# *Standard Definitions*

*for*

*Establishment Surveys*

Final Dispositions of Case Codes and Outcome Rates for Establishment Surveys

2025

**THE AMERICAN ASSOCIATION FOR PUBLIC OPINION RESEARCH**

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# Standard Definitions for Establishment Surveys

## About This Report

*Standard Definitions for Establishment Surveys* is a new guide focusing on data collections of establishments (defined here as a single unit or location within a business or organization). The intent is not to apply a strict interpretation to the meaning of an establishment, rather to stress the importance of starting with a clearly defined unit of measurement. As with *Standard Definitions* this is a work in progress and is the first edition solely focusing on establishments. The American Association for Public Opinion Research (AAPOR) plans to continue updating this new report going forward and will maintain alignment with *Standard Definitions,* now organized by frame and focused on population surveys. As with *Standard Definitions,* AAPOR will continue to work with other organizations to further the widespread adoption and utilization of these standards and to continue to be inclusive of establishment surveys. While these standards are now separate references, AAPOR will request academic journals to select articles for publication that conform to these standards, as relevant. Several including *Public Opinion Quarterly, the Journal of Survey Statistics and Methodology, Survey Practice* and the *International Journal of Public Opinion Research*, have agreed to do so.

This is not the first reference to standards for establishment surveys. It was in the seventh edition of *Standard Definitions* that standards for establishment surveys were first introduced in 2011. The seventh edition was edited by Tom Smith who chaired the committee with Rob Daves, Paul J. Lavrakas, Mick Couper, Timothy Johnson, and Richard Morin. Sara Zuckerbraun drafted the section on establishment surveys. In the eighth edition, Sara Zuckerbraun and Katherine Morton revised the section on establishment surveys. In the tenth edition, the section on establishment surveys was removed, identifying a need for further revision and planned as a future addendum.

This new guide was edited by Douglas Williams, Melissa Cidade and Karen Stein.

**How to cite this report**

This report was developed for AAPOR as a service to public opinion research and the survey research industry, so please feel free to cite it. AAPOR requests that you use the following citation:

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## Background

Efforts to standardize sample unit dispositions and the calculation of response and other outcome rates were the result of decades of research and debate (see Smith 1999 for a detailed review). Much of this debate centered on concerns over wresting control from researchers and determining who would be responsible for developing standards. However, beginning in the early 1970's and throughout the 1990's, it became increasingly clear that there was a need for uniform definitions to quantify and understand changes in respondent behavior (specifically non-participation) (Bailar and Lanphier 1978). These efforts eventually led to the formation of a committee of the American Association for Public Opinion Research (AAPOR) tasked with creating standardized definitions[1].

The first edition of AAPOR's Standard Definitions was released in 1998 (AAPOR 1998). However, these were not immediately adopted. Survey organizations and federal statistical agencies were assessing these standards and starting to provide some of the first comparisons across surveys utilizing consistent definitions. One of the first efforts for Federal household surveys was undertaken by the Interagency Household Survey Nonresponse Group (IHSNG) (Atrostic et al. 1999; Atrostic et al. 2001). The authors confirmed what many anecdotally believed, that nonresponse rates were increasing, however the authors hypothesized that observed increases could be attributed to changes in collection processes and procedures and not the result of household changes in participation or availability (i.e., non-contact). The standardization of dispositions and outcomes allowed for an informed assessment of data collection efforts for Federal household surveys.

Around the same time, similar efforts to understand differences across establishment surveys across Federal agencies were being conducted. With the unit of measurement being entities like organizations, businesses, and institutions, establishment surveys generated different considerations than household surveys. The Interagency Group on Establishment Nonresponse (IGEN) investigated how establishment survey programs differed and applied standardization to compare outcome rates across establishment survey programs (Shimizu 2000; Petroni et al 2004). The authors noted that variation existed in how dispositions are assigned (or included) and that establishment programs calculated a variety of outcome rates unique to a specific program's purpose. To calculate rates, the IGEN group took inspiration from the new AAPOR Standard Definitions (first

[1] AAPOR was not the first organization to outline standard definitions with members of the first committee taking insight from the Council of American Survey Research Organizations (CASRO) 1982 Special Report on the Definition of Response Rates.

edition) in devising final dispositions for survey programs included in the review. These dispositions are shown in Table 1 below.

