

Appendix A

Memo on Wave 1 Interview Methods and Findings

Exploratory Semi-structured Interviews on Retail Food Loss—Wave 2

Agency: Economic Research Service

To: Linda Kantor
From: RTI Project Team
Date: July 21, 2023
Subject: Retail-Level Loss Factors for Loss-Adjusted Food Availability (LAFA) Series:
Memorandum on Wave 1 Interviews

BACKGROUND

In September 2018, the U.S. Department of Agriculture, Economic Research Service (USDA, ERS) contracted with RTI International to develop updated, nationally representative, and fully documented estimates of retail food loss in the United States for more than 200 LAFA commodities and to answer the following questions:

- What is the amount of the available U.S. food supply at the retail level that goes uneaten in total and for each LAFA commodity or commodity group?
- What are the major drivers of food loss at the retail level and how do these drivers differ across retail commodities (e.g., fresh produce, dairy, meats and poultry, and frozen foods)?

The Office of Management and Budget (OMB) encouraged RTI to explore working with the U.S. Census Bureau to collect retailer data on food loss for the proposed Field Test (before designing a national study). After considering several options for working with the U.S. Census Bureau, in January 2020, Census, RTI, and USDA, ERS jointly decided that additional exploratory work was needed to inform the appropriate methodology for a Field Test and ultimately for a full nationally representative data collection.

To learn more about the nature of data that might be available to estimate food loss factors by LAFA commodity, RTI plans to conduct up to 25 semi-structured interviews with food retailers' corporate staff. The interviews are divided into two waves: up to 10 companies in Wave 1 and up to 15 companies in Wave 2 (including potentially contacting the Wave 1 participants for follow-up questions). In Wave 1, RTI completed interviews with five retailers. Because the response rate was lower than assumed, we exhausted the original sample of 50 retailers (i.e., used all of the sample allocated for Wave 1) before completing the target of 10 interviews. Some of the information presented in this memo was gathered from informal conversations at professional meetings and conferences. The findings from the Waves 1 and 2 interviews will help us assess whether it is feasible to conduct a nationally representative retail food loss study using our proposed methodology and, if feasible, help inform the sampling approach, retailer recruitment process, data collection protocols, and the analysis procedures.

The purpose of this memo is to describe the data collection methods; summarize the information collected in the Wave 1 interviews; and present our recommendations for revising the recruiting and data collection protocols, interview guide, and recruiting materials for Wave 2, as well as our preliminary conclusions for the design of a potential national study based on the interview findings.

DATA COLLECTION METHODS

We collected data under the Confidential Information Protection and Statistical Efficiency Act (CIPSEA). All staff involved in data collection completed required CIPSEA training and signed the ERS confidentiality agreement, the interview data were stored and worked with in RTI's Federal Information Processing Standards Moderate Enhanced Security Network, and responses were de-identified and reported in aggregate in this memo. The section below describes the sample selection, recruiting, interviewing, and analysis procedures.

Sample Selection

The unit for the semi-structured interviews is the corporate headquarters of a food retail company (referred to as "company" or "companies" for brevity) that owns supermarkets, supercenters, or club stores.¹ In this context, companies own individual retail stores or chains of retail stores. We interviewed companies, not individual stores, to learn about the data they maintain for estimating food loss and the level of the organization at which they maintain the data. We aimed to interview retail companies of different types (supermarket, supercenter, or club store), with different organizational structures (i.e., independent operators², regional chain, and national chain), and in different regions of the country.

We used Nielsen's TDLinX database to select companies for the interview sample. TDLinX is a proprietary commercial database that includes the name, address, and corporate owner of individual food stores with at least \$1 million in sales.³ It also provides information on store characteristics and type. For the selected sample, we searched for contact information for the list of companies selected from the TDLinX on the ZoomInfo database, company websites, and LinkedIn, specifically looking for the contact information for the corporate director of sustainability or the sustainability manager. Target individuals for the interviews were corporate staff who are knowledgeable about how product data are maintained across their company's individual stores (e.g., this may be someone in operations or supply chain management, a procurement specialist, or a retail/supermarket buyer). For any regional and national chains, we initially attempted to identify and contact someone within the company's sustainability group (e.g., chief of sustainability, director of sustainability) to get their support for the interviews and then work with them to identify the individual(s) who maintain(s) data on product shipments and sales as the individual to take part in the interview.

