Community Income and Expenditures Model Implementation Manual

How to Get the Information You Need to Create and Maintain Local Community Wealth:

A Self-Guided Handbook for Communities

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All Economics is Local

Former Speaker of the House Tip O'Neill used to say that "All politics is local." He meant that those things that most impact people happen in their own communities. O'Neill's aphorism holds true for economics as well. National declines in unemployment do little to soothe the pain of a community that just had a major employer close its doors. Further, the impacts of such an event often have a multitude of consequences, few of them healthy. Indeed, economics is local, too.

Vast economic changes have transformed virtually every local economy over the past quarter century. Midwestern states have been most severely impacted, strewn with communities in which factories and supporting institutions have laid off many people, or have closed altogether. The results for local residents are often as confusing as they are devastating.

Nowhere has global industrialization yielded harsher consequences than in Michigan. Local economies that flourished for decades find themselves today in great distress, needing to focus its scarce resources dedicated to economic development with great care.

Recovery from economic upheaval requires a plan. Simply identifying the source of economic dysfunction is an inadequate response to the threats to economic vitality that loom over many Michigan communities. To be successful in an attempt to overcome serious economic setbacks, communities must adopt long-term, comprehensive economic development strategies that focus on sustainability of economic vitality.

Leaky Communities Need A Strategic Plan For Economic Revival

History has shown that the success of community based economic development efforts can be achieved by effectively responding to local development needs, setting realistic expectations and goals, and building community consensus to achieve these goals.

The failure to accurately measure the condition of a local economy dooms most economic redevelopment efforts to failure. Local areas have different strengths and weaknesses that require unique approaches to achieving satisfactory economic performance. The degree of economic strength in a community in large measure determines the proper strategy for economic development, and understanding those strengths and weaknesses allows us to most effectively use scarce resources.

Retaining local economic wealth is an important aspect of building community capital. Tracking the progress of economies at that scale masks the economic challenges and opportunities at the local or neighborhood level. Without knowing how money flows into and out of the local economy, it is difficult keep it there.
What is the Community Income and Expenditures Model (CIEM)?

The Community Income and Expenditures Model (CIEM) is a community economic development tool dedicated to arming communities with the information required to develop effective development strategies and policies. It is a tool to measure asset flows and economic leakage in communities.

CIEM was developed from the belief that low-income communities remain poor for reasons other than having a lack of accumulated wealth:

- The problem is not just that low-income communities have too little income, rather, the problem is that a substantial amount of money enters the neighborhoods then quickly leaves due to non-local purchases, non-local hiring, and non-local ownership of homes and businesses.

- The problem is intensified by the lack of commercial institutions (e.g., businesses, financial, etc.) that are located within poor communities and responsive to their needs. Dollars circulating outside of the community do not contribute to local economic wealth.

CIEM helps identify these missed opportunities for increasing local economic wealth. To do this, CIEM uses a community-based survey to gather information about the spending patterns of consumers, businesses, non-profit organizations, and government agencies within the community.

The CIEM survey assesses four major features of the economy:

- How much income is received by individuals and organizations within the community?
- How much of this income originates from within the community?
- How much money is spent within the community by individuals and organizations within the community?
- How much of this money is spent within the community?

What are the goals of CIEM?

CIEM involves the community in an analysis of their own economy. The process provides education and opportunity to empower local residents. It is comprehensive and flexible, allowing for the examination of the economic behavior of a variety of economic entities, including the local household, business, non-profit, and government sectors in the local economy.

The goal of CIEM is to help economically distressed communities take more control over their lives and their economy in order to build upon their economic strengths and capacities. It hopes to accomplish this goal through three specific objectives:

Learning: The project is designed to foster economic literacy so those community members are empowered to make economic decisions for their own well being.
Community: The project seeks to build a sense of community by encouraging residents and community leaders from the business, non-profit, and government sectors, to work together toward a common goal of community improvement.

Diagnosis: CIEM is designed to identify opportunities for local economic growth by understanding leaks in the economy.

Why is CIEM needed in a community?

Communities in economic distress not only have fewer economic resources, but the remaining resources are depleted much more quickly than communities with healthy economies. When some of the following problems are observed in the community, it can signal the need to examine the local economy for leakages:

- High unemployment
- Deteriorating housing stock
- Plant closings or business shut downs
- Population loss
- Low home ownership
- High percentage of residents living in poverty
- High amount of absentee landlords

How does CIEM compare to other economic development strategies?

Although the CIEM is unique in its implementation, it is not in its design. The design of the CIEM is an adaptation of the classic input-output model used to analyze national economies. It is also similar to the Community Accounting Matrix (CAM) and the Needs, Capacities, & Assets Model (NCAM).

Like other models, CIEM provides a database complementary to several analysis procedures becoming popular in economic development such as sector analysis, network market development, and flexible manufacturing networks.

The community-based implementation technique provides CIEM significant advantages over other models:

- **CIEM is more comprehensive.** Unlike traditional economic development strategies that focus on individual firms, CIEM focuses on the entire community and it describes the interrelationships between sectors. This information is critical for policy-making strategies.

- **CIEM involves community members.** Data gathering depends from the beginning on a fairly large core group of community volunteers, who assist throughout the implementation. Others depend upon economic analysis experts.

- **CIEM fosters economic literacy.** By involving people from the community in the process, CIEM helps people to understand the systemic impacts of their household or organizational purchasing decisions upon the local economy.
- **CIEM is more user-friendly and cost-effective.** The CIEM "do-it-yourself" manual makes it possible for communities to conduct economic analyses without having to hire expert analysts.

- **CIEM addresses the issue of wealth distribution.** The CIEM analysis focuses on how money is distributed through the community, not just on how much money is coming into and out of the community.

- **CIEM is grounded in the principles of community development.** CIEM is a unique economic development strategy because it applies the principles of community development to economic development.

### What are the principles guiding CIEM?

CIEM adheres to the principles of community development established by the Community Development Society. Persons participating in the CIEM process are expected to do the following:

- Promote active and representative citizen participation so that community members can meaningfully influence economic decisions that affect their lives;

- Engage community members in problem diagnosis so that those affected may adequately understand the causes of their economic condition;

- Help community leaders understand the economic, social, political, environmental, and psychological impacts associated with alternative courses of action;

- Assist community members in designing and implementing a strategy to solve agreed-upon problems by emphasizing shared leadership and active citizen participation in that process;

- Disengage from any effort that is likely to adversely affect the disadvantaged segments of a community;

- Actively work to increase leadership capacity, skills, confidence, and aspirations of all participants involved in the community development process.

### What is the role of the community in CIEM?

The CIEM implicitly assumes the following elements:

- The community rather than some smaller economic entity (firm or household) or larger economic entity (nation, state, region) is viewed as the body which makes and implements decision.

- The community's initiative, leadership and collective action, rather than externally imposed mandates, is a source of change.

- The community can use both internal and external resources to achieve change, drawing on its own strengths and capacities and looking beyond its boundaries for supplemental resources.
The participation of citizens within the community should be inclusive as possible. All citizens should be given an opportunity and encouraged to participate. The model assumes a democratic political system in which people express their preferences openly.

**What information can we get from this project?**

The intent of this model is to create a knowledge base to help a community better understand the nature of their asset flows. Past research and practice has shown that communities who engage in the process of discovering their own wealth are better equipped to improve their economic condition.

**At the conclusion of the project, communities will be able to identify:**

- Sizes of each local economic sector in contributing to community wealth
- Most under-represented business sectors
- Major purchases made outside of the community
- Opportunities to improve the economic linkages between residents, businesses, non-profit agencies, and government offices.
- Potential purchasing power of the sectors
- Potential areas of development within the community
- Areas of economic vulnerability to leakage of community wealth.

**Example data from other communities**

Here are examples of what previous communities who have used the CIEM process have discovered about their local economy:

- North Lansing residents (population 16,999) spent $22 million on groceries, with 84% of expenditures made outside of the neighborhood in 1993.
- Non-profit agencies in Southwest Detroit (population 38,000 residents, 150 agencies) had a total of $19 million dollars of annual expenditures in 1995.
- Businesses in the Hillman school district (rural northeast Michigan) bought an estimated $69 million dollars of wholesale goods, with nearly 100% of these purchases being spent non-locally.
- 41% of Lansing city government (non-payroll) expenditures totaling $62 million dollars were made within the city in 1993.
What are the focused strategies that may be employed directly as a result of CIEM?

There are four main non-mutually exclusive strategies that can be developed using information from the model:

- Strategies to increase local procurement from local sources;
- Strategies to increase local hiring from local sources;
- Strategies to help local businesses and organizations compete more effectively outside of the local community;
- Strategies to develop new businesses and organizations

What are other indirect outcomes of CIEM that we might expect?

- Strengthened local citizen participation, so that those affected can meaningfully participate in their solutions
- The creation of a sense of local ownership, which gives residents financial security, a stake in the neighborhood, and more control over their economic fortunes
- The definition and establishment of local reinvestment strategies to aid the community's wealth retention and continued development.
- Investment in infrastructure that enhances the neighborhood's physical conditions and fosters increased economic activity
- Enhanced local purchasing networks, which keeps money flowing within the neighborhood, between businesses and creating jobs.
- Strengthened purchasing power, with income high enough and cost low enough, to keep the neighborhood affordable. (revised from Working Neighborhoods: Taking Charge of Your Local Economy, The Neighborhood Works, Chicago, IL, 1985).

Can CIEM be implemented in my community?

If your community can answer "Yes" to most of these questions, you will probably be successful in implementing the CIEM in your community:

- Does your community have a well-defined boundary?
- Do people within this boundary have a sense of community?
- Are there organizations who can mobilize a broad spectrum of community members (residents, leaders, business owners, etc.)?
- Is there sufficient cooperation among these people and organizations to prevent the project from stalling or being unsuccessful?
- Does the community have both residential and commercial/industrial areas?
- Is there a local organization willing to sponsor a CIEM study?

**What do local sponsors need to do to implement CIEM?**

An essential element of this project is local involvement and ownership. A local resident or community group may sponsor the project. This individual or group should work to develop broad-based support from groups within the community.

There are many examples of these groups. This group can be a formal or informal organization from the non-profit, government, business, or residential sectors. Examples of these groups are neighborhood associations, community development organizations, faith-based organizations, chambers of commerce, business associations, mayors' offices, county government offices, etc.

The sponsoring individual or group should be able to implement the CIEM and report findings without limitations due to political constraints or conflicts of interest.

**What resources of time and money are needed to implement CIEM?**

Significant financial and time resources are needed to design and implement a CIEM project. Financial requirements include the costs of conducting surveys or interviews, access to telephone banks, computers, and printing costs. Depending on the methods used to collect survey data and the size of the community, the costs for these expenses can range from $500 to $5000.

The sponsor will also need to support a project coordinator’s time. During this nine-month project, a central coordinator is essential for maintaining the flow of the project. This expense can be minimized if the coordinator is a volunteer or a staff person from a host organization. The coordinator should expect to work on the CIEM 5 to 10 hours per week, more if the size of the additional volunteer pool is less than 10-25 people.

It is helpful to have this coordinator identified as early as possible to conduct the preliminary work outlined in the next chapter.
What are limitations of CIEM?

The information listed above is valuable because it provides the data required by most development models that focus on strategies from housing to job creation. The CIEM can identify underdeveloped business sectors, purchasing power, and purchasing patterns that are first steps toward business development strategies.

However, CIEM analysis should not be used in place of a traditional market analysis. While the CIEM project can identify which businesses might be successful, it cannot be used to determine where it should be located, or whether a business might compete effectively.

Furthermore, the data generated from this project should be considered as estimates that provide a generalized view of the community economy, rather than exact figures.

Nevertheless, the CIEM project can be extremely useful in creating an accurate portrayal of the local economy, its' size, and opportunities for growth.

How to use this manual

At least one person, the project coordinator, should read through this manual to get an overview of the steps involved with the project. The handbook is written as a step-by-step guide through the process of creating a core volunteer organization, collecting and analyzing data, and using this data to build strategies for economic growth through new community partnerships.

At some points in this manual, a menu of options will be provided for some steps. You should select the option that fits your situation the best depending on the resources available to you. Some options require more time and expertise than others do and will provide the most detailed or reliable information. However, you can choose the simpler options if necessary. The difficulty of the options will be depicted as follows:

The most detailed or reliable method is indicated by the dark shading

The recommended method is indicated by the arrow.

The time/resource saving method is indicated by the light shading

Recommended methods are described in greatest detail in the manual. The other options are provided to give you alternative techniques, but will not be described in great detail.
What is the Timeline for this Project?

The flowchart on the following page gives an overview of how the steps are organized for the CIEM. The suggested timeline for these steps is presented below. Obviously, the time requirements of these steps can be modified.