Table 1. Notation and descriptions used in early research on response rates by IGEN (circa 1998)

| Disposition Code[a] | Description |
|---|---|
| S | Successfully completed survey-eligible units |
| D | Nonrespondents with some data received |
| R | Refusal (survey-eligible units with identified respondent) |
| O | Other or Pending (attempted survey-eligible with no data, or refusal or other final disposition) |
| *n*[b] | *Attempted units of those included at start of collection (survey)* |
| NAT | Original units at which data collection has not yet been attempted |
| OOB | Units that are deemed out-of-business (includes not locatable) |
| OOS | Confirmed out-of-scope units |
| DUP | Confirmed duplicates of units already included in the survey |
| *E*[b] | *Attempted original survey units were not deemed to be ineligible (= n – OOB – OOS – DUP)* |
| NU | New eligible units identified after data collection has started |

a. Referred to as “outcome” or “notation” in Shimizu 1998.
b. Code values that are the sum of other codes.
Source: Shimizu, 2000

The same interagency group later assessed the pros and cons of standardization for establishment surveys (Ramirez et al. 2000). The advantages included consistent comparability of outcome rates, and the potential for monitoring establishment participation and burden. The latter requiring more than just standardization of disposition codes and outcome formulas. The disadvantages were largely operational, noting requirements to update survey systems and potential changes to outcome rate time series. The authors do note that standardization may not lead to a “best” measure of response and that a standardized response rate may not be meaningful for some data users. This is attributed to differences in establishment survey populations and characteristics, such as, employment size, where standard rates may not provide relevant information on employment coverage (Thompson and Oliver 2012). This was an early insight into the challenges specific to establishment survey programs.

Subsequent to these initial efforts, standard practices for defining case dispositions became widely adopted for household or population surveys and were periodically updated. The first edition of AAPOR’s Standard Definitions provided dispositions for Random Digit Dial (RDD) telephone surveys and in-person surveys (of households or populations). Revisions addressed changes in data collection technology (computerization and web surveys), the increasing complexity of sample frames (the decline of landline RDD and the emergence of cellular RDD), the increased use of mail contact and data collection, the increased use and acceptance of nonprobability surveys, and the increased prevalence of mixed-mode surveys. However, it was not until the seventh edition of AAPOR's Standard Definitions in 2011 that dispositions for establishment surveys were discussed (AAPOR 2011). At that time, guidance offered for establishment surveys was focused on the challenges that set them apart from household or population surveys. These included attributes of sample frames, defining respondents, and defining the sample unit. Specification of dispositions codes addressing these challenges was not provided, only a general need to consider these challenges. In the tenth and current edition of AAPOR's Standard Definitions (AAPOR 2023), guidance for establishment surveys was removed with the understanding that more work was needed to address the unique properties of establishment surveys.

### This Report:

- Includes separate sections organized around the contact and collection stages specific to establishment surveys. We recognize that this organization does not provide comprehensive coverage of all establishment survey types (for example, panels which may better follow the typology of *Standard Definitions* for household surveys). Here we note that many organizations and government agencies source or maintain a frame of establishments.
- Closely aligns with definitions for survey case dispositions detailed in *Standard Definitions* for household surveys; extending these to establishment specific collection stages.
- Provides operational guidance and formulas for calculating response rates, and establishment-specific estimation rates[2].

## Introduction

Disposition codes are an important component of the data collection process. Also known as "status" codes, "result" codes, or "outcome" codes, disposition codes provide key information that describe the results of actions taken on a sample unit. AAPOR has official disposition codes for household surveys available for download from https://aapor.org/standards-and-ethics/standard-definitions/. Disposition codes are key to our understanding of the results of data collection processes in part by helping us standardize the calculation of a number of metrics. Such metrics include response and

[2] Estimation rates provide a direct measure of the analytic sample used for estimation. These rates are particularly important in establishment surveys where multi-item reporting and partial data submissions are common. Importantly, however, estimation rates are not a substitute for response rates.

nonresponse rates, cooperation and refusal rates, non-contact rates, eligibility rates, and much more. Despite the important role disposition codes play, they are sometimes given only passing consideration, especially for establishment surveys. While persons and households are well defined, establishments are generally not well defined. Without standardization, this results in disposition codes that may have been developed focusing on the specific needs of a survey program and may not fully consider the breadth of outcomes that can occur. This can lead to differences in the meaning and use of disposition codes between different surveys, or even survey organizations. For example, codes between surveys may not easily map to each other, making it difficult to compare quality metrics. Or, researchers may not have the same terminology (e.g., how response rate is calculated), leading to inappropriate comparisons. Such differences can lead to unintended misrepresentations of achieved response and make objective comparisons between survey collections more challenging.

## Defining Establishments

We also recognize the complexity in defining the meaning of an establishment. In broad terms we are making the distinction between general population surveys, where a household or person is the unit of measurement, and surveys where an organization is the unit of measurement. Commonly, the term “business” has been used interchangeably in reference to establishment surveys. This tends to reflect surveys focused on economic statistics (Cox and Chinnappa 1995) and is not uniformly recognized to include entities such as farms, or other institutions (e.g., schools; government facilities, etc.). Even defining an establishment as an organization can lead to ambiguity. An establishment generally refers to a single unit, or location. Some surveys may collect information at the firm (a group of locations - establishments - within a business or organization), or the enterprise level, i.e. a group of firms (Sadeghi, Talan, and Clayton 2016)[3]. Our intent is not to apply a strict interpretation to the meaning of an establishment, as it is important that researchers have the flexibility to define the unit of measurement or reporting that best meets their needs. Rather our intent is to stress the importance of starting with a clearly defined unit of measurement and apply consistent rules for monitoring collection outcomes. This includes providing a clear definition of eligibility.

