CONDUCTING COMMUNITY SITUATIONAL ANALYSES: A Field Guide to Dynamic Extension Programming

Loretta Singletary, Editor
University of Nevada Cooperative Extension

COOPERATIVE EXTENSION
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CONDUCTING COMMUNITY SITUATIONAL ANALYSES:  
A Field Guide to Dynamic Extension Programming

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This bulletin is intended for Extension professionals who are interested in conducting community situational analyses as a first step in dynamic Extension program development. It has been written by University of Nevada Cooperative Extension faculty. Printing provided by USDA Sustainable Agriculture Research and Education Professional Development funds.
Chapter 1
Community Situational Analyses

Loretta Singletary, UNCE Extension Educator

Introduction

Increasingly, Extension professionals conduct community situational analyses to determine Extension program priorities prior to program development. Gathering information to help isolate key program topics is a critical first step in developing meaningful programs with measurable impacts. For University of Nevada Cooperative Extension faculty, the art and science of designing and implementing assessments have advanced significantly in recent years. Extension professionals must conduct periodic assessments and report the results to colleagues and citizens. Further, they must design, implement and evaluate Extension programs that respond directly to the assessment results.

A well-executed community situational analysis provides critical information about a community’s assets, needs and opportunities for teachable moments. The results should serve as a solid foundation to build meaningful Extension programs. Because the information gathered through community situational analyses is vital to building effective programs, Extension professionals must make every effort to learn about and apply appropriate research methods for conducting these analyses.

Logic Model as a Basis for Extension Program Development

Similar to Extension systems in other land grant universities, University of Nevada Cooperative Extension has adopted the Logic Model as a framework to guide program development.¹ The Logic Model outlines a systematic method for determining program topic, planning investments, planning activities for program implementation and evaluating program impacts.

¹ University of Wisconsin Extension maintains a website that provides an excellent Logic Model tutorial and illustrates applications to Extension program development. Available at: http://www.uwes.edu/ces/pdande/evaluation/evallogicmodel.html
“Program development is a process of designing an educational response to a situation that logically links community needs, investments, activities and targeted audiences to results. Program development includes the basic activities of needs assessment, planning, implementation and evaluation” (University of Wisconsin Extension Logic Model Website, 2004).

A community situational analysis, often referred to as a needs assessment, should identify a community’s problems and strengths or needs and assets as well as establish priorities for Extension education and research programs. Describing and understanding a community’s situation prior to program development is the first and perhaps most critical step of the Logic Model approach to Extension program development.

The Logic Model proposes the following steps for program planning (see Figure 1a).
1. Situational Analysis (examine community needs and assets)
2. Set Priorities (program focus and logic underlying focus)
3. Action Plan (how to implement programs and a timetable for implementation)
4. Implementation (inputs, outputs, outcomes, impacts)
5. Evaluation (ongoing process to determine impacts of programming)

The Logic Model approach contrasts with the former approach to Extension program development. Referred to as the narrative model, this approach initiated a needs assessment, listed expected outcomes of programs, a timetable for program implementation including topic, audience, materials and methods, and evaluated the program to determine resources needed.

The Logic Model maintains a more dynamic approach to program development that questions program design and implementation continually. It guarantees a higher level of accountability to stakeholders because it connects program outcomes and impacts with Extension professionals’ responses to community situations.

The situational analysis required of the Logic Model, seeks to assess needs and assets rather than simply needs. Assessing needs and assets provides the opportunity to identify gaps or community imbalances in efforts to achieve and maintain quality of life.

The distinguishing characteristic of a community situational analysis is that it ties program development directly to stakeholder input. This is as opposed to, for example, tying programs to funding sources, academic appointments or service providers.

Information collected during a community situational analysis may come from a number of sources including secondary data such as population trends and employment statistics. Primary data collection involves collecting information directly from stake
Figure 1a. Logic Model Diagram

Situational Analysis

needs & assets

Priority Setting

focus and why

Action Plan

implementation plan
timetable

Situation Statement

needs assessment

Expected Outcomes

learner objectives, action-based objectives

Implementation Plan
timetable

(Implementation)

Inputs

investment, resources
professional development

Clientele

participation

Outputs

activities & participation

Subject Matter

meeting learner needs

Outcomes

learning & actions

Methods & Materials

investments, activities

Impacts

change in conditions

Evaluation Plan

ongoing

Evaluation Resources Needed

ongoing process

holders. Focus groups provide an excellent method for collecting primary data through interactive interviews with small groups of stakeholders. Another primary data collection method is to survey the public, typically through postal mail and more recently electronic mail.

**Extension Professionals as Applied Researchers**

A community situational analysis is applied research. In conducting applied research, two phases must occur. These are planning and execution. The **planning stage** requires an Extension professional to learn about various methods for conducting a situational analysis. Through situational analyses, an Extension professional develops and refines awareness of public issues facing the study area or community. This awareness may come from examining secondary data and/or collecting primary data through a public opinion survey. Extension professionals must be willing to work with colleagues and the public to develop, refine and revise questions in an effort to ask useful questions pertinent to a community situational analysis. S/he must consider budget constraints, timelines and geographic size and density of the study area. The **execution stage** of the analysis includes implementing a study design, analyzing data and reporting the results to colleagues and stakeholders.

**Purpose and Overview of this Publication**

This publication presents basic information to assist Extension professionals in conducting community situational analyses as a systematic part of program development and planning. While a number of approaches are available, this publication focuses on three approaches for conducting community situational analyses. These are: 1) secondary data collection and analysis, 2) focus groups and 3) mail surveys. In addition, this publication presents a brief overview of basic statistics necessary to analyze focus group and survey responses, ideas about reporting the results and institutional approval to conduct applied research involving human subjects. Finally, a brief discussion is provided concerning the linkage between Extension program development and situational analyses as well as some common concerns facing Extension professionals.

Chapter 1 introduces the concept of situational analyses and explains why these analyses are critical to successful Extension program design, planning and implementation. Chapter 1 also briefly reviews the Logic Model, commonly adopted in many
Extension systems across the US, as a basis for conducting situational analyses as a first step to dynamic program development.

Chapter 2 considers the role of secondary data in situational analyses. This chapter discusses sources of secondary data, how to locate these sources and how to conduct meaningful basic community analysis using secondary data. Advantages and disadvantages for using secondary data for community situational analysis are also considered.

Chapter 3 reviews focus groups as an approach to conducting situational analyses. This chapter defines focus groups as a research technique involving stakeholders to help identify potential program issues and priorities. It clarifies the purpose and use of focus groups and reviews roles of facilitators and researchers. This chapter explains how to develop a budget; select, recruit and screen participants; consider incentives for participation; design questions and; analyze and report results.

Chapter 4 provides basic guidelines for designing and implementing self-administered surveys. It discusses techniques for writing survey questions and constructing a visually inviting questionnaire. This chapter also reviews guidelines for designing a budget to implement a mail survey.

Chapter 5 provides basic guidelines for data analysis including calculating, interpreting and reporting basic descriptive statistics. It also presents information about sampling strategies to avoid biased assessment results.

Chapter 6 discusses ideas for reporting assessment results. These include visual aids to illustrate results clearly and to educate the public. Formats for reporting the results include peer reviewed fact sheets, newsletters, journal articles and oral presentations.

Chapter 7 reviews requirements for seeking and obtaining institutional approval to conduct applied research involving human subjects. This chapter explains also how to acquire certification to conduct this type of research including ethics involved in working with human subjects.

Chapter 8 discusses dynamic Extension program development based on community situational analyses. Some common concerns are reviewed as well as the Logic model steps for program planning.
Chapter 2
Secondary Data and Analysis

Buddy Borden, UNCE Area Specialist

Introduction

Data are the foundation of any community situational analysis. Data help to define where a community is currently, where it was at some past point in time and provide a basis for making decisions about its future. Understanding basic social and economic indicators may also help explain why specific issues are more important than others to a community.

Primary data, data collected directly from the source, are ideal for community situational analysis, but collection can be very expensive and time consuming. Secondary data, data collected and published by a third party, can be very useful in the early stages of a community situational analysis because of ease of accessibility at relatively small costs. Historically, a “hybrid” method is usually the norm that includes the combination of primary and secondary data and provides the best approach for a comprehensive community situational analysis.

This section discusses sources of secondary data and where to locate them, advantages and disadvantages for using secondary data for community situational analyses and how to conduct meaningful situational analyses using secondary data.

Secondary Data Sources

Over the last 10 to 15 years, secondary data have become more easily accessible with the development of computer data bases and the Internet. For what was once a major task, gathering secondary data has been vastly improved by just a click of the mouse. This development has also increased the number of agencies and organizations that collect and report data for general population access.

Secondary data are published by different sources that normally originate from federal, state, local, and private agencies or organizations. In most instances, these data are free of charge with the exception of some private data that may require a one time charge or annual subscription fee.
Not uncommon, secondary data are often generated or estimated using primary data as the original source. For example, census data, which is one of the most widely used primary data collection sources by communities and researchers, are generated every ten years. However, these primary data are then used to estimate various social and economic indicators for years that primary census data are not collected. These estimates are classified as secondary data and are used by states, communities and investigators.

Although secondary data can be very useful when used for any preliminary community situational analysis, there are disadvantages to consider. Table 2a lists some of the advantages and disadvantages of secondary data.

Table 2a. Secondary Data Advantages and Disadvantages

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Easily accessible and readily available at a low cost.</td>
<td>1. Reliability of data is highly dependant on the reliability of the source.</td>
</tr>
<tr>
<td>2. Provides a quick snapshot of a community over a period of time.</td>
<td>2. Time lags. Depending on the indicator and source of the data, may not reflect the current year.</td>
</tr>
<tr>
<td>3. Provides a quick comparison to other communities, state, and national.</td>
<td>3. Interpretation of data may only be in the eyes of the beholder. Community may not agree with data.</td>
</tr>
<tr>
<td>4. When combined with primary data, provides a comprehensive assessment of the community.</td>
<td>4. Subscribing or purchasing data can be very costly.</td>
</tr>
</tbody>
</table>

A question often asked at the beginning of any community situational analysis is **which secondary data source is best?** Depending upon the issue or information of interest, this question is highly dependent on how community is defined. Some secondary data sources are better suited for community level analysis while other sources report data strictly on county, state or a regional basis. The preferred way to handle this question is to compare multiple secondary sources to identify which source more realistically represents the defined community and the issue(s) being studied. Also, it is essential to cite the source of the secondary data used.

As a general rule, when deciding which secondary data source to use, it is best to use secondary data that are available and closely resembles the community. If specific data are unavailable at the local or community level, it is best to move to the next level which may be county or state. Table 2b presents common levels of secondary data useful for conducting a community situational analysis.
Table 2b. Common Levels of Secondary Data

<table>
<thead>
<tr>
<th>Community Defined by Geographic Boundary</th>
<th>General Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Community</td>
<td>One community that is defined by census tract, zip code</td>
</tr>
<tr>
<td>Multi-Community</td>
<td>Two or more communities, but less than an entire county</td>
</tr>
<tr>
<td>County</td>
<td>One county</td>
</tr>
<tr>
<td>Multi-County</td>
<td>Two or more counties</td>
</tr>
<tr>
<td>State</td>
<td>One state</td>
</tr>
<tr>
<td>Multi-State</td>
<td>Two or more states</td>
</tr>
</tbody>
</table>

As previously discussed, accessibility of secondary data continues to improve, especially through Internet web pages. One of the most comprehensive web pages for secondary data can be found at econdata.net. This web page, created for the Economic Development Administration, provides a compilation of electronically linked secondary data sources. Data are separated into ten categories with multiple subcategories. Table 2c summarizes data categories and types of data available through econdata.net.

**Secondary Data Analysis**

**Changes and Trends**

When using secondary data for community situational analysis it is important to consider data points over a period of time. This is important for comparing, documenting and explaining community change over time. Two data points can measure change over time while three or more data points can measure trends. Measures of both changes and trends help to explain a historical context for a community event or activity.

For example, how have population and crime rates changed in Nevada over the last 20 years? If only two end points are considered, a measure of change is derived but this measure may not accurately depict changes in population and crime rates, especially in the interval years. The overall result could be that over the 20 year period population increased 25 percent while crime rates increased 10 percent. Considering 10 year intervals instead may help to determine that between years 1 through 10, Nevada’s population increased 35 percent and crime rate increased 20 percent, while years 11 through 20, Nevada’s population increased 10 percent and crime rates remained the same. This would indicate that Nevada’s crime rate has improved over the last ten years while population continues to increase at a modest rate.
Community Situational Analysis Methods and Procedures

Once secondary data are collected for a specific community indicator over a specified time period, the need for meaningful analysis and interpretation most useful to the community situational analysis is required. Data can be compiled, analyzed, and presented using several methods. For the purpose of this publication three simple analyses will be discussed including:

1. **Absolute change** – difference between two time periods.
   
   Formula: \( (\text{Current Year} - \text{Past Year}) \)

2. **Relative Change** – percent difference between time periods.
   
