop a set of hypotheses to guide your research. Hypotheses are nothing more than statements of relationships, which are TESTABLE and FALSIFIABLE.

Hypotheses must specify a relationship for at least two or more variables. A variable is a property of whatever it is that we are studying. If we are studying people, then people have properties like height, eye color, attitudes toward their jobs, etc. These properties VARY by each individual, and thus are variables.

Examples of variables could be: quality of housing options; types of economic development programs; income levels; gender; occupations; health insurance costs; level of pesticide use; citizen attitudes toward educational policies; amount of government development aid; population; etc.

All hypotheses should have at least one dependent variable (what is to be explained) and one independent variable (what is used to explain variation in the dependent variable).

STEP 3: CONCEPTUALIZATION (defining your variables)
When determining which hypotheses will be the subject of your research, you need to define what your concepts i.e., (variables) mean. For example, if you are interested in rural poverty, you need to define exactly what you mean (be sure to include all relevant dimensions for each concept included in the hypothesis). A definition of poverty may include a specific income level, amount of wealth/property holdings, employment status, etc. The concept of job satisfaction may include employee morale, attitudes toward current jobs, etc.

STEP 4: OPERATIONALIZATION (specifying indicators for variables)
After defining your variables above in Step 3, you next need to determine what your actual indicators will be. How will you actually measure your concepts?

Often times this particular step will be dictated by the use of previously collected data sets. If you are designing your own survey, there are several things you should be concerned about when designing indicators: (1) Be sure to account for all possible response categories to a question; (2) Response categories should be mutually exclusive-- only one attribute applies; (3) Use the appropriate level of measurement--categorical, ordinal/rank-ordered responses, and interval/ratio.

STEP 5: CHOICE OF RESEARCH METHOD
This step will probably be decided before this point, but here is a brief list of possibilities (not an exhaustive list):

- a) Library research/literature review for other studies in your area of interest.
- b) Secondary analysis of existing data sets--analyze data collected by someone else.
- c) Field research--participant observation, informal interviews.
- d) Survey research--telephone, mail and personal interviews (structured and quantifiable).
- e) Experiments--controlled environments.
- f) Historical research--use of data archives to trace trends over time.
- g) Evaluation research--examine the impact of an existing policy to see if the specific goals have been achieved, etc.

STEP 6 POPULATION AND SAMPLING
The next question to consider is: "Who do we want to be able to draw conclusions about? Who will be observed for that purpose?"

Often it is impossible to study an entire population, therefore we typically use samples that allow us to make conclusions about the general population.

This can be a very complicated step and will determine the level of confidence you can have in your research findings. It is highly advisable to get help from a resource person (e.g., university researcher) when designing a sample. You must be concerned about such things as sample size and how the sample is selected. Attached you will find a general guide for determining sample size. Be careful of "samples of convenience" or "supermarket" surveys (i.e., surveys of people you know or an extremely biased survey).

STEP 7 OBSERVATIONS
This step concerns the actual collection of data for analysis. This could be the process of carrying out a survey, conducting interviews, doing library research, observing certain behaviors in the field, etc.

There are certain "rules" or "procedures" to follow when conducting interviews, surveys and the like. A poorly designed and implemented survey or interview will lead to poor results and decrease the legitimacy of your research.

Design issues often take you back to previous steps. Are you asking a question that will get meaningful answers from your target population? Implementation issues involve the training of staff and timing of the research process.

STEP 8 DATA PROCESSING AND ANALYSIS
Once you have collected your data, they need to be transformed into a form appropriate for manipulation and analysis. Increasingly this means the use of computers. Data needs to be in a format that can be read by any number of software packages. University researchers typically use SPSSx or SAS (now both available for PCs), research firms use many other software packages.

Analysis techniques will depend on the hypotheses you are testing. Sometimes tables will

work (using percentages). However, multivariate techniques are required when you are asking which of a dozen factors is most important in explaining some issue.

The key to doing research comes in steps 1-3. If you know what the issue is and can define the important/ relevant variables, this will guide you through subsequent steps