## Sample Frame

There are several different sources for selecting a sample. Some examples outlined in AAPOR’s Standard Definitions include list samples (of known or specifically named

[3] See also van Delden et al. 2018 for a similar typology defining statistical units for measurement of businesses.

persons); Address-Based Samples (ABS) – generally sourced from USPS delivery sequence files; telephone samples – such as Random-Digit Dial (RDD) with numbers generated based on properties of the telephone number assignment system. These sample types are typical of household surveys, but not all (such as RDD) are suitable for surveys of establishments[4].

Of these various sample source types, samples for establishments are commonly sourced from existing lists. These may be purchased from vendors, or as is the case for a few U.S. federal agencies, they maintain a master list of establishments and manage survey programs to keep these lists updated. These lists are generally limited to intra-agency use. This provides a universe of establishments from which to sample that may include additional characteristics for sampling (such as industry, employment size, etc.). Some examples of these are provided below:

- The sample frame maintained by BLS is the Longitudinal Database (LDB) of employer records, which is the sample source for most BLS establishment programs[5]. This list is maintained by the Quarterly Census of Employment and Wages (QCEW) which itself is based on records provided by State Workforce Agencies (SWA) and sourced from state Unemployment Insurance (UI) records. While many BLS programs use this as the source for their sample, some programs such as the International Price Program (IPP) do not. For IPP, establishments are selected based on import and export transactions reported to U.S. Government systems.
- The Census Bureau's Business Register (BR), which is a comprehensive list of businesses in the United States. This frame is fed by newly filed IRS Forms, the Quarterly Birth Survey, and the quinquennial Economic Census. It is cleaned and maintained by the Annual Integrated Economic Survey.[6] Most Census Bureau economic surveys use the BR as the sampling frame.
- Private-sector businesses maintain establishment list frames available for a fee via a license. Examples include Dun and Bradstreet and S&P Global. Researchers, which may also use web-based sources, such as, YellowPages.com via web

[4] Establishments may have multiple telephone numbers, which may connect to an employee or representative of the establishment, but not a person with authority or access to relevant information. Telephone numbers also lack necessary sampling information, such as establishment size, or industry characteristics that are often used in sampling.

[5] For an overview of the development of the BLS Longitudinal Database, see: Searson, Robertson, and Clayton (2000)

[6] For an overview of the Business Frame's maintenance, see: Yarbrough and Stinson (2021). See also: DeSalvo, Limehouse, and Klimek (2016)

scraping, or Google Places via an Application Programming Interface (API), the latter associated with a fee.

- Other common frames in the private sector are a list of hospitals or schools. These may be sourced from Centers for Medicare & Medicaid Services (CMS) (hospitals) or National Center for Education Statistics (NCES) (public schools). Note that these frames and this guide should be used when conducting surveys of the institution. For surveys of individuals (e.g., doctors, school administrators), we recommend using the Standard Definitions.
- Organization rosters. The Institute for Supply Management (ISM) and The Conference Board sample clients (i.e., establishments) to produce influential establishment surveys.

## Multiple Respondents

One of the unique considerations of establishment surveys is that response may necessitate multiple people and systems across an institution. For establishment surveys, the respondent must have the authority, capacity, and motivation to provide response (Edwards and Cantor 1991; Tomaskovic-Devey, Leiter, and Thompson 1994; Willimack and Nichols 2010). In many instances, an establishment survey may ask for information that is not available to the respondent, and so, the respondent must act as a survey manager, soliciting response from other parts of the organization to complete various needs of the survey. This can lead to varying levels of partially completed surveys – for example, a business with multiple locations may report data for the headquarters and some of the locations, but not all, as not all locations responded to the internal data call to complete the survey. In other instances, the data are housed in separate systems, such that a single respondent may have the authority and capacity to report accounting information, but does not have access to human resources information. These nuances in completeness of response should be reflected in the disposition codes assigned throughout the field period and at survey close-out.

## Collection Stages

Because of the complex nature of establishments and the data they are asked to provide, establishment surveys may have additional unique stages, before, during, and after data collection. A review of the existing literature and procedures used by organizations identified four stages with differing levels of contact with establishments. These include address-refinement, initiation or enrollment, data collection, and post-processing (data quality review and reconciliation). The application of a comprehensive and consistent set of dispositions can be useful in monitoring the survey collection process. Each of these stages is described further below.

**Address Refinement** – at this stage, units that have been sampled are reviewed to identify, or update the establishment's contact information. This can include one or more of the following elements: address, phone number, contact person, and email address. Data collectors will use several resources to validate or locate contact information, such as public directories, internet searches, or state agencies. Data collectors may contact the establishment to validate information or identify a contact person. At this stage, attempts to gain cooperation and survey participation are not made.