   Formula: \( \frac{(\text{Current Year} - \text{Past Year})}{\text{Past Year}} \)

---

<table>
<thead>
<tr>
<th>Secondary Data Category</th>
<th>Types of Secondary Data at all Community Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic</td>
<td>Summary population characteristics</td>
</tr>
<tr>
<td>Employment</td>
<td>1) Employment by Place of Residence, and</td>
</tr>
<tr>
<td></td>
<td>2) Employment by Place of Work</td>
</tr>
<tr>
<td>Occupation</td>
<td>1) Labor Force by Occupation and</td>
</tr>
<tr>
<td></td>
<td>2) Wages by Occupation</td>
</tr>
<tr>
<td>Income</td>
<td>1) Personal &amp; Money Income, 2) Poverty and Income Distribution, 3) Total Payroll, 4) Average Annual, Weekly, and Hourly Earnings, 5) Transfer Payments, and 6) Assets</td>
</tr>
<tr>
<td>Output &amp; Trade</td>
<td>1) Economic Outputs, 2) Input-Output Models, 3) Business Conditions and Activity, 4) Characteristics of Business, and 5) International Investment and Trade</td>
</tr>
<tr>
<td>Prices</td>
<td>1) Cost of Living, 2) Cost of Doing Business, and 3) Consumer Expenditures</td>
</tr>
<tr>
<td>Economic Assets</td>
<td>1) Debt Finance and Venture Capital, 2) Research and Advanced Technology, 3) Education and Training, and 4) Physical Infrastructure and Land</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>1) General, 2) Housing, 3) Environmental Quality, 4) Criminal Justice, 5) Health, and 6) Social Welfare</td>
</tr>
<tr>
<td>Warehouse</td>
<td>1) General, 2) Manufacturing, 3) Technology, 4) Finance, 5) Nonprofit, 6) Healthcare</td>
</tr>
<tr>
<td>Firm Listings</td>
<td>1) General, 2) Manufacturing, 3) Technology, 4) Finance, 5) Nonprofit, 6) Healthcare</td>
</tr>
</tbody>
</table>
3. **Index Change** – similar to relative change analysis but makes direct comparison to base year. 

*Formula:* \((\text{Current Year} / \text{Past Year}) \times 100\)

Each of these methods may be performed when using secondary data. Each procedure provides information that can be useful when assessing a community situation and identifying cause and effect relationships. **Absolute change** is very informative in terms of actual number changes. **Relative change** is useful for measuring percentage changes between time periods. **Index change**, similar to relative change, compares a period in time against a base year. This analysis is very popular for graphical presentations, especially when large numbers are involved.

One or a combination of these analysis methods can be used when conducting a community situational analysis using secondary data. More sophisticated analytical methods can also be used.

**Category Indicator Community Situational Analysis**

Three categorical indicators should be considered when conducting a community situational analysis. These include:

- **General Demographic Indicators**
- **Social Indicators**
- **Economic Indicators**

Gathering and analyzing secondary data under each of these categories provides an excellent community profile. The following discussion provides description and examples for each category.

**General Demographic Indicators**

General demographic indicators provide the best place to begin a community situational analysis using secondary data. This information usually centers on population statistics and associated characteristics to describe a community. Characteristics commonly include **population**, **age distribution**, **gender**, **race**, **occupation** and **educational attainment**. Table 2d, provides an example comparing Clark and Humboldt and the State of Nevada.

**Social and Vital Statistics Indicators**

Social and vital statistics indicators, also referred to as social behavior and well-being of people, provide measures of the health and social-well being of people in a community. Several indicators can be considered including: **mortality rates**, **morbidity rates of types of illnesses**, **crime rates** and **juvenile delinquency**, **suicide rates**, **family instability** including divorce rates and one-parent households, **alcohol**
and drug abuse and poverty status. Table 2e provides a relative comparison change of selected vital statistics for Clark County, Humboldt County and Nevada between 1990 and 2000.

**Economic Indicators**

Economic indicators are useful for providing the general welfare of a community. Specific economic indicators to consider include housing, business and industry, wages and salaries, employment, public services and taxation. Table 2f, for example, shows economic sector employment trends for Clark County and Humboldt County, Nevada.
Secondary data can be very useful when preparing a preliminary community situational analysis. This kind of analysis helps to describe where a community is today, where it was at some historical point in time, and provides a basis for decisions about the future. Combined with other assessment methods, including primary data collection, secondary data analysis can provide a good starting point for shaping future Cooperative Extension programs. Finally, it is important to understand that several secondary data sources exist and no one particular source provides all the answers but should provide a basis to begin to frame community assets and needs in an objective, factual and organized manner.

Table 2e. Vital Statistics (rate per 1,000 population)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1990</td>
<td>1995</td>
<td>2000</td>
</tr>
<tr>
<td><strong>Clark, NV</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population</td>
<td>756,170</td>
<td>1,035,847</td>
<td>1,393,754</td>
</tr>
<tr>
<td>Births</td>
<td>13,350 (17.6)</td>
<td>16,755 (16.2)</td>
<td>21,970 (15.8)</td>
</tr>
<tr>
<td>Deaths</td>
<td>5,625 (7.4)</td>
<td>8,108 (7.8)</td>
<td>10,085 (7.2)</td>
</tr>
<tr>
<td><strong>Humboldt, NV</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population</td>
<td>12,933</td>
<td>15,183</td>
<td>15,928</td>
</tr>
<tr>
<td>Births</td>
<td>246 (19.0)</td>
<td>304 (20.0)</td>
<td>262 (16.4)</td>
</tr>
<tr>
<td>Deaths</td>
<td>87 (6.7)</td>
<td>75 (4.9)</td>
<td>92 (5.8)</td>
</tr>
<tr>
<td><strong>Nevada</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population</td>
<td>1,236,130</td>
<td>1,611,593</td>
<td>1,998,257</td>
</tr>
<tr>
<td>Births</td>
<td>21,862 (17.9)</td>
<td>25,175 (15.9)</td>
<td>30,477 (15.1)</td>
</tr>
<tr>
<td>Deaths</td>
<td>10,350 (8.5)</td>
<td>13,609 (8.6)</td>
<td>16,080 (8.0)</td>
</tr>
</tbody>
</table>
Table 2f. Clark County, NV and Humboldt County, NV Sector Employment between 1990 and 2000.

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>1995</th>
<th>2000</th>
<th>90-00 Absolute Change</th>
<th>90-00 Percent Change</th>
<th>2003 Index Base 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clark, NV</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Population</td>
<td>756,170</td>
<td>1,035,847</td>
<td>1,393,754</td>
<td>+637,584</td>
<td>+84.3%</td>
<td>184.3</td>
</tr>
<tr>
<td>Total Employment</td>
<td>459,537</td>
<td>617,216</td>
<td>866,758</td>
<td>+407,221</td>
<td>+88.6%</td>
<td>188.6</td>
</tr>
<tr>
<td>Agriculture (Production &amp; Service)</td>
<td>4,312</td>
<td>6,128</td>
<td>9,514</td>
<td>+5,202</td>
<td>+120.6%</td>
<td>120.6</td>
</tr>
<tr>
<td>Mining</td>
<td>823</td>
<td>1,389</td>
<td>1,424</td>
<td>+601</td>
<td>+73.0%</td>
<td>173.0</td>
</tr>
<tr>
<td>Construction</td>
<td>40,514</td>
<td>52,832</td>
<td>75,531</td>
<td>+34,017</td>
<td>+86.4%</td>
<td>186.4</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>11,712</td>
<td>17,742</td>
<td>22,489</td>
<td>+10,777</td>
<td>+92.0%</td>
<td>192.0</td>
</tr>
<tr>
<td>Transportation &amp; Public Utilities</td>
<td>21,153</td>
<td>28,724</td>
<td>43,578</td>
<td>+22,425</td>
<td>+106.0%</td>
<td>206.0</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>14,339</td>
<td>18,945</td>
<td>24,797</td>
<td>+10,458</td>
<td>+73.0%</td>
<td>173.0</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>72,606</td>
<td>97,488</td>
<td>142,470</td>
<td>+69,864</td>
<td>+96.2%</td>
<td>196.2</td>
</tr>
<tr>
<td>Finance, Insurance &amp; Real Estate Service</td>
<td>32,448</td>
<td>46,433</td>
<td>85,685</td>
<td>+53,237</td>
<td>+164.1%</td>
<td>264.1</td>
</tr>
<tr>
<td>Government</td>
<td>50,692</td>
<td>62,150</td>
<td>78,902</td>
<td>+28,210</td>
<td>+55.6%</td>
<td>155.6</td>
</tr>
<tr>
<td><strong>Humboldt, NV</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Population</td>
<td>12,933</td>
<td>15,183</td>
<td>15,928</td>
<td>+2,995</td>
<td>+23.2%</td>
<td>123.2</td>
</tr>
<tr>
<td>Total Employment</td>
<td>7,728</td>
<td>9,757</td>
<td>9,737</td>
<td>+2,009</td>
<td>+26.0%</td>
<td>126.0</td>
</tr>
<tr>
<td>Agriculture (Production &amp; Service)</td>
<td>711</td>
<td>668</td>
<td>836</td>
<td>+125</td>
<td>+17.6%</td>
<td>117.6</td>
</tr>
<tr>
<td>Mining</td>
<td>1,591</td>
<td>2,373</td>
<td>1,496</td>
<td>-95</td>
<td>-6.0%</td>
<td>94.0</td>
</tr>
<tr>
<td>Construction</td>
<td>653</td>
<td>683*</td>
<td>516</td>
<td>-137</td>
<td>-21.0%</td>
<td>79.0</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>125</td>
<td>159</td>
<td>336</td>
<td>+211</td>
<td>+168.8%</td>
<td>208.8</td>
</tr>
<tr>
<td>Transportation &amp; Public Utilities</td>
<td>401</td>
<td>451</td>
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* Estimates
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Introduction

Focus groups are guided small group discussions that focus on targeted issues and can help in acquiring detailed information on particular topics. Ideally, focus groups consist of 6 to 8 participants strategically selected and invited to participate. A facilitator guides the discussion and keeps the participants focused on a set of predetermined questions.

The term focus group has been loosely applied to various group processes. There is, however, a clear distinction between what constitutes a focus group and what does not; what focus groups are used for and what they are not. This chapter explains these distinctions, describes how to plan a focus group, develop questions, facilitate focus groups, and analyze and report focus group results. These materials are described in detail in The Focus Group Kit (Morgan and Krueger 1998).

Focus Group Uses

A focus group is a research method to study problems as well as to identify, plan and implement programs that respond to needs. Although focus groups require a fair amount of planning time, their design satisfies a well-defined purpose. A considerable amount of information may be collected through group discussion in a relatively short time-period.

Focus groups must involve an adequate number of people and ask key questions. With that said, the following are examples of situations that are not conducive or appropriate for a focus group method.

- Sales approaches
- Educational workshops/seminars
- Regular board meetings or committee meetings
- Decision-making groups
- Consensus-building sessions
Morgan (1998) describes the following myths about focus groups:

**Myth - Focus groups are low-cost and quick.**
Effective focus groups normally require a fair amount of planning, which means time and money.

**Myth – Focus groups require professional facilitators.**
Not everyone can nor should facilitate a focus group. But no two focus groups are the same and depending on the specific goals of a focus group, individuals without professional facilitation credentials may qualify for the task.

**Myth – Focus groups require special facilities.**
Focus groups may be conducted almost anywhere, provided the participants’ comfort is considered.

**Myth – Focus groups must consist of strangers.**
Typically, people will freely participate in a discussion and are not influenced by their association with others.

**Myth – Focus groups will not work for sensitive topics.**
In groups, people are usually willing and able to engage in discussions about sensitive topics.

**Myth – Focus groups produce conformity.**
Focus groups can produce conformity but the purpose of a focus group method is to discover and document participants’ viewpoints, not to make a decision or reach consensus.

**Defining Purpose and Outlining Roles**

Defining the purpose of a focus group as part of a community situational analysis is important. Carefully consider goals and anticipated outcomes for using this research technique. The technique can help to identify a problem, assess strengths, plan a program or develop a design for collecting data to evaluate program impacts. After clearly outlining the purpose and goals for the focus group, consider additional assessment techniques to build a comprehensive approach to conducting a situational analysis.

Every focus group involves at least two entities, the Extension professionals initiating the research and the focus group participants. The Extension professional collects and analyzes the data, while the participants partake in group discussion and essentially provide the data.
Developing a Budget

A budget should be constructed at the onset that outlines the human and fiscal resource demands for the focus group project. The budget items and their associated costs will be determined by the size of the overall focus group project. Smaller projects tend to utilize in-house staff for planning, facilitating and reporting. Larger projects will likely require multiple groups, employ an outside firm to recruit participants, and hire a professional facilitator. The budget should include the resources required for the planning, recruiting, facilitating, data analysis and reporting the results. Typical budget line items might include the following:

- Facilitator
- Support staff (note taker, audio-visual operator and assistants)
- Travel
- Meals and lodging
- Facility rental
- Supplies and equipment (telephone and postage)
- Printing and reports

As stated earlier, smaller projects usually are limited to one or two groups and will make use of existing staff with focus group expertise. In addition, the final report may be limited to a few pages and a brief executive summary. In contrast, a larger project requires more funds to cover the expenses associated with hiring outside professionals to complete much of the work. Larger assessment projects typically include at least five focus group sessions. Criteria that define a larger project include complexity of issues, more sessions needed to accommodate variations in demographics or geography, greater analysis requirements or greater reporting commitments. Other items to consider when determining the size of the project include the amount of time and money required to specify the project purpose, prior experience with focus groups and participant accessibility and inherent interest.

Number of Focus Group Sessions

To collect sufficient data for a community situational analysis, it is necessary to conduct more than one focus group session. One session prevents the ability to measure for differences in responses.

Plan to conduct at least 3 to 5 focus group sessions. In planning focus groups, consider the factors mentioned above to estimate a satisfactory number of sessions needed to acquire consistent responses. Minimally, 3 to 5 sessions are recommended to test for diversity of responses. If, however, the topics are complex, and the demographics are mixed, plan to conduct more focus group sessions.
Designing Questions

Careful and thoughtful question design is the foundation of a successful focus group. Consider designing questions before selecting participants. The exercise of question design will provide a clearer sense of who should participate. Keep these simple guidelines in mind when formulating questions:

- Questions must be clear, brief and reasonable.
- Design and write final as complete sentences.
- Seek the assistance of others to construct questions.
- Designing questions takes time, so plan accordingly.

