UNIT **THREE**

METHODS AND IMPLEMENTATION

FARMERS MARKET COALITION

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Introduction

This unit explains how to collect data and is the third unit within the Farmers Market Metrics Training. Throughout the training, you will have the opportunity to complete a worksheet, resulting in an evaluation plan for your market.

This unit has two sections: this general introduction (Unit 3 Part 1) and the FMM Methods and Instruments (Unit 3 Part 2). The Methods and Instruments Unit goes into detail about how to collect the metrics used in FMM.

Data 101

Now that you have read Units 1 and 2, you have selected the metrics that best fit your farmers market's current goals. Next, you need to think about the specific **data** that will be collected for those metrics. The goal is to collect data that is reliable and repeatable. You can achieve that once you understand the best methods for collecting the different types of data and then to prepare your collection strategy.

Primary and Secondary Data

Market managers, volunteers, and organizers may not think of themselves as "data collectors." Nonetheless, when a market counts visitors, collects sales figures, or records volunteer hours, it is collecting and creating **primary data**. Vendor applications, records of card transactions, and visitor count sheets are all examples of tools that collect primary data.

Secondary data, on the other hand, has already been collected, analyzed, and (usually) published somewhere. Secondary data allows you to compare your primary data to other data in your state, region, or even nationally. Three well regarded sources of secondary data that could provide relevant information to your market are the USDA's Census of Agriculture, the Food Environment Atlas, and the American Community Survey. Your city or county may also have commissioned studies or have a Community Food Assessment which may help you understand demographics, land use, or nutrition assistance participation in your area. Ask around to see if there are reports that you can review. In addition, income, consumer spending, and economic multiplier data is available by region from the Bureau of Economic Analysis. The USDA Economic Research Service even has national data on food purchasing trends.

Quantitative and Qualitative Data

After primary and secondary data, the next step in categorizing data is either as quantitative and qualitative.

Quantitative data contains numbers: for example, visitors, sales totals, pounds of food donated, days per year all of which can be measured or counted in categories. Because the things being counted are usually physical objects or *material*, quantitative data tends to be viewed as more objective. Quantitative data lends itself to comparisons over time, such as how many visitors to the market this year compares to last year and the year before. Numbers can be easily reported as ranges or made into percentages, or averages.

But since there is more to markets than just material objects or numbers, you might also want to collect **qualitative data.** Qualitative data involves open-ended explorations of people's opinions, experiences, feelings, or understandings or collectors' observations. Common methods used in qualitative research include structured interviews, participant observation, oral histories, written field notes, and open-ended questions. Qualitative data is especially useful in revealing patterns and relationships, and digging deeper into opinions that influence your market's goals and operations. It is, however, is time consuming to collect, code, report, and analyze.

In this training, we focus on quantitative metrics, since they are most often required in reports for funders or partners, and because they are more easily collected and analyzed. So it's a good place to start your data collection. There are many in-depth resources, including nearby university researchers, available to assist you in learning about and conducting qualitative research when you are ready.

Three Methods for Data Collection at Farmers Markets

In FMM, we focus on three general methods for collecting data at farmers markets:

- **Document Review**
- **Observation**
- **Surveys**

Examples of how markets currently use these methods include:

- Document Review - vendor sales data, market day documentation, market budgets, logs, or information supplied through processing government benefits such as Farmers Market Nutrition Program or SNAP EBT
- Observation - weather, special events, visitor counts, vendor tallies
- Surveys – vendor questionnaires and shopper surveys, including Dot Surveys

These three methods were selected for FMM because they are relatively cost-effective, practical, and gather the same information that farmers markets across the country are already collecting.

Collection Schedules

To begin data collection, plan the dates well ahead of time in order to organize the labor and resources needed. Weather or other issues may arise which as the day arrives, may make it seem better to cancel but if it all possible, keep that agreed upon date. Alert your vendors and shoppers to the collection dates using the market website, Facebook page and signs at the market leading up to the collection days.

If volunteers are needed, then adding that request to chalked market signs, the market Facebook page and in email newsletters weeks ahead may increase chances of encouraging market enthusiasts to help with collection. Reach out to your stakeholder organizations to see if they can help with staffing for the collection. There is a separate document on Volunteer tips to look through for ideas as to staffing your data collection team.