**Initiation or Enrollment** – at this stage, a contact has been identified or is known and is contacted on behalf of the establishment to obtain cooperation with the data collection effort. Data collectors may then collect information or schedule a future time for data collection or for when the establishment is to begin self-reporting data.

**Data Collection** – this is the stage where information specific to the survey is collected. This includes longitudinal data collections where the establishment may be asked to report on a recurring schedule (e.g., monthly) or retrospective data from previous fiscal or calendar years.

**Post-Processing** – at this stage, data have been collected and are pending review to determine if the data are usable. For some data collections, data review is done during the interview, and the interviewer works with the respondent to reconcile issues (e.g., edit failures). In cases where data are submitted (e.g., a submitted form or data files), or where edit checks are not feasible, data are reviewed after they are submitted. Specialized staff will review data and if necessary, follow-up with the establishment to confirm or correct the data. Data that cannot be confirmed or corrected may be determined to be unusable.

While the four stages described note the unique challenges and considerations for establishment surveys, not all surveys will require all four stages. In some instances, these may occur in tandem, for example the case of a small business survey (targeting small establishments), where interviewers may call and, upon identifying the correct (or suitable) individual, conduct the survey during the same contact. While in an ideal scenario, sampled establishments would proceed through each stage in order as completed, there will frequently be instances where a case needs to revisit a previous stage, for example if the identified establishment contact leaves the establishment between stages, or post-processing reveals errors requiring additional collection or clarification. These stages are outlined separately to show the unique outcomes that can occur.

## Interim Disposition Codes

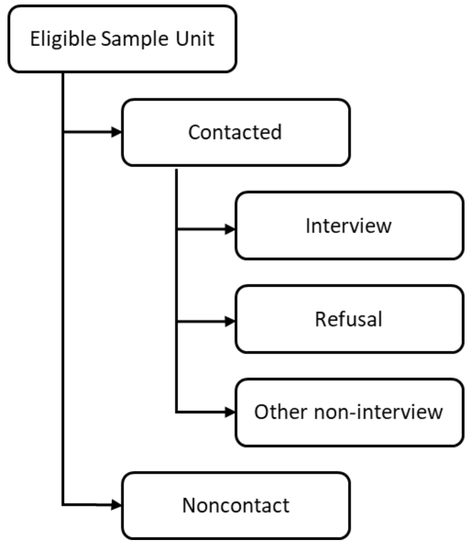
When it comes to disposition codes, the focus is generally on final codes for facilitating the calculation of outcome rates (e.g., response rates). However, interim, or temporary codes can play an important role in monitoring the data collection process and communicating information about a specific contact attempt and the next course of action for obtaining response. There is a distinction that is made in the *Standard Definitions* outlined by AAPOR between dispositions and actions. Actions are those that dictate the next step in the data collection process and are useful for survey management (e.g., call back for an appointment vs nonresponse), but should not be used as final dispositions (see AAPOR 2023, p.12 for a discussion).

Interim disposition codes convey information about a specific contact attempt at a specific point in time. Often, a final outcome code results from a contact attempt, for example, response or ineligibility (e.g., out of business, or out of scope). For nonresponse and noncontact, the variety in *interim* outcomes that can occur at each contact attempt requires careful consideration in how final dispositions are assigned. This requires defining a hierarchy in the application of codes where different codes may take precedence over other codes (see AAPOR 2023, p.13 for a discussion). In general, contact attempts that result in some form of contact take precedence over non-contacts:

> *In the context of a series of contacts that did not result in a final disposition (e.g., complete or ineligible), the hierarchy applies across the history of contacts. If the first contact resulted in a refusal, and all subsequent contacts resulted in non-contact, the final disposition would be 'refusal'.*

After that, the degree of information provided takes priority over less information (e.g., voicemail of known contact vs ring-no-answer for a series of telephone attempts). A high-level example of this hierarchy is depicted in Lynn et al. (2001) and adapted in Figure 1 below for eligible sample units.

Figure 1. Example final disposition hierarchy for eligible sample units.




The use of a clearly defined hierarchy may seem to add unnecessary complexity to the assignment of final dispositions. However, failure to apply a standard hierarchy or a lack of consistent rules in how dispositions are defined and applied can lead to differences in calculated outcome rates. Blom (2014) and McCarty (2003) demonstrate this, showing that when consistent rules are not applied, differences in calculated response rates are observed. Generally, the authors show that such differences are small for response rates – likely due to affecting known eligibility rates and not affecting cases coded as complete (i.e., response). However, inconsistent application can have larger effects on other outcome rates, such as noncontact and refusal rates. With declines in survey participation, these rates become increasingly important for understanding collection outcomes and reasons for non-participation.