There are a number of question types to include in focus group settings. These include the following:

- **Opening questions** help participants break the ice and establish some common ground for participating. An example includes, “Tell us who you are, what you do, and what you like to do in your leisure time.”

- **Introductory questions** initiate the focus group discussion connect participants with the purpose of the focus group. An introductory question includes, for example, “When you hear the word ‘community economic development’ what comes to your mind?”

- **Transition questions** lead the participants toward key questions. “Tell us about community economic development activities that you have participated in.”

- Typically, 2 to 5 **key questions** comprise the heart of the focus group session. These are likely to require more thought and time for each participant to respond and are asked about one third of the way through the focus group and constitute the meat of the discussion. “What role did you play in helping others with their community economic development efforts?” “How well is the current community development plan working or not working?”

- Finally, **summary questions** are designed to bring closure to the focus group discussion. “How well does that capture what was said here today?”

In designing focus group questions, plan to require no more than two hours of participants’ time. Participants will lose enthusiasm and energy after a two-hour focus group session.
Prior to conducting the focus group session, share the questions with colleagues and citizens, excluding intended participants. Ask these reviewers if the questions are easy to understand and elicit discussion. Also, ask these reviewers if the questions follow a logical sequence that meet the focus group purpose. Revise questions accordingly. Then, ask others to review and if necessary revise the questions again. Well-designed questions are the key to acquiring useful information. Take adequate time to prepare the best questions possible.

**Participant Selection and Recruitment**

Potential participants may be selected from existing lists that include contact information, including voter registration lists, phone books and similar resources. This type of selection process typically is random. Another way to select participants is through referrals of key informants and other potential participants.

In selecting focus group participants, consider the characteristics desired for the analysis through establishing a simple, concise set of selection and screening criteria. Screening criteria may include demographic characteristics, experiences, attitudes and opinions. For example, focus groups related to community economic development may want a mix of business owners as well as non-business people to obtain a broader perspective.

Participants will be more inclined to participate in a focus group if some type of incentive is offered. Incentives range from gifts and meals to cash. Extension professionals more than likely are prohibited from offering cash and gift incentives. However, light refreshments are a traditional incentive used to lure and retain program participants, including focus group participants.

- Follow the checklist below to ensure a successful recruitment process.
- Develop and use a recruitment script.
- Use screening criteria to select participants.
- Make sure the research is meaningful and worthwhile to the participant.
- Offer incentives.
- Check to confirm that the focus group date, time, and location is convenient.
- Ask for commitment to attend and listen for any signs of hesitation.
- Follow-up with a confirmation letter a week prior to the session and a phone call the day before.
In every contact, make sure participants know their participation is critically important. Over recruit to ensure at least six to eight participants.

It is very important to make multiple contacts with the participants. Use the three-step method of initial contact and screening, confirmation letter, and reminder phone call.

**Logistics**

Focus groups can take place in public meeting rooms, commercial facilities and even private homes. Follow the list below when selecting a suitable location.

- Everyone can see and hear one another (semi-circle or U-shape table and chair arrangement).
- The chairs are comfortable, lighting is adequate, and temperature easy to adjust.
- There is plenty of room.
- Food and restrooms are easy to access.
- Room location is easy to find and parking is plentiful.
- The location provides a pleasant, neutral atmosphere.

**Facilitating Focus Groups**

There is no particularly correct way to successfully facilitate focus groups. It is practically impossible to script an exact strategy. Each facilitator brings a unique personality and set of skills that add richness to the group process. However, the following general principles can guide focus group facilitation.

- Take a genuine interest in the participants – in their experiences, insights and character.
- Be a facilitator not a participant. In other words, do not answer the questions asked.
- Be prepared to hear negative viewpoints and monitor your reactions accordingly, remaining neutral and objective.
- Be a good listener.
- Exercise a sense of humor – make the experience enjoyable for participants.

Krueger and King (1998) recommend the following criteria for rating facilitators. These criteria may help guide facilitators’ actions before, during and after a focus group session.
Before the focus group, the facilitator:

- Develops familiarity with the topic and goals of the focus group.
- Understands the purpose and objective of each question.
- Has a sense of the amount of time needed for each question.
- Anticipates the topics of discussion and potential areas of probing.
- Is mentally and physically ready to facilitate.
- Has sufficient technical knowledge of the topic.
- Welcomes participants and makes them feel comfortable.

During the focus group, the facilitator:

- Delivers a smooth, comfortable introduction that is accurate and complete, including a welcome, a brief overview of the topic that defines the purpose of the group, a description of ground rules, and the opening question.
- Establishes rapport with participants.
- Asks the exact questions as written and intended, unless they have already been answered in previous question.
- Allows sufficient time for each question.
- Keeps the discussion on track.
- Keeps all participants involved.
- Listens carefully; synthesizes information and feeds it back, probes for clarification, gets people to talk.
- Seeks out both cognitive and affective domains; gets participants to tell both how they think and how they feel about the topic.
- Moves smoothly from one question to another.
- Handles different participants adeptly and conveys a sense of relaxed informality.
- Avoids sharing personal opinions.
- Finishes on time.
- Brings closure to the group with a summary and invites comments on any missing points.
- Goes to the door and thanks each person individually for coming, just as you would when guests leave your home.

After the focus group, the facilitator:

- Debriefs researcher(s) soon after the focus group, with any assistants involved.
- May performs the analysis or provides insight into the analysis.
- Reviews the final report for accuracy.
The use of conversation principles, also referred to as meeting ground rules, is recommended to create a productive focus group environment. Facilitators should review ground rules at the beginning of the session and post the rules in a visible spot in the room. Participants are asked to add to the list of ground rules. Ground rules help set the tone for productive behavior. The following are examples of ground rules to govern conversation behavior.

- All ideas count, even the “crazy” ones.
- Avoid personal attacks.
- Stay on schedule.
- Limit side conversations.
- Follow facilitator’s instructions.
- Silence cell phones and pagers.

**Recording Focus Groups**

Accurate data collection is critical. In order to get the most from a focus group session data should be collected in many forms.

A recorder using a flipchart may record key words and phrases from participants. Alternatively, the facilitator may perform this function. Flipchart notes provide a visual stimulus for the participants. As people speak and their words are recorded on the flipchart, it provides confirmation that someone is listening. The collection of visible notes may even help participants think new thoughts. As the flipchart pages are posted around the room the participants may get a sense of accomplishment and time well spent.

A note taker should remain outside of the ring of participants. The note taker’s role is to record items such as key themes, big ideas, body language observations, attitudes and meeting climate. The note taker provides a backup for any electronic taping should it malfunction or not pick up small details. The note taker is a third eye, so to speak, or an observer from outside the discussion ring.

Audio or video taping is another important recommendation for a focus group. These recordings are particularly important when it is time to transcribe the focus group discussion in detail. Comments are more likely to be captured verbatim from recordings.
Analyzing and Reporting Results

Once the focus group sessions are completed, it is time to analyze and report the results. To begin the analysis and reporting, determine the purpose of the report and the intended audience. The report can provide details or a brief summary. Think about the information that contributes to the research purpose and objectives. Analysis of focus group data includes the following:

- Specific words
- Context of comments
- Intensity of comments
- Consistency of comments
- Extensiveness of comments
- Specificity of responses
- What was not said
- The big ideas expressed

Marilyn Rausch (1998) offers these simple steps in analyzing and reporting focus group results.

1) Read the transcriptions, annotating and highlighting key findings and potential quotes.
2) Write a rough draft of the detailed findings.
3) Go back to the transcriptions and select verbatim quotes to illustrate the findings.
4) Reread and edit the draft with the executive summary in mind.
5) Write an executive summary that features key findings and recommendations.
6) Append copies of the discussion guide and any other material pertinent to the focus group and results.

A summary report should feature the cumulative results of multiple focus groups. An outline of a report summarizing cumulative focus group results includes the following components:

- Cover page
- Summary
- Table of contents
- Purpose and procedure
- Results or findings
- Summary or conclusions
- Recommendations
- Appendix
Summary

Focus groups are guided small group discussions that focus on targeted issues and are used to acquire detailed information on particular topics. Focus groups provide a research technique for conducting a community situational analysis. To determine if focus groups are right for a particular situational analysis, begin by clearly identifying the precise purpose and scope of the analysis. Consider the advantages and disadvantages of other approaches.

If the focus group method is the best fit, set-aside adequate time for planning. Determine the role of Extension professional as an investigator and/or possibly facilitator as well as participants’ roles. Develop a budget. Develop and write questions carefully, providing adequate time for reviews and revisions. Select, screen, and recruit participants. Submit data collection protocol and required application forms to conduct research involving human subjects through the proper university channels (see Chapter 7). Use high quality facilitation to collect pertinent information from participants. Finally, analyze the data and organize the findings into a report that is easy to read.

In addition to providing information on important topics to help target Extension programs, a focus group technique may also provide an excellent venue to help the Extension professional to understand any challenges or barriers to program implementation. Such barriers may include, for example, the political history surrounding particular issues identified, seeking budget support for programs, and maintaining program momentum or citizen participation.

References


Chapter 4
Mail Surveys

Loretta Singletary, UNCE Extension Educator

Introduction

Self-administered surveys are an effective method for conducting community situational analyses. Since a self-administered survey takes place in the comfort and privacy of a participant’s home, it provides citizens with an opportunity to influence program development relatively anonymously and therefore honestly.

The prevalent methods for self-administered public surveys are through US Postal mail delivery using a paper questionnaire and, more recently through electronic delivery, using an email or web based questionnaire. Compared with postal mail surveys, e-mail and web based surveys are economical and time-efficient. In addition, an increasing number of web based survey clearinghouses are available that facilitate questionnaire design and data collection providing colorful and inviting survey experiences. However, if Extension professionals intend to conduct situational analyses with diverse socioeconomic groups, they should consider several potential disadvantages associated with this method. A recent study reported that less than half of all Americans have daily access to computers and the internet. Rural areas, in particular, still vary significantly in terms of transmission infrastructure to access the web or receive electronic mail. Also, differences exist among individual’s computer hardware and software that may hinder access to or distort appearance of electronic mail surveys. This lack of homogeneous or universal ability to receive and respond to electronic surveys presents serious problems in terms of sampling and coverage error. Also, as compared with postal mail addresses which exist for one residence, different email addresses can exist for each family member in the same residence, again, increasing sampling error.

Electronic infrastructure is rapidly improving while the prices of computers and software only continue to fall. The evolution of this survey method is rapid and its future

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2 A number of electronic survey clearinghouses are available to facilitate email surveys, including, for example, “surveymonkey.com,” available at: http://www.surveymonkey.com.
promising. However, until rural areas in particular have improved access and capacity to participate in electronic surveys, and sampling issues are worked through, self-administered surveys will likely rely heavily upon postal mail rather than electronic mail surveys.

Regardless of the delivery method selected, postal or electronic, self-administered surveys require special attention to particular details to increase the likelihood of responses. These details involve question construction, questionnaire design and survey implementation. To ensure successful implementation, data analysis and reporting results Extension professionals must also plan an adequate budget that addresses all aspects of a survey project. Although this chapter focuses on postal mail surveys, many of the principles and guidelines presented can be applied to electronic survey construction and implementation.

**Writing Questions**

A broad-based community assessment generally requires formulating and asking a broad range of questions concerning potential problems and assets unique to a study area. These questions may examine, for example, employment and infrastructure, shopping accessibility, fire and police protection, health, education and youth issues, in addition to environmental or natural resource issues.

Unlike focus groups, telephone and other interview survey approaches, a mail survey does not provide a facilitator to clarify instructions or encourage participants to answer individual questions. Therefore, a mail survey must feature carefully and clearly worded questions. The goal of writing questions is to develop questions that all respondents will understand the same way, willingly answer and answer accurately.

Dillman (2000) outlines several criteria for developing survey questions. These include the following:

- **Each question requires an answer from each participant.** Questions are tools for determining the distribution of a characteristic of the population surveyed. Participants should have the opportunity to answer every question asked. Thus, avoid questions with introductory words such as *if* and *when* which invites nonparticipation or non-responses.

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4 Other survey methods applicable in rural settings include telephone surveys and drop-off/pick-up surveys. The author encourages readers to consider these methods in addition to mail surveys. Dillman (2000; 1994; 1978) remains a leading expert on survey techniques. Readers should examine publications listed in the reference section following this chapter.
Understand the extent to which participants have a ready-made answer to a question. Questions about age, for example, have automatic, ready-made answers. Other questions that attempt to measure opinions and beliefs require more thought and can produce inconsistent responses when asked at different times. A great deal of thought and testing goes into asking broad contextual questions. This requires practice with writing questions, testing questions and rewriting questions.

Encourage participants to relate their answer in terms of present time. Instead of asking about what happened in the past, ask what usually happens. The participant can then estimate their usual activity rather than try to recall from a past event.

The range of response categories provided, perhaps more so than words, influences responses. Visual layout of choices can stimulate response also. The more vague the question and response categories the greater the risk for measurement error.

Motivate participants to answer questions by designing a friendly questionnaire with simply, clearly worded questions. Examples of questionnaires that do not motivate response include lengthy instructions printed in a separate booklet or asking participants to prioritize a long list of items.

Collect comparable data. If a self-administered survey is used in addition to other modes of situational analysis, including focus groups, questions should be designed and data collected so that they are comparable.