This unit's collection instructions in Part 2 are based on markets collecting *survey* data on a minimum of *two days per season*, with four days of surveying strongly encouraged. The thinking is that markets with an average of a 25 week season needs at least two sample days of data and should be able to gather the resources at least twice to do it correctly. Year-round markets should schedule data collection just as a one-season market does, but add more rounds of data collection using the same intervals (i.e. the 10^{th} and 16^{th} market week of the winter season). In other words, don't think of data collection as never-ending, but as campaigns with a kick off, check-in, and a wrap up at the end of each campaign.

Consider following or adapting the example schedule presented in Figure 3.1 below. The bolded days are the primary days for two days of collection. However, if you have the data collection team available and would like more precise data, the other two dates should be added.

Counting & Survey Days	On the 4th, **10th, 16th** and 22nd market days
Surveys	On the 5th, **11th, 17th** and 23rd market days (if unable to conduct on Counting Days)
Observation	On the 6th, **12th, 18th** and 24th market days
Ideally surveys should be conducted on the same day as counting visitors. If two seasons of data collection are desired, repeat the dates above for each season.	

Figure 3.1 Farmers Market Metrics Data Collection Schedule

Collection Method: Document Review

Document Review includes two types of market methods: Operations Research and Secondary Research. **Operations Research** makes use of the documents and data usually collected during normal farmers market management activities.

One of your first steps with Operations Research is to take stock of what information your market is already collecting, either for your own use or for any farmers market association, public benefit program (i.e., FMNP, SNAP EBT), grant, or market sponsor. Much of this information is already in your vendor applications, market day forms or logs used to track vendor fees, vendor attendance, payment processing statements, etc. Hopefully, collecting and storing at least some of this information is already a routine part of your market operations.

As you consider your market operations research, you should:

- Compile a list of all the operational documents your market already has on file.
- Review the documents and inventory all of the information or data that you already have. What's missing? What would you like to add next season? What condition is the data in? Is it complete, or are there missing variables?
- Modify future market operations documents as needed to ensure you are collecting the information you need.

Organizing your information and making it easy to access are also *critical*. This observation is especially true when there is a change in the primary market manager or if market information is being stored on personal computers. Once your market's operations data collection is routine, then your energy can be dedicated to keeping it up-to-date and compiling it in a useful way.

Secondary Research uses previously collected data, such as what is found in the Census of Agriculture, which is published every 5 years. If you have a research partner who wants to add data from those reports to your market reporting, certainly encourage them to do so. It will offer your market some comparisons or some context for the data that you collect. Number of market vendors under 35 years old is one such metric that might benefit from secondary data from the Census of Agriculture as the larger data set from the Census could be compared with the market vendor's data ("The average age of our market vendors is 40 years old, while the 2012 Census' data of an average age is 58 years old for farmers across the U.S.")

Collection Method: Observation

Observation is a way of gathering data by counting people or products, documenting behavior, events, or physical characteristics in their natural setting. Observations can be "overt," meaning everyone knows they are being observed, or it can be "covert," meaning no one knows they are being observed.

The benefit of covert observation is that people are more likely to behave naturally if they do not know they are being observed. However, covert observation methods raise potential ethical problems that most markets want to avoid. That's why markets typically only conduct overt observation, often posting a sign informing patrons about a planned observation.

This section covers two types of **market methods** that are considered Observation:

1) Tallies or counts of people and products;
2) Observing behavior or clusters of activity, often using audio and video recording, which have had limited use so far in market data collection across the U.S. A/V recordings will require some planning and sophisticated analytical skills to review footage correctly. A/V recordings may, however, offer a solution to low-capacity markets interested in evaluation, especially those with available partners to assist with reviewing and analyzing the footage. FMM does not presently use this method to collect data, but some markets have used it and so it is listed here as a potential method for markets.

The advantages of observation methods include:

a. Tallies of items like market goods or recipes taken, for example, can be gathered directly by the market staff, volunteers, or the data team, rather than asking vendors to submit data;
b. Observers can note what *doesn't* happen, which is also valuable information. "The seating near the event was not used."