Figure 1 Project Timeline

<table>
<thead>
<tr>
<th>Step #</th>
<th>Month to Complete Project Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1 – Organize Community Volunteers</td>
<td>X</td>
</tr>
<tr>
<td>2 – Determine project scope</td>
<td>X</td>
</tr>
<tr>
<td>3 – Make community database</td>
<td>X</td>
</tr>
<tr>
<td>4 – Customize the surveys</td>
<td>X</td>
</tr>
<tr>
<td>5 – Select survey sample</td>
<td>X</td>
</tr>
<tr>
<td>6 – Prepare materials for mailing</td>
<td>X</td>
</tr>
<tr>
<td>7 – Send advance letters and promote project</td>
<td>X</td>
</tr>
<tr>
<td>8 – Send and Track surveys</td>
<td>X</td>
</tr>
<tr>
<td>9 – Send reminders and 2nd surveys</td>
<td>X</td>
</tr>
<tr>
<td>10 – Create data entry spreadsheet</td>
<td>X</td>
</tr>
<tr>
<td>11 – Review and enter data</td>
<td>X</td>
</tr>
<tr>
<td>12 – Analyze the data and create reports</td>
<td>X</td>
</tr>
<tr>
<td>13 – Share reports with community</td>
<td></td>
</tr>
</tbody>
</table>
Figure 2 Flowchart of Tasks

1. Organize Community Volunteers
2. Determine the Scope of the Project
3. Make a database of community residents and organizations
4. Customize the Surveys and Advance Notification Letters
5. Select Survey Samples
6. Prepare Materials and Database for Mailing
7. Send Advance Letters and Promote Project
8. Send the Surveys and Keep Track of Responses
9. Send Reminder Letters and Second Surveys to Non-respondents
10. Create the Spreadsheets for Entering the Data
11. Enter the Data After the Surveys Have BeenReviewed
12. Analyze the Data and Create Reports
13. Share Reports With the Community and Determine Action Strategies

Include volunteers from all areas within the chosen boundary and sectors.
Step 1 – Organize Community Volunteers

The CIEM process relies on the time and effort of volunteers. Many people will be needed to gather information from the community. Ideally, people from different parts of the community work together to build linkages between different organizations. Such cooperation and networking during the design phase will lay the foundation for implementing strategies at the end of the project.

Determine an Organizational Structure

There are many ways a community might organize to complete this project. The ideal organizational structure depends upon the scope of the project. Our experience leads us to believe that a project coordinator (or co-coordinators) to oversee the project works best. The core group of volunteers can meet in its entirety, or it can divide into task-based subgroups. Additional volunteers with specialized skills may also be needed to help out with specific tasks for short periods of time. Here are the steps for organizing in this manner.

Select a Project Coordinator or Co-coordinators

Project coordinators oversee the completion of the CIEM project. Depending on available funds, this can be a paid or volunteer position. The position may require anywhere from 5 to 15 hours per week for 5 to 9 months, depending on the scope of the project and how tasks are delegated.

Tip: Some organizations can provide in-kind time for their staff to work on this project. A local high school, college or university could also offer an internship for this position. Finding a qualified project coordinator is the key to a successful CIEM project.

The project coordinator must ensure the completion of the following tasks, either by direct involvement or delegating them to the core group of volunteers:

- Schedule meetings of the core group
- Type and copy survey instrument(s) and cover letters
- Prepare address labels, envelopes, postage, and other mailing supplies
- Track return and completion of surveys
- Respond to questions of survey respondents if they call
- Enter survey data into spreadsheet
- Conduct data analysis and prepare reports
Assemble a core group

The first step in assembling a broad-based core group of volunteers is to identify stakeholders in the community. Stakeholders are people with a direct interest in the outcome of the study, and may include:

- Citizens who live in the area
- Business owners who operate businesses in the area
- People who work in the community
- Local government officials who are located or offer services in the area; and
- Leaders and members of faith-based or community-based organizations located in the area.

The second step is to inform and invite community members to participate. Here are some ways to present information to get people involved:

- Have informal conversations with people you see regularly
- Present information at meetings of community or business groups
- Invite groups of stakeholders to a meeting for a special presentation

Get volunteers to help with specific tasks

Some tasks may be performed by an ad hoc group of volunteers. These people may not come to all the core group meetings, but can add their skills and time to assist the core group. People can volunteer their time or expertise to help with the following tasks:

- Develop a logo for all project materials
- Type surveys using word processor or desktop publishing
- Data entry and/or data analysis using spreadsheet software
- Assist with mailings (stuffing and addressing envelopes, etc.) or hand deliver surveys
- Provide access to mailing lists or community data (e.g., librarian, historian, realtor, municipal clerk, tax assessor, postal worker)
- Provide access to special populations (e.g., leaders of non-profit organizations, civic leaders, business leaders, citizen leaders, high school teachers, etc.) who can help to generate support for the project and provide volunteers if needed.
Checklist for assembling volunteers:

- Have a project coordinator to oversee the volunteers
- Include at least a dozen community leaders in the core group.
- Remember that there are many kinds of leaders, not just the ones who have formal visible leadership positions. Invite different types of people to reflect all parts of the community.
- Make sure the core group of volunteers are representative of all parts of the community (e.g., ethnically, geographically, and from households, businesses, non-profits, and government agencies)
- Select core group members who live or work within the community boundaries.
- Organize the core group according to your needs.
  - The core group can work as one unit or subdivide into subgroups depending on your needs.
  - They can be divided according to specific tasks to be completed (e.g., getting the mailing lists, customizing surveys, mailing press releases, etc.).
  - If you are surveying multiple sectors in your community, you may wish to have subgroups to work on each sector (e.g., some work on household survey, others work on business/non-profit survey, others gather data from government agencies).
- Include short-term volunteers to provide the skills you need that are not in the core group.

Tip: The boundary area to be studied should include stakeholders from that geographical area. Later, when the full group of stakeholders are together, the boundary area may change, and additional stakeholders may need to be identified.
Step 2 - Determine The Scope Of The Project

Decision 1: Select the Community Boundary for the Study Area

The boundary area will determine who you send surveys to, and it will determine what expenditures will be defined as “inside” or “outside” the community. Everything that is spent within the boundary area (by people and organizations within the boundary area) will be considered “inside” expenditures. Everything that is purchased (by people and organizations within the boundary area) outside of the boundary area will be considered “outside” expenditures. Therefore, it is important to consider what your group views as the boundary area of your community so you can define local and non-local purchases accordingly.

Review maps to consider the types of boundaries that exist in your area

It is often helpful to use various maps of the general community to discuss the possible geographical boundaries for the study area. These maps should show the different boundaries such as the following:

- zip codes
- school districts
- census tracts
- block groups
- counties
- cities or places according to census designations
- 3-digit telephone areas

Tip: It is easier to use a single unit, such as a zip code, rather than having to collect and sum the information for several units, such as census tracts.

Evaluate boundary areas based on these criteria:

- SENSE OF COMMUNITY - The boundary should generally encompass a community that defines itself as belonging together. A sense of shared community is useful for getting people involved.

- DIVERSITY OF SECTORS – The CIEM project describes each community economy as having 4 sectors. These four sectors are the following: (1) Households (2) Business Establishments (3) Non-Profit Establishments and (4) Public Owned Establishments. A good boundary size would include a mix of residents and various establishments.

- SIZE OF SECTORS --The boundary must be large enough to include residents and businesses, but it must be small enough (e.g., under 40,000 people) to make
it possible to conduct effective interventions once you collect your data and make recommendations. The ideal boundary size would be small enough to allow you to send a survey to every business, non-profit, and public establishment within the boundary, and to 400 randomly selected households.

- **BUDGET CONSTRAINTS** – Under ideal circumstances you would be able to send surveys to 400 randomly selected households, and one survey to every business, non-profit organization, and public agency within your boundary. To be able to examine all parts of the community economy you may wish to keep your boundary area smaller. Otherwise, you may be limited to surveying fewer sectors of your community, or selecting just the largest establishments in each sector.

- **AVAILABILITY OF ADDRESS LISTS** - Address lists for the people and organizations within the boundary area must be assembled. Therefore, you may want to consider what kinds of address lists exist in your area and choose a boundary that will lend itself to collecting this information.

- **COMPATABILITY WITH DATA SOURCES** – You may wish to compare your findings with existing census data or other studies done in your area. This is a good reason to choose boundaries that are similar to those used by the census bureau or other agencies.

- **RESPONSIBILITIES FOR IMPLEMENTING STRATEGIES** – Think about what boundary area best represents the community of people who will take ownership for keeping more money within the boundary area. People within the boundary area need to see themselves as a group with shared interests who will work together to implement strategies as a result of CIEM findings.

**Tip**: Keep in mind that you will be sending surveys to LOCATIONS not people. Your database should have addresses of places where people live, regardless of whether it is owned or rented. A tax assessor's list is the best type of list to use for the household survey because it will have a listing of property addresses rather than people.

By using lists that are based on individual names (e.g., voter registration, marketing lists) you will have more than one name per household on your list and you could end up sending duplicate surveys to a household. Furthermore, you may be neglecting renters and non-voters if you use lists of names of people who vote or who own homes.

Once you get a list of property addresses, you will address your survey to “Household residents” at (property address). This will ensure that the renter, rather than the property owner (who may live out of town), will receive the survey if the home is not owner-occupied.

**Recommendations for densely populated urban areas:**

In densely populated urban areas, the easiest boundary to use is a zip code area. The second choice is usually an aggregation of geographically contiguous census tracts.
Recommendations for sparsely populated rural areas:

In sparsely populated rural areas, the easiest boundaries to use may be a zip code or city name. Other options are school districts or counties.

If the zip code area has too few people and business establishments, a collection of geographically contiguous zip codes can be used. Counties are often the most appropriate levels, although it may be more difficult to gather address information from a phone directory by county, rather than city or zip code. A last choice may be a group of geographically contiguous census tracts.

Tip: Once you have determined boundaries, make sure your group members are representative of the geographical area. It is important to have adequate representation from the residential, business, non-profit, and government sectors of this geographical area.

Decision 2: Determine what parts of the community to survey

Sectors of the Community

One of the unique aspects of the CIEM strategy is that it encourages people to examine the community as a whole when assessing the community economic development needs. CIEM allows you to analyze all of your sectors (groups) at once.

Within the CIEM project we think of the community economy as having 4 sectors. These four sectors are the following:

1) Households (people who reside in the community)

2) Business Establishments

3) Non-Profit Establishments

4) Government or Public Establishments (all publicly owned establishments, e.g., schools, police, utilities, city/township/county offices, social security administration, etc.)

Examine your sectors and your resources

Estimate about how many addresses are in each of these four sectors for your given boundary area. You can choose to conduct a full or community analysis or a sector analysis depending on time and financial constraints.

Under ideal circumstances you would be able to send a survey to each establishments within the business, non-profit, and government sectors and to a random sample of 400 households. If your boundary area is large, you may have to limit your survey to households and one or two of the most important sectors in your community. The most important sectors are usually the ones that generate the most revenue or employ the most people.
Full Community Analysis

For the purpose of this study, we describe each community as having three (3) economic sectors. These sectors include the following:

1) Household (people who reside in the community)

2) Business and Non-Profit (companies and organizations located in the community)

3) Government (local, state, and federal branches of government located in the community)

A comprehensive analysis of each sector will result in the best assessment of your local economy.

Partial Community Analysis

If there are inadequate time or financial resources to conduct a comprehensive analysis, it may be preferable to focus on those sectors that have the largest economic impact on the community. This may be the sector that employs the most people in the community, or it may be the sector that has the largest volume of dollars to spend. (These are often the businesses or the public schools.)
Decision 3: Determine how many people and organizations to collect information from

The goal is to select a group of respondents who represent the sector(s) you are surveying. This can be done in several ways, using different methods for each sector as is appropriate. See Step 5 for more details on these methods.

Full Census of the Sector

A full census of a sector, in which all citizens or establishments in that sector are surveyed, makes sense if some of your sectors are very small. On the other hand, if you have large sectors you will probably wish to select a representative sample of addresses to collect information from. This will save you time and money in survey costs.

Random Sampling

This is the most reliable form of sampling. You can easily do it if you can put your address list in a spreadsheet or database that has a random number generator.

Almost Random Sampling

This is almost as reliable as random sampling. It is easier to use than random sampling if there are paper records of address lists instead of computerized lists.

Purposive Sampling

This is a targeted strategy to select targeted respondents, usually the largest employers. This is often a good second choice for business/non-profit and government sectors, especially if you have trouble getting a good response rate the first time around. An average size is of between 10 and 30 of the largest employers in a community. This strategy makes sense as a starting point if there is reason to believe that organizations and businesses will be reluctant to respond to the survey. By selecting fewer respondents, more resources can be devoted toward getting full information from several organizations. The information will be less representative of the whole community, but it can give a good picture of part of the economy.

Convenience Sampling

This method allows project volunteers to collect information from people through existing social networks and business groups by passing out surveys to people they know. This method can be highly unreliable, and is not likely to be very representative of the entire community. It may be a useful method if the community has not yet formed a cohesive identity, as support is often low for a survey sent out by a little-known organization.
Decision 4: Determine the method to use to collect the Information

There are different ways to collect survey data, each of which take a different amount of time and financial resources. The type of survey determines the work plan timeline. Those strategies that require the least time and resources are listed first.

Mailed Survey

The least time-consuming way to collect information is through a mailed survey that individuals complete themselves and return in a postage-paid envelope. While mailed surveys are easiest way to collect information, they also tend to have the lowest rate of return and reliability compared to telephone interviews or face to face interviews.

Mailed Survey with Follow-up Reminders and 2nd Surveys

Increased response rates with a mailed survey can be achieved if reminder letters and a second copy of the survey are sent to anyone who does not respond to the first mailing within a few weeks. If you have volunteers available you may wish to make follow-up phone calls to non-respondents before mailing the second survey.

Personal Delivery of Survey

Personal contact with respondents may increase people’s willingness to complete surveys, but unless the sample size is small, this takes a lot more time. Instead of initially mailing the survey, you can hand deliver the surveys and include pre-paid return envelopes so respondents can complete the survey in private and return it confidentially. If you do this, you will need to train volunteers on how to explain the purpose of the survey and the procedure for returning it, and how to assure respondents that it will be confidential. You will need to keep track of which surveys have been given to which volunteers and when they delivered it. You will also have to monitor the volunteers to make sure the surveys are actually delivered in time. Appendix K provides sample materials for communities wishing to use volunteers to hand deliver surveys.