Question Structure

Writing questions is the most difficult aspect of conducting a mail survey. Perhaps one of the most frustrating experiences encountered with this type of research is finding that a question is ineffective or problematic when it comes to the analysis. This is especially disappointing when the survey is intended for replication in other geographic areas or in future time-periods. Relying upon proven principles for writing questions can help to avoid potential problems and associated survey disappointments.

Deciding upon question structure is an important first step. There are three different structures. These are open-ended questions, close-ended as ordered response categories and close-ended as unordered response categories.
Open-ended questions are likely to get inadequate answers. These may include questions such as:

- What other youth issues need to be addressed to enhance quality of life in your community?
- Please list any additional development needs in your community.

Answers to these questions are likely to be incomplete without an interviewer or facilitator present to probe for details. However, open-ended questions are very useful in cases where the researcher is not sure of the possible answers and is looking for ideas to build future survey questions. In other cases, open-ended questions are helpful when providing a range of responses is not practical, such as questions about occupation.

Close-ended questions with ordered responses provide participants with a response scale where they must select one answer from a scale or fixed range of choices. Examples include:

Question #1: All citizens have a responsibility to conserve water on a daily basis.
   - □ Strongly disagree
   - □ Somewhat disagree
   - □ Neither agree nor disagree
   - □ Somewhat agree
   - □ Strongly agree

Question #2: How good do you think you are at listening to youth?
   - □ I need a lot of improvement at this
   - □ I need some improvement at this
   - □ I am okay at this
   - □ I am good at this
   - □ I am very good at this

Close-ended questions with unordered responses present answers in no particular order. Participants must pick the one response that best describes their situation. An example includes:

Question #3: Whose responsibility is it to see to it that your child gets the most out of the 4-H program? (check one):
   - □ Child
   - □ Parent(s)
   - □ Community
   - □ Extension Staff
   - □ Volunteer Leaders
An example of a partially closed-ended question with unordered response categories:

Question #4: How do you prefer to receive timely community information?
- Printed material
- Seminars/workshops/classes
- On-line, web-based instruction
- Newspaper articles
- Other (please describe) ____________________________

The easiest questions to answer are question #1 and question #2. The choices are limited and require limited effort to consider and choose an answer.

Question #3 requires more effort to consider responses and choose an answer as the participant is more likely to consider their personal situation compared with others and prior circumstances. Nevertheless, with this particular question, these are the choices available and cannot be ordered in any particular way.

Similarly, question #4 requires more time to consider responses plus volunteer a choice that they perceive to be missing from the choice set. This type of question may be necessary, however, when the researcher is uncertain that all possible choices are included and needs more information from the participant.

**Principles for Writing Questions**

Careful choice of words is the key to success in writing all structures of questions. Dillman (2000) provides principles that serve as guides when writing questions. These include the following:

- **Choose simple rather than specialized words or phrases.** For example, instead of using the word “occupation,” use “job”; instead of “respond,” use “answer”; instead of “household occupants,” use “people who live here.”

- **Choose as few words as possible avoiding redundant phrases and words.** Instead of repeating the choices in the question stem, ask the question and provide the choices once.

- **Use complete sentences to ask questions.** Instead of “Number of years lived in your county,” use “How many years have you lived in your county?”
Avoid vague quantifiers when more precise estimates can be obtained. Instead of the choice “occasionally,” separate this choice into “about once a month” and “two to three times per month,” for example.

Avoid specificity that exceeds the respondent’s potential for having an accurate, ready-made answer. Instead of asking “how many Extension materials have you read during the past six months,” provide a set of numeric choices including 0, 1-2, 3-5 and so forth.

Use equal numbers of positive and negative categories for scalar questions. For each level of agreement or satisfaction, there should be an equal number of levels of disagreement or dissatisfaction, with a neutral category typically positioned in the middle of the scale.

Distinguish undecided from neutral by placement at the end of the scale. For example, on a choice scale of 1 to 5, “don’t know” should be positioned at the end of the scale as choice 6.

State both sides of attitude scales in question stems. For example, “on a scale of 1 to 5 with 1 being “not a concern” and 5 being “a major concern,” please circle the number that best indicates your opinion about how the following issues affect youth in your community.

Eliminate check-all-that-apply question formats to reduce primacy effects. Respondents are more likely to choose items listed first than those listed last. The question should be revised to include a choice set for each item listed.

It is a good idea to draft questions for content and then test these drafts on colleagues and staff. After revising questions accordingly, test the readability and clarity of the questionnaire further with a small sample of citizens that will provide honest feedback. Typically, numerous drafts, revisions and rewrites are required to produce a set of questions that satisfy the goal of content and readability.

Creating a Visually Inviting Questionnaire

A researcher must balance the number of questions with format and appearance, so that the resulting questionnaire is of reasonable length and appears inviting.

Again, because mail surveys stand alone without a facilitator, researchers must make special efforts to create a questionnaire that is visually inviting. The participant must find it interesting enough to decide it is worthwhile to take the time to complete and return. A researcher must balance the number of questions with format and appearance, so that the resulting questionnaire is of reasonable length and appears inviting.
Visual appearance includes the selective and strategic use of color, if possible, to direct participants’ attention to questions and answer choices. With the falling prices of color printers and digital printing, using color to guide a participant through a questionnaire, is fast becoming a more affordable option in questionnaire design. In addition, graphics placed on the cover of mail questionnaires should be simple yet eye-catching.

Format of individual questions and question sets is also an important detail to manage. Figure 3a illustrates a format that lists both questions and answers horizontally thus conserving space. Instructions incorporate and explain the question stem, with individualized aspects of the question stem listed next to the set of possible choices. Although not exactly complete sentences, this format provides simply worded questions and conserves space significantly, thus shortening the overall questionnaire length. Similarly, Figure 3b illustrates another example of format where the question stem is directly above a list of simple stem endings.

Survey experts recommend the following guidelines to create an inviting questionnaire.

- Include only essential instructions. Do not burden the participant with information about the survey within the questionnaire itself.
- Print the questionnaire as a booklet (approximately 6 by 8 inches). Use legal size paper to print the questionnaire and then fold the paper in half to make the booklet.
- Print the questionnaire using white or off-white 16-pound bond paper.
- Use between 10 and 12-point font size.
- The finished questionnaire should fit into a regular business envelope.
- The questionnaire should be no more than 12 pages, printed back to back, including front and back cover.
- Design an attractive and interesting, but neutral, front cover that captures the reader’s attention. Use simple graphics and provide a study title.
- The front cover should include the name of the study sponsor, in this case an Extension office/location and affiliated university or institution.
- Print the return address on the cover and/or the back page. If the participant loses the return Envelope, the questionnaire can still be returned.
- Leave the back cover blank and invite comments. Comments often shed new insight on issues and providing the opportunity to comment promotes goodwill.

**Motivating the Public to Respond**

Motivating participants to respond to surveys, that is, completing and returning questionnaires, remains a challenge. Proper question construction and concise, attractive, easy-to-read formats go a long way in encouraging response.
Figure 3a. Space-conserving Horizontal Format.

I. Community Assets: Community assets are positive features that explain why we choose to live in a particular community. On a scale of 1 to 5, with 1 being “poor” and 5 being “excellent,” please circle the number that you believe most accurately rates each feature in your community. If you “don’t know,” circle DK.

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<th>Poor</th>
<th>Fair</th>
<th>Okay</th>
<th>Good</th>
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<td>1. Personal and family safety</td>
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<td>2</td>
<td>3</td>
<td>4</td>
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<td>DK</td>
</tr>
<tr>
<td>2. Weather</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
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<tr>
<td>3. Air quality</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>4. Water quality</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
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<td>5. Availability of open space</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>6. Cleanliness of open space (no trash dumping)</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>7. Recreational opportunities</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>8. Place to raise a family</td>
<td>1</td>
<td>2</td>
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</table>

Figure 3b. Main Question Stem Stated Once with Multiple Endings Listed.

On a scale of 1 to 5 with 1 being “very little” and 5 being “very much” please circle the number that best indicates how much you think your child(ren) is learning as a result of 4-H. If you “don’t know,” circle DK.

<table>
<thead>
<tr>
<th>As a result of 4-H, my child(ren) is learning:</th>
<th>Very Little</th>
<th>Little</th>
<th>Neutral</th>
<th>Much</th>
<th>Very Much</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. skills useful in dealing with conflicts</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>2. improved communication skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>3. relationship-building skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>4. to acquire greater self-esteem</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>5. improved organizational skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>6. improved decision-making ability</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>7. to achieve greater self-confidence around others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>8. improved public-speaking skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>9. improved skills to lead peers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>10. about future career choices</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>11. self-responsibility</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>12. to trust others and be trustworthy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>13. knowledge about the project(s) in which s/he participates</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>14. to set and reach goals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
<tr>
<td>15. to value service to the community</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>DK</td>
</tr>
</tbody>
</table>
Multiple mailings are another way to encourage completion. Survey methods research indicates participants are more likely to respond if they receive several opportunities to participate in a mail survey. Typically, this includes an initial mailing, followed by a reminder postcard, followed by a second mailing to survey non-respondents.

Ideally, some type of social exchange occurs between the researcher and the participant as well. Studies have shown that this exchange is more effective if immediate rather than later. Studies also indicate that cash awards are the best incentive. A gift certificate enclosed with a postal mail survey also provides an instant reward for responding. However, Extension professionals may find it fiscally difficult, if not impossible, to include cash awards or gift certificates as a part of their survey project.

Alternatively, a well-written cover letter can initiate social exchange. The letter should be informative yet friendly, promising a timely response to the analysis through the delivery of improved relevant stakeholder-based programs (see Figure 3c).

Other techniques for encouraging survey response include press releases that inform communities about upcoming surveys. Finally, pre-letters may help to attract attention to an upcoming survey. Similar to cover letters, pre-letters are sent to participants prior to the initial cover letter and questionnaire. A pre-letter notifies participants that a survey is coming, explains its purpose and expresses appreciation for their participation. Personalized letters can increase response rates. Ideally, letters include the investigator’s hand written signature using contrasting ink.

Implementing a Mail Survey

The details required for implementing a mail survey are partly driven by budget and can affect the length and visual appearance of a questionnaire as well as decisions about sample size. Many field Extension professionals work with moderate budgets, yet are required to conduct objective, high quality analyses. Thorough and careful planning, however, can produce an effective yet frugal postal mail survey.

A number of resources provide postal address lists free or for minimal costs. A postal mail survey requires at a minimum a one-time mailing of the questionnaire and cover letter along with a return self-addressed and stamped envelope. However, a one-time mailing likely will result in lower than desired response rates.
LETTERHEAD

Date

Dear citizen:

Your local University of Nevada Cooperative Extension office is conducting a survey to assess educational and research program needs in Any County. Your name was selected randomly from a list of (source here) to participate in this survey. Your participation is voluntary and strictly confidential. By returning a completed survey, you will help us build better Extension programs in Any County. Your responses are very important to us.

Enclosed is a brief questionnaire that asks questions about the “quality of life” in the community where you live in Any County. Quality of life is an expression that summarizes our perceptions about the places where we choose to live. The questions asked specifically concern community assets, community needs, issues affecting youth, water resource issues and demographics.

Completing the questionnaire will take about 10 to 15 minutes. Please try to answer every question. After you complete the questionnaire, enclose it in the self-addressed and stamped envelope provided. Please return the completed questionnaires by (date here).

We assure you that your individual responses will remain confidential. There are no identifying marks on the survey and we request that you do not write your name on the survey. Once we combine and summarize the responses, we will share these results with you through a fact sheet.

Thank you for you participating in this important survey. We work very hard to provide quality Extension programs useful to you. This survey will help us to better target our efforts. If you have any questions please call me at (local office number) or the University of Nevada, Reno Social Behavioral Institutional Review Board at 775-327-2368.5

Sincerely,

__________________________, Extension Title
University of Nevada Cooperative Extension
Dillman (2000) and other survey experts (Salant and Dillman, 1994) recommend multiple mailings. Studies indicate that multiple mailings increase the likelihood of a higher response rate.6 A four-stage multiple mailing, for example, includes the following sequence of activities:

1. **Pre-letter**: Mailed to the entire sample. This is a personalized letter that, similar to the cover letter, tells the recipient they have been selected to participate and will be receiving a questionnaire in the mail.

2. **Initial survey packet**: Mailed to entire sample 1 week following the pre-letter. The packet includes cover letter, questionnaire and pre-addressed, stamped return envelope.

3. **Follow-up post card**: Mailed to entire sample about 4 to 8 days after initial packet. The card should thank those who responded and remind those who have not responded to complete and return their questionnaire.

4. **Complete survey packet**: Mailed only to non-respondents about 3 weeks after the first questionnaire. A revised cover letter explains to participants that they have not yet responded asking them to respond.

Multiple mailings typically target “non-respondents” or survey recipients who have not yet returned their completed surveys. This process requires “tracking” survey respondents using some type of simple number coding scheme printed on the return envelope. The number that is encoded on the return envelope corresponds with an outgoing address so that when a completed survey is returned that participant is removed from the list of recipients who receive multiple mailings.