Counts of People or Products

Tracking the numbers of market visitors, vendors, and products is critical to knowing how well a farmers market is doing. You need to be able to answer questions such as:

- What are our average sales per shopper?
- On average, how many visitors come to our market? Is it growing? Declining?
- What are the patterns over the market season?

To answer these questions, you need to have good data collected in the same way each time.
First, you must define the category that will be counted. In this training, we recommend choosing "adult visitor" as your category or unit of data. This means any adult visitor entering the market will be counted. Some markets choose to count "anyone with a wallet" (including teenagers). Whatever the category or definition of your unit, make sure you spell it out to your data collectors and in your final report.

The method for counting visitors in this unit is an *entry sample* or a *timed entry count*, which means that every adult visitor is counted **as they enter the market** for predetermined time periods. The FMM materials recommends using 20-minute entry counts.

Greater accuracy is achieved by counting everyone entering the market, known by some as a **full count**. If trained staff is available to do a full count, by all means do so – it will generate more precise numbers and make related computations more precise as well. But be aware: the full count is still considered a sample of overall attendance if not done every market day, is quite labor intensive, and may be quite difficult to manage for markets with many entrances and large attendance. Farmers Market Coalition has been collecting experiences from markets and researchers about different methods of counting visitors which will be available for FMM users.

When counting products for metrics such as "Average number of SNAP-eligible goods available per market day" the market needs to be clear with those collecting how to handle duplicates or different varieties of the same product before they begin their data collection. It is also helpful to complete product tallies as early as possible in the market day before some items sell out.

Tips for Implementation

1. Avoid conducting visitor counts during the opening market day or the last few market day of the season or on all of the market's event days. In other words, choose the most representative dates of your season(s). If you have events every market day, be sure to note what was happening on the day of the count.
2. Communicate the news about your designated counting or survey days as early as possible to all members of your farmers market community (vendors, volunteers, board members).
3. In the weeks before a counting day, walk through the process of what will happen on those days with vendors. If you are unsure about the process you have set up, consider conducting a trial count on the first or second market day, to give yourself a chance to work out any kinks.

Audio/Visual Recording

Another way to observe and collect market data is by using audio/visual recordings to capture market day patterns, including traffic flow, and to analyze interactions with vendors. Videos, audio recordings, and photographs allow the researcher or data collection team to re-visit moments and reawaken memories of the market day.

Photography and videography are tools that require both expertise and appropriate technology, including computer software. Recording the market also requires identifying in advance the best locations from which to record or take pictures throughout the market day.

Benefits and limitations

Video recording offers an opportunity to observe and re-observe market gatherings and interactions over and over again. Researchers may be able to observe something in a video that they might have missed in a single viewing. Similarly, recorded interviews with market participants (visitors, shoppers, and vendors) allow the researcher to listen to material more than a single time. Photos capture only a single point in time, but can be a powerful way to illustrate and share data. Both videos and photos are easy to share online or via a website and can be used collaboratively in both research and communications. It is also imperative that the market have permission forms for those being interviewed on camera and signs alerting that recording is happening at all entrances and in the market. Ask a university researcher to assist with crafting the forms.

There are limitations to audio and visual recording, however. Weather, including wind, can influence the quality of results from video and photography or even require rescheduling. Recording tools can be expensive and require safekeeping during market hours. Additionally, because market participants are aware that they are being observed, data collection with a recorder in hand may be disruptive to normal market activity. As noted earlier, the Farmers Market Metrics does not currently include audio or visual methods.

Collection Method: Surveys

We focus on three types of surveys that farmers markets often use. They include **questionnaires** (also called self-administered surveys or sales slips), **intercept** (face-to-face) surveys, and **dot surveys**.

Samples can be randomized (asking every second person that walks by), self-selected (having a link to a survey on your Facebook page), or pre-selected (asking all vendors or incentive shoppers to fill one out). Regardless of your selection technique, be sure to note it in your data files, so it is part of your methods.

The size of the sample (how many people take the survey) is also important. There is always a question of how large a sample you need to produce "valid" results. We provide a sample size template in Part 2 as well as a link to a sample size calculator. When you do surveys, you will also hear terms such as **margin of error** and **confidence level.** Those terms are meant to calculate how well the sample represents the population. For example, a survey may have a margin of error of plus or minus 5 percent at a 95 percent level of confidence. These terms simply mean that if the survey were conducted 100 times, within 5% above or below, the answers would match the percentages reported in 95 of the 100 surveys. In other words, if 100 more people were surveyed, the percentage of those come weekly would not differ by more than 5% than the first 100 people surveyed.