Phone interviews or Personal Interviews

You can choose to set up appointments to conduct personal interviews however, people may be reluctant to provide private financial information to another individual. If you choose to do this, remember that the sample surveys are designed to be read, not spoken, so you will have to modify the surveys. You will also have to train numerous volunteers in how to set up appointments and conduct the interviews.

Collect data and existing records from organizations

Individuals and businesses will probably be unwilling to provide access to their financial records. However, you can access financial information from government agencies. This will increase your accuracy and response rate, but you will need someone who can format and analyze the electronic data you request. You will need 2 pieces of information from each agency: 1) A list of vendor expenditures with dollar amount spent and some address information about each vendor so you can classify the expenditure as inside or outside the community and 2) A list of employee salary and fringe expenses with information to allow a classification of the employee as inside or outside the community.
Step 3 – Make a database of community residents and organizations

What is this information used for?

In order to contact people and businesses to participate in the survey, you will need to find out who is in the community and where they are located. Keep this information in a spreadsheet or database program and put each sector in a separate file because these lists will be used to do the following:

1) Select a sample to contact about the survey – (See Step 5)

2) Create mailing labels for sending surveys – (See Step 6)

3) Keep track of which surveys have been returned and completed – (See Step 8)

4) Estimate the amount of total dollars in your community based on the number and type of households and organizations located within your boundary – (See Appendix L)

The Importance of Confidentiality

A confidential survey means that it is possible to keep track of who has completed the survey, but that team members agree not to use the list to find out how people answer surveys. No one will match survey answers with anyone’s name or organization.

An anonymous survey means that you do not keep track of whom turns in surveys and it is not even possible to match answers to individuals or businesses.

As you compile these lists, remember that confidentiality is an important trust between the survey team and the community members who will be participating in the surveys. Although it is possible to cross-reference these address lists with the returned surveys, everyone on the team should agree to keep the survey information separate from these address listings so that no one can match survey answers to an individual or organization.

To ensure confidentiality, limit the number of people who have access to the numbers assigned to the names or addresses in the databases (See Step 6).

Households

Collect Contact Information

- Get a complete listing of all the residential addresses within your boundary area. This includes all properties where people live, regardless of whether it is rented or owned.

- Because you will be mailing to households, rather than individuals, it is best to get a list of property addresses rather than names. If you use a list of names you will have to eliminate duplicate names at the same mailing address.
Sources for this information:

- Tax Assessor's lists - This is the most complete listing because it will contain addresses for all residential properties that are owned or rented.

- Postal lists - This information is generally available for zip code areas and may be fairly reliable. However, it will be more costly than other resources because you must purchase the information from a database supplier such as Dun & Bradstreet (http://www.dbisna.com/ or 1-800-932-0025), Moody, Info USA (800-321-0869).

- Phone directories - This may be out of date and will exclude residents without phones. This is available on CD-ROM for roughly $100 from a software vendor. However, this will not include residents who do not have telephone service.

- Voter registration lists - This will exclude individuals who have not registered.

- Local Fire & Police maps – Local libraries, fire, or police offices will probably have detailed maps of your area that lists addresses in every block of your city, and designates each address as a residence or a business. These maps are not always up-to-date so you may need to double check the addresses in person or send out extra surveys to compensate for all surveys returned due to bad addresses. If your boundary area is a collection of smaller units, such as census tracts or block groups, this may be the easiest way to collect an address list.

Example database for households

Below is an example spreadsheet or database template used to keep track of households:

(NOTE: Name and telephone are for your records only and should not be printed on mailing labels):

<table>
<thead>
<tr>
<th>Name</th>
<th>Street Address</th>
<th>City</th>
<th>State</th>
<th>Zipcode</th>
<th>Phone number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anna Rodriguez</td>
<td>123 Main St</td>
<td>Anytown</td>
<td>MI</td>
<td>12345</td>
<td>555-9000</td>
</tr>
<tr>
<td>Tyrone Brown</td>
<td>87 Oak Ave</td>
<td>Anytown</td>
<td>MI</td>
<td>12345</td>
<td>555-6389</td>
</tr>
<tr>
<td>Chris Smith</td>
<td>456 Highway 6</td>
<td>Anytown</td>
<td>MI</td>
<td>12345</td>
<td>555-2814</td>
</tr>
</tbody>
</table>

Businesses & Non-Profit Organizations

Collect Contact Information

Get a listing of all business and non-profit establishments within the community boundary. This list should contain the following information:

For mailing the survey:

- Name of company or agency
- LOCAL mailing address (not address of corporate headquarters located elsewhere)

For follow-up contact after survey is mailed (if needed):
- Telephone number and contact person’s name if possible

For selecting the largest establishments to receive survey (if needed):
- Volume of sales/revenue or number of employees

For analysis described in next chapter
- Nature of establishment (For-profit or Not-for-profit or Government)
- Type of establishment by Standard Industry Classification (SIC)

**Sources for this information:**

CD-ROM or internet telephone directory
- CD-ROM phone directories cost approximately $100 and can be found at many businesses that sell computer software. A local library may also have the current CD-ROM phone directory. Using included software, you can easily download the information about all the establishments within a particular zip-code or city. These directories contains all the required information except the IRS profit status of an establishment, which must be determined individually. Some of this information is also available using the “Yellow Pages” sections of various World Wide Web search engines, such as Yahoo or AltaVista. To search for all the businesses in an area, enter an asterisk “*” in the business category, then select the zip code or city name you want to search. Use the business descriptions you can infer an SIC code.

Local directories
- The library, chamber of commerce, or other local business or human service organization may have recently compiled an address listing of local agencies. If you have enough information about these establishments, you can use your own judgment to classify these places by appropriate SIC codes. A listing of these codes is provided in Appendix D.

Commercial & Government database suppliers
- The information listed above is also available for purchase from commercial database suppliers such as Dun & Bradstreet (http://www.dbisna.com/ or 1-800-932-0025), Moody, Info USA (800-321-0869) and the US Census Bureau. For a fee they can provide you with zip code level information in a paper format and in a format that can be used in a spreadsheet program. Local tax assessors may have electronic databases available to the public.

**Example database for businesses/nonprofits**

Here is an example spreadsheet or database to keep track of businesses and non-profit organizations:

[You will need to add columns for 1) sales volume and/or 2) number of employees if you are going to compare sizes and only select the largest organizations to collect information from.]
Figure 4 Example Address Database for Establishments

<table>
<thead>
<tr>
<th>Company</th>
<th>Contact</th>
<th>Bus. Or NP</th>
<th>SIC</th>
<th>Street Address</th>
<th>City</th>
<th>State</th>
<th>Zipcode</th>
<th>(Telephone number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom’s grocery</td>
<td>Tom Arnold, Owner</td>
<td>B</td>
<td>5410</td>
<td>123 Main St</td>
<td>Anytown</td>
<td>MI</td>
<td>12345</td>
<td>555-9000</td>
</tr>
<tr>
<td>Lily's trucking</td>
<td>Lily Tomlinson, Proprietor</td>
<td>NP</td>
<td>4210</td>
<td>87 Oak Ave</td>
<td>Anytown</td>
<td>MI</td>
<td>12345</td>
<td>555-6389</td>
</tr>
<tr>
<td>Midtown clinic</td>
<td>Dr. Joe Martin, Executive Director</td>
<td>NP</td>
<td>8010</td>
<td>456 Highway 6</td>
<td>Anytown</td>
<td>MI</td>
<td>12345</td>
<td>555-2814</td>
</tr>
</tbody>
</table>

**Government**

For many communities, government agencies (e.g., public schools, hospitals, etc.) are a substantial portion of the community economy, so it is important to consider obtaining data from them. You can do this by sending a survey to the agency directly, or by requesting data that you will analyze yourself. For both options you will need to collect address and contact information for the government agencies.

**Survey the Government Agencies**

The first option is to include government agencies in your survey of businesses and non-profit organizations. A staff person may be able to complete the survey and provide the same type of data as you are requesting from businesses and non-profits. The data would be summarized in the categories you request. Follow the same instructions as you would for the business and non-profit survey.

**Request Government Agency Data for your Own Analysis**

The second option is to request access to the raw data and conduct the summary calculations yourself. This section briefly describes how you can collect information from these agencies, and what types of information you are looking for. This task is devoted almost entirely to collecting, formatting, and analyzing computer data from multiple sources, and thus is ideal for delegation to a person or team skilled in spreadsheet software use. The steps are outlined next:

**Collect Contact Information**

Create a complete address and telephone listing of all government agencies within the community boundary identified for the study. This includes government offices at all levels (federal, state, county, city, township, etc.) that are geographically located within your community boundary. This list should contain the following information:

- Name of agency
- Full mailing address
- Nature of establishment (Federal, State, Local government)
- Telephone number (for follow-up if needed)
- Contact person’s name if possible (for follow-up if needed)
- Volume of annual expenditures or number of employees (for selecting largest if needed)

**Request Vendor and Employee Expenditure Information**

Because it may take a while for government agencies to fulfill your request for this public information, consider requesting this information at this stage. It may take time to locate the person who will be able to provide you with this information. Request the information as an electronic file if possible.

From each of these government offices (or the 5 or 10 largest agencies) request the following information:

- A list of all employee expenditures for the past year broken down by employees living inside the boundary versus employees living outside the boundary area.
- A list of all vendor expenditures for the past year broken down by vendors located from inside the boundary versus vendors residing outside the boundary area.
- Be sure the address gives enough information to identify whether or not the person is in the designated boundary. City name or zip code may be enough information if your boundary is that large. If your boundary is a neighborhood within a city or zip code you will need street addresses if you are allowed this confidential information.

**Example database for government agency employee expenditures**

This is an example of the spreadsheet or report to request from the government agency. You may have to complete the last column ("within boundary?") on your own as you review the address. If the agency cannot give you an address, request that they provide the determination of whether the employee is in the boundary or not.

It is also helpful to get information about what types of jobs are held by local residents compared to non-local residents. This can help you examine what types of jobs are not being held by local residents. From this you can identify possible education or training needs for the local labor pool.
**Figure 5 Example Database for Government Agencies’ Employee Expenditures**

<table>
<thead>
<tr>
<th>#</th>
<th>Employee address</th>
<th>Job type</th>
<th>Wages &amp; Fringes</th>
<th>Within Boundary?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>175 Main Hwy, Citytown, 48000</td>
<td>Teacher</td>
<td>$25000</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>48 Ranch Road, Outtatown, 48009</td>
<td>Administrator</td>
<td>$40000</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>1800 Elm St, Citytown, 48000</td>
<td>Clerical</td>
<td>$22000</td>
<td>Yes</td>
</tr>
</tbody>
</table>

---

**Example database for government agency vendor expenditures**  
This is an example of the spreadsheet or report to request from the government agency. You may have to complete the last column (“within boundary?”) on your own as you review the address. If the agency cannot give you an address, request that they provide the determination of whether the vendor is in the boundary or not. It is helpful to know what products or services are being purchased so you can identify types of goods and services that are not being purchased locally. However, that information may not be available.

**Figure 6 Example Database for Government Agencies’ Vendor Expenditures**

<table>
<thead>
<tr>
<th>#</th>
<th>Vendor address</th>
<th>What was purchased? (If available)</th>
<th>Amount</th>
<th>Within Boundary?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>225 Main Hwy, Citytown, 48000</td>
<td>Office supplies</td>
<td>$1200</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>800 Grove Road, Outtatown, 48009</td>
<td>Accounting services</td>
<td>$1575</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>1911 Ash St, Citytown, 48000</td>
<td>Property maintenance</td>
<td>$965</td>
<td>Yes</td>
</tr>
</tbody>
</table>
**Summarizing Vendor and Employee Expenditure Information**

Your end goal is to summarize the data you have received from each agency. (Some agencies may be willing to provide the summary data for you so that you do not have to do the computations yourself.) Here are the summary statistics that are needed:

**Employee Expenditures**

1) How much did your agency spend on employees (wages and fringes) last year?

2) What percent of that expenditure went to employees living within the boundary?

3) What is the average wage of employees living within the boundary versus outside of the boundary?

4) What types of jobs are most often held by employees living within the boundary versus outside of the boundary?

**Vendor Expenditures**

5) How much did your agency spend last year on vendor (non-employee) expenditures?

6) What percent of this expenditure was spent on vendors living within the boundary?

7) What types of products and services are most often purchased from vendors living within the boundary versus outside of the boundary?
Customize the Sample Surveys

Appendices A and B are sample surveys with recommended questions for households and businesses/non-profits, respectively. You will need to modify the surveys to fit your community.

Replace blanks with community information

Bracketed [ ] questions must be replaced with specific information. Examples include [your community name], [survey date], etc.

Select expenditure categories you want to use in the survey

Because the questions about income and expenditures are the main component of this survey, you will need to choose the best types of categories to use. The remainder of this chapter will guide you through this process.

Delete questions that are not useful to your community

You need to keep all the questions that ask about income or expenditures so you can compute the results of the study. However, the other questions regarding attitudes and perceptions in the community are optional. It is helpful to keep the survey short so that people will want to fill it out. Include a limited number of these attitude questions in your survey, unless it is an issue that people will be highly motivated to answer questions about.

Add/modify questions that are important to your community if desired

You may wish to modify some of the community attitude questions in the sample survey to reflect the issues pressing in your community. You may also wish to add additional questions that relate to current community conditions, attitudes, or development. Be sure to state the questions in a way that is neutral and does not reflect bias on either side of the issue. See Appendix C for tips on adding questions.

Choose the type of expenditure categories that best reflects your community's expenditures

The sample survey lists categories of expenditure items from past surveys used with CIEM. The expenditure categories were customized for an individual community. Change expenditure categories to reflect the type of purchases people make in the project boundary.