In terms of planning a budget, implementation of a mail survey requires the following items:

- Address list
- Postage for outgoing surveys
- Postage for return envelopes
- Postage for multiple mailings
- Letter head stationery for cover letter
- Paper for questionnaire
- Outgoing envelope
- Return envelope
- Reminder postcards and postage
- Costs for printing questionnaires
- Address labels

In addition to required materials, investigators should consider the often hidden costs associated with numerous tasks that the investigator, clerical and other support

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6 The author strongly urges readers to study and follow Dillman’s (200; 1994; 1978) multiple wave mail protocol in implementing mail surveys to increase response rates.
staff perform to implement a mail survey. In addition to time invested in constructing a questionnaire, including drafts, tests and revisions, specifically, these include:

- Design cover graphics
- Format questionnaire
- Review drafts of formatted questionnaire
- Print questionnaire
- Write pre-letter
- Write cover letter
- Print pre-letters and cover letters
- Write and submit press release to advertise survey
- Fold pre-letters and insert into envelopes
- Fold questionnaires and cover letters
- Address and stamp outgoing envelopes
- Pre-address and stamp return envelopes
- Insert questionnaires, cover letters and return envelopes into outgoing envelopes
- Track, sort and file completed surveys as they are returned
- Conduct multiple wave mailings that target initial survey non-respondents
- Enter responses into spreadsheet software

**Summary**

The prevalent methods for self-administered public surveys are through US Postal mail delivery using a paper questionnaire and, more recently through electronic delivery, using an email or web based questionnaire. Compared with postal mail surveys, e-mail and web based surveys are economical and time-efficient. In addition, an increasing number of web based survey clearinghouses are available that facilitate questionnaire design and data collection. Although there are some potential disadvantages associated with electronic mail surveys in rural areas, electronic infrastructure and access will only improve, ensuring a bright future for this survey method.

Self-administered surveys are an effective method for conducting community situational analyses. Since a self-administered survey takes place in the comfort and privacy of a participant’s home, citizens can influence program development relatively *anonymously* and perhaps more honestly.

Unlike focus groups and other types of interview survey methods, a mail survey does not provide a facilitator to clarify instructions or encourage participants to answer individual questions. A mail survey must feature carefully constructed questions.
Investigators must make special efforts to create a questionnaire that is attractive and professional looking. The participant must find it interesting enough to decide it is worthwhile to take the time to complete and return. A researcher must balance the number of questions with format and appearance, so that the resulting questionnaire is of reasonable length and appears visually inviting.

Questionnaire format and construction must also conserve space to avoid inflating implementation costs. In addition, size of the survey sample and the length of the survey questionnaire determine costs for survey materials and human resources involved. The details required for implementing a mail survey are partly driven by budget and can affect the length and visual appearance of a questionnaire as well as decisions about sample size. Many field Extension professionals work with moderate budgets, yet are required to conduct objective, high quality analyses. Thorough and careful planning, however, can produce an effective yet frugal postal mail survey.

References


Chapter 5
Analyzing Data

Brad Schultz, UNCE Extension Educator
Don Breazeale, UNCE Extension Educator

Introduction

A community situational analysis involves the collection of data about distinct and important populations. Data may be qualitative, quantitative or a combination. The goal of data analysis is to reduce and summarize many data points into manageable numbers that characterize and provide valuable information about populations. When appropriate, statistical tests can help to determine if populations respond similarly.

Data collection and analysis, however, are not the final products. A community situational analysis uses data to produce information to help Extension professionals make better decisions about planning and developing education and research programs.

This chapter briefly reviews typical approaches to conducting a community situational analysis from a measurement or statistical perspective. It discusses data collection methods, data analysis using descriptive statistics, scalar data, survey validity and data presentation.

Data Collection Methods

In conducting a community situational analysis, an Extension professional can incorporate numerous data collection methods. Methods include examination of secondary data, focus groups, mail surveys and individual interviews to name a few. The specific method depends on the nature, quantity and level of detail desired.

A focus group is a selected group of individuals assembled to discuss specific topics. Particularly, when used at the beginning of an assessment process, focus groups
provide information useful for generating additional questions to research. Focus groups can help to narrow broad issues into very specific questions. Well-defined education and research programs can be developed around these questions. Focus groups generally do not provide sufficient information for quantitative statistical analysis, however, because the number of participants is small.

Mail surveys typically ask a series of questions that have discrete answers. These may be yes/no, agree/disagree, or feature a set of scalar responses. If a survey targets only one population, data analysis is limited to summary statistics about the population. When surveys include multiple populations, data analysis can characterize each population and compare characteristics between populations, such as communities or counties, for example.

The goal of any situational analysis is to learn more about a given community. An Extension professional may even use multiple approaches. Regardless of the approach used, it is important to plan data analysis prior to collecting data.

**Why Use Descriptive Statistics?**

Descriptive statistics by definition describe one or more attributes about a population. Data are reported as single values that characterizes the population. These single values are mean, median and mode. Other single values describe how population characteristics vary. These values include standard deviation, variance, maximum and minimum. These calculations provide the Extension professional with an overview of a given population’s responses. If more than one population is sampled using the same method and tool, these statistics allow comparisons among populations.

The purpose of collecting data for a situational analysis is to improve Extension professionals’ understanding of specific issues relevant to populations in the geographic area in which they work. Many data points or responses are collected and descriptive statistics used to summarize and characterize the population. If the data collection process is designed carefully and an adequate number of responses collected, the use of descriptive statistics will improve the investigator’s knowledge about the population sampled.

Descriptive statistics obtained for several attributes “paint a picture” of the population(s). This information should improve investigators’ understanding of a community’s values, perceptions and knowledge about issues. When descriptive statistics are applied to data collected similarly from two or more populations, an investigator can determine if different populations in their community view the issue or condition similarly or differently.
**Data Scales**

Data typically fit one of four scales: nominal, interval, ordinal and ratios. A nominal scale assigns items to a group or category defined by qualitative measures, such as personal attributes such as gender, eye color or race; demographic attributes such as income and education, and yes/no categories. There are no values or relationships between variables. The only applicable statistics are frequency of occurrence and mode. Most demographic information fits the nominal scale. When the investigator uses the nominal scale, s/he must include all possible responses, including the category “don’t know” to prevent respondents from forcing answers into an inappropriate category. Also, all categories must be mutually exclusive.

An interval scale is one where the distance between measures is always the same such as calendar years and test scores. Descriptive statistics used to summarize interval data include mean, median, and mode. Common measurements of variation include range (minimum and maximum), variance, standard deviation, confidence intervals, coefficient of variation, quartiles, skew and kurtosis.

Ordinal scales classify responses according to whether they have more or less of a characteristic such as letter grades, achievement, and rankings. When respondents are asked to rate their responses for levels of achievement from low to high an ordinal scale is used. The actual scale provided may be either verbal (agree strongly) or numeric (agree strongly = 5, using a scale of 1 to 5). Categories of responses must have an ordered, logical relationship to one another, but distances from one category to another (1 to 2 and 2 to 3) are not necessarily equal. An ordinal scale is commonly used when seeking information about knowledge, attitudes, beliefs or perceptions about an issue. Ordinal scales (also called Likert scales when numeric values are used for qualitative categories) must be structured to include all possible responses, including a category for “don’t know” to prevent forcing responses. This scale works best when there are at least four or five choices.

Some researchers treat ordinal scales as interval scales, when qualitative categories (e.g., agree, strongly agree, etc.) are assigned numeric values (e.g., agree = 4, strongly agree = 5). This approach can help numerically inclined researchers interpret qualitative responses, but the researcher must remember that differences between mean values for specific populations do not confer a quantitative degree (specific amount) of difference. Descriptive statistics readily applicable to ordinal data are the mode and median. Researchers often calculate the mean value when Likert scales are used, but since the distance between answer points (1, 2, 3, etc.) are not equal the calculated mean is only a qualitative descriptor for comparing the general similarities in responses for or between populations. It should not be used in a statistical test for comparison purposes if populations respond similarly to qualitative questions. Common measures of variability include range and percentile ranking.
**Ratio scales** are complex scales that incorporate characteristics of nominal, ordinal, and interval scales. All points on the scale are equidistant from one another, but the scale has an absolute zero (e.g., age and income scales). The presence of absolute zero permits the use of meaningful ratios. Ratio scales are used to gather quantitative information and are commonly used to obtain information about age, income, years of use or attendance. Important points to remember when creating ratio categories are: 1) each range of values used to form a group or category should be the same size; 2) categories should never overlap; and 3) categories should follow a logical order. All descriptive statistics and measures of variation described above are applicable to data collected on ratio scales.

**Analyzing Descriptive Data**

The basic theoretical assumption about descriptive quantitative data is that all data points are normally or evenly distributed around a central point. When graphed on an x-y axis, the data will represent a bell-shaped curve (Figure 4a), where the right and left sides are mirror images of one another. Using descriptive statistics the investigator reduces numerous many data points to one or several values that characterize a population. Comparisons between populations can be made using inferential statistical tests, including t-tests and analysis of variance (ANOVA), to determine if two populations are similar or different.

The two most common concepts used to describe data are its central tendency and variability. All data points (e.g., individual responses to a question or individual measurements of a feature) can be graphed, showing the full range of their distribution. A large amount of data makes it difficult to interpret the meaning of individual points, especially when two or more populations are compared. Measures of **central tendency** are single values used to characterize an entire set of data points. The single value identifies the center of the distribution for each population. When two or more populations are sampled, investigators can calculate the central tendency of each and compare values.

The three most common measurements of central tendency are the mode, median and mean. The **mode** is applicable to both qualitative (descriptive) and quantitative (numeric) data. Simply stated, mode represents the response that occurs most frequently. It is the easiest statistic to calculate because it is a simple count of the number
of responses in each category, of each value, or each range of values if numeric data are divided into groups, such as low, middle and high. For qualitative data, the mode is a measure of popularity, such as most used after school program. The mode is not affected by extreme responses or values, but can be an unstable description of central tendency when a group of responses can have two or more modes. Although the mode identifies the most common response or score, it may not reflect the majority of responses or scores. It is the peak of the distribution curve. The mode is used most appropriately for nominal data.

The **median** is the midpoint in a range of scores and is applicable only to quantitative data. Half of the data points are above the median value and half below. When the number of data points is an even number, the median is the midpoint between the two middle scores. Every data set has only one median value, and that value is not influenced by extreme events. The median is often an appropriate measure of central tendency for data collected using ordinal scales. Because the median is not influenced by extreme values, it is informative when interval data are not normally distributed, but skewed by very high or low values.

The **mean** is an arithmetic average. It is the summation of the values for every data point, divided by the number of data points. It is applicable only to quantitative data, and there is only one mean value possible for each variable measured. Unlike median and mode, the mean is influenced by extreme values. It can be skewed far to the right or left of the mode. The mean is a very appropriate statistic for interval data such as tons of hay produced, animal weights and test scores.

It is often helpful to calculate more than one statistic for central tendency, particularly if data are not normally distributed. The use of two or more measures of central tendency often provides a more accurate interpretation of data. All measures of central tendency, however, must be interpreted with respect to sample size and rate of response. Small sample sizes can provide misleading statistics particularly if participants are not randomly selected, and/or their responses have large variation.

Measurements of central tendency are only one statistical measurement that can be applied to responses gathered through a situational analysis. They represent a central value that may differ within a population before and after implementation of an education or research program, or between populations asked the same assessment question or issue.

Full interpretation of the mean, median or mode of any data requires the investigator to understand the variability of the population’s responses. Interpretation of the mean, median, and/or mode will be quite different if variation of the data around the
mean is large compared to very small. Large variation would indicate the population has very divergent opinions, beliefs, values and/or knowledge. Small variation indicates the population holds very similar opinions, beliefs, values and/or knowledge.

All data sets have variation. The important question is how large or small is that variation. Common measurements of variation are the range, variance, standard deviation, confidence intervals, and the coefficient of variation, quartiles, skew and kurtosis. The **range** is simply the difference between the highest and lowest reported values. The degree of spread from the mean, median, or mode is an indicator of the variability of the population's responses. These values, however, should be checked to determine if they are outliers from "most" responses. If the high and low values are extreme compared to most responses they are meaningless as an indicator of the range of variability.

Variance and standard deviation measure the difference between the mean and individual data points. Specifically, **variance** is the average of the squared deviations from the mean. The difference between each data point and the mean squared, all data points summed and the total divided by the number of data points. Standard deviation is the square root of the variance. In practical terms, the larger the variance or standard deviation, the more divergent the responses or measurements obtained. That is, many data points are far from the mean value. A small variance or standard deviation indicates very similar responses or measurements. Most data points are near the mean. The terms large and small are relative and directly related to the scale of the data set.

When the range of responses is 1 to 5, a variance of 4 (standard deviation = 2) is very large. When the response range is from 1 to 100 a variance of 4 (s.d. = 2) is quite small.

The **confidence interval** comprises two values, one on each side of the mean, that identify the range of values likely to include the true mean for the population. The calculated mean is always the mean for the data points collected. Most data collected are a subset or sample of the full population. Thus, the population mean typically differs from the sample mean. The confidence limit identifies specific values on both sides of the sample mean whose range is likely to contain the true population mean, given a specified level of probability (95%). For example, if the sample mean is 25 and the 95 percent confidence interval is from 21 to 29, there is a 95 percent chance the true mean of the population is a value from 21 to 29. For a given sample mean, the higher the probability selected (99% versus 95%) the broader the confidence interval will be. Data with high variability have broader confidence intervals than data with low variability.

The **coefficient of variation (CV)** is expressed as a percent; therefore, it is a relative measure of variability. Specifically, it is the sample standard deviation divided by the sample mean, multiplied by 100. The CV can be applied to quantitative survey data where different populations are asked the same question. In contrast, the standard deviation is an absolute measure because it is measured in the same units as the observations.
A sample can also be divided into quartiles. **Quartiles** are intervals that contain 25 percent of the data points. The width of the intervals is an expression of variability in the data. Broad quartiles indicate highly variable data, which indicates a large segment of the population responded differently than indicated by the mean value.