While interim disposition codes are by nature temporary, the history of interim dispositions should be maintained. That is, while interim dispositions can be updated, they should not be overwritten. Maintaining a disposition history allows for appropriate assignment of final dispositions. Maintaining a history of dispositions resulting from contact attempts can also be useful for other purposes, such as modeling response propensities, or managing and prioritizing casework.

Table 2 below provides a list of some interim or temporary codes that generally do not have a final outcome complement. Other valid codes are provided later in tables for final outcome codes.

**Table 2. Interim disposition codes that do not have a final outcome complement.**

| Interim specific without final complement |
| --- |

| Description | Code | Definition |
|---|---|---|
| Not yet attempted or worked | | Case has been selected as part of collection sample and contact information has been verified or is determined to be complete. Contact attempts have not yet been made with the establishment. |
| Contact | | |
| Data collected, pending entry | | Data collection is complete with the establishment, but additional entry activity (i.e., data entry, keying, write-up entry, etc.) is required. |
| Specific appointment | | A specific date and time for a future contact has been scheduled with the establishment contact. |
| General appointment | | A general day or time range was provided by the establishment contact for a future contact. |
| Told to call back | | Contact (known or gatekeeper) said to call back at another time, but did not, or was unwilling to specify a best time. |
| Other mode requested | | A representative or respondent requested and alternative mode for providing paper, such as, paper (mail), web (online), or other available mode (e.g., such as electronic data exchange). |
| Non-contact | | |
| Prenotification (mail) | | Prenotification mailing/package sent to establishment – no contact yet received, or initiated by data collectors. |
| Initial mailing (mail) | | Initial mailing sent to establishment – no contact/response yet received, or initiated by data collectors (e.g., reminder follow-up). |
| Non-response follow-up (mail) | | Additional mailing sent to establishment – no contact/response yet received, or initiated by data collectors (e.g., reminder follow-up). |
| Initial email (web) | | Initial email sent to establishment – no contact/response yet received, or initiated by data collectors (e.g., reminder follow-up). |
| Non-response follow-up (email) | | Additional email sent to establishment – no contact/response yet received, or initiated by data collectors (e.g., reminder follow-up). |

## Final Disposition Codes

Final dispositions are provided in the tables that follow. As different collection stages are specified, statuses should remain separate between stages. This means that a case that requires all four stages should have a status for each stage, with the caveat that a case must achieve a complete status to be eligible for the subsequent stage. By maintaining statuses for each stage, various rates can be calculated in addition to response rates. Some examples are provided below.

- Proportion of cases completing address refinement
    - Proportion of cases completing address refinement by refinement source (secondary sources vs establishment contact)
    - Proportion of cases requiring updates to contact information
- Proportion of cases successfully enrolled
    - Proportion of cases successfully enrolled by contact type (existing or new)
- Proportion of cases completing collection (i.e., response rates)
    - Proportion of cases successfully completing collection by type
- Proportion of cases with usable data (and the inverse – proportion not usable)[7]
    - Proportion of cases requiring additional validation, or successfully validated (corrected)

The final dispositions are structured following the framework provided in AAPOR's Standard Definitions[8]. That framework allows for dispositions to be easily collapsed for calculating various outcome rates. This includes:

- Completes (1.X)
- Eligible (2.X)
- Unknown Eligibility (3.X)
- Not Eligible (4.X)

In the tables that follow, dispositions for Unknown Eligibility are limited. Unknown Eligibility occurs where a case is sampled, but information is not provided as part of the sample frame to determine eligibility and information must be collected from the sample unit to determine eligibility.

The sample frame source for an establishment survey may include information for determining eligibility at the time of selection. For example, selecting establishments within specific industries is only possible if these data are available on the sampling frame. While this information can be incorrect, or characteristics of the establishment have changed (e.g., changing industry; establishment is no longer in business), the establishments selected are known to be eligible at the time of selection.

Final disposition codes provided in the tables that follow are at the location level. For some surveys, there may be an additional level of sampling within an establishment. For

[7] Some surveys calculate an estimation rate, which reports on the proportion of sample units whose data was usable in contributing to published estimates.
[8] https://aapor.org/standards-and-ethics/standard-definitions/

example, specific occupations of employees, commodities, or services are selected and separately collected. These will require tracking dispositions at this second-level of sampling and those dispositions will determine the final disposition at the establishment level. The dispositions provided here can serve as guidance for second-level sample units, they do not fully cover dispositions currently in use for second-level samples.

## Final Dispositions – Completed

Table 3 below describes final dispositions codes by collection stage for various complete statuses.