It is important to note that the margin of error decreases as the sample size increases, but only to a point. A very small sample, such as 50 respondents, has about a 14 percent margin of error while a sample of 1,000 has a margin of error of 3 percent. (The size the group being surveyed does not matter.) This is important in market surveys as smaller markets could have a large margin of error if they set too low quota of surveys on collection day. But it also helps larger markets as the number of surveys to collect does not continue to grow ever larger.

To reduce over or under sampling, we recommend that markets do their best to follow the sample size or use the sample calculator to get the appropriate number of surveys to collect.

Markets can certainly choose different levels, based on their partners' and their own analysis needs. As for the **response rate,** this is usually very high for market intercept or dot surveys, as most of those approached to complete surveys at markets are happy to help. However, if you are surveying outside population (for example, at a community center) or your vendors it may be more difficult to get completed surveys. As a general rule, you will want to set a goal of reaching 10-15% of that population. Have your data collectors keep track of how many refusals they receive.

If you are doing surveys for the season, then estimate your **total population** by adding up all of the market days visitor attendance estimates during that season. (20 market days @ an avg. of 200 shoppers per day means 4000 would be the total population on which to base your sample size.)
Whew! That's a lot of detail about percentages and statistics. The most important thing to know is in order to make sure you get enough responses, take the calculation seriously and either ask a research partner, use the sample size suggested here, or use an online sample calculator.

For all surveys, think through your research question clearly. Keep in mind that yes/no, multiple choice and numeric answers are far more straight-forward to clean, analyze and report. For the FMM metrics, the survey questions and instructions for collection are included in the protocols.

Three more important tips for conducting successful surveys are listed below:

1) Test your final survey with your friends, colleagues, or some other "pilot" group to work out the bugs;
2) Keep your surveys as short as possible. This is easier said than done, but short surveys increase your response rates (more people will complete them) and are easier to clean, analyze, and report. Try to keep the entire exchange under 2 minutes; remember, people are there to work or

to shop, not to answer dozens of questions. Whenever you are not sure, ask yourself if the added information is necessary to collect that year. Often markets overload their surveys and burn out their collectors and their target population! Keep in mind you can always ask other questions in another round of data collection later.

3) In some cases, offering an incentive to respondents can help increase your response rate. At a farmers market easy incentives include free tokens, free coffee or tea, or even free produce.

Questionnaires

A **questionnaire or self-administered survey** is a useful way to gather data while preserving a degree of privacy.

Written questionnaires can take the form of paper or online questionnaires. If you have current emails for the population you want to survey, an online questionnaire can enable you to collect information from a large number of people in a short period of time and in a cost-effective way.

The results of an online questionnaire can usually be obtained quickly and easily through online services such as Survey Monkey or Google Forms. Be sure to check what each version of software allows; in the free versions, these companies often limit how many responses you can collect and how the data can be exported. These online services also offer paid options for larger samples.

Data obtained through questionnaires does have limitations: some respondents may not recall answers to every question or may not always be truthful. Additionally, questionnaires may not capture all the desired information, depending on the length of and number of questions posed by the researcher.

Many markets are hesitant to ask their vendors sensitive information about sales or other business data, which is a perfectly valid concern. However, since markets are tasked with advocating for their community with policy makers and others, sales data is key. What is important is to safeguard the information and to only ask what and when necessary. FMM will continue to research methods for collection of sensitive information and to offer additional tips and templates for collecting this data.

Intercept Surveys

Intercept or face to face surveys capture real time information by approaching market visitors on site and inviting them to complete a survey. **Intercept surveys** may allow the data collector to reach the desired number of surveys quickly over the course of the market day.

Intercept surveys also have some drawbacks:

- Visitors may not like being interrupted in their usual activity at the market.
- Intercept surveys require training of data collectors.
- The market may need to recruit a large number of volunteers or paid data collectors.
- Weather may also be a factor in survey success, since reliable results depend on surveying a relatively large percentage of the shopper population.

