

Unit

2

The Language of Social Research

Overview

In Unit 1 you learned the meaning of social research, the purpose of social research and the role that the researcher plays in the research process. Unit 2 builds on the discussion started in Unit 1. In order to conduct social research you need to learn the language used in research. This unit introduces and discusses some of the main terms that you, as a researcher, need to be familiar with at the start of your social research project and gets you started on the road to understanding how a research problem is formulated.

The learning activities at the end of each session are intended to assist in your understanding of the main concepts discussed in the unit.

This unit is comprised of four sessions as follows:

Session 2.1: What are Social Variables?

Session 2.2: What are Independent and Dependent Variables?

Session 2.3: Units of Analysis for Social Research

Session 2.4: Problem Formulation – Statement of the Research Problem

Unit 2 Learning Objectives

At the end of this unit you will be able to:

1. Describe social variables
2. Differentiate independent and dependent variables
3. Describe the research problem in social research
4. Formulate a research problem for your research project/proposal



Readings and Resources

Your readings and resources for this unit are as follows:

Babbie, Earl. (1986). *The Practice of Social Research*, Fourth Edition. Wadsworth Publishing Company.

Cresswell, John W. (2003). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. London: Sage Publications. (page 90).

LaFountain, R.M., & Bartos, R.B. (2002). *Research and statistics made meaningful in counseling and student affairs*. Pacific Grove, CA: Brooks/Cole.

Research Variables. Retrieved at: <http://www.youtube.com/watch?v=pabthvd9r4c>

Trochim, W.M.K. (2006). "Research Methods Knowledge Base". <http://www.socialresearchmethods.net/kb/contents.php>

University of Wisconsin Writing Center. Retrieved at: http://writing.wisc.edu/Handbook/presentations_abstracts_examples.html

Session 2.1

What Are Social Variables?

Identifying Social Variables

You won't be able to do very much in research unless you know what social variables are and how important they are to the research project. A **variable** is an object, idea, event or category that you are trying to measure or it is any entity that can take on different values. This means that anything that can vary can be considered a variable (Trochim, 2006). For instance, income can be considered a variable because income can take different values for different people or for the same person at different times. Similarly, someone's level of satisfaction can be considered a variable because it can be assigned a value and can change at different times and under different circumstances.

Variables are not always 'quantitative' or numerical. If we take the variable 'gender' for example, it consists of two text values: 'male' and 'female'. We can, in social research, assign quantitative values instead of the text values, for instance, male = 1 and female = 2.

We don't have to assign numbers in order for something to be a variable. Variables aren't only things that we measure in the traditional sense. For instance, if evaluating a programme in social research, we can consider the treatment or programme to be made up of one or more variables; that is, the factors that contribute to the success or failure of the programme being evaluated can also be considered variables. Further, an educational programme can have varying amounts of 'time on task', 'classroom settings', 'student-teacher ratios', and so on. So even the programme, too, can be considered a variable (which can be made up of a number of sub-variables).

Variables are made up of attributes. An **attribute** is a specific value on a variable. For instance, the variable *sex* or *gender* has two attributes: *male* and *female*. Or, the variable *agreement* might be defined as having five attributes:

- 1 = strongly disagree
- 2 = disagree
- 3 = neutral
- 4 = agree
- 5 = strongly agree



Learning Activity 2.1

1. Identify and discuss in discussion forum the possible variables in the research scenario
2. Review the variables identified by your peers. Do you agree?
3. Are there any other variables that can be added to this research project?

“Fostering H.O.P.E.: Helping Overcome Poverty through Education for Teen Moms”

Angela Cunningham and Sherrill Sellers (Mentor), Social Work

This program was designed to address the prevalent issues of teen parenthood and poverty. The idea was to introduce and reinforce the importance of obtaining a post secondary education to teen mothers in their junior or senior year of high school. The program ran for eight weeks during the summer of 2003. Participants met once a week to participate in group building activities, get insights to what it will take to finish school, and receive information on services that are available to help them along the way. The young women also had the opportunity to tour the UW and MATC campuses. The participants walked away from the program with a sense of hope that they are able to pursue their dreams despite their difficult situations.

The above abstract was retrieved at:

http://writing.wisc.edu/Handbook/presentations_abstracts_examples.html

Session 2.2

What Are Independent and Dependent Variables?

Types of Variables and Distinguishing Between Them

It is important to understand the various types of variables and to be able to clearly distinguish between *independent* and *dependent* variables. This distinction is particularly relevant when you are investigating cause-effect relationships. The **independent variable** is the variable that you the researcher manipulate for example, a treatment or programme or cause. The **dependent variable** is what is affected by the independent variable, that is, the effects or outcomes. In other words, the independent variable is the presumed cause while the dependent variable is the presumed effect. For example, if you are studying the effects of a new educational programme on student achievement, the programme is the independent variable and your measures of achievement are the dependent ones.