**Table 3. Final disposition codes indicating status of complete by data collection stage.**

| **Address Refinement** | | |
|---|---|---|
| Description | Code | Definition |
| Refinement Completed | 1.0 | The case has completed the refinement stage and sufficient information is present for entering other stages. |
| No Review Necessary | 1.1.1 | All required information is present and there is a high degree of confidence the information for the case is current, known to be accurate, or was previously updated and no review or validation is required before continuing to other stages |
| Reviewed – no changes | 1.1.2 | Establishment contact information was reviewed and determined to be accurate and completed requiring no changes or updates to any information |
| Updated – changes confirmed through establishment contact | 1.1.3 | Establishment contact information was updated or added through a contact of the sampled establishment |
| Updated – changes made through secondary sources | 1.1.4 | Establishment contact information was updated or added through the use of secondary sources, such as public directories, or internet searches |
| Partial update | 1.2 | Some information was updated or added, but some information elements remain incomplete. Enough information was identified such that contact with the establishment can be initiated |

| **Initiation or Enrollment** | | |
|---|---|---|
| Description | Code | Definition |
| Complete (Enrolled) | 1.0 | The establishment was successfully enrolled and the establishment contact is prepared for data collection |
| Enrolled with listed contact | 1.1.1 | The establishment was successfully enrolled and the original contact for the establishment listed in address refinement is the contact for data collection |

| | | |
|---|---|---|
| Enrolled with new contact | 1.1.2 | The establishment was successfully enrolled and the contact for the establishment is different from address refinement, or a contact was not listed from address refinement. The new contact is the contact for data collection |

| **Data Collection** | | |
|---|---|---|
| Description | Code | Definition |
| Collection Complete | 1.0 | Collection for this establishment (for a single period – e.g., month) meets defined criteria for which information is obtained. Definitions should be created in advance that determine when sufficient information is collected to meet minimum requirements. |
| Complete | 1.1 | Information was collected on all sampled elements, or required elements. Definitions for sample elements can vary with some examples below:<br>• Data were collected on all sampled locations<br>• Data were collected for all sampled commodities or transactions<br>• Data were collected for measures identified as required or crucial.<br>This definition excludes completes due to special arrangement as outlined in 1.3. |
| Partial Complete | 1.2.1 | Information was collected on a predefined proportion of sampled elements, or required elements where a majority, but not all sampled elements were collected. Definitions for sample elements can vary with some examples below:<br>• Data were collected on 50% or more of sampled locations, but not all<br>• Data were collected for 50% or more of sampled commodities or transactions, but not all<br>• Data was collected for 50% or more of measures identified as required or crucial, but not all |
| Minimal Complete | 1.2.2 | Information was collected on a predefined proportion of sampled elements, or required data elements, where less than a majority of sampled elements were collected. Definitions for sample elements can vary with some examples below:<br>• Data were collected on less than 50% of sampled occupations, but not all |

| | | |
|---|---|---|
| | | • Data were collected for less than 50% of sampled commodities or transactions, but not all<br>• Data were collected for less than 50% of measures identified as required or crucial, but not all |
| Central Office Collection | 1.3 | Information is collected via special arrangement with the establishment, or by specified home office staff (e.g., "account managers"). Interviewer collection is avoided, due to establishment size, importance, or other extenuating factors that could affect establishment cooperation |

| **Post Processing** | | |
|---|---|---|
| Description | Code | Definition |
| Usable | 1.0 | The data passes all validation checks, or has been reconciled or corrected with establishment follow-up |
| Usable – Passed Validation | 1.1.1 | All data pass required validation checks, or do not raise any inconsistency flags |
| Usable – Data Validated | 1.1.2 | Flagged data or measures have been reconciled with the establishment and confirmed as correct or corrected |
| Usable – Validation Incomplete | 1.1.3 | Flagged data or measures could not be reconciled with the establishment, but are determined to be within acceptable limits of change. For example, if a measure changes more than expected, but the change coincides with external events (e.g., natural disaster, or other emergency) |
| Unusable[9] | 2.0 | Key data fail validation checks and establishment follow-up is not possible |

## Final Dispositions – Non-interview (Known Eligible)

Table 4 below describes final dispositions codes for initiation or enrollment and formal data collection stages when an interview was not obtained.

**Table 4. Final disposition codes for known eligible cases indicating a final status of non-interview for initiation, enrollment, and formal data collection stages.**

| **Initiation or Enrollment & Data Collection** | | |
|---|---|---|
| Description | Code | Definition |

[9] A case that fails data or validation checks and is unusable would normally return to the data collection stage and those dispositions would apply. This code is provided to address situations where it is not possible for a case to return to the data collection stage (for example, due to fielding period constraints).