¹ A supermarket sells a wide variety of food, beverages, and household products. It has a wider selection than grocery stores but is smaller and more limited in the range of merchandise than a supercenter or club store. Supercenters are large stores that combine nonfood mass merchandise with supermarkets. Club stores are large outlet stores that sell food and beverages in bulk and require consumers to buy a membership.

² Independent operators were defined as companies that own 10 or fewer stores.

³ Cho, C., McLaughlin, P.W., Zeballos, E., Kent, J., & Dicken, C. (2019). *Capturing the complete food environment with commercial data: A comparison of TDLinX, ReCount and NETS databases* (TB-1953). U.S. Department of Agriculture, Economic Research Service. <https://www.ers.usda.gov/publications/pub-details/?pubid=92628>

We assumed that up to 50 companies would need to be contacted to complete interviews with 10 companies for the Wave 1 interviews. This estimate was based on RTI's experience contacting a small number of food retailer companies earlier in this study for informal discussions. During recruitment, we supplemented the original sample of 50 companies with 12 companies identified through networking during the recruitment process (see Table 1), for a total sample size of 62 companies.

Table 1. Companies in Sample by Source

TDLinx database	50
Interview completed	2
Interview not completed	48
Additional companies added from networking	12
Interview completed	3
Interview not completed	9
Total	62

Recruiting

Sampled companies were initially contacted via email (if an email address was available) or phone (if no email address was available) using the OMB-approved recruiting materials.⁴ If a response was not received from the initial call or email, we called again or sent a follow-up email. We made up to four mail/phone contact attempts to a company over a 2- to 3-week period, including leaving two or three voicemails with a callback number. If both an email address and phone number were available, we made two email attempts and two phone call attempts. If a response was not received after four attempts, the company was considered a passive refusal and was not contacted again. Companies that agreed to an interview received an email reminder (including the informed consent form and list of interview questions) a few days before the scheduled interview. In addition to contacting sampled companies, we also leveraged networks to supplement the sample by gathering referrals or contact information from industry and government contacts, state trade and sustainability organizations, and interviewees themselves.⁵ Notably, for the five companies interviewed, the contact was either introduced or referred to us directly or otherwise was a suggested contact provided by someone with knowledge of the grocery industry. For three of the five companies, the introduction/referral got us to the correct person to interview the first time, so this approach was very effective. Additional information about the source of the contact interviewed is provided in the Description of Interview Participants section.

⁴ For companies that were designated as 2030 Food Loss and Waste Champions, ERS worked with the Office of the Chief Economist to send an introductory email. One company indicated a willingness to participate by providing a written response to the interview questions but ultimately did not send their responses to RTI.

⁵ RTI planned to work with two industry associations to recruit companies (Food Industry Association [known as FMI] and the National Grocers Association). We conducted exploratory conversations with the two associations, and they initially expressed interest in assisting with recruiting; however, there were delays in the recruiting process, the associations experienced employee turnover, and RTI was unable to reestablish the previous working relationships with the associations.

Of the 57 retailers in our sample that did not participate in an interview, only five companies directly refused to participate (see Table 2). Most were passive refusals, meaning the company did not respond to emails or phone calls. Industry associations we interacted with earlier in the project suggested that retailers might be hesitant to participate due to staffing shortages, the high-paced and unpredictable nature of the grocery business, concerns about data confidentiality, concerns about interacting with a government body perceived by the industry to be a regulatory authority, and a lack of interest in the topic or perception that the topic is not relevant to the core mission of their business. Three retailers were amenable to participating but did not participate. For one retailer, our initial contact received clearance to participate, but was not the best person within their company to answer the interview questions. We were subsequently unable to schedule an interview with a more appropriate contact. Another company was initially willing to participate but suggested deferring the interview to the summer after completing the transitioning of their food tracking systems. The last company agreed to provide written responses but was unable to provide them before the cut-off date for Wave 1. We will likely contact these retailers again in Wave 2. The overall cooperation/response rate was 8% (5/62), taking into consideration the additional sample added through networking ($n = 12$) to the original sample ($n = 50$).