**Skew** describes how the distribution of the data points compares to the theoretical normal distribution, which is symmetrical. Variation from the normal distribution is skewness. Typically, data are skewed right or left of the mode, to some degree particularly if extreme values are present. When skewness is high, an assumption of normal distribution is not met, and the use of many parametric statistical tests, such as t-tests and analysis of variance, is not valid. The use of the mean to characterize the population may be a poor indicator of central tendency. Likewise the variance and standard deviation would be poor indicators of sample variation. Quartiles may be the best indicator of variability when the data distribution is highly skewed. The width of the quartiles on either side of the mode may be small, but very wide toward the skewed tail. This pattern would indicate most of the population responded similarly, with some extreme outliers. If there are few outliers, it may be best to exclude them from data analysis and interpretation.

**Kurtosis** reflects whether the distribution of data points or “curve” is peaked or flat. It identifies the steepness of the curve at the mode. Very steep curves indicate similar responses, thus low variation. Very shallow (broad curves) indicate wide variation in responses.

**Surveying Populations**

**Sample Size**

An investigator must determine what proportion of the target population to sample to have some statistical confidence about the information gathered and to be able to reach some reliable conclusions about the group surveyed. Most statistics textbooks offer a table for determining sample size. Unfortunately, in many instances, community-based situation analyses provide a less than ideal response rate, at least from a strict interpretation of statistical rules.

An investigator must determine the true purpose of their analysis, however. Most situation analyses do not test any hypothesis, and therefore lack nor require rigid experimental design. Rather, such analyses are exploratory studies intended to acquire general information, trends and important issues. There is a big difference between the statistical rigor required to test a potential vaccine versus determining whether childcare
or economic development is the top issue in a community. Large samples provide more confidence in the summarized results; however, small samples can provide important information that while not “statistically significant” may be “educationally significant.”

**Sampling Methods**

Specific sampling methods include simple random sampling, systematic sampling, stratified sampling, and cluster sampling. With **random sampling**, every member in a given population has an equal and independent chance of being selected. **Systematic sampling** typically places the entire population on a list, randomly selects one individual and then selects individuals systematically (e.g., every fifth person). **Stratified sampling** identifies certain subgroups in the population and samples them in proportion to their numbers in the total population. **Cluster sampling** does not target any individual as part of a sample, but rather a naturally occurring group of individuals, such as counties, schools and clubs.

**Sources of Survey Error**

There are several potential pitfalls inherent in surveying a population that investigators must consider. The following are common sources of survey error:

- **Sampling error** is the result of surveying only some rather than all of the population. Sampling error is a function of sample size and is greatest when the sample is small. The best method for overcoming sampling error is to increase sample size.

- **Frame error** or **coverage error** is another potential pitfall. This error results from not allowing all population members to have equal access to or an equal chance of being sampled to participate in a survey. The error involves a potentially large difference between the target population and the population actually surveyed. A well-known example of coverage error occurred during 1936 presidential election and involved the Literary Digest poll. This poll used telephone directories to survey the population in attempts to predict the winner. This frame predicated the Republican candidate to win, but many voters were Democrats who did not have telephones. These voters omitted inadvertently from the survey were numerous enough to alter the outcome of the election.

- **Nonresponse error** refers to those people who respond to a mail survey being different from those individuals who do not respond. This is a common dilemma with survey research as either some portion of the sample could not be reached (non-deliverable addresses) or they refused to participate. Investigators can address this problem to some extent through careful design and construction of questions and questionnaires as well as implementation methods. From a statistical perspective, when the rate of nonresponse is high, the investigator may compare respondents to the population, using secondary demographic data. If the respondents are
similar to the population, generalizations about the respondents are likely applicable to the larger population.

- **Measurement error** concerns a number of systematic effects that bias survey results. These include poor question construction and wording. It also involves inability to interpret answers obtained. Specifically, systematic effects include: (1) unclear and ambiguous questions; (2) poor instructions for completing questions; (3) reactive effects to questions resulting in socially acceptable answers; (4) respondents not having correct information about issues asked; and (5) people deliberately providing incorrect responses.

**Validity**

**Instrument validity** refers to the extent to which a survey instrument actually measures what it is intended to measure. **Content validity** refers to the extent to which survey questions represent generally what the survey attempts to measure. Because content validity is subjective, a panel of subject-based experts should review early drafts of the survey instrument prior to implementing a survey. Field testing or piloting the survey instrument is recommended also. For community-based surveys, field tests are a convenient method for testing validity.

If a survey is intended to gather information to make a prediction, criterion-related validity is important. **Criterion-related validity** refers to the relationship between individual item scores between one instrument and another or other external variables referred to as criteria. For example, if one has developed a reading test to predict grade level performance, how well does the test predict reading achievement?

**Construct validity** involves determining precisely what the instrument measures. Individual survey questions should relate to the construct to be measured. For example, if a construct involves water conservation strategies, survey questions should ask about water conservation efforts to date and anticipated or desired efforts. Individual questions should be highly correlated. If not, then the instrument lacks construct validity and questions should be revised accordingly.

**Face validity** is the simplest measure of validity and refers to the appearance or appeal of the instrument. If the instrument does not look to be professional or capable of measuring what it is intended to measure, respondents may not take time to complete it.

**Reliability**

**Instrument reliability** refers to the extent to which a survey instrument consistently measures the same thing. For example, if a person weighing 200 pounds steps on a scale and finds that it reads 150 pounds every time they step on it, the scale is reliable (consistent) but the measurement is not valid (does not measure weight accurately). There are several statistical tests to measure instrument reliability, including equivalence and Chronbach’s alpha score.
Data Presentation

Summarized data must be presented in a logical and concise manner. This includes a combination of text, charts, tables and graphs. Text increases clarity and provides an analysis of the results, particularly when other data not part of the investigators study is used in analysis of the results. Charts combine pictures, words and/or numbers that often show important trends and variation. Charts can graphically illustrate sequential steps much clearer, and often more concisely, than lengthy text. Charts delineate and organize complex ideas, procedures and lists of information.

Tables summarize large amounts of data and can illustrate differences between groups or populations. They report a numeric value for a category that can be qualitative (eye color) or quantitative (percent of respondents with an income below $20,000). Tables group variables from data sets to illustrate comparisons.

Graphs also present summarized quantitative data. They are excellent for describing changes, relationships and trends. They convey information much quicker and clearer than text. Graphs allow the reader to visually observe the results and interpret their meaning, without having to interpret lengthy text. Graphs are generally preferred over tables, particularly when a visual result enhances understanding about the magnitude of differences at one point in time, or trends in change across time. Tables are appropriate when specific numbers are necessary to convey critical interpretation of data.

Pie graphs and histograms are excellent graphics for showing frequency data, when data are available for two or more categories or populations. Pie graphs are best for qualitative categories given a limited number of categories and succinct category labels.

Histograms can be used for any data and illustrate distribution of responses (see Figure 4b). Categories or intervals are placed along the x-axis, and the percent frequency identified on the y-axis.

Line graphs are an excellent for illustrating change across time. Bar graphs demonstrate differences between two attributes at specific points in time. Bar graphs can be simple (single comparisons) or complex (multiple comparisons), and can be structured horizontally or vertically. Each bar summarizes a quantitative attribute (total, mean, median) about one or more populations for a specific attribute or question. Figure 4c illustrates an example of a bar graph showing multiple population ratings of multiple issues.
Scatter plots are used to display the relationship between two variables, on an x-y graph (see Figure 4d). When variables are tightly grouped together, usually in a linear (or curvilinear) pattern, they typically have a strong correlation. Wide scattering of the data points indicates poor or weak relationships.

**Summary**

A community situational analysis requires data collection and analysis to provide information about community issues, assets and needs. It is a powerful tool to rely upon in developing educational programs. This chapter has attempted to provide general guidelines for those who may have little formal training in descriptive statistical analysis. It is not intended for use as a comprehensive reference, but rather as a brief overview of techniques and pitfalls to consider in conducting a situational analysis.
Figure 4c. Rating of Livestock Production Issues by Population Segment, Humboldt County, Nevada, 2003.
Figure 4d. Scatter Plot Illustrating Sage Grouse Nest Success and Shrub Cover at Nest Site

Nest Success and Shrub Cover at Nests

References


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Chapter 6

Reporting Results

Marilyn Smith, UNCE Area Specialist

Introduction

An important final step in conducting a community situational analysis is reporting the results. A written report should describe data collection and analysis, including methods and target audience. It should summarize important findings. According to Salant and Dillman (1994), this step should be the highlight of the data collection and analysis process, but many times the results are reported in a way users cannot understand.

Report format is primarily determined by the audience the report is intended to inform. Who needs to know about these results? What do they need to know? What is the most useful way to present this information? Often, a variety of audiences need the information and multiple reports may be compiled for both written and verbal presentation. A one-shot approach report for all audiences is rarely successful. Following are several examples of reporting survey results.

Components of a Comprehensive Written Report

A comprehensive written report provides a complete story of data collection and data analysis. It includes details about purpose of the research and study area. The comprehensive report can provide tables of results and detailed discussion of what the findings mean. A written report provides the reader with the opportunity to take as much time as they need to study the sections of the report that are of interest. A comprehensive report may be used for multiple audiences, especially if offered to individuals for further study after a verbal report is presented.

A comprehensive written report may simply present each question by average or mean response or by percentage response for each category of questions. Ranking questions by mean or by percentage can help the researcher prioritize issues. In most instances, a situational analysis will cover a broad range of topics that may be of interest
to others conducting programs in the community. Since all survey items are included in this comprehensive report, other agencies and organizations designing programs will be interested in obtaining a copy. A comprehensive written report includes the following sections and topic areas:

Section 1. Introduction

The introductory section of a report provides a concise overview of the information included in the report. The following topics may be addressed in the introductory section.

- Purpose of the analysis.
- Location of the analysis and any relevant background information.
- Type of data collection method (focus group, mail survey, secondary data analysis).
- If secondary data, state sources and analysis.
- Demographics of sample such as age, gender, ethnicity, employment status, income level or other descriptors of the sample surveyed.
- Development of questions asked or researched and supporting rationale.
- Research compliance statement – with either assurance number or exemption.
- Acknowledgement of collaborators.

Section 2. Methods

In the methods section, any information that document methods used in data collection and analysis is included. The following topics should be included in the methods section of a report.

- Date and process for reviewing, piloting and validating survey questions.
- Date of survey implementation and a description of the audience surveyed.
- How participants were selected and process for random sampling, if applicable.
- Sample size and response rate.
- Measure of data reliability and validity.
- If secondary data are used, the source is cited and collection process described.

Statements that describe steps of a quantitative analysis, for example, may include, “Surveys were scanned into the computer and SPSS was used to analyze the data. Ranked means were used to compare relative importance of each item.” Similar statements would be used in describing secondary data analysis. However, the data collection method would be stated as secondary data and the source of the data cited.

In a qualitative analysis, similar statements are made to describe methods for collecting and analyzing the data. Statements to describe a method for collecting qualitative data might include, for example, “A descriptive case study method, as described by Merriam (2001) was employed. Over a period between April and August 2000, interviews were conducted, each taking approximately 30 minutes.”
An example of describing the method of analyzing qualitative data might include the following:

“Grounded theory, as described by Glaser and Strauss (1967), served as the basis for data analysis. Leadership for the analysis was provided by one of the investigators. Two other researchers made up the team so that a variety of opinions were available for each decision (Hill, et. al., 1997). A consensus process was used to reach the decisions regarding the three broad themes identified as important in understanding the needs and issues of juvenile offenders.”

Section 3. Results

This section may simply report means or percentages for each survey question or item. Table 6a illustrates results compiled in the same format as presented in a questionnaire, except reordered to show the ranked highest to lowest mean score to. This

Table 6a. Example of Reporting Ranked Means

<table>
<thead>
<tr>
<th>How good do you think you are at ............</th>
<th>2003 Ranking</th>
<th>2003 Mean</th>
<th>2003 Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1=“I need a lot of improvement at this” and 5=“I am very good at this.”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>listening to youth</td>
<td>1</td>
<td>4.31</td>
<td>.78</td>
</tr>
<tr>
<td>making sure that the facility where we have 4-H is safe</td>
<td>2</td>
<td>4.28</td>
<td>.80</td>
</tr>
<tr>
<td>ensuring that youth act appropriately in the 4-H program</td>
<td>3</td>
<td>4.27</td>
<td>.80</td>
</tr>
<tr>
<td>helping youth to feel they are an important part of the 4-H program</td>
<td>4</td>
<td>4.19</td>
<td>.81</td>
</tr>
<tr>
<td>letting youth know I have high expectations of them</td>
<td>5</td>
<td>4.180</td>
<td>.82</td>
</tr>
<tr>
<td>helping youth to feel like they belong to a part of a special group</td>
<td>6</td>
<td>4.175</td>
<td>.82</td>
</tr>
<tr>
<td>making sure I’m easy to approach if a youth has a problem</td>
<td>7</td>
<td>4.15</td>
<td>.84</td>
</tr>
<tr>
<td>understanding a “youth” point of view</td>
<td>8</td>
<td>4.074</td>
<td>.85</td>
</tr>
<tr>
<td>keeping youth from bullying each other</td>
<td>9</td>
<td>4.070</td>
<td>.88</td>
</tr>
<tr>
<td>encouraging youth to take on leadership roles</td>
<td>10</td>
<td>3.99</td>
<td>.91</td>
</tr>
<tr>
<td>making sure youth are occupied during 4-H meetings &amp; activities</td>
<td>11</td>
<td>3.982</td>
<td>.90</td>
</tr>
<tr>
<td>relating well to youth from different cultures/backgrounds</td>
<td>12</td>
<td>3.981</td>
<td>.87</td>
</tr>
<tr>
<td>providing youth with age-appropriate learning activities</td>
<td>13</td>
<td>3.94</td>
<td>.90</td>
</tr>
<tr>
<td>conducting activities with youth that are challenging to them</td>
<td>14</td>
<td>3.89</td>
<td>.88</td>
</tr>
<tr>
<td>managing conflict between youth</td>
<td>15</td>
<td>3.88</td>
<td>.86</td>
</tr>
<tr>
<td>keeping youth from hurting each others feelings</td>
<td>16</td>
<td>3.87</td>
<td>.87</td>
</tr>
<tr>
<td>providing activities that are designed to help youth learn life skills such as healthy life-styles, goal setting and decision making</td>
<td>17</td>
<td>3.83</td>
<td>.92</td>
</tr>
<tr>
<td>providing activities designed to help youth learn social skills such as communication and relationship building</td>
<td>18</td>
<td>3.74</td>
<td>.93</td>
</tr>
</tbody>
</table>
simple analysis indicates the results from 600 volunteers regarding their strengths in working with youth on 18 different items on a scale of 1 to 5 with 5 being the highest score possible. From this simple analysis, the results indicate that parents and volunteers are least skilled regarding teaching activities that provide youth opportunities to learn life and social skills. They are best skilled at listening to youth and making sure that facilities are safe.