| | | |
|---|---|---|
| Eligible, Not Completed | 2.0 | |
| Refusal and break-off | 2.1.0 | |
| Refusal | 2.1.1 | |
| Establishment-level Refusal | 2.1.1.1 | Refusal by someone other than the known contact, or the individual with access to data of interest (e.g., a gatekeeper). |
| Known Respondent Refusal | 2.1.1.2 | Refusal by the person identified in enrollment, or who is known to have access and ability to provide data |
| Logged on to survey, did not complete any items, or submit data or forms | 2.1.1.2.1 | (Web) |
| Other Implicit (Passive) Refusal | 2.1.1.3 | |
| Blank questionnaire or form returned | 2.1.1.3.1 | Postal (mail) survey or data requests |
| Broken appointment | 2.1.1.3.2 | Known or named respondent failed to keep a scheduled, firm appointment arranged previously. |
| Break-off | 2.1.2 | Respondent started data collection, but stopped, and the data collected is insufficient to meet partial or minimal complete categories. |
| Non-contact | 2.2.0 | |
| Known/Named respondent never available | 2.2.1 | Contact has been made (including email interactions) and the respondent identified (or previously identified), yet no data collected (and no refusal code is appropriate). |
| Phone answering device | 2.2.2 | No contact was made, but a phone answering device is reached that confirmed the number is for the correct establishment, or contact at the establishment |
| Answering machine – no message left | 2.2.2.1 | |
| Answering machine – message left | 2.2.2.2 | A message was left by the interviewer, with details on the purpose of the call, and an indication of another future call-back, or instructions on how to respond |
| Other non-contact / Unreachable | 2.2.3 | |
| Postal Non-Deliverable | 2.2.3.1 | (Postal / Mail) returned by post office (numerous reasons; e.g., delivery refused, return to sender, cannot be delivered, etc.) |
| Email undeliverable | 2.2.3.2 | (Web) |
| Phone Always Busy | 2.2.3.3 | (Telephone) |
| Phone Never Answered (Ring no answer) | 2.2.3.4 | (Telephone) |

| | | |
|---|---|---|
| Phone Technical Technological Barriers | 2.2.3.5 | (Telephone) - call-screening, call-blocking, or other telecommunication technologies that create barriers to getting through to a number |
| Non-working / Disconnected Number | 2.2.3.6 | (Telephone) – includes Fax/Data lines and numbers non-working or unable to connect |
| Phone – Other / Technical Issues | 2.2.3.7 | (Telephone) – technical phone problems, or phone company problems; other ambiguous operator messages |
| Unable to access establishment | 2.2.3.8 | (In-Person) unable to access establishment due to physical barriers: gate, guardhouse, locked doors, refused entry |
| Unable to locate establishment | 2.2.3.9 | (In-Person) – unable to locate establishment, or establishment address does not match expected physical location (e.g., mailbox center) |
| Other | 2.3.0 | |
| Unable to conduct interview due to technical issues | 2.3.1 | Data could not be collected due to poor audio quality, for example poor phone, or video interview quality and issues could not be reconciled during contact attempt |
| No longer with establishment | 2.3.2 | Known or named respondent is no longer with the establishment and a new contact is needed. |
| Wrong number | 2.3.3 | The phone number for the establishment contact is incorrect, and a new number is not available |
| Not attempted or worked | 2.4.0 | |

## Final Dispositions – Non-interview (Unknown Eligibility)

Table 5 below describes final dispositions codes for initiation or enrollment and formal data collection stages when an interview was not obtained and eligibility is unknown or undetermined.

**Table 5. Final disposition codes for unknown eligibility cases indicating a final status of non-interview for initiation, enrollment, and formal data collection stages.**

| **Initiation or Enrollment & Data Collection** | | |
|---|---|---|
| Description | Code | Definition |
| Unknown Eligibility, Not Completed | 3.0 | |
| No response | 3.1.0 | Supplemental information not available to determine eligibility |
| No screener completed | 3.2.0 | For establishment surveys where a screening interview is necessary for determining eligibility.<br><br>Note: lack of engagement in a targeted business activity does not necessarily indicate ineligibility. If |

| | | |
|---|---|---|
| | | seeking establishments engaged in hiring, a lack of hiring (or lack of information) would not be ineligible. While a business with no employees could be ineligible. |

## Final Dispositions – Not Eligible

Table 6 below describes final dispositions codes for initiation or enrollment and formal data collection stages when a case is determined to not be eligible.

**Table 6. Final disposition codes indicating a final status of not eligible for initiation, enrollment, and formal data collection stages.**

| Initiation or Enrollment & Data Collection | | |
|---|---|---|
| Description | Code | Definition |
| Not Eligible | 4.0 | |
| Out of Scope / Ineligible | 4.1.0 | |
| Industry | 4.1.2 | Business has changed industries or no longer operates in the industry for which it was selected. |
| Location | 4.1.3 | Business has moved or is located outside the area for which it was originally sampled (but within the U.S.) |
| Not in U.S. | 4.1.4 | Business is a foreign business outside of the U.S. or any sampled territories |
| Business sold | 4.1.5 | Business has been sold.<br><br>The sale of a business may not directly result in being not eligible. Circumstances that may result in being not eligible include the change in ownership, changes the industry or location, or the business is merged with another business. |
| No employees | 4.1.6 | The establishment is family owned, or does not have any employees, or occupations. For example, employees are all family members, or are leased through another firm. |
| Industry incorrect | 4.1.7 | The industry for which the establishment was sampled is determined to be incorrect upon verification with the establishment and establishment has not changed industries |
| Out of Business | 4.5 | The establishment location has ceased business operations with no intention of re-opening |
| Unreleased Replicates | 4.8.0 | For unreleased sample replicates |
| Duplicate | 4.8.1 | The establishment location is a duplicate of another listing, or the listing is part of another listing and should be reported as one unit. |
| Other | 4.9 | |