Table 2. Status of Companies Contacted by Interview Outcome

Interview completed	5
Interview not completed	57
Amenable to participating but did not participate ^a	3
Explicit refusal	5
Passive refusal (did not respond to contact attempts)	44
Unable to contact (e.g., email bounced back, no phone number) so replaced in sample	5
Total	62

^a We will likely recontact these companies for Wave 2.

Interviewing

The interviews were conducted via Zoom and lasted approximately 30 minutes (vs. the OMB-approved burden estimate of 60 minutes for the interview). At least two RTI staff participated in each interview, allowing one person to ask questions and one person to take notes. We began each interview by ensuring that participants understood the informed consent process and documents and answering any initial questions respondents had. We followed the OMB-approved semi-structured guide with questions that asked about methods used to track and measure food loss, including for random-weight products; the format of the data; their thoughts and opinions on our proposed data collection approach; the steps that would be necessary in order for them to share the data with USDA, ERS; and suggestions for nonmonetary incentives. The RTI interviewer used the interview guide to provide structure to the discussion. The guide contained structured probes so that all participants were initially asked the same set of questions, but interviewers probed when further clarification was needed.

Analysis

We summarized the interview notes using an Excel spreadsheet organized by topic area. We then reviewed responses from each company within each topic area to identify common themes and any exceptions to those themes.

DESCRIPTION OF INTERVIEW PARTICIPANTS

RTI began recruiting retailers in February 2023 and conducted the Wave 1 interviews in March through May 2023. We conducted interviews with an independent grocer, a regional food cooperative, two regional chains, and one national chain (see Table 3). The number of stores operated by the retailers we interviewed ranged from 1 to over 500. Some retailers operated distribution centers, while others had warehouses, bakehouses, or central kitchens. Some did not operate any type of distribution center. The geographic ranges of the retailers were scattered across the country and ranged from metro areas to nationwide coverage. The retailers we interviewed operated one banner each.

Because most of the companies we interviewed have an active interest in food loss or waste or ongoing initiatives related to tracking or reducing food loss, our study sample suffers from self-selection bias. Self-selection bias refers to the bias that can occur when individuals are allowed to choose whether they want to participate in a research study. Because the companies that participated may differ from nonparticipating companies, self-selection can lead to a biased sample and affect the generalizability of the results. Thus, the interview results should be interpreted as information about a best-case scenario for participation in a national study.

Table 3. Description of Interview Participants

Type	Organizational Structure	Source (Network Leveraged) ^a
Supermarket	Independent grocer	Company added to sample (industry referral)
Supermarket	Regional food cooperative	Company added to sample (industry referral)
Supermarket	Regional supermarket chain	Company added to sample (industry referral)
Supermarket	Regional supermarket chain	Contact suggested for company already in sample (industry referral—previously cold-contacted company unsuccessfully)
Supermarket	National supermarket chain	Contact suggested for company already in sample (industry referral)

^a “Referral” means a known contact of the organization either directly introduced RTI or allowed RTI to use their name in recruitment communications.

SUMMARY OF DATA COLLECTED

This section provides a summary of the data collected in the Wave 1 interviews.

General Approaches to Tracking Food Loss and Donations

In general, the retailers we interviewed considered the value of unsold food to be an important business metric to track. They tracked some version of this information, although the exact fields collected and data format varied.

Barcode Products

With the exception of the independent grocer, the retailers we interviewed used an electronic system for tracking food loss. Some of the retailers we interviewed tracked food loss at the aggregate level, and some retailers tracked food loss by department or loss category such as donation and disposal. Most tracked cost, retail value, and weight/number of units of unsold product. They sometimes captured store, department, and Universal Product Code/price look-up identification electronically as well.

Random-Weight Products

Generally, the retailers we interviewed tracked random-weight product food loss using the same approach and metrics as those used for barcode products. One exception was a retailer who used a manual system to track bulk produce shrink (and an electronic system for all other tracking). Another retailer mentioned that weight is recorded differently for random-weight products because products that are sold by count require a unit-to-weight conversion.