Graphics are powerful communication tools and include bar charts, histograms, pie charts, and other graphics. Several computer programs used for data analysis also include templates for designing graphics that represent the data. Table 6b provides an example of an Excel chart that was converted to a bar graph using the template within Excel.

Graphics are used to condense information and help communicate the importance of the information presented. Large amounts of numerical data can be condensed into a graph. Both skill and artistic ability are required to design a graphic that can represent data to communicate a clear message.8

Table 6b. Top Student Ratings of Issues Facing Teens

<table>
<thead>
<tr>
<th>Parents Concerned + Very Concerned</th>
<th>1995</th>
<th>1997</th>
<th>1999</th>
<th>2001</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS Prevention</td>
<td>70</td>
<td>72</td>
<td>65</td>
<td>71</td>
<td>65</td>
</tr>
<tr>
<td>What to do after high school</td>
<td>67</td>
<td>65</td>
<td>62</td>
<td>69</td>
<td>64</td>
</tr>
<tr>
<td>Parents Support</td>
<td>65</td>
<td>67</td>
<td>63</td>
<td>67</td>
<td>63</td>
</tr>
<tr>
<td>Getting along with teachers</td>
<td>39</td>
<td>37</td>
<td>36</td>
<td>73</td>
<td>64</td>
</tr>
<tr>
<td>$ for education after high school</td>
<td>61</td>
<td>62</td>
<td>68</td>
<td>66</td>
<td>62</td>
</tr>
<tr>
<td>Making decisions</td>
<td>59</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>69</td>
</tr>
<tr>
<td><strong>Doing well in school</strong></td>
<td><strong>72</strong></td>
<td><strong>73</strong></td>
<td><strong>68</strong></td>
<td><strong>35</strong></td>
<td><strong>37</strong></td>
</tr>
</tbody>
</table>

8 Salant and Dillman, in *How to Conduct Your Own Survey* (1994), provide excellent examples of tables and graphs organized to be easily understood. Rather than replicating those examples, the reader is encouraged to review this publication carefully.
The following example from a school survey of youth illustrates reporting percentages and includes a graphic of the topic area by year (see table 6b). This table illustrates how to report results for each question in a survey. In this longitudinal study, researchers are concerned about why “doing well in school” is no longer one of the top concerns for teens in a school district.

**Section 4. Conclusions and Recommendations**

The final section presents conclusions and recommendations summarizing and perhaps prioritizing findings. A recommendation concerning the school survey example in Figure 6a may include “need for further study”. For example a focus group of teens could help shed further light on why “doing well in school” is no longer a top priority. Is passing the mandatory tests now more important than grades in school? Is “getting along with teachers” the current venue for school success? Has cooperative learning replace the need for individual school excellence?

A focus group could also assist in providing programming recommendations. For example in the 4-H survey, the county 4-H program coordinators need to be included in discussions so that they can review county results and match findings with their program priorities. Based upon their program priorities, local Extension programs may strive to strengthen specific areas.

Completion and publication of a comprehensive written report is important for a variety of reasons. Obviously, while it may be shared with stakeholders and colleagues, it also becomes an important archival document. As programs are implemented based on priorities identified, the results also provide baseline data to measure program progress over time. In incremental years, the survey may be replicated and changes noted. The situation analysis can become an important component of program impact evaluation if used in this manner.

**Multiple Types of Written Reports**

When a situation analysis clarifies community issues, program development and implementation targeting program priorities is the next step. Convincing and informing decision makers, supervisors, granting agencies, media and target audiences of program priorities are crucial to program success. Writing additional reports tailored to the unique needs and interests of a variety of audiences may be necessary to communicate program priorities and plans for future programming.
sary to communicate program priorities and plans for future programming. Following is a discussion of additional reports that may be created.

**Peer Reviewed Report**

Cooperative Extension professionals are encouraged to publish a peer-reviewed document that reports the results of a situation analysis. This document may consist of a fact sheet, bulletin, special publication or a peer-reviewed journal manuscript. An approved, peer-reviewed publication provides readers with the assurance that the assessment was completed with adequate scientific rigor and the identification of prioritized program areas was reached independent of personal or other biased interests.

This justification of program priorities helps Extension professionals logically narrow and focus programs into a manageable workload. That focus is necessary so that limited resources are targeted to ensure that programs developed make measurable impacts. Typically, Cooperative Extension field faculty identify no more than two or three major program areas based upon assessment results. Multiple programs may be designed to meet program objectives within the targeted program areas.

Besides providing a documented source of program direction, a peer-reviewed document may be made available to the clientele surveyed. Providing results of surveys to those that completed the survey is one strategy in obtaining good response rates on future surveys. A fact sheet outlines the highlights of the comprehensive report and may refer the reader to this unpublished report for further details.

The format of the written peer-reviewed Extension publication is determined by the target audience. Typically Extension publications are written for the lay audience and thus provide a simplified format to follow in writing a comprehensive report. A 4-page fact sheet, for example, allows Extension professionals to highlight key findings of the comprehensive written report. An Extension bulletin has no page restrictions and provides a format that allows for a longer, more detailed report. Finally, a special publication may simply feature a colorful poster that lists key findings or it may consist of a web page that, similarly, includes important or key findings.

A peer-reviewed journal manuscript provides yet another publication venue if survey findings are timely or of wide audience appeal. For example, a school survey that included information about school safety was timely during the months following the Columbine shootings. A survey of ranchers regarding feeding practices would be of wide audience interest if it provided information pertinent to Mad Cow Disease. A peer-reviewed journal manuscript is especially appropriate if the analysis provides sufficient data to build and/or test a theoretical model.
Creating and Combining Different Types of Reports

Several types of reports may be prepared based upon the results of a situation analysis. These include both written and oral reports. The effective Extension professional can outline program priorities based upon a comprehensive assessment in informal discussions with clientele, peers, administrators and local decision-makers. The effective Extension professional also has on file a comprehensive peer-reviewed report to refer to when planning programs. The effective Extension professional may also prepare other reports to assist in communicating programming decisions based upon an objective assessment.

These reports may take any of the following forms including:
- Fact sheet, bulletin or special publication
- News release or newsletter
- Abstract submitted to professional meetings
- Exhibit or poster display submitted to professional meetings
- Web site
- Peer-reviewed journal article
- Power point presentation

Oral Presentations

While the written report has been emphasized here, an oral presentation is also a viable option for many audiences. A written report(s) can provide content guidelines for an oral presentation. In an oral report, information about survey design, implementation and data collection may be included to add credibility to the presentation. Offering the audience an additional comprehensive written report for further study further adds credibility to the presentation results and findings.

There are several key ideas to consider in an oral presentation. First, consider the audience and the type of information that will be useful to them. Avoid simply restating everything that is presented in the comprehensive report. Select highlights that the audience may find most useful and interesting. Use attractive and simple graphics to condense and organize information. Save time for questions and discussion. Practice the presentation and ask others to critique the presentation prior to the speaking engagement.

Include Existing Data

Just as survey research adds to the knowledge base regarding community needs and assets, a summary report should include a discussion of existing secondary data. This discussion helps to support and strengthen conclusions from primary data analyses. Examples of bulletin style reports featuring secondary and primary data include:
- Nevada Youth Risk Behavior Survey Report (Nevada Department of Education)
Summary

A final yet critical step in conducting a community situational analysis is reporting the results. The report should be written and should describe data collection and analysis, including methods and target audience. It should summarize important findings. Report format is primarily determined by the audience the report is intended to inform. A one-shot approach report for all audiences is rarely successful.

A comprehensive written report provides a complete story of any secondary data analysis as well survey data analysis. It includes details about the purpose, location, type of data collection and data analysis. The comprehensive report can provide tables of results and detailed discussions of what the findings mean, providing the reader with the opportunity to take as much time as they need to study the sections of the report that are of interest and skip the rest. Written reports may take any of the following forms including Extension publications, newsletters, press releases, professional presentations, posters, web sites, peer-reviewed journal articles and power point presentations. Oral reports are also necessary to communicate results to citizen stakeholders, but should be based upon a comprehensive written report(s).

References


9 Beyond Data may assist in writing reports. Available at www.ces.ncsu.edu/depts/fcs/beyonddata/index.htm


Chapter 7
Research With Human Subjects

Pamela Powell, UNCE Extension Educator
Susan F. Publicover, Director, Office for Human Research Protection

Introduction

While community situational analyses vary in method and design, those that involve human subjects, including focus groups and mail surveys, share one common factor. Prior to implementation, investigators must apply for and receive approval from the investigator’s respective Institutional Review Board (IRB).

At the University of Nevada, Reno (UNR) there are three IRBs, all of which function to protect the rights and welfare of human research subjects recruited to participate in research activities conducted under the auspices of the institution. The IRBs at UNR (one biomedical and two for social sciences) are charged with approving, disapproving, or modifying any study protocol that involves the use of human subjects. Not only does this process protect the human subjects involved in the study, it also guides study investigators to conduct research in an ethical manner.

Institutional Review Boards were created throughout the United States as a result of both Senate hearings in 1972 and legislation passed in 1974 (National Research Act). Because of unethical practices used in previous research, it became necessary for review boards to oversee and protect the rights of study subjects.

The United States Department of Health and Human Services requires that research institutions have IRBs if they receive federal funding and conduct research involving human subjects. Such research institutions file an assurance of compliance with the federal Office for Human Research Protection (OHRP) to guarantee that all human research is conducted in an ethical manner and complies with federal regulations. OHRP is a branch of the Office of the Secretary of the Department of Health and Human Services (DHHS). Once assurance is approved, an institution registers their IRB(s), and those IRBs are regulated by the federal OHRP in DHHS and potentially the U.S. Food and Drug Administration, if they are studying investigational drugs or devices, cosmetics, or foods. While the DHHS regulations are clearly outlined in Title 45 Code of Regulations Part 46, other agencies from which funding is awarded, may have unique requirements.
The information presented in this chapter discusses the manner in which the University of Nevada, Reno oversees its human research protection program. Because the regulations at 45 CFR 46 are written broadly and are therefore subject to local interpretation, other institutions may have different requirements. It is also important to remember that each study is unique; there is no particular blueprint or template for all protocols outside regulatory requirements. Consequently, it is strongly recommended that an investigator contact the respective institution for guidelines on compliance.

**On-line Training Course**

Investigators who desire to conduct research involving human subjects must pass an on-line training course sponsored by the Collaborative IRB Training Initiative (CITI) and the University of Miami. The Social and Behavioral Research track of the on-line tutorial is comprised of 11 modules. If investigators plan to conduct research at the VA Sierra Health Care System in Reno, completion of Module 13 is also required.

Investigators are required to take open-book tests after reading each module. Because the training is in an open-book format, investigators should print module materials in advance, review the contents, and then refer to the materials when taking the quiz. A test grade is assigned for each module. The training, including reading the modules and taking the quizzes, may take approximately 4 to 5 hours. While the training addresses each study protocol individually, all investigators must follow the same procedures for training.

The online training course teaches investigators about various ethical concerns associated with research involving human subjects and regulatory and institutional requirements for the protection of human subjects. As detailed in the Belmont Report, three fundamental ethical principles guide the conduct of investigators: Respect for Persons, Beneficence and Justice.

In the guidelines provided under respect for persons, investigators must recognize that individuals must be given all the information they require or request in order to make an informed decision about whether or not to participate in the study. Participation is voluntary and should not be coerced. If a participant has diminished autonomy (described as a developmental disorder, dementia or includes children), additional provisions must be met in order to include them as a subject.

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10 Information and links to the training for UNR investigators are available at: [www.unr.edu/ohrp/Training.htm](http://www.unr.edu/ohrp/Training.htm).

11 The Belmont Report is available online at: [http://ohrp/osophs.dhhs.gov/humansubjects/guidance/belmont.htm](http://ohrp/osophs.dhhs.gov/humansubjects/guidance/belmont.htm).
Guidelines affecting **beneficence** require that all human subjects are treated in an ethical manner by maximizing possible benefits and minimizing possible harm. It is the investigator’s responsibility to ensure that all efforts are made to secure the well-being of study participants. **Justice** requires that all participants are treated fairly. If the study has benefit(s) associated with it, those who participate must be allowed to benefit from the study research.