Business and Non-profit Survey

The expenditure items for the businesses and non-profits (see Question #8 in the business/non-profit survey) are fairly standard, but more detailed expenditure categories
could be included. However, experience suggests that the simpler the survey, the more completed surveys will be returned.

**Household Survey**

The expenditure items for the households (see Question #11 in the household survey) are examples of categories designed by another community. Each community will select expenditure categories that match the type of expenditures made by residents.

The Bureau of Labor Statistics (BLS) Consumer Expenditure Survey (http://www.bls.gov or Appendix L) is a good starting point for choosing which expenditure categories to use. The BLS site also indicates how much money an average household spends on a variety of goods and services. Major categories (e.g., Food) as well as detailed subcategories (e.g., meats, dairy, etc.) are listed. This information is also available for regions (e.g., Midwest) and for select metropolitan areas (e.g., Detroit).

**Tip:** We recommend that communities use the main categories listed in the BLS consumer expenditure survey and customized subcategories if possible to allow for comparisons with other communities.

**Choose the level of detail you need in the expenditure categories**

Sample household survey questions about the economy focus on very detailed categories (e.g., gasoline & motor oil, medical supplies). Feel free to make these categories more broad or more detailed according to the economic particulars of the community.

**Detailed Expenditure Categories**

Selecting the proper level of detail in expenditure categories is critical to discovering where the major spending leaks are in the community. Major leaks can come from many people purchasing at least small amounts goods or services elsewhere, or a few people spending large amounts on goods or services elsewhere. With this in mind, the level of detail in expenditure categories must provide enough information to detect significant leaks.

Note the following detailed categories of two summary categories of Transportation and Health Care:

**Figure 7 Example of Detailed Expenditure Categories**

<table>
<thead>
<tr>
<th>TRANSPORTATION</th>
<th>$ spent last year</th>
<th>% bought locally</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vehicle purchase/payments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Gasoline and motor oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Maintenance, parts, tires, towing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Public transportation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEALTH CARE</td>
<td>$ spent last year</td>
<td>% bought locally</td>
</tr>
<tr>
<td>5. Health insurance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Home health care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Doctor, Dentist, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Drugs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Chiropractic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Medical supplies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Summary Expenditure Categories

Using only summary categories will simplify the survey. It would make the data entry and analysis quicker, but it would also result in less specific information about expenditures, which can be useful in assessing areas for potential growth.

Figure 8 Example of Summary Expenditure Categories

<table>
<thead>
<tr>
<th>$ spent last year</th>
<th>% bought locally</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TRANSPORTATION</td>
<td></td>
</tr>
<tr>
<td>2. HEALTH CARE</td>
<td></td>
</tr>
</tbody>
</table>

Combination of Detailed and Summary Expenditure Categories

You may also wish to use a combination of these approaches and collect detailed information in some categories and summary information in other categories. The main goal is to customize the survey for your own economy, gathering information about expenditure areas that are most applicable to your area:

Figure 9 Example of Combined Detail & Summary Expenditure Categories

<table>
<thead>
<tr>
<th>TRANSPORTATION</th>
<th>$ spent last year</th>
<th>% bought locally</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vehicle purchase/payments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Gasoline and motor oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Maintenance, parts, tires, towing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Public transportation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. HEALTH CARE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Make sure the survey is realistic for your resources

How long will the data entry take?

Someone who is familiar with the computer mouse and keyboard operations can probably enter data for 10 to 15 questions per minute (600 to 900 per hour) with some practice. This can vary depending on the skill level of the person and how complex the survey is. The following formula offers a general idea of how much time the data entry will take:

Figure 10 Steps to estimating data entry costs

<table>
<thead>
<tr>
<th>Steps</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Number of potential answers a person could give on a survey:</td>
<td></td>
</tr>
<tr>
<td>B. Number of completed surveys expected: (This is roughly 30 to 50% of the number you mail.)</td>
<td></td>
</tr>
<tr>
<td>C. Total number of responses:</td>
<td>=A x B</td>
</tr>
<tr>
<td>D. Number of answers entered per hour: (An experienced typist can enter 600 to 900 per hour.)</td>
<td></td>
</tr>
<tr>
<td>E. Total estimated time (in hours) for data entry:</td>
<td>=C / D</td>
</tr>
</tbody>
</table>
**How long will the data analysis take?**

It takes time to calculate the results, compute averages, frequencies and other statistics, and create reports and graphs to summarize the data. This process can last as long as the data entry phase, depending on the skill of the person analyzing the data. You will also want to allow time to create the reports and presentations that will be shared with the community.

**Create the Data Entry Spreadsheets**

Once the survey instruments are completed, a spreadsheet for tabulating the answers from the returned surveys must be developed. Since spreadsheets must match the surveys, it is best to wait until after all the final changes have been made on the surveys to start it.

It will be extremely helpful to have someone start creating these data entry spreadsheets templates as soon as the surveys are completely customized. Then the spreadsheets will be ready for when the surveys start being returned. This will help the data entry phase to move much more quickly. **Step 10** describes the steps for creating this spreadsheet.

**Tip:** It is best to design the survey with the data entry spreadsheet in mind. You want the survey to be easy for people to answer, and you also want it easy to enter answers into the spreadsheet. Refer to Appendix C for tips.
Step 5 - Select Survey Samples

How many surveys do we need?

For the survey results to be meaningful, it is recommended that you have at least 100 surveys, but preferably 400, returned from each sector that you randomly sample and as many as possible from the remaining samples.

It is also best if surveys are returned from people and organizations that are representative or typical of the community, so it is important to do adequate follow-up with people or establishments who do not return their survey. This is why promotion and community support is so important in this project! You really need cooperation from the community and survey respondents to make this project most successful.

Why are so few surveys needed?

Most social scientists consider a sample size of 100 adequate, although 400 is desired, when you have a random sample from a population that is large. With a sample of 400, you can expect results to have a margin of error at 5% or less. This means that the analysis of your community's expenditures could be 5% higher or lower than the actual expenditures.

The 5% error rate is small enough to provide good estimates of the economic flows in your community. To significantly reduce the error rate would take much more time and money to do a larger survey. That level of precision is not necessary for this study.

By selecting a random sample, you can assume that you are getting a fairly accurate picture of the average profile. This principle of random surveying illustrates how election forecasters are able to predict outcomes of national elections with a small rate of error by contacting a random sample of only 2,000 to 3,000 people from across the United States.

How many surveys should we distribute?

The response rates for this type of mailed survey is between 30 and 50%. That means about 30 to 50% of your original surveys will be returned. Therefore, you will need to mail 300 to 400 surveys for every 100 surveys you want returned.

For the household survey, you will need to select 300 to 400 addresses to receive your survey. For the organization survey (business, non-profit, government) survey you will also need 300 to 400 addresses to receive the survey. This should ensure that you receive at least 100 good surveys from both groups.

How do I select respondents?

You can select a group of respondents who represent a sector in several ways. You may choose different selection methods for each sector. For example, small communities have

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used a random sample for the household survey (since there were over 2,000 people in the area) and a full census of the organizations (since there were less than 300 total businesses and non-profit establishments in the area).

The diagram below shows which options are discussed in this chapter. The most difficult but reliable methods are listed first. More detail on each method is provided after this overview list:

- Full Census of the Community – **Only if your sectors are small (400 or less)**
- Random Sampling – **If you have software with a random number generator**
- Almost Random Sampling - **Useful for all sectors**
- Purposive Sampling- **A good second choice for business/non-profit and government sectors, especially if you have trouble getting a good response rate the first time around or cannot survey all of them.**
- Convenience Sampling - **Not very reliable, but useful if your community is not cohesive**

**Full Census of the Community**

In a small community it is not difficult to send surveys to everyone in the community or particular sector. If you have more than 400 addresses for a particular sector (e.g., households or businesses), it will be much easier to select a sample of addresses than trying to collect data from everyone. There are different types of sampling methods to choose from below.

**Random Sampling**

The most reliable form of sampling is random sampling, which dramatically increases the probability of getting a results that represent those of the entire community. To get a random sample of each sector (household, business/non-profit) a complete list of all valid addresses in that sector must be compiled. Separate listings for households and businesses/non-profits are necessary.

Steps for drawing a random sample:

1) Put the addresses into a computer database

2) Add a number field to the database.

3) Number the addresses consecutively in this field. Be sure the numbers are values rather than formulas.

4) Decide how many surveys you will need to send out in order to get the amount you want. (Example: 300)
5) Use the random number generator (supplied with software) to select the needed number of surveys (e.g., 300) at random.

6) Create a new computer database address list that has only the selected addresses. (Do not delete the database with all the addresses. Keep the original database in case you need to come back and select more names. For instance, this may happen if you have a large number of surveys returned due to bad addresses.)

7) In the new database, renumber the addresses consecutively. Number the household addresses beginning with 10001. Number the business/non-profit addresses beginning with 50001.

Almost Random Sampling

This procedure is similar to random sampling. The difference is that in this process, the addresses are not listed in random order, nor are they selected randomly from the group.

1) Put the addresses into a computer database or review a printout list manually.

2) Count the number of addresses that are on your list. (Example: 3,000)

3) Decide how many surveys you will need to send out in order to get the amount you want. (Example: 300)

4) Divide the total number of addresses (Example: 3,000) by the number of surveys you will mail (Example: 300) to determine the interval you will use. In this example, the interval is ten. (Example: 3,000 / 300 = 10)

5) Using your interval number, select every \textit{n}th (Example: every 10\textsuperscript{th}) address on your list.

6) Create a new computer database address list that has only those addresses you have selected. (Do not delete the database with all the addresses. Keep the original database in case you need to come back and select more names. For instance, this may happen if you have a large number of surveys returned due to bad addresses.)

7) In the new database, renumber the addresses consecutively. Number the household addresses beginning with 10001. Number the business/non-profit addresses beginning with 50001.

Purposive Sampling

This method is distinctly non-random. It allows the selection of addresses that are the most important, based on some predetermined criteria. For example, only the largest firms (e.g., hires the most people, has the largest revenue) might be targeted. This method is least useful for the household sector, but is often very appropriate for the business/non-profit, and government sectors.

Convenience Sampling

This is the simplest form of sampling because you give surveys to people that are easily accessible. It may provide the benefit of getting a higher rate of completed surveys returned since you can hand deliver surveys to people you know through your community
organizations. However, it may make your results more biased because the surveys are probably not given to a representative group of individuals or organizations.

Convenience sampling can be done by distributing household surveys at community meetings, through volunteer organizations, at faith-based groups, at grocery stores or libraries, or other places where community residents will gather. Likewise, business/non-profit surveys could be distributed to non-profit directors and business owners at community business meetings such as Kiwanis, Rotary, Exchange Club, Lions, or other places where the local executives gather.
Step 6 – Prepare Materials and Database for Mailing

Have a logo ready to use on your materials

A logo is useful for identifying this project as a community-wide effort that goes beyond the boundaries of any particular organization. It provides a unifying theme for your letters, envelopes, and surveys. This logo will build a recognizable identity for the project so people will know to pay attention to mailed materials if they see the logo.

Prepare Press Releases

To increase community awareness of the project and its purpose, it is helpful to garner media attention for your cause. Local media can help to increase the return rate of surveys because people will be more interested in being involved with the development of strategies and recommendations as a part of this project. Prepare a one page informational sheet describing the importance and value of the survey to the community, its beginning and end dates, and who to contact for more information. Sample press releases are provided in Appendix I. Find an address listing of newspaper, radio and TV contacts for your community, and mail or fax a press release when the data collection process begins.

Organize your database

Include only the selected sample

By now you have already selected samples from the household and organizational sectors to receive your survey. Each sector requires a separate database file. These files should only have entries for only the people/organizations selected in your sample. Create a separate new file that is different from the original database that had information about all the people and organizations in the community, but don’t get rid of the original files yet!

Add a new field/column for the survey number

If you haven’t already done so, add a new field (or column) that is for the SURVEY NUMBER in each of the sample databases. Each survey needs a unique number to match it with the proper person/organization. To make sure the surveys are confidential, use only the survey number, not the person/organization name to identify the survey.

Assign survey numbers to each person/organization

Each person/organization to have a different number so that no two surveys (even from different sectors) will have the same numbers. Number the person/organization entries consecutively beginning with the following numbers, if you haven’t already done so:

- Household sector: 10001 and up
- Business/non-profit sector: 50001 and up
Create mailing labels

Most database software allows the easy creation of mailing labels. The following fields/columns of information should be included on the mailing label:

HOUSEHOLD LABEL:

[Survey number]
Community Resident at
[Address]
[City, State, Zip]

BUSINESS/ NON-PROFIT/ GOVERNMENT LABEL:

[Survey number]
[Contact person name]
[Organization]
[Address]
[City, State, Zip]

Prepare and Copy Pre-Survey Announcement Letters of Support

Prepare a letter to send to your everyone who will be receiving a survey. This letter will tell your survey sample that they will be receiving a survey in a week and it will tell them why they should participate in the project. The purpose and importance of the project should be clearly stated.

Create a different letter for each type of survey you will be sending. For instance, you could send one type of letter addressed to community residents who will be receiving the household survey. Another type of letter could be addressed to community leaders who will be receiving the organizational survey for businesses, non-profits, and/or government agencies. You may wish to have an influential "spokesperson" from the community write each of these letter to show that they support this project. The spokesperson should be someone who is respected by the group receiving the letter. See Appendix F for sample copies.

Order Envelopes for the Advance Notice Letters if Necessary

Purchase business size envelopes to mail the announcement letters. Have the logo printed on the envelope if possible. Put a return address on the envelope where you want undeliverable mail returned to so you can remove this name from the survey sample.