Dot Surveys

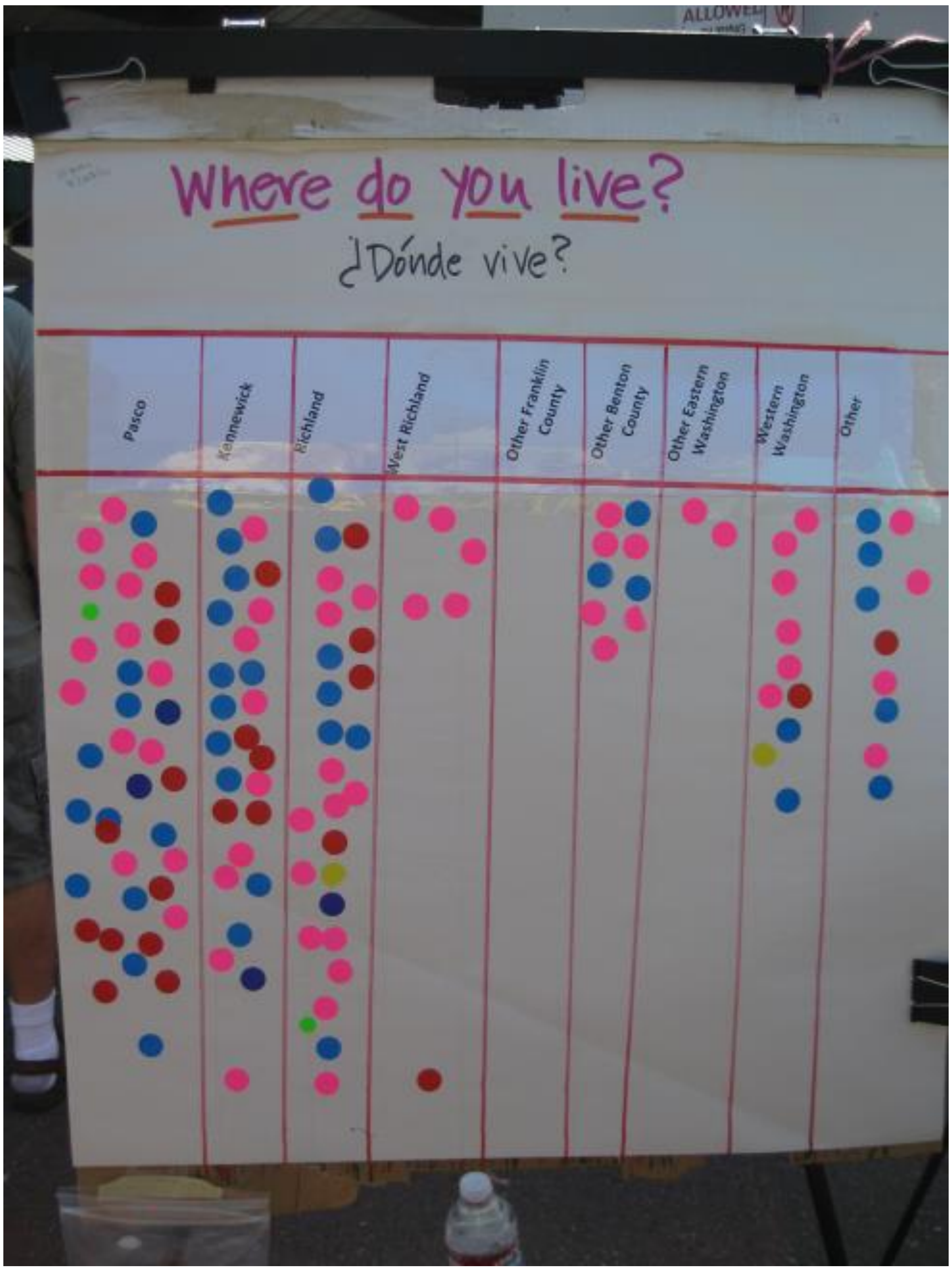
Dot surveys are popular instruments for collecting information from market visitors about simple "yes or no" or multiple choice questions in which only one response is possible. A small number of questions (1-3) are displayed on sheets of paper on easels or flipcharts. Respondents indicate their responses using colorful, stick-on dots during the visit to the market. Dot surveys are a core part of Rapid Market Assessments (RMA), along with shopper counts and constructive comments and observations from the RMA team.