## Administrative and Alternative Data

Alternative data includes data that are collected from sources other than a sampled establishment. This generally includes administrative records, such as financial filings, tax records, employment records, or other business or government databases. With the proliferation of computing power and electronic data-generating and collection devices, administrative data have become a subset of a much broader data ecosystem. Examples of this include passive or event-type data, transactional data, or crowd-sourced data. The use of alternative data is not new to establishment surveys (see for example FCSM Statistical policy Working Paper 6 [1980]). It can be used in two primary ways. First, it has frequently been used in the development and maintenance of sample frames.

Second, and more relevant to this guide, it may be used to reduce the burden of collection on establishments (National Academies of Sciences, Engineering, and Medicine 2023). Specifically, researchers may link alternative data to the survey responses to reduce the number of questions the respondent must answer. With the availability and use of alternative data expected to grow, it can be tempting to include such data in the calculation of response rates. Researchers should avoid including data collected from sources other than the establishment in the calculation of response rates. While response rates are a good measure of survey production and only an *indicator* of the risk of bias (OMB 2016), including alternative data as collected data can be misleading and is generally not relevant as an indicator as a response metric. Further, the amount of data available may far exceed what can reasonably be collected through a survey, such as transaction data. Rather than subset to what was originally sampled, there may be good reasons and benefits to using all available data. However, this doesn’t signify 100 percent response or say anything about data quality.

There has been some limited work toward producing similar metrics that support alternative data collection. Trepanier, Julien, and Kovar (2005) shared work at Statistics Canada that produced direct collection rates for collected data and extraction rates for administrative data. This still restricts collection to what was sampled and provides the proportion of data that was available from the administrative records. They further the use of these rates to produce separate and combined estimation rates – a measure of the proportion of collected and extracted data that was usable.

Quality metrics for alternative data are beyond the scope of this report. There are several resources available to researchers that provide valuable guidance for evaluating the quality and fitness for use of administrative data. Researchers are directed to resources available through the Federal Committee on Statistical Methodology (FCSM), including a subcommittee report outlining a Data Quality Assessment Tool for Administrative Data (FCSM 2013), and the FCSM Framework for Data Quality (FCSM 2020).

## Calculating Outcome Rates from Final Disposition Distributions

In calculating and reporting outcome rates, researchers have several formulas available from which to choose. These formulas have different definitions and rules for handling partially completed cases and accounting for cases with unknown eligibility. Readers are referred to the formulas described in Section 7 of *Standard Definitions* for details on each formula. We direct readers to that report to ensure consistency and uniformity in the definition and application of reporting outcome rates. When reporting outcome rates, it is important to state exactly which rate was used. The outcome (disposition) data used should be provided in a table available upon request.

For reference we do provide the minimum response rate (denoted as Response Rate 1 [RR1] in Standard Definitions). We also provide an estimation rate, or the proportion of establishments for which data was not only collected, but the data was usable (i.e., used in estimation). Due to the complexity or sensitivity of the data provided by respondents to establishment surveys, they may fail to provide all requested data, or the data may be outside of what is known to be possible. For example, earnings, employment, or square footage may be outside of bounds known to be possible for a given business. An estimation rate allows researchers to report what proportion of data was usable – separate from response.

RR = Response rate

INA = Initiation or enrollment Rate

EST = Estimation rate

I = Complete interview (1.1, 1.3)

P = Partial interview (1.2)

R = Refusal and break-off (2.1)

NC = Non-contact (2.2)

O = Other (2.3)

U = Unknown if sampled unit is eligible (3.0)

Response Rate 1 (RR1), or the minimum response rate, is the number of complete interviews divided by the number of interviews, plus the number of non-interviews (refusal and break-off plus non-contacts plus others), plus all cases of unknown eligibility.

$$RR1 = \frac{I}{(I + P) + (R + NC + O) + U}$$

Estimation rates complement response rates by providing a direct measure of the analytic sample used for estimation. These rates are particularly important in establishment surveys where multi-item reporting and partial data submissions are common. Importantly, however, estimation rates are not a substitute for response rates.

$$EST = \frac{I_{est}}{(I + P) + (R + NC + O) + U}$$

In the formula above, $I_{est}$ is inclusive of all completed cases that will be used in estimation. The values indicated in the denominator would match those defined for response rates. The same formulas above would apply for determining initiation or enrollment rates.

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