Order at least twice the number of surveys you will be sending. You can use these envelopes twice. You will use it for mailing the advance notice letters and for sending out reminder letters to anyone who has not completed the survey.
Prepare and Copy Survey Introduction Letters to Accompany the Surveys

Prepare an introductory letter to send with each survey. Separate letters for residents and the business/non-profit owners will be necessary. The letters should explain to each group why completing the survey will be in their interest. The letters should explain the importance of the survey, when the survey will arrive, who to contact if there are questions, and any other important details about the survey. Be sure to tell people the due date for the return of the surveys and any other important instructions. The chair or members of the core group should sign these letters. See Appendix G for sample copies.

Print or Photocopy Surveys

Photocopy the surveys using a different color (at least for the cover) for each sector if possible. Some communities have custom-printed their surveys in booklet form, using a stock cover.

Be sure to print enough surveys at one time to reduce printing costs, or to take advantage of bulk discounts for photocopying. Print enough extras for any follow-up mailings you wish to send to people who did not complete the survey after the first mailing.

Purchase Pre-Printed Return Envelopes for Surveys

You can save a lot of time and add professionalism to your survey if you are able to purchase pre-printed envelopes for respondents to use when returning their surveys. Have the envelopes pre-printed with 1) Your logo if available, 2) the return address where you want the surveys delivered, and 3) the “postage-paid” emblem if your organization has this option to do this. Consult your local post office for details on pre-paid postage.

As you decide where the surveys should be delivered to, consider locations that will provide survey respondents with the greatest level of comfort and assurance that confidentiality will be maintained. It should also be a place where the surveys can be safely stored and easily delivered to the data entry location.

Purchase Postage to Affix to Return Envelopes if Needed

If you are not able to order pre-printed envelopes, you will need to hand stamp the return address on each envelope and affix the proper postage. Remember to consider the weight of the survey and envelope before determining how much postage to affix.

You could also request that survey respondents provide their own postage but this may reduce the number of surveys you receive back. People are much more likely to return the surveys if they do not have to pay for postage or address the envelopes.

Purchase The Right Size of Survey Mailing Envelopes

Be sure the survey, instruction letter, and return envelopes will fit in the mailing envelope. Remember to include a return address on the outside in addition to postage.

Schedule time with Volunteers to help stuff envelopes!

Schedule a day to have people help stuff envelopes for the advance notices and to stuff surveys into envelopes. Mail the surveys approximately one week after sending the advance notices.
Step 7 – Send Advance Letters and Promote Project

Tell the local media about your survey

Mail or fax the press releases to local newspapers, radio, and TV stations. Have someone on the project team designated to answer calls or do interviews if requested.

Mail the advance notice letters to the survey sample

Print one set of the mailing labels for each sector. Be sure the labels have the survey ID number on them and that the return address is where you want the letters returned to if the addresses are undeliverable. Apply the labels to the envelopes and enclose the appropriate advance notice letter for (e.g., for households or businesses/non-profits).

Add a new field to the database for the tracking bad addresses

Add a new field (or column) that is for ADDRESS VALIDATION in each of your database files for your sector samples. For each person or organization in your database, add a code to indicate whether each address is valid or invalid. For instance, you might want to use “B” to indicate that an entry in your database has a “bad address.” (If you can get a corrected address you can remove the “B” from their record.) When you are ready to print address labels you can select all records that do not have a “B” in the “Address Validation” field.

Keep track of advance notice letters returned

Collect letters that have been returned undeliverable. Remove these names from the mailing list to save time or money mailing surveys to these addresses. Match the survey ID number with the matching entry in the database.

If you get many letters returned, you may want to randomly select additional addresses from your original database to replace these invalid entries.
Monthly 6 to 10

**Step 8 – Send the Surveys and Keep Track of Responses**

**Send the Surveys (Mail 1 week after sending the advance notice letters)**

- **Print a new set of mailing labels for the surveys**
  
  Print a new set of mailing labels for each sector. Remember to select only those addresses that were not returned due to a bad address. Be sure to include the survey ID number on the mailing labels, and put the corresponding survey in the envelope.

- **Number the surveys**
  
  Within each sector number the surveys consecutively, beginning with the first number that appears in the database (e.g., 10001) and ending with the last number that appears in the database. This will serve as a check to make sure there are no duplicate numbered surveys. Don’t worry if there are some surveys numbered that are for bad addresses. They can be removed in the next step.

- **Stuff the envelopes with numbered surveys**
  
  Apply the mailing label to the large mailing envelope. In that large envelope, add a postage-paid envelope and include a numbered survey that corresponds with the number on the mailing label. BE SURE THE SURVEY ID ON THE MAILING LABEL AND THE SURVEY MATCH EXACTLY.

**Tip:** It is EXTREMELY helpful to keep the mailing labels, the surveys, and the stuffed envelopes in numerical order. If you run into problems while you are stuffing envelopes, it is much easier to locate items to verify or correct problems.

**Keep Track of Surveys That are Completed and Returned**

- **Add a new field/column for the tracking survey completion in the database**
  
  Add a field (or column) to the sample database for SURVEY COMPLETION to the sample databases for each sector. This is where returned surveys are tracked.

  Examples include codes such as “C” for “Completed” and “R” for “Refused.” The ‘C’ would indicate that the survey was completed and returned, while an ‘R’ would indicate that the survey was returned unanswered. An empty field would indicate an un-returned survey.
Check in the Surveys and Update the database

When a survey is returned it should be dated and “checked-in.”

1) On the front cover of the survey, write the date it was returned.

2) Review the survey answers to make sure all the answers are clear for the data entry person. If there are discrepancies, use a red pen to show what information you want the data entry person to record. See Step 11 for answers to common problems.

3) In the Database, type the appropriate code in the SURVEY COMPLETION column to show that the survey has been returned for that person or organization.

4) When the survey has been appropriately “Checked In” to the database, you should put your initials on the front cover.
Follow up on Surveys that are Not Returned

Mail Reminder Letters

About 2 weeks after the first surveys are mailed, send out reminder letters or postcards to the individuals or organizations who have not yet returned their surveys. The letters should remind people about the purpose and importance of the confidential survey and thank them if they have already participated.

Instruct them where to get a new copy of the survey, if they have lost the original survey. If people pick up new surveys REMEMBER TO PUT THE ORIGINAL SURVEY ID NUMBER on each duplicate survey. Appendix H shows examples of reminders sent in the past, along with notes sent to people who requested duplicate copies of the surveys.

Mail Second Surveys

About 2 weeks after the reminder letters are mailed, send a second survey to those individuals and organizations who have not yet returned their surveys. Be sure the follow-up surveys have the original survey ID number written on them.

Do selective phone follow-up as needed

If you have low responses from organizations, you may wish to conduct follow-up telephone calls to key employers in the area. Contact the owner or manager and explain the importance of the CONFIDENTIAL survey and ask to make an appointment with the appropriate person to interview them. Ask for responses to the full survey, but focus on mainly getting responses about the organizational expenditures.

Set an end date for collecting the last surveys

Surveys tend to trickle in for a time, so setting a cutoff date for the last day surveys will be used is helpful to bring closure to the project. One or two months after the second surveys are mailed is sufficient time to collect surveys from the majority of people who will participate. You can complete the data entry while surveys are being returned. Data collection and entry usually is finished 2 weeks after the cutoff date for survey returns.
Step 10 - Create the Spreadsheets for Entering the Data

Create the spreadsheets to enter your data

You will need a separate spreadsheet for each type of survey (e.g., one for household one for business/nonprofit/government).

You will need to create a spreadsheet that will allow you to enter the data from the survey questions. The answers for a survey will go DOWN the column. Each row will contain the answers for one question from all the surveys.

Add Headings

Row headings must be added to match the questions on the survey. The first row should have the heading for the Survey ID number. The ID number is on the front cover of each survey. In this example, each survey respondent has information in one column.

Label rows with the question numbers. Some questions have more than one part, so you will need a separate column for each part (e.g., Question 6-A, 6-B, 6-C, etc.). You may also wish to have an additional column to describe briefly the content of the question.

Figure 11 Sample Data Entry Headings

<table>
<thead>
<tr>
<th>QUESTION DESCRIPTION</th>
<th>QUESTION #</th>
<th>1st survey</th>
<th>2nd survey</th>
<th>3rd survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>(On front cover)</td>
<td>Survey ID #</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of residence</td>
<td>Question 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Question 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Question 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business type</td>
<td>Question 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Position in business</td>
<td>Question 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food $ dollars spent</td>
<td>Question 6-1-A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food % spent local</td>
<td>Question 6-1-B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing $ dollars spent</td>
<td>Question 6-2-A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing % spent local</td>
<td>Question 6-2-B</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Add data entry formulas**

If possible, this is the best time to include formulas to help analyze the data to avoid a time crunch when surveys are straggling in and people are anxious for the final report. The only downside to adding these formulas early is that they might get in the way of the typist while they are doing the data entry. This can be minimized by "hiding" and "protecting" the formulas, so the data entry typist will not be bothered by extra rows.

Step 12 for detailed explanations of how to enter formulas.

**Format the Spreadsheet**

Format the rows so that when data are entered, the values will appear in the same format as the survey. Format rows to appear as dollars, percents, or regular numbers to correspond with the survey. This will make it easier to verify that data is entered correctly to match the answers on the surveys.

**Protect Cells That Should Not Be Typed Over**

Protect all cells containing labeling and formulas. This includes any of the cells around the edges that contain the question number, question description, or formulas.

**Pretest the Spreadsheet**

Have someone fill out a test survey. Enter the numbers from this test survey into the spreadsheet. This will help to detect any errors before they become a serious problem. It will also help get an estimate of how long it will take to enter data from each survey.
Cleaning the Data

After a completed survey is received, and the database is updated to show that it has been returned, the survey must be reviewed and “cleaned-up.” Someone should be assigned the task of reviewing the surveys to “clean up” any answers that may be confusing. Someone familiar with the project should do this part, especially if the data is entered by people who are not familiar with the survey.

The person cleaning the data should make his/her changes with a colored pen. If more than one person is cleaning the data, each person should use a different color pen to identify who to ask about the changes they have made. The surveys should be initialed by the person reviewing the survey.

What should I do if more than one answer is circled?

When more than one answer is given, it is usually best to take the first answer provided. However, in some cases an average of the two numbers may be used.

For example, in question 5 below, you may wish to choose “1” since it is first, or you may choose “2” which is an average of the two numbers circled. (For attitude questions in the household survey you might find more than one answer is circled if people in the household had different views on the question. In this case you could take the average response between the two numbers.)

However, in question 7, it would not make sense to take an average of the numbers, because the numbers do not relate to each other arithmetically. The numbers are just assigned to represent categories. Therefore, it would be best to choose “1” for since it is circled first.

Figure 12 Example - Fixing Survey with More than one Answer Circled

| Q5. How satisfied are you with access to clients for your business? (circle one) |
|-----------------------------|----------|-------------|
| Very satisfied              |          | Somewhat satisfied | Not satisfied |
| 1                           |          | 2            | 3            |

Q7. Please indicate the legal type of your business. (circle one)

1 Non-incorporated Sole Proprietorship
2 Non-incorporated Partnership
3 Non-incorporated Limited Partnership
4 Incorporated "S" Corporation
5 Incorporated Corporation
When should a blank answer be changed to zero?

In the sections where people are asked to list their expenditures, they will often leave blanks. Sometimes this means they do not spend anything in that category. Other times it means they do not know the answer, so they leave it blank. See the following examples:

Figure 13 Example - Survey (#20001) with Blank Answers that Should be Changed to Zeros

<table>
<thead>
<tr>
<th>Expenditure Category</th>
<th>A. Average spent per month</th>
<th>B. Approximate % Purchased Locally (circle one amount per line)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Housing</td>
<td>$</td>
<td>None</td>
</tr>
<tr>
<td>2. Food</td>
<td>$250</td>
<td>0%</td>
</tr>
<tr>
<td>3. Transportation</td>
<td>$300</td>
<td>0%</td>
</tr>
<tr>
<td>4. Household Supplies</td>
<td>$</td>
<td>0%</td>
</tr>
<tr>
<td>5. Healthcare</td>
<td>$</td>
<td>0%</td>
</tr>
<tr>
<td>6. Clothing</td>
<td>$300</td>
<td>0%</td>
</tr>
<tr>
<td>7. Entertainment</td>
<td>$</td>
<td>0%</td>
</tr>
</tbody>
</table>

The household in the above survey appears to spend money on Food, Transportation, and Clothing but not any of the other expenditure categories. Because the respondent filled out complete information for lines 2, 3, and 6, we can assume that they left the other lines blank because they did not have expenditures in those areas.

If a household does not purchase anything from a particular category, it is not possible for them to have any local expenditures on that category. Therefore, circle “0%” for the percent spent locally on these sectors, and enter “0” for total dollars spent.

This means that columns A and B should be changed from blanks to zeros for Housing, Household Supplies, Healthcare, and Entertainment.
### Figure 14 Example - Survey (#20002) with Blank Answers that Should be Left Blank

<table>
<thead>
<tr>
<th>Question 1</th>
<th>A. Average spent per month</th>
<th>B. Approximate % Purchased Locally (circle one amount per line)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure Category</td>
<td>$750</td>
<td>None</td>
</tr>
<tr>
<td>1. Housing</td>
<td>$750</td>
<td>0%</td>
</tr>
<tr>
<td>2. Food</td>
<td>$250</td>
<td>0%</td>
</tr>
<tr>
<td>3. Transportation</td>
<td>$1000</td>
<td>0%</td>
</tr>
<tr>
<td>4. Household Supplies</td>
<td>$400</td>
<td>0%</td>
</tr>
<tr>
<td>5. Healthcare</td>
<td>$100</td>
<td>0%</td>
</tr>
<tr>
<td>6. Clothing</td>
<td>$500</td>
<td>0%</td>
</tr>
<tr>
<td>7. Entertainment</td>
<td>$</td>
<td>0%</td>
</tr>
</tbody>
</table>

For survey number 20002 there are three places that are blank and they should remain blank because the information is incomplete.