Educational Programme = Independent Variable

Measures of Achievement = Dependent Variable

In social research you can have more than one independent variable since there may be more than one factor causing something to occur. Most times you have one dependent variable which is the one outcome that you are studying.

Statement	Independent Variable	Dependent Variable
The effects of a new educational programme on student achievement.	Educational Programme	Measures of Student Achievement
The greater the availability of biology tutoring, the higher the biology grades.	Biology Tutoring	Higher Biology Grades
"There will be a statistically significant difference in graduation rates of at-risk high-school seniors who participate in an intensive study programme as opposed to at-risk high-school seniors who do not participate in the intensive study program." (LaFountain & Bartos, 2002, p. 57)	Participation in intensive study programme	Graduation rates of at-risk high-school seniors

Table 2.1

Identifying Independent and Dependent Variables

Variables Are Exhaustive and Mutually Exclusive

There are two traits of variables that should always be achieved. Each variable should be *exhaustive*; it should include all possible answerable responses. For instance, if the variable is “religion” and the only options are Protestant, Jewish and Muslim, then the variable is not exhaustive. There are other religions that haven’t been included in this variable. The list does not exhaust all possibilities. On the other hand, if you exhaust all the possibilities with some variables -- religion being one of them -- you would simply have too many responses. The way to deal with this is to explicitly list the most common attributes and then use a general category like “Other” to account for all remaining ones.

In addition to being exhaustive, the attributes of a variable should be *mutually exclusive*; no respondent should be able to have two attributes simultaneously. While this might seem obvious, it is often rather tricky in practice. For instance, you might be tempted to represent the variable “Employment Status” with the two attributes “employed” and “unemployed.” But these attributes are not necessarily mutually exclusive -- a person who is looking for a second job while employed could check both attributes. Sometimes we often use questions on surveys that ask the respondent to “check all that apply” and then list a series of categories. While this may be true, technically speaking, each of the categories in a question like that is its own variable and is treated dichotomously as either “checked” or “unchecked”, attributes that *are* mutually exclusive.



Learning Activity 2.2

Watch the YouTube video “Research Variables” below:

<http://www.youtube.com/watch?v=pabthvd9r4c>

After watching this video, discuss in the Unit 2 discussion forum the main differences between independent and dependent variables while providing examples of each.

Session 2.3

Units of Analysis for Social Research

Determining the Units of Analysis

The unit of analysis is the major entity that you are analyzing in your research study (Trochim, 2006). It is the 'what' or 'who' that is being studied. For instance, any of the following could be a unit of analysis in a study:

- individuals
- a youth group
- artifacts (books, photos, newspapers)
- geographical units (town, census tract, state)
- social interactions (divorces, arrests)
- events (political elections)

While the *unit of analysis* may be the objects we study, people, cities, newspaper articles, *variables* are dimensions or aspects of units of analysis that vary. For instance the unit of analysis being studied may be the 'individual' and the variable could be the age, level of education or marital status of the individual.

Why is it called the 'unit of analysis'? *It is called the unit of analysis because it is that phenomenon in your study that you are trying to understand more about.* For instance, if you are comparing the children in two classrooms on their achievement test scores, the unit of analysis is the individual child because you are trying to understand why the child or student obtained certain test scores. On the other hand, if you are comparing the two classes on classroom climate, your unit of analysis in this case is the classroom because it is the overall climate in the classroom that you are testing. For different analyses in the same study you may have different units of analysis. If you decide to base an analysis on student scores, the individual is the unit. But you might decide to compare average classroom performance. In this case, since the data that goes into the analysis is the average itself (and not the individuals' scores) the unit of analysis is actually the group. Even though you had data at the student level, you use aggregates in the analysis.

Some studies include more than one unit of analysis. In these instances, the researcher must anticipate what conclusions he or she wishes to make with regard to each unit of analysis. For example, if a researcher is examining what kinds of college students are most successful in their careers, but also wants to examine what kinds of colleges produce the most successful graduate students, he or she is working with two separate units of analysis: individuals (college students) and organizations (colleges).

In your social research project, it is important to determine before you get started what your unit of analysis is. You must decide whether you are studying crimes or criminals, marriages or marriage partners, corporations or corporate executives, and so on. Otherwise, you run the risk of drawing invalid conclusions because your statements about one unit of analysis are actually based on the analysis of another unit of analysis.