Additional topics covered in the on-line course include **privacy and confidentiality**, **informed consent** and the required reporting of any **adverse event(s)**. Modules provide examples of each topic along with the historical perspective of its importance.

After completing the on-line training course, investigators must notify their respective institutional Office of Human Research Protection. The training website provides instructions on how to submit notification. After an investigator receives a passing grade (75% at UNR), s/he can submit the documentation required to obtain approval to conduct research involving human subjects.

**IRB Review Processes**

In determining whether a study meets the IRB criteria for implementation, an investigator must first determine whether approval requires a **Full-Board Review** or an **Expedited Review**. The determining factor is the level of risk the study poses to human subjects. If the level of risk is greater than minimal, a **Full-Board Review** is mandated. A study that exposes human subjects to minimal risk and satisfies at least one of the federally mandated categories may qualify under **Expedited Review**. If these categories do not apply, the study will likely undergo a **Full-Board Review** process.

For the most part, a situation analysis conducted by UNR Cooperative Extension faculty and staff can meet the criteria for Expedited Review or a **Statement of Exemption**. Both applications accompany required forms to be completed and submitted to UNR Office of Human Protection (UNR OHRP) for review.

To apply for an expedited review an investigator must compose a packet that includes the following items.

- Protocol application form
- Description of study
- Copies of all recruitment materials
- Consent forms (if appropriate)
- HIPAA forms (if appropriate)

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12 These categories are listed at [http://www.unr.edu/ohrp/PolicyUNRfinal.htm#expeditecategory](http://www.unr.edu/ohrp/PolicyUNRfinal.htm#expeditecategory).

13 These forms are located at [http://www.unr.edu/ohrp/How%20to%20Submit.htm#Initial](http://www.unr.edu/ohrp/How%20to%20Submit.htm#Initial).
Copies of survey instruments or questionnaires used
Letters of permission from non-University sites
Copy of the grant application if the study is sponsored

Study design determines which of these forms and supplemental items are required and whether the study qualifies for an Expedited Review or a Statement of Exemption application. A Statement of Exemption application may be submitted if the proposed study poses minimal risk or less to prospective subjects. Similar to an Expedited Review, an exempt study must satisfy at least one of the federally mandated categories to qualify.\textsuperscript{14}

The Description of Study has very specific guidelines that must be followed. Although there is no form, there are guidelines provided to help in writing the description. It must include information regarding the following study components:

- Purpose
- Participants
- Recruitment Procedures
- Informed Consent
- Performance Sites
- Methods and Procedures
- Risks, Benefits
- Risk-Benefit Ratio
- Costs/Compensations to Participants
- Disclosure of Financial Interests
- Confidentiality

Guidelines for the description of study also include format instructions on pagination, version dates and headings. IRB can withhold approval of the research project if format instructions are not followed correctly. Forms required for completing review packets for UNR review processes are available online.\textsuperscript{15}

Once a packet is complete, and the application is signed by the investigator(s) and the institutional official, it should be delivered to the UNR Office of Human Research Protection. The packet is assigned a protocol number and screened by UNR OHRP staff to ensure that it contains the required documentation. Once this has been determined, the protocol is routed to the appropriate review process. The investigator may only proceed with the research when final approval has been granted.

Any changes or variations in study protocol must be resubmitted to IRB for approval before implementation. If an investigator fails to seek approval for a variation in protocol, s/he has violated federal regulations and University policy. If any negative

\textsuperscript{14} These categories are listed at http://www.unr.edu/ohrp/exempt_categories.htm.
\textsuperscript{15} UNR OHRP website available at: http://www.unr.edu/ohrp/Forms.htm.
issues arise from the research and investigator(s) have not strictly followed approved protocol, it is possible that the investigator(s) may not be protected by the institutional legal system. The purpose of the UNR OHRP is to protect human subjects involved in research. However, it also serves to guide investigator(s) who are conducting research by providing them with assistance throughout the entire process.

References


Community situational analyses are essential to dynamic Extension program development and delivery. Programs grounded in comprehensive and objective assessment provide a framework and rationale for targeting resources to support program development. Research shows that programs based on community situational analyses are generally successful.

With that said, many Extension professionals may find the task of conducting a community situational analysis somewhat daunting, particularly with slim operating budgets. Others may navigate situational analyses successfully but experience difficulty linking the outcome of the analyses to program development and implementation. Finally, some may find success in conducting situational analyses and linking the outcome to program prioritization, development and implementation, only to find evaluating program impacts the elusive pot of gold. Extension professionals often voice the following concerns surrounding situational analyses and program development.

- Is there a proven or accepted process to follow in conducting a community situational analysis?

- How do I combine a generalized analysis with a focused analysis into one assessment tool?

- How do I combine different data sources or data collection methods into a single community situational analysis?

- How do I assign weights of importance to these various data sources and methods?

- I have completed a situational analysis and have identified several topics that could qualify as program areas. How do I determine which topic is most important?
Now that I’ve determined a program area, how should I proceed towards program development?

I’ve conducted a situational analysis and determined multiple program needs. However, existing data indicate that there is a strong societal need that should be addressed. In developing my Extension program, how do I reconcile the differences between citizen perceived needs and overarching societal needs?

What if I lack expertise or experience to conduct Extension programs on a critical topic identified in a broad-based situational analysis?

**An Individualistic but “Logical” Approach**

While there may be numerous viable answers to each question listed above, both questions and answers influence program quantity, quality and overall programming integrity. Individual approaches taken to meet the challenge of dynamic programming based on situational analyses will be determined by one’s knowledge, experience, skills, personality and even intuition. These variables should help to produce a diverse yet rich approach to programming as well as successful programs with measurable impacts.

Clearly, a logical approach to dynamic programming linked directly to community situational analyses sequentially involves secondary and primary data collection and analysis. Secondary data analysis provides an excellent starting point for a situational analysis as it provides objective information about past and current conditions in a community or county. An analysis of secondary data may also help the Extension professional determine the kinds of questions that need to be asked about a community in order to understand more clearly its needs and assets. Primary data collection enables the public to provide their input directly and includes mail surveys followed by a focus group technique to further clarify issues identified through the survey. Alternatively, a focus group process may precede a mail survey to help identify and clarify which questions to ask.

The cycle of looking at community trends, seeking public input through primary data collection, and focusing or clarifying issues is an ongoing process throughout an Extension professional’s career. An Extension professional should expect to conduct numerous situational analyses throughout their career.

Data analysis should, at a minimum, involve the use of basic descriptive statistics outlining highs, lows, averages, change and trends. While not addressed in this publication, more advanced statistical analysis, including factor analysis, t-tests, analysis of
variance and certain regression analyses, may be necessary. These advanced analyses can help to paint a vivid picture of community conditions, perceptions and directions. A factor analysis, for example, may help to determine which primary data items are related, helping the Extension professional to link topics and perhaps identify a program focus. Statistical expertise is available within most Cooperative Extension systems to assist field professionals who wish to conduct these types of advanced analyses.

Finally, a well written report summarizing results of the analyses provides an effective medium for Extension professionals to use in communicating results to colleagues and citizens. Extension professionals may rely upon their written report as references to help prioritize program areas and justify time and resource allocations.

Extension professionals should also conduct a gaps analysis or identify and investigate existing community programs that address program areas identified through the situational analyses. The argument of limited resources emphasizes that services, including educational and research programs, are not duplicated. Particularly for Extension professionals new to a community, gaps analysis is a formal process that may take the form of a telephone survey of agencies and organizations to determine what programs are currently offered. This approach is also effective for professionals who are long-time residents, particularly if a potential topic area is new to Cooperative Extension. The gaps analysis can also assist in identifying potential program collaborators and funding sources.

**Utilizing the Logic Model to Develop Dynamic Programs**

A comprehensive situational analysis combined with a clear, well written report helps Extension professionals to find their program focus and maintain it. Attention to the situational analysis is the definitive step to ensuring long-term success of any Extension professional. This is not a one-time occurrence. Successful long time Extension professionals pay particular attention to conducting situational analyses on a regular basis.

Once topics are prioritized for program development, additional applied research will be required in order to frame issues surrounding the topic or program area. Again, research protocol and results should be captured in written form to create Extension materials to support teaching efforts. These materials typically take the form of fact sheets, bulletins or a curriculum. It is important to provide information in written form to participants in any
Extension program. While content can be taught in workshop settings, program participants benefit from materials that capture the contents and that they can take away after the workshop for further consideration, study or reference.

In developing program content and supporting teaching materials, Extension professionals follow the Logic model closely. The Logic model provides a systematic approach to program development building from the first step, a situational analysis. A written report summarizing the results of the situational analysis outlines program priorities and explain how these priorities were determined. Many Extension professionals express confusion in setting program priorities. They may find it difficult to choose and focus efforts on one, two or three programs. The purpose of situational analyses is to help the Extension professional identify and isolate key program opportunities. And, the Logic model provides an exact formula for program development which emphasizes program impact evaluation. Targeting and focusing on fewer, but critically needed, programs is likely to support a Logic model approach, producing manageable programs with measurable impacts. Other extension professionals may worry that prioritized program areas lie outside their particular area of training and expertise. Extension systems were established on the premise that no one individual possesses expertise on all subjects. Therefore, it may be necessary to collaborate with those who have extensive knowledge in identified subject areas in order to, at the least, develop program direction and materials.

After setting priorities for program development, the Extension professional must next develop an action plan for implementing a program. The action plan should include a timetable for implementation that incorporates program design, delivery and evaluation. An action plan should consider if additional research is needed to address a particular program topic. If so, a detailed outline of a research plan is necessary and should precede program development. If research necessitates public participation, such as the case with controversial public issues, then it must be planned to occur as part of the overall program design and delivery.

The next step in program planning deals with program implementation and incorporates the following components:

- **Inputs** – investment of time and dollars, plus any additional resources, required to develop and implement a program; includes applied research to develop or collect information for the purpose of developing program content and supporting materials

- **Outputs** – program activities including workshops, demonstrations, collaborative processes with colleagues as well as with participants; includes the production of teaching materials including fact sheets, bulletins, curricula and journal articles used for teaching and research purposes
- **Outcomes** – learning and immediate actions taken as a result; includes workshops or courses provided, participation (numbers involved or attended) as well as participants perceived quality of program content, delivery and materials at time of program participation; can include pre-test and post-test evaluations administered during workshops and courses

- **Impacts** – change in community, family or individual conditions reflected through changes in behavior and attitudes; includes retrospective assessments of what participants learned and what aspects of their lives (environmental, economic, social, for example) were affected as a result of program participation.

**Evaluation** of program impacts is an ongoing process that literally begins with community situational analyses. The same research tools utilized and practiced in conducting situational analyses are applicable in conducting program impact evaluations. These include the collection and analysis of both secondary and primary data. Throughout all stages of program development and implementation, primary data, in particular, provide a rich source of feedback to Extension professionals in evaluating program impacts. Gathering feedback directly from program participants is the key to maintaining dynamic program creativity and integrity as well as ensuring the program is effecting desired change among participants.

Extension professionals could expand beyond impacts on program participants to include program impacts that take a surprising variety of forms. These impacts are also measurable and include the following:

- **Impact on the issue** – Extension programs may produce new information through research conducted as part of the program development or teaching techniques may be incorporated that forward Extension pedagogy.

- **Impact on the institution** - Extension programs that create life-long learning centers, research and demonstration labs or distance education hubs significantly impact the land grant institution and its ability to reach the public.

- **Impact on the Extension profession** – Extension programs that start small but are eventually adopted by other professionals, or institutionalized, impact the entire Extension profession. Several landmark Extension programs have accomplished this, including 4-H, which was started by a single Extension agent in rural Texas over 100 years ago.

- **Impact on individual development** – Programs that help an Extension professional to further his or her individual professional development also produce positive impacts. The individual is impacted in the form of increased capacity to develop future programs. If an Extension professional acquires new skills, knowledge and experience as a result of program planning, positive impacts occur and should be reflected through future, stronger program development.
**Unanticipated impacts** – Sometimes Extension programs may produce unanticipated and negative impacts. In such cases, the important questions Extension professionals must ask are twofold. First, are the negative impacts at acceptable levels posing minimal risks to individuals? Second, if the program is unsuccessful, are there important lessons learned to add to the programming knowledge base and improve future programs?

**Importance of Mentoring**

Even if Extension professionals closely follow each step of the Logic model and succeed in developing dynamic and accountable programs with measurable impacts, they may still experience moments of confusion and doubt along the way. Or, they may encounter a gap between successful dynamic programming and a successful professional review and promotion process.

For this reason, each Extension system, whether at the state or local level, should consistently exercise a strong mentoring program. A strong mentoring program provides ongoing support to Extension professionals regardless of career path stage. Long time veterans who mentor new professionals, sharing formulas for success, can greatly assist new professionals navigating program planning. And, new professionals are likely to bring with them new ideas for program topics and development that can rekindle excitement among long time Extension professionals.

Informally discussing program plans with mentors can help new Extension professionals to identify potential pitfalls and opportunities. Part of the mentoring process should involve strategies for short and long term program development to ensure success with performance review and promotion. This includes strategies for reporting program development and measuring and reporting impacts. Likewise Extension professionals who serve as effective mentors should be acknowledged and rewarded for their efforts in the performance review process.

An ideal mentoring relationship is symbiotic, benefiting mentor and protégé, rather than one-sided, draining energy and resources of either professional. Finally, a mentoring relationship does not require an additional layer of personal friendship to be effective, but rather a relationship based on shared goals, mutual respect, professional courtesy and integrity.
References