The first place is in the row for Housing. This household reported having $750 in average monthly Housing expenditures. However, the respondent does not seem to know how much is spent locally, otherwise s/he would have circled a percentage as was done on the other lines. Therefore, the percentage (column B) must be left blank.

The second place is in the row for Healthcare. This person says the household has $100 in average monthly expenses for Healthcare. Once again, the respondent does not know how much is spent locally, otherwise s/he would have circled a percentage as was done on the other lines. Therefore, the percentage (column B) must be left blank.

The third place is in the dollar amount for Entertainment expenditures. This person knows that no Entertainment expenditures are made locally, but does not have an estimate for the total amount of money spent on Entertainment. The amount might be zero, but it is probably larger. Since its meaning cannot be determined, it must be left blank also.
Basic Rule for Dealing with Blank Information

If survey respondents leave questions blank, you will generally have to leave them blank when you enter the data.

The main exception will be in the survey areas that ask people to report dollar information. If you can figure out that a blank space actually means $0.00 or 0%, then you can change the blank to zero. Here is a summary of how to decide this:

Figure 15 Decision Table for Dealing with Blank Answers

<table>
<thead>
<tr>
<th>Column A (Dollars spent)</th>
<th>Column B (Percent spent locally)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>Blank</td>
</tr>
<tr>
<td>Not Blank</td>
<td>Not Blank</td>
</tr>
<tr>
<td>Blank</td>
<td>Change blanks to zeros in both columns</td>
</tr>
<tr>
<td>Not Blank</td>
<td>Leave column A empty</td>
</tr>
</tbody>
</table>

Tip: The key rule to remember is that when both columns are left blank, change the blanks to zeros. If only one column is blank, leave it blank.

Enter the Data

Once the spreadsheet has been modified to match the surveys, and any of the answers that might not be clear on the surveys have been cleaned, it is time to enter data from surveys into the spreadsheet.

Type the answers down the column, making sure the survey question number corresponds to the question number in the spreadsheet. See APPENDIX ?? for a sample exercise in entering data and analyzing results using these two sample surveys.

Periodically review your data entry to compare how accurate it is with the written survey. It may also be helpful to keep track of how much time it takes to enter each survey. This will help you to plan how long it will take to finish entering the surveys.

Tip: If several people are doing the data entry, it is best to have individuals work on the same sector surveys instead of switching them back and forth to different sector surveys.
**Using the data to create an economic profile of your community**

One of the main goals of CIEM is to create a profile of the economic sectors you surveyed within your community. The main things you will want to identify for each sector are the following:

- **Calculating the Information**

  The basic method for using these variables to create an economic profile for your community is shown below. The example is shown for households, but the same principles would apply for establishments in each of the other sectors. Just substitute the name of the establishment (e.g., businesses, non-profits, or public agencies) for “households” in this example.

- **RESULTS ANALYZED FOR EACH SECTOR**
  - **EXPENDITURES**
    - Total Amount of Money Spent
      - Spent INSIDE the community
      - Spent OUTSIDE the community
      - Amount spent on different TYPES of goods and services
    - Spent INSIDE the community
    - Spent OUTSIDE the community
  - **INCOME**
    - Total Amount of Money Received
      - Spent INSIDE the community
      - Spent OUTSIDE the community
      - Amount spent on different TYPES of goods and services
    - Spent INSIDE the community
    - Spent OUTSIDE the community

- **Calculating the Information**

  The basic method for using these variables to create an economic profile for your community is shown below. The example is shown for households, but the same principles would apply for establishments in each of the other sectors. Just substitute the name of the establishment (e.g., businesses, non-profits, or public agencies) for “households” in this example.

  - Average spent by households in survey
  - spent by households in the community
  - Number of households in the community
  - Total spent by households in the community
Analyzing by type of expenditure or income source

The steps shown above gave a simple overview of the data analysis. You will need to do compute information that is more specific. You will need to compute the average amounts of expenditures made and income received inside and outside the community for every category of expenditure types (e.g., food, rent, transportation) and income sources (e.g., sales, grants, jobs).

Analyzing by type of subgroup

To get even more specific, you may wish to calculate each of these averages based on subgroups and then multiply those averages by the total number of the subgroups in that sector.

Households can be categorized in subgroups based on their level of income (e.g., under $5,000, between $5001 and 9000, etc.). See Appendix ?? for a list of income categories used by the U.S. Census Bureau.

Establishments can be divided into subgroup categories based on their size (small, medium, large) based on numbers of employees or volume of annual revenue. Establishments could also be divided into subgroups based on SIC codes (now NAISC codes). See Appendix ?? for a list of establishment codes.

Figure 17 Steps for analyzing community expenditures
Methods for Summarizing the Survey Data

Understanding the different types of questions

You will need to understand the different types of data to know how to provide the best analysis of the information. There are three different types of questions used in the typical CIEM survey: 1) Categorical questions, 2) Ordinal questions, and 3) Interval questions. Each of these types of questions is described below. A description of the appropriate type of analysis to use for each type of question is also provided.

Categorical questions

Description

Categorical data assigns numbers to represent different categories of answers. In the example below, the value "1" is assigned to male and the value "2" is assigned to female. These numbers do not represent anything meaningful. Just because 2 is larger than 1 does not mean that females have twice the value as males. These numbers just represent different categories. Since the numbers just represent categories, these numbers cannot be added, subtracted, or otherwise arithmetically manipulated. Other examples of categorical data include questions about gender, ethnicity, type of business, job position in the company, etc.

Example of a categorical question

Q3. What is your gender?

1 Male
2 Female

Analyzing categorical questions

Frequency distribution

The best way to summarize categorical data is with frequencies. Frequencies report how many people gave a particular answer to a question. Frequencies can also be translated into percentages to show what percentage of the total sample answered in each category. Here are the steps to follow to create a frequency distribution:
Step 1: Assign Values to Each Response:
Assign a number to each answer category if they aren’t already numbered on the survey. In this example, “owners” are assigned a value of “1” and “managers” are assigned the value of “2,” etc. Remember that the numbers assigned to each category do not have any meaning in a categorical question.

Step 2: Compute the Frequency of Responses
The frequency is the total number of people who answered the question. In this question, we show the number of people who answered in each of the different categories. For example, 25 people answered that their position in the company was “owner.” The total number of people who answered this question was 50.

Step 3: Compute the Percentage of Responses in each Category
Divide the number of people who answered in each category by the total number of people who answered the question. For example, to find out what percent of the respondents were “owners,” divide 25 by 50 to get 50%.

### Ordinal questions

**Description**

In ordinal questions, the number assigned to the answer category has meaning. The answer categories are ranked from highest to lowest (or lowest to highest). In the example below, a person with an answer of “9” has a higher income than a person with an answer of “1.” Examples of other ordinal questions include those that ask about attitudes ranked on a scale from lowest to highest. In each of these examples, the lower number represents a lower quantity or quality than higher numbers.

The limitation of this type of question is that the intervals between categories may not be exactly equal. In the example question 39, the difference between category 1 and 2 may be much smaller than the difference between categories 3 and 4. In other words, there may not a large difference between crime that is “not a problem” versus crime that is a “small problem,” but there may be a big difference between crime that is a “medium” versus “big” problem.
Analyzing ordinal questions

Frequency distribution

Frequency distributions are very useful for ordinal questions, just as they are for categorical questions. Here is an example of a frequency distribution with ordinal data.

Figure 19  Example of frequency distribution used to analyze an ordinal question

<table>
<thead>
<tr>
<th>Q39. How much is crime a problem?</th>
<th>FREQUENCY</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Not a problem</td>
<td>N=25</td>
<td>50%</td>
</tr>
<tr>
<td>2  Small problem</td>
<td>N=15</td>
<td>30%</td>
</tr>
<tr>
<td>3  Medium problem</td>
<td>N=10</td>
<td>20%</td>
</tr>
<tr>
<td>4  Big problem</td>
<td>N=00</td>
<td>0%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>N=50</td>
<td>100%</td>
</tr>
</tbody>
</table>
Frequency distribution graph

Because the numbers (or values) assigned to each answer category are rank ordered, it is useful to have a graph to show how many people answered in each of these categories in order from lowest to highest (or highest to lowest). This helps people to visualize the results.

Figure 20 Example of a frequency graph used to analyze an ordinal question

Averages

When people refer to averages, they usually mean the “arithmetic” average. This type of average sums up everyone’s scores and divides them by the number of people. This gives you one idea of where the middle score is. (You can compute averages for ordinal data, however, they are more difficult to interpret than averages computed for interval data which will be discussed later.) The next steps show you how do compute this type of average.
### Figure 21 Example of averages used to analyze an ordinal question

**Q5. What is your household annual income?**

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>VALUE</td>
<td>FREQUENCY</td>
<td>VALUE X FREQUENCY</td>
</tr>
<tr>
<td>1</td>
<td>Less than $5,000</td>
<td>N=2</td>
</tr>
<tr>
<td>2</td>
<td>$5,000 to $9,999</td>
<td>N=3</td>
</tr>
<tr>
<td>3</td>
<td>$10,000 to $14,999</td>
<td>N=10</td>
</tr>
<tr>
<td>4</td>
<td>$15,000 to $19,999</td>
<td>N=15</td>
</tr>
<tr>
<td>5</td>
<td>$20,000 to $29,000</td>
<td>N=18</td>
</tr>
<tr>
<td>6</td>
<td>$30,000 to $39,999</td>
<td>N=20</td>
</tr>
<tr>
<td>7</td>
<td>$40,000 to $49,000</td>
<td>N=22</td>
</tr>
<tr>
<td>8</td>
<td>$50,000 to $75,000</td>
<td>N=10</td>
</tr>
<tr>
<td>9</td>
<td>Over $75,000</td>
<td>N=5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>N=105</td>
<td>587</td>
</tr>
</tbody>
</table>

**AVERAGE RATING OF INCOME =** (Step 3 x Step 2)

= (587 x 105)

= 5.6

### Figure 22 How to Calculate Averages for Ordinal Data

- **Step 1: Assign Values to Each Response:**
  Remember that the answers to ordinal questions are ranked in order. In this example, the higher the income of the household, the higher the value that is assigned to their response. A household with an annual income over $75,000 is given a score of “9.” A household with an annual income under $5,000 is given a score of “1.”

- **Step 2: Compute the Frequency of Responses**
  As shown earlier, the frequency is the total number of people who answered the question. In this question, we show the number of people who answered in each of the different categories. For example, 15 people reported having an income between “$15,000 and $19,999.” The total number of people who gave any answer to this question was 105.

- **Step 3: Compute the Points Scored for this Question**
  Multiply the number of people who answered in each category of the question by the value assigned to that category. (In other words, multiply Step 1 x Step 2 on each line.) For example, 15 people reported having an income between “$15,000 and $19,999” and the value of that category is “4.” So the total amount of points for this question is 15 x 4, which equals 60. Add up all the points for each answer to get a total for the question. In this example the total points equals 2+6+30+60+90+120+154+80+45, which equals 587.
♦ Step 4: Compute the Average Rating
Divide the total number of points (587 from Step 3) by the total number of people who answered the question (105 from Step 2). In this example the average income rating is 587 / 105 which equals 5.6. This means the middle income of this group is somewhere between category 5 ($20,000 to $29,000) and category 6($30,000 to $39,999), but closer to category 6. As you can see, this is a little difficult to interpret. Using interval questions allows the analysis to be more specific.

## Interval Questions

### Description

Interval questions use numeric data that increases by a standard increment from step to step, and thus allows for averaging, frequencies and other more sophisticated analyses. When possible, it is nearly always preferable to use interval rather than ordinal data.

It is similar to ordinal questions because answers are rank ordered from highest to lowest. However, instead of assigning a separate value to represent a category, the value assigned to the category is the actual answer provided by the respondent.

Interval questions have an advantage over ordinal questions because the types of numerical answers that people provide have equal intervals between answer categories.

Question 2 above asks people to report a specific number, rather than a category, when describing their age. The same is true of Question 5 when reporting income.

In Question 5 above, people are asked to provide their income information in dollar amounts (e.g., $12,000) rather than in broad categories as shown previously in the ordinal data section.

Figure 23 Examples of Interval Questions

<table>
<thead>
<tr>
<th>Q2. What is your age?</th>
<th>58 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q5. What is your household annual income?</td>
<td>$12,000</td>
</tr>
</tbody>
</table>

When this income question was asked earlier as an ordinal question, this same household, with $12,000 annual income, would have circled category 3 ($10,000 to $14,999). In this interval question, the value assigned to this answer is $12,000 not 3.

For example, the distance between an annual income of $30,000 and $35,000 is $5,000. This $5,000 is the same amount of difference between an income of $31,000 and $36,000. Likewise, in Q2 there are the same amount of years between age 30 and 40 as there are between 35 and 45.
Frequency distributions and Frequency graphs

Frequency distributions and graphs can be used with interval data, however, they might be cumbersome if there are many categories of responses. For instance, go back to Figure 13. Image that 100 people answered the survey, and they each reported a different income. The resulting frequency distribution would have 100 different incomes listed with each having 1 respondent! In that case, it is better to report the information in categories as they are in Figure 13, rather than in intervals.