Benefits and Limitations

The benefits of using **dot surveys** include the fun, interactive atmosphere they contribute to the market and their typically high response rate. The main limitation of dot surveys is the time required to recruit volunteers and figure out the right questions and responses that work well in a dot survey, as well having someone on hand ready to hand out the dots to enough people, and to change the sheets of paper regularly. This type of survey is not appropriate for sensitive or personal data, and like other intercept surveys, may also be negatively impacted by bad weather. Answers can also be influenced by prestige bias, meaning that respondents can be influenced by previous answers clustered in one area.

Examples of two different types of Dot Surveys are presented in Figures 3.3 and 3.4 on the following pages.

Figure 3.3 *This photo is an example of a Dot Survey. Notice how the first sheet has one question only and a column for each possible answer. This Dot Survey captures which neighborhood those (at the market that day) call home. The different sticker colors may denote gender or age or another category.*



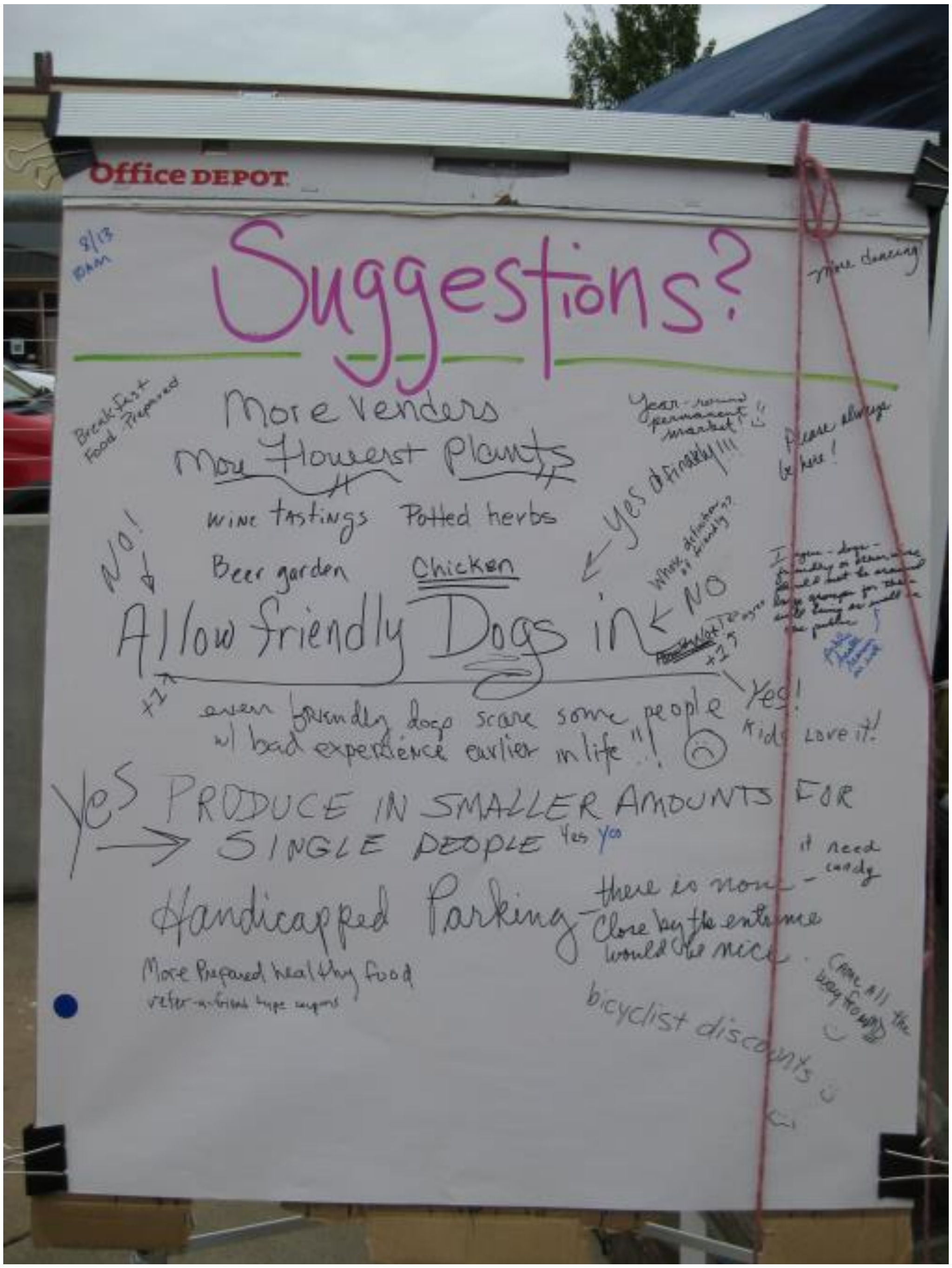


Figure 3.4 *This photo shows an open-ended question being used and markers available for answers.*

This Dot Survey is an example of capturing qualitative data. However, organizing this into analysis can be difficult as the context of the comments and the demographic information of the person who offered the suggestion are not recorded. Still, it is a friendly way to allow shoppers to offer input on the market.

Tips for Successful Data Collection Days

For many metrics, data is initially obtained on a paper instrument, whether it's a physical slip of paper handed in by a vendor at the end of the day, a visitor count tally sheet, or an intercept survey on which members of the data collection team wrote visitor responses using a clipboard as they walked around the market. The instruments for FMM collection are discussed in Unit 3, Part 2.

Keeping track of all these pieces of paper can itself be challenging, so here are a few tips for keeping track of surveys and tally sheets:

1. Make sure the date received is recorded on every data collection form, in the same place on each instrument.

2. Assign a unique identifier to each completed instrument, using incremental numbers like 001, 002, 003. Write this number on the corner of each paper survey questionnaire, and enter that same number in the column labeled "ID#" followed by the data for that questionnaire. Later, this will allow members of the research team to find a particular questionnaire even if identifying elements (name or contact information) are removed from your electronic database.

On data collection day:

1. Have physical maps of the market on a clipboard or a table in a central location. If there is not a market booth or table normally, it would be helpful to set one up for the day with bins for the data collectors to store their personal items (have them leave expensive items in their car or at home) and to keep water and extra supplies and even chairs for between "shifts" if applicable.

2. Start the day of data collection by explaining the breakdown of the day, including sketching out where everyone is to be and at what time each person needs to be there. It might be helpful to write everyone's name on the map in the location they are assigned with their mobile phone number if applicable. Have everyone introduce themselves.

3. When hand the collectors their interview or observation sheets, mark their name and their goal for completion for that hour or the specific time period covered on the top sheet or on a post-it note. Ask them to come back to the booth or arrange to meet them at a specified time at the end of that time-period. All collectors should have 5-10 minutes each hour for a break or a 20-30 minute break for those collectors working the entire market day.

4. Give everyone a name and a phone number to call if they have an issue, even if that person will be checking in regularly. If possible, introduce them to the vendor nearest to their station.

5. At the end of the first collection timespan, ask collectors how things went, ask them to describe one of their data collections, and ask them for any ideas to make it easier or more fluid the next time.

6. If there is time, do one or two rounds of role-playing with the market leader acting as the data collector and if possible, a regular volunteer as the respondent.

7. Assure the collectors that this will go well and be easy work. Offer some sample language for intercept or dot surveys, such as, "Do you have a minute to help the market?" and give a simple explanation to use when questioned by visitors or vendors, especially for observers and tally collectors, such as, "We're gathering information to help the market."

8. Assign one person to look through completed surveys and check the tallies throughout the day. Ideally, this person will also do the data entry, which will be explained in Unit 4.

Acknowledgements

These training materials were created with support from the United States Department of Agriculture's (USDA) Farmers Market Promotion Program (FMPP) FL-326-G, and reference research in process as part of the USDA's Agriculture and Food Research Initiative (AFRI) 2014-68006-21857, in collaboration with Dr. Alfonso Morales of the University of Wisconsin - Madison.

Created by Darlene Wolnik and Jennifer Cheek with support from Sara Padilla, Stacy Miller and a panel of expert advisors. Special thanks to Colleen Donovan for her review and contributions.