Defining Food Loss

The retailers we interviewed consider it important to their business management to understand how much “shrink” their operation experiences. Shrink is the amount of product they purchase that is not sold. Shrink could be product that is donated, composted, taken home by employees, or discarded. Many retailers do not disaggregate shrink into these different categories, so it can be difficult to estimate true food loss as opposed to food in the other categories.

Availability of Food Loss Metrics

Retailers provided helpful information about the data related to food loss that they have available and how they maintain that data, as well as suggestions for recruitment procedures for a potential national study.

Product Shipments and Sales

The retailers we interviewed used a variety of approaches to track data on product shipments. The independent grocer only tracked aggregated expenses and sales and did not have this information available by product or category. Other retailers did have the information available or estimated it based on other data that are tracked. One retailer noted that they do not disclose sales in terms of dollar values to third parties, but it was more likely they could provide weights or item numbers.

Products Packaged in Store or Transferred to Other Departments

Except for the large national chain, the retailers we interviewed generally agreed it would be harder to track the data of interest for products packaged in store or transferred to other departments. One retailer said they could provide information on how much food they made and how much they discarded but not at the ingredient level. Another noted that it might be quite difficult to connect shipment and sales amounts for products that arrive at the store in one form and leave in another. For example, the retailer might know exactly how much pasta and cheese they receive, but if they make macaroni and cheese in house to sell (and use pasta and cheese in other foods that are prepared in the store), then it would be difficult to make the connection between quantities of shipments and sales on a food product or even category level.

Food Donations

Three of the retailers we interviewed tracked food donations, one did not, and one estimated donations based on other data (this retailer noted the data were likely low quality). Those that did track data sometimes used unit-to-weight conversions to track the weight of products donated.

Feedback on Study Approach

The independent grocer considered our proposed study approach unfeasible for their operation, citing the challenge of their data being logged into paper records and their inability to provide electronic versions of sales and shipment records. The other retailers that we interviewed thought our proposed national study approach was feasible with the caveat that some datasets might need to be connected to each other, reformatted, or disaggregated further to get consistent product-level information. Two of the retailers we interviewed noted data format consistency across sources would likely pose a challenge. One regional chain suggested that the data of interest will be harder to find for banners with fewer than 30 stores, based on their experience with retailers.

The retailers we interviewed mentioned a few considerations for developing an approach for collecting data on retail food loss. First, they recommended that we create unique product identifiers, such as a number or letter code, for food product categories of interest for use across several different data-tracking platforms/approaches/report formats. They thought that reviewing three to four different report formats and designing a unique identifier system that works across these formats would be a sufficient check that the proposed approach for a national data collection study would be compatible with most retailers' tracking systems. Second, they suggested that the proposed approach collect detail on how product weights are calculated (actual weights or estimates based on unit/quantity). Third, they noted that human error is a nontrivial factor in collecting data on food loss, especially when tracking systems rely on staff to take extra steps to record food loss. The actual amounts of food loss are likely higher than what is tracked or estimated.

Data Maintenance and Access

With the exception of the independent grocer, the retailers we interviewed said they would be able to retrieve 1 year of the type of data we are interested in for a national food loss study. Although the data

were usually available, many retailers pointed out the sensitivity of dollar value figures and expressed hesitation at being able to share them for the purposes of research.

Staff and Software Involved

Data management systems varied across the retailers we interviewed. The independent grocer used a manual system (i.e., paper records), while the other retailers managed the data using different software systems. Often the software systems served multiple purposes in addition to tracking food loss, such as ordering, receiving, pricing, and labeling. Usually, the software systems had the functionality to generate reports.

Often, several departments (e.g., IT, accounting, operations, sustainability) at a single retail company entered data into the software system and used the database outputs for different purposes. Usually, one department maintained the technical aspects of the platform, but sometimes a couple of staff from different teams shared that responsibility. One retailer mentioned that it was a goal of theirs to streamline their data management system. Interviewees cautioned that inquiring about the type of data management system (both software and staffing structure) used will be an important early-stage step in working with any retailer to collect data for food loss calculations.