Averages

Averages are very useful ways for summarizing interval data. It is also a very important part of the CIEM analysis regarding income and expenditures.

Figure 24 Using Averages to Summarize Interval Data

<table>
<thead>
<tr>
<th>Household #</th>
<th>Yearly Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>20001</td>
<td>$12,000</td>
</tr>
<tr>
<td>20002</td>
<td>$15,000</td>
</tr>
<tr>
<td>20003</td>
<td>$30,000</td>
</tr>
<tr>
<td>20004</td>
<td>$45,000</td>
</tr>
<tr>
<td>20005</td>
<td>$7,000</td>
</tr>
</tbody>
</table>

TOTAL # of Households = 5
TOTAL $INCOME for all 5 Households = $109,000

AVERAGE ANNUAL HOUSEHOLD INCOME = $21,800
($109,000 / 5 = $21,800)

Figure 25 How to Calculate Averages for Interval Data

- Step 1: Sum the Answers:
  In this case, the answers are for the “Yearly Income” reported by each household. The sum total of these values is $109,00.

- Step 2: Count the Total Number of Answers
  In this example, there were 5 households that provided valid answers. If someone left the question blank (and it was not changed to zero) do NOT include them in the total number of answers.

- Step 3: Compute the Average Rating
  Divide the sum ($109,000 from step #1) by the total number of answers (5 from step #2) to compute the average. In this example, the average annual income for households is $21,800.
Totals

Using the averages computed earlier, it is possible to report total values for the community. Here are the steps:

♦ Step 1: Get the average value for the sample
In this case, the average value was for the annual income of the sample of households. This number from above was $21,800.

♦ Step 2: Count the total population within the boundary area
Since the average was based on a sample of households, you will need to know the total number of households in the boundary area. In this example, we’ll assume there were 1000 households. (If the average had been computed based on a sample of businesses and non-profit organizations, you would need to count the total number of businesses and non-profit organizations within the boundary.)

♦ Step 3: Compute the Total
Multiply the average household income ($21,800 from step #1) by the total number of households (1000 from step #2) to compute the total. In this example, the total yearly combined income for all households within the boundary area is estimated at $21,800,000!

Which Ways Are Best To Summarize Data?

Here is a guideline to use for selecting ways to summarize your data. All data lends itself to computing frequencies. Common sense is the best guide for deciding if data is ordinal or interval, and using averages and totals will help in finding important information from each individual question.

Figure 26 Decision Table for Summarizing Data

<table>
<thead>
<tr>
<th></th>
<th>ANSWERS ARE PROVIDED IN CATEGORIES</th>
<th>ANSWERS ARE PROVIDED AS NUMBERS, NOT CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Categories have</td>
<td>Categories are</td>
<td>Numbers</td>
</tr>
<tr>
<td>no order</td>
<td>ranked</td>
<td>represent values</td>
</tr>
<tr>
<td>Sample answer</td>
<td>1=male</td>
<td>1=small problem</td>
</tr>
<tr>
<td>formats:</td>
<td>2=female</td>
<td>2=medium problem</td>
</tr>
<tr>
<td></td>
<td>3=big problem</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequencies &amp;</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Distributions</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Averages</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
Appendix ??- Sample Exercise to Create Data Entry Spreadsheet

Sample Spreadsheet with Data

The following sample spreadsheet has the data entered for question 6 for the two sample respondents above from the Figures in Step 11. Remember that some blanks have been changed to zeros, while others have been left blank. These changes appear in the sample spreadsheet below.

Figure 27 Sample Data Entry Spreadsheet – Sample surveys entered

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; survey</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Description of Question</td>
<td>SURVEY ID #</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Housing</td>
<td>20001</td>
<td>20002</td>
</tr>
<tr>
<td>3</td>
<td>Amount Spent</td>
<td>Question 6-1-A</td>
<td>$0 $750</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>% Spent Locally</td>
<td>Question 6-1-B</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Amount Spent</td>
<td>Question 6-2-A</td>
<td>$250 $250</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>% Spent Locally</td>
<td>Question 6-2-B</td>
<td>10% 10%</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Amount Spent</td>
<td>Question 6-3-A</td>
<td>$300 $1000</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>% Spent Locally</td>
<td>Question 6-3-B</td>
<td>90% 10%</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Amount Spent</td>
<td>Question 6-4-A</td>
<td>$0 $400</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>% Spent Locally</td>
<td>Question 6-4-B</td>
<td>0% 30%</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Amount Spent</td>
<td>Question 6-5-A</td>
<td>$0 $100</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>% Spent Locally</td>
<td>Question 6-5-B</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Amount Spent</td>
<td>Question 6-6-A</td>
<td>$300 $500</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>% Spent Locally</td>
<td>Question 6-6-B</td>
<td>50% 50%</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Amount Spent</td>
<td>Question 6-7-A</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>% Spent Locally</td>
<td>Question 6-7-B</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>
**Change percentages into dollars where necessary**

To make it simple for people to fill out the survey, respondents were asked to estimate what percentages of their expenditures were made locally instead, rather than asking for dollar amounts. These percentages must be transformed into dollar amounts.

**Insert Blank Rows**

To transform percentage data into dollars, insert two new rows after each pair of questions that ask (A) how much was spent and (B) what percent was spent locally. See lines 5, 8, and 11 below (only the first 3 questions are shown to conserve space):

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1st survey</td>
<td>2nd survey</td>
</tr>
<tr>
<td>2</td>
<td><strong>Description of Question</strong></td>
<td><strong>SURVEY ID #</strong></td>
<td></td>
<td>20001</td>
<td>20002</td>
</tr>
<tr>
<td>3</td>
<td><strong>Housing</strong></td>
<td><strong>Amount Spent</strong></td>
<td><strong>Question 6-1-A</strong></td>
<td>$0</td>
<td>$750</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td><strong>% Spent Locally</strong></td>
<td><strong>Question 6-1-B</strong></td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td><strong>Food</strong></td>
<td><strong>Amount Spent</strong></td>
<td><strong>Question 6-2-A</strong></td>
<td>$250</td>
<td>$250</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td><strong>% Spent Locally</strong></td>
<td><strong>Question 6-2-B</strong></td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td><strong>Transportation</strong></td>
<td><strong>Amount Spent</strong></td>
<td><strong>Question 6-3-A</strong></td>
<td>$300</td>
<td>$1000</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td><strong>% Spent Locally</strong></td>
<td><strong>Question 6-3-B</strong></td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figure 28 Sample Data Entry Spreadsheet – Insert Rows*
Add Question Descriptions in Row Headings

In these new rows, add headings to describe the information being added. Each question will have two headings added. The first heading is for the Dollar amounts spent locally on the expenditure item and the second heading is for the Dollar amounts spent non-locally on the expenditure item. See lines 5, 6, 9, 10, 13, and 14 below:

Figure 29 Sample Data Entry Spreadsheet – Row Headings Added

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Description of Question</td>
<td>SURVEY ID #</td>
<td>1st survey</td>
<td>2nd survey</td>
</tr>
<tr>
<td>2</td>
<td>Housing</td>
<td>Question 6-1-A</td>
<td>$0</td>
<td>$750</td>
</tr>
<tr>
<td>3</td>
<td>% Spent Locally</td>
<td>Question 6-1-B</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>$ Spent Locally</td>
<td>Q6-1-A x Q6-1-B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Food</td>
<td>Question 6-2-A</td>
<td>$250</td>
<td>$250</td>
</tr>
<tr>
<td>6</td>
<td>% Spent Locally</td>
<td>Question 6-2-B</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>7</td>
<td>$ Spent Locally</td>
<td>Q6-2-A x Q6-2-B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Transportation</td>
<td>Question 6-3-A</td>
<td>$300</td>
<td>$1000</td>
</tr>
<tr>
<td>9</td>
<td>% Spent Locally</td>
<td>Question 6-3-B</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>10</td>
<td>$ Spent Locally</td>
<td>Q6-3-A minus “$Spent Locally”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>$ Spent Non-locally</td>
<td>Q6-3-A minus “$Spent Locally”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>$ Spent Non-locally</td>
<td>Q6-3-A x Q6-3-B</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Enter Formulas Across the Row to Compute Amount Spent Locally

The first row that was added in each question will be used to calculate how much money was spent locally on each expenditure. This means that you will multiply part A of each question by part B of each question, and enter the resulting amount of dollars spent locally in part C.

Remember that some parts of the questions were left blank because there was no information provided in the sample surveys. Most spreadsheets will assume that a blank cell is a zero and that could misrepresent your results. Those cells cannot be included in the calculation. To make sure that the blank cells are not included in the formula, you will need to specify in your formula that Part A should be multiplied by Part B, ONLY if both Parts A and B have numbers in them. See lines 5, 9, and 13 in the next figure.

To determine how much money each survey respondent spends locally, the following formulas are entered in line 5 below. The formula below is in MS Excel 97 syntax. This example is for the HOUSING expenditure category. The formula in cell D5 computes the local expenditure for survey respondent #20001 and cell E5 computes the local expenditure for survey respondent #20002:

![Figure 30 Sample Formula for Computing Expenditures Locally](image)

**WHAT DOES THIS FORMULA MEAN?**

The first formula above states that "If either D3 or D4 are blank, leave D5 blank. If both D3 and D4 have valid numbers (meaning they are not blank), multiply them and put the result in D5." This will compute how much money was spent locally on the expenditure for anyone who reported complete information. This prevents blank cells as being treated as zeros which would make it look as though less money is being spent locally than there actually is.

**Tip:** Once you enter the formula in cell D5, you can copy it all across the row in line 5. The cell references for the columns will change appropriately as you copy the formulas.
**Figure 31 Sample Data Entry Spreadsheet - Formulas to Compute Dollars Spent Locally**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>1st survey</td>
<td>2nd survey</td>
</tr>
<tr>
<td>2</td>
<td><strong>Description of Question</strong></td>
<td><strong>SURVEY ID #</strong></td>
<td>20001</td>
<td>20002</td>
</tr>
<tr>
<td>3</td>
<td><strong>Housing</strong></td>
<td><strong>Amount Spent</strong></td>
<td>Question 6-1-A</td>
<td>$0</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td><strong>% Spent Locally</strong></td>
<td>Question 6-1-B</td>
<td>0%</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td><strong>$ Spent Locally</strong></td>
<td>Q6-1-A x Q6-1-B</td>
<td>=IF(OR(D3=FALSE, D4=FALSE),FALSE, D3*D4)</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td><strong>$ Spent Non-locally</strong></td>
<td>Q6-1-A minus &quot;$Spent Locally&quot;</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td><strong>Food</strong></td>
<td><strong>Amount Spent</strong></td>
<td>Question 6-2-A</td>
<td>$250</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td><strong>% Spent Locally</strong></td>
<td>Question 6-2-B</td>
<td>10%</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td><strong>$ Spent Locally</strong></td>
<td>Q6-2-A x Q6-2-B</td>
<td>=IF(OR(D7=FALSE, D8=FALSE),FALSE, D7*D8)</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td><strong>$ Spent Non-locally</strong></td>
<td>Q6-2-A minus &quot;$Spent Locally&quot;</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td><strong>Transportation</strong></td>
<td><strong>Amount Spent</strong></td>
<td>Question 6-3-A</td>
<td>$300</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td><strong>% Spent Locally</strong></td>
<td>Question 6-3-B</td>
<td>90%</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td><strong>$ Spent Locally</strong></td>
<td>Q6-3-A minus &quot;$Spent Locally&quot;</td>
<td>=IF(OR(D11=FALSE, D12=FALSE),FALSE, D11*D12)</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td><strong>$ Spent Non-locally</strong></td>
<td>Q6-3-A x Q6-3-B</td>
<td></td>
</tr>
</tbody>
</table>
**Enter Formulas Across the Row to Compute Amount Spent Non-Locally**

The second row that was added to each of these questions will be used to calculate how much money was spent non-locally on each expenditure. To do this, you will simply subtract the amount spent locally (that you just calculated with the new formulas) from the total amount spent on each expenditure item. See lines 6, 10, and 14 below:

---

**Figure 32 Sample Data Entry Spreadsheet - Formulas to Compute Amount Spent Non-Locally**

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Description of Question</td>
<td>SURVEY ID #</td>
<td>1st survey</td>
<td>2nd survey</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Housing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Formulas:**

- **$Spent Locally** = IF(OR(D3=FALSE, D4=FALSE), FALSE, D3*D4)
- **$Spent Locally** = IF(OR(E3=FALSE, E4=FALSE), FALSE, E3*E4)
- **$Spent Non-Locally** = D3 - D5 = E3 - E5
- **$Spent Non-Locally** = D7 - D9 = E7 - E9
- **$Spent Non-Locally** = D11 - D13 = E11 - E13
### Calculating the Formulas

After the formulas are typed into the cells, the calculations will be completed and the results will appear in the cell. The previous sample spreadsheets showed the formulas that were typed into the cells. This sample spreadsheet shows the results of the formulas earlier entered on lines 5, 6, 9, 10, 13 and 14 below:

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>1ˢᵗ survey</td>
<td>2ⁿᵈ survey</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Description of Question</td>
<td>SURVEY ID #</td>
<td>20001</td>
<td>20002</td>
</tr>
<tr>
<td>3</td>
<td>Housing</td>
<td>Amount Spent</td>
<td>Question 6-1-A</td>
<td>$0</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>% Spent Locally</td>
<td>Question 6-1-B</td>
<td>0%</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>$ Spent Locally</td>
<td>Q6-1-A x Q6-1-B</td>
<td>$0</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>$ Spent Non-locally</td>
<td>Q6-1-A minus &quot;$Spent Locally&quot;</td>
<td>$0</td>
</tr>
<tr>
<td>7</td>
<td>Food</td>
<td>Amount Spent</td>
<td>Question 6-2-A</td>
<td>$250</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>% Spent Locally</td>
<td>Question 6-2-B</td>
<td>10%</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>$ Spent Locally</td>
<td>Q6-2-A x Q6-2-B</td>
<td>$25</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>$ Spent Non-locally</td>
<td>Q6-2-A minus &quot;$Spent Locally&quot;</td>
<td>$225</td>
</tr>
<tr>
<td>11</td>
<td>Transportation</td>
<td>Amount Spent</td>
<td>Question 6-3-A</td>
<td>$300</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>% Spent Locally</td>
<td>Question 6-3-B</td>
<td>90%</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>$ Spent Locally</td>
<td>Q6-3-A x Q6-3-B</td>
<td>$270</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>$ Spent Non-locally</td>
<td>Q6-3-A minus &quot;$Spent Locally&quot;</td>
<td>$30</td>
</tr>
</tbody>
</table>
Calculate averages and totals

With the addition of these rows, averages and totals can be tabulated where appropriate.