Learning Activity 2.3

Read the same research abstract by Cunningham and Sellers below (retrieved from The Writing Center at the University of Wisconsin: http://writing.wisc.edu/Handbook/presentations_abstracts_examples.html).

After reading it, identify the unit of analysis in this research study and discuss with your peers why and how you came to that decision.

Session 2.4

Problem Formulation: Statement of the Research Problem

Formulating the Problem Statement

Before starting your research study project, you should have an idea of an issue that you would like to investigate. Research originates with a research question or problem for investigation. The research topic or research problem precedes the unit of analysis and variables. The latter can only be gleaned after the research problem has been decided.

Social research begins with you, the researcher, deciding on a question or problem that you wish to investigate. Your intention is to collect information pertaining to that problem in order to increase your understanding of its behaviour. Once you decide on your research question, then the variables as well as the unit of analysis will become clear.

So if we say that research originates with a question or problem, where or how exactly will we come up with the question or problem? Essentially, it begins with your interests or some pressing issue in your community or society, like escalating crime rates in your country. If initially you have absolutely no idea what you want to do you may wish to go to the library or use online sources and browse to see what is happening in the field; or maybe you already have an area of interest and just want to see what others are saying about the problem. Examination of abstracts of actual research projects on the problem later on can be very revealing and helpful to you in clarifying a specific question or problem you have in mind.

It is important to select an area of real interest to you; one which you can sustain interest in for a period of at least six months. Most importantly, however, you should select an appropriate problem - one that is researchable and suited to you given your research skills, access to participants to be studied, time constraints and available resources.

What, then, is the **Problem Statement**? The **Problem Statement or Statement of the Problem** is the backbone of any research endeavour. It is through the problem statement that the researcher identifies and describes a phenomenon that requires solution or additional investigation. The problem statement should be kept concise. However, it must describe the phenomenon under consideration in sufficient detail to guide the reader in understanding exactly what the research will explore, examine or investigate.

In writing the problem statement ensure that you do not just talk about the problem – you must state what the problem is. Here are some simple steps to follow in writing the problem statement:

1. State the problem clearly and completely.

Try to state your problem in a few sentences – not a page.

Example: (a) Welfare on children's attitude.

The example in (a) above is not a good example of a problem statement; it is neither clear nor complete.

A better statement would be (b) below.

(b) This study will analyze what effect welfare assistance to parents has on the attitude of their children towards work.

2. Think about what the problem implies – is it feasible? If not, don't do it. Be practical – think about how you will carry out such a study.

3. Say exactly what you mean and do not assume the reader knows what is in your mind.

4. Edit your work carefully. Have a colleague read it or discuss it with you.

Language to use when writing the Statement of the Problem could be:

"This qualitative research project examines how

"This case study examines"

"The purpose of this case study

Criteria for Good Problem Statements
1. The statement of the problem; i.e., the specific issue that you intend to research is clearly outlined. It indicates a specific focus/direction.
2. The problem is researchable – can be investigated through data collection.
3. Variables are introduced and defined.
4. N.B. The statement of the problem does not have to be confined to one sentence but neither should it be too long. In fact, make this section <u>no more</u> than 5 sentences. The aim is to succinctly capture the main issues of your proposed research: who, what, where, are answered in the statement.



Learning Activity 2.4

Fill in the blanks in writing the Statement of the Problem:

The purpose of this _____ (strategy of inquiry? or study?) (is? was? will be?) to

_____ (understand? describe? develop? discover?) the _____ (central phenomenon being studied) for _____ (the participants, such as the individual, groups, organization) at _____ (research site). At this stage in the research, the _____ (central phenomenon being studied) will be generally defined as _____ (provide a general definition).

Submit your response to your tutor for individual feedback.

Unit Summary

The unit has discussed some of the main terms used in social research while also demonstrating the relationship among those terms. Whatever the topic being researched, these terms form the core language used in the research process. The unit ends with a discussion on what is the problem statement and shows how you the learner, may go about formulating the statement of the problem for your own research project/proposal. As active learners in this course, you are developing your research proposal as you go along, starting with the statement of the problem.

References

Babbie, Earl. (1986). *The Practice of Social Research*, Fourth Edition. Wadsworth Publishing Company

Cresswell John W. 2003. *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. London: Sage Publications. (page 90)

LaFountain, R.M., & Bartos, R.B. (2002). *Research and statistics made meaningful in counseling and student affairs*. Pacific Grove, CA: Brooks/Cole.

Research Variables. Retrieved at: <http://www.youtube.com/watch?v=pabthvd9r4c>

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