Approval Process

The suggested primary point of contact at the company for a national food loss data collection effort varied based on the data management structure and general departmental structure of the company (e.g., whether a sustainability department existed), but we often interviewed the person in the sustainability or IT department. All retailers who thought their company would consider participating said senior leadership would need to approve the data-sharing request, often in consultation with the legal team. Retailers anticipated that their leadership would ask questions about the benefit to the company of sharing the data and the level of effort required to compile and share the data. They also mentioned that a nondisclosure agreement or other legally binding document might be required, although such agreements would not be necessary because CIPSEA requirements are the most stringent guarantees available. Even with those measures in place, some retailers were uncertain if they would receive approval to share certain sensitive business information, such as sales values and cost of shipments. One retailer stated that they expected senior leadership approval to participate in the project would be the biggest obstacle.

Data Collection Logistics

The retailers we interviewed noted that the level of effort on their part would depend on how much organizing of the data was required. For example, if retailers could provide a report or provide data in raw form (a direct output of the software system used), then that would be a much lower level of effort compared with creating a dataset organized and formatted to certain specifications. They said their level of effort would likely depend on the quantity and granularity of the data requested.

The retailers who said they would consider participating indicated it would be much easier for them to specify the format of the data (as opposed to a format being specified for them). The independent grocer said a specific format request would be helpful, but they likely would not have time to prepare the data.

In terms of food categories, the response was mixed in terms of the preferred format. Some retailers said it would be easier to provide data for all food categories and have researchers extract the product categories of interest, some said it would be easier to compile data for a specific list of food categories, and others said it would be a similar amount of effort either way. They requested clear descriptors of products and categories, especially those that go by multiple names or could be defined differently by different parties. One retailer explained that grocery retailers carry a lot of the same food items, but they might be labeled differently from company to company.

Most retailers said they were equally likely to be able to participate at any time of year, as long as they have plenty of notice, but one mentioned that October through December is an especially busy time, and they would probably not be able to participate if they received a request during that period.

Recruitment Strategy

The retailers we interviewed provided suggestions for initial points of contact and nonmonetary incentives to consider when designing the recruitment process for a potential national study.

Points of Contact

Retailers pointed out that larger companies have more resources to devote to tracking and initiatives such as sustainability, so the point of contact for a potential national study may vary depending on the size of the company. We interviewed individuals with several different job titles in Wave 1.

The regional chains we interviewed suggested targeting someone in operations and finance or, if possible, someone with government relations or research experience, so they are familiar with USDA's structure and the nature of research projects. The national chain we interviewed suggested targeting a representative from the sustainability, data, or finance team.

Nonmonetary Incentives

Some companies viewed a benchmarking report that showed a company's food loss metrics compared with its peers as a benefit, according to the retailers we interviewed. The independent grocer and one of the regional chains we interviewed thought it would be helpful to see how they compared relative to their competitors in terms of food loss because this information is not readily available. Other retailers we interviewed said it would not be helpful because they already have strong motivation to track and address food loss. One said the level of interest in a benchmarking report would likely vary by department; the loss prevention department might be more interested, and the operations department might be less interested.

In terms of other incentives, one retailer suggested that having a better understanding of how USDA plans to use the data would be helpful for them in motivating participation and getting buy-in from corporate leadership. This retailer was also interested in developing a closer working relationship with USDA regarding food loss, including the possibility of receiving public recognition for their participation in the study and their efforts in addressing food loss.

CONCLUSIONS

Based on the findings from the Wave 1 interviews, we offer the following conclusions regarding the feasibility of a potential national study on retail food loss and the proposed study approach for collecting data to estimate food loss factors by LAFA commodity. The findings from the Wave 2 interviews will help further inform and refine these conclusions.

Because we interviewed only one independent retailer, we have insufficient data to determine the feasibility of our proposed approach for independent retailers. Thus, it will be important to interview several independent retailers in Wave 2 to better understand how they track and maintain food loss data.