Include New Columns

At the far right side of the spreadsheet, add two additional columns. Label them "AVERAGE" and "TOTAL."

Compute Averages

Under the column-heading AVERAGE, insert a formula to calculate an average for each row. Type "NA" for rows in which averages do not apply (e.g., questions about gender, income, or other types of questions with nominal categorical data). Make sure to use a formula that does not include blank cells in its average.

For example, find the cell where row 3 and column F meet. The formula in this F3 cell is:

=AVERAGE(D3:E3)

This formula will add up all the values in row three from columns D to E. Then it will divide that sum total by the number of values that were in these rows. This formula skips over blank cells and does not include them in any calculations. Here is the math behind the formula using the numbers in our sample spreadsheet below.

($0 +$100) / 2 = $50

Compute Totals For the Community

Use the calculated averages to estimate totals for the whole community.

Retrieve the total number of people or establishments in each sector

Using the original address lists for each sector, determine the total number of households, businesses/non-profits, government agencies that are present within your boundaries.

Multiply the average value times the total number

Under the column-heading TOTAL, insert a formula to calculate a sum total for each row that is prorated for the whole community. Type "NA" for rows in which totals do not apply. (e.g., questions about age, gender, or other types of questions which ask people to report a category).

To see example of this formula, find the cell where row 3 and column G meet. Let us assume that there are 250 total businesses and non-profits in the community that did the business/non-profit survey below. The formula in this G3 cell is the following:

=(F3 * 250)

This formula will take the average amount of dollars spent on Food and multiply it times the number of businesses/non-profits in the community. Here is the math behind the formula using the numbers in our sample spreadsheet below.
($50 \times 250 \text{ businesses/non-profits}) = $12,500 \text{ estimated agricultural expenditures}

Sample Data Entry Spreadsheet D

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Description of Question</td>
<td>SURVEY ID #</td>
<td>1st survey</td>
<td>2nd survey</td>
<td>AVERAGE</td>
<td>TOTAL</td>
</tr>
<tr>
<td>2</td>
<td>Housing</td>
<td>20001</td>
<td>20002</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>$ Total Spent</td>
<td>Question 6-1-A</td>
<td>$0</td>
<td>$750</td>
<td>$374</td>
<td>$93,750</td>
</tr>
<tr>
<td>4</td>
<td>% Local</td>
<td>Question 6-1-B</td>
<td>0%</td>
<td>0%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>$ Local</td>
<td>Q6-1A x Q61-B</td>
<td>$0</td>
<td>FALSE</td>
<td>$0</td>
<td>N/A</td>
</tr>
<tr>
<td>6</td>
<td>Food</td>
<td>$250</td>
<td>$250</td>
<td>$250</td>
<td>$62,500</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>% Local</td>
<td>Question 6-2-B</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>$ Local</td>
<td>Q6-2A x Q62-B</td>
<td>$25</td>
<td>$25</td>
<td>$25</td>
<td>N/A</td>
</tr>
<tr>
<td>9</td>
<td>Transportation</td>
<td>$300</td>
<td>$100</td>
<td>$650</td>
<td>$32,500</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>% Local</td>
<td>Question 6-3-B</td>
<td>90%</td>
<td>10%</td>
<td>50%</td>
<td>N/A</td>
</tr>
<tr>
<td>11</td>
<td>$ Local</td>
<td>Q6-3A x Q63-B</td>
<td>$270</td>
<td>$100</td>
<td>$185</td>
<td>N/A</td>
</tr>
<tr>
<td>12</td>
<td>Household Supplies</td>
<td>$0</td>
<td>$400</td>
<td>$200</td>
<td>$50,000</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>% Local</td>
<td>Question 6-4-B</td>
<td>0%</td>
<td>30%</td>
<td>15%</td>
<td>N/A</td>
</tr>
<tr>
<td>14</td>
<td>$ Local</td>
<td>Q6-4A x Q64-B</td>
<td>$0</td>
<td>$120</td>
<td>$60</td>
<td>N/A</td>
</tr>
<tr>
<td>15</td>
<td>Healthcare</td>
<td>$0</td>
<td>$750</td>
<td>$375</td>
<td>$93,750</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>% Local</td>
<td>Question 6-5-B</td>
<td>0%</td>
<td>0%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>17</td>
<td>$ Local</td>
<td>Q6-5A x Q65-B</td>
<td>$0</td>
<td>FALSE</td>
<td>$0</td>
<td>N/A</td>
</tr>
<tr>
<td>18</td>
<td>Clothing</td>
<td>$300</td>
<td>$500</td>
<td>$400</td>
<td>$100,000</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>% Local</td>
<td>Question 6-6-B</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>N/A</td>
</tr>
<tr>
<td>20</td>
<td>$ Local</td>
<td>Q6-6A x Q66-B</td>
<td>$150</td>
<td>$250</td>
<td>$200</td>
<td>N/A</td>
</tr>
<tr>
<td>21</td>
<td>Trucking</td>
<td>$0</td>
<td>$600</td>
<td>$300</td>
<td>$75,000</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>% Local</td>
<td>Question 6-7-B</td>
<td>0%</td>
<td>0%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>23</td>
<td>$ Local</td>
<td>Q6-7A x Q67-B</td>
<td>$0</td>
<td>FALSE</td>
<td>$0</td>
<td>N/A</td>
</tr>
<tr>
<td>24</td>
<td>How long has your business been here?</td>
<td>Question 7</td>
<td>15</td>
<td>25</td>
<td>20</td>
<td>N/A</td>
</tr>
<tr>
<td>25</td>
<td>What is your gender?</td>
<td>Question 8</td>
<td>1</td>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>26</td>
<td>How many full-time employees do you have?</td>
<td>Question 9-a</td>
<td>37</td>
<td>19</td>
<td>28</td>
<td>7000</td>
</tr>
<tr>
<td>27</td>
<td>How many part-time employees do you have?</td>
<td>Question 9-B</td>
<td>11</td>
<td>27</td>
<td>19</td>
<td>4750</td>
</tr>
<tr>
<td>28</td>
<td>How much is pollution a problem? 1=small 2=medium 3=big</td>
<td>Question 10</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>N/A</td>
</tr>
<tr>
<td>29</td>
<td>How much is crime a problem? 1=small 2=medium 3=big</td>
<td>Question 11</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Tally frequencies

Insert a new worksheet

As mentioned earlier, questions that generate categorical data should be summarized using frequency and percentage counts. These formulas will be entered on a separate worksheet page in the same file as the data entry page.

Type the question label and answer categories with headings

On the spreadsheet page type the question and list the possible answer categories. Label columns for Frequency and Percentage.

THIS IS ORDINAL DATA

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Q10 How much is pollution a problem?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Frequency</td>
<td>Percentage</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1=small</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2=medium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>3=big</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Compute Frequencies

By referring to the data entry spreadsheet page ("Sheet 1"), compute these frequencies and percentages on this page ("Sheet2"). On the previous sample data entry spreadsheet, question 10 was entered on line 28.

The formula for computing the frequency in cell B2 below is as follows (in MS Excel 97 syntax):

Sample formula to count frequencies

=COUNTIF("Sheet1"!D28:E28,1)

This formula specifies to go back to sheet one and count every time the value "1" appears in row 28 from the columns D to E. This is the way to count how many people answered that pollution was a "small" problem.
At the bottom of the column of frequencies add up the number of responses. This will tell you how many people provided an answer to the question. This formula for cell B6 is as follows:

Sample formula to calculate a sum:

=SUM(B3:B5)

Format Cells

Format the cells so the numbers appear with the correct labels. For example, numbers in the “Percent” column formatted as percentages.

Sample Data Entry Spreadsheet E (to Calculate Frequencies – With Formulas)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Q10 How much is pollution a problem?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Frequency</td>
<td>Percentage</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1=small</td>
<td>=COUNTIF('Sheet1'!D28:E28,1)</td>
<td>(B3/B6)</td>
</tr>
<tr>
<td>4</td>
<td>2=medium</td>
<td>=COUNTIF('Sheet1'!D28:E28,2)</td>
<td>(B4/B6)</td>
</tr>
<tr>
<td>5</td>
<td>3=big</td>
<td>=COUNTIF('Sheet1'!D28:E28,2)</td>
<td>(B5/B6)</td>
</tr>
<tr>
<td>6</td>
<td>TOTAL</td>
<td>=SUM(B3:B5)</td>
<td>=SUM(C3:C5)</td>
</tr>
</tbody>
</table>

Sample Data Entry Spreadsheet F (to Calculate Frequencies – With Values)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Q10 How much is pollution a problem?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Frequency</td>
<td>Percentage</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1=small</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td>4</td>
<td>2=medium</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>5</td>
<td>3=big</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>---</td>
<td>-------</td>
<td>---</td>
<td>------</td>
</tr>
</tbody>
</table>
Step 13 – Share Reports With the Community and Determine Action Strategies

Select Target Groups and Methods of Communication

Make a list of people that should be invited to hear the report presentation. Most communities will want to hold a public meeting that is open to all members of the community. In addition, communities may want to target specific groups such as business organizations, civic groups, chambers of commerce, local government, schools, employment and training organizations, and non-profit membership organizations.

The information can be shared in specially arranged public meetings or as part of a group’s regular meeting schedule.

WHO RUNS FOCUS GROUPS?? NIGHTMARE!

Focus groups could be held to discuss the information in more detail. Consider whether you would like to have focus groups with similar people (e.g., local business leaders) or with mixed groups (e.g., employers and educators). Mixed groups are very useful when you want to have groups begin to work together on issues that are important to both of them (e.g., school-to-work initiatives) especially if they do not have other opportunities to work together. This is an important tool for developing strategies for retaining local resources!

Prepare the Reports

Review the detailed report with the core group

Prepare a preliminary report showing the results for each question in the survey. Use frequencies or averages as appropriate. Include graphs and charts whenever possible. This detailed report will be for members of the core group to thoroughly review to check for errors and to determine which information should be highlighted for shorter presentations to community groups.

Prepare short presentations for selected community groups

Package the material for presenting in a public forum so that it is visually appealing, and can be distributed upon request.

The report should list each question and show the summary statistics for it, including averages, totals, and frequencies. It may be helpful to use a copy of the word processing file that contains your survey. Be sure to include data for all the questions presented in the surveys. It may be very helpful to present some of the data using color bar charts or pie graphs to illustrate frequencies and percentages.
For the data regarding expenditures, create a bar chart that shows how much money is being spent on each product or service and how much of that is being spent locally. Provide these charts in two different orders:

1) Largest total volume spent to smallest total volume spent
2) Largest amount spent outside of the community to smallest amount spent outside of the community

WHAT ABOUT A CHART FOR INSIDE THE COMMUNITY AS A POSITIVE REINFORCEMENT?

Also provide a chart showing how many employees are being hired from outside of the community. You may wish to break this information down by industry type and job type.

What are we looking for in the survey results?

**Household sector**

Identify products or services that have high dollar values spent non-locally and determine if there is a local market that could support the development of these businesses.

**Business sector**

Identify products or services with high dollar values being spent non-locally and determine if there is a local market that could support the development of these businesses. Look for types of businesses that tend to employ high numbers of people from out of the area. Determine how to support the development of the local work force so that it could better contribute to these businesses.

**Government Sector**

Identify products or services with high dollar values being spent non-locally, as well as patterns of non-local employment. Determine whether it would be beneficial to revise local vending or bidding policies to favor local vendors or employees.

**Gather together people from multiple sectors of the community**

The core group should invite all community stakeholders to public presentation of the report. Announcements should be made through press releases, newsletters, mailings, and word of mouth to inform people of the presentation date and how to get a copy of the printed report.

Presentations can be made in public meetings, town hall forums, other public venues where people from all different parts of the community can gather to discuss what the summary results mean for the community. The presentation may be made to multiple audiences, as more people become interested.

Be sure to have people sign in and provide their name, address, and telephone information at these meetings so they can be involved in future efforts.
After presenting the survey results, ask participants to do the following:

1) Define where the major leaks are in each of the sectors

2) List issues that may be important to address based on survey results

3) Prioritize the top 3 to 5 issues or cluster of issues

Ask people to take part in an "Action Team" to define strategies for development suggested by the report. Action Teams should invited additional stakeholders to engage in this discussion.

**Strategies**

See Appendix J for some strategies that have been conceptualized in response to the CIEM in past projects. This is an ideal starting point for brainstorming!
THINGS TO DO AT THE END

Add the Appendices

Appendix L – add numbers

Redo Table of Contents

Add new survey templates to appendix