- As previously noted, the Wave 1 study findings suffer from self-selection bias (simply put, the Wave 1 interviewees are more likely to care about the issue of food loss than the average retailer). Thus, it will be important to interview several retailers in Wave 2 that do not have a strong interest in food loss and sustainability to obtain the perspectives of these retailers.
- Some retailers track food loss on a total dollar basis and do not break it out by specific products or loss categories (e.g., donated, discarded), which will affect RTI's planned analysis procedures. During the Wave 1 interviews, retailers often responded by talking about "shrink" when asked about their approach to tracking food loss. In Wave 2 interviews, we will probe on retailers' definitions of food loss or shrink and how they align with ERS's definition of food loss.
- Given the low cooperation/response rate for Wave 1, the larger hurdle for a potential national study may be recruitment of retailers to participate rather than data availability (among regional and national retail chains).
- Because of retailers' concerns about sharing information on prices, designing a study approach that does not require collecting price information or has an option to provide food loss values by weight instead of dollars might yield a higher participation rate.
- Minimizing retailers' burden will be important to encouraging participation. A "data dump" is generally preferable to a very prescriptive approach for providing data on food loss. Additionally, product descriptions that consider multiple labeling conventions would be helpful (then retailers can choose if they want to provide all data or use the product list provided, depending on what is less burdensome).
- Retailers want to know "what's in it for them" by participating. Nonmonetary incentives could include a benchmarking report or public recognition by USDA.

RECOMMENDATIONS FOR THE WAVE 2 INTERVIEWS

We learned some important lessons about the response to cold contacting retailers, the effectiveness of leveraging networks to recruit participants, and the expected burden for participants. Based on the findings from the Wave 1 interviews, we offer the recommendations listed below for revising the interview guide, recruiting materials, and data collection protocols for Wave 2. Given that the contract is scheduled to end in September 2023, it is likely that RTI will only be able to conduct up to 10 interviews for Wave 2. The suggested revisions are reflected in the memo to OMB to obtain approval for Wave 2 and the attachments containing the interview guide and recruiting materials.

- Based on the 8% cooperation/response rate for Wave 1 (five of the 62 companies in the sample completed an interview), we estimate that a sample size of 125 companies will be needed to complete 10 interviews for Wave 2. Although cold calling was not very effective for Wave 1, we will likely still have to rely on cold calling in Wave 2 to reach independent retailers and retailers that do not have an above-average interest in tracking food loss. Thus, we recommend starting with a much larger sample size for Wave 2 than we did for Wave 1.
- Because cold calling alone was ineffective, it will be useful to leverage networks (such as those made at a recent conference by members of the ERS and RTI project teams) to facilitate identifying the appropriate contact person and recruiting them for an interview. Based on our conversation with grocers' representatives at a recent conference, we learned that arranging an interview through a cold email is difficult. Major grocers follow a specific procedure for requesting interviews with anyone within the company, which involves submitting a request to the communications department. This request then undergoes a review by the legal department before being forwarded to the relevant department or individual. For Wave 2, we recommend that we work with a subset of the Wave 2 sample (e.g., initially release 50 companies and exhaust the subset before releasing another subset of sample) and try multiple recruiting approaches concurrently (i.e., attempting to directly identify the potential respondent using the Wave 1 approach and going through the company's corporate communications department or government affairs contact, as applicable). Based on our experience with the initial 50 companies contacted in Wave 1, recruiting staff will tailor the recruiting approach for the remaining companies contacted. For independent retailers, we will use the contact list from an industry trade show. This is a more targeted list than we had access to in Wave 1. Having access to a contact we know was active at the company recently may increase the likelihood (compared with a cold call alone) that we receive a response. Additionally, we will ask companies interviewed for Wave 2 if they could provide referrals or assist with making connections to other independent retailers (referred to as snowball sampling) to help us reach our goal of completing 10 interviews.
- All Wave 1 interviews took 30 minutes or less, so we recommend lowering the estimated interview burden for Wave 2 from 60 to 30 minutes, which may help increase participation.
- We recommend simplifying the text in the recruiting materials, so it is shorter and more conversational.
- We recommend removing the table from the list of interview questions sent to participants before the interview because this table led some people to believe that we were collecting actual data.
- Suggested staff to target for a primary point of contact include staff working in sustainability, data, operations, and finance departments.
- As previously noted, one retailer who was amenable to participating but did not participate requested the option to provide written responses to the interview questions instead of participating in an interview. We allowed the retailer to submit written responses, but the retailer was unable to do so in the time provided during Wave 1. We revised the OMB memo and Wave 2 recruiting materials to offer the option to provide written responses to companies that are amenable to participating but do not have time to participate in an interview.