

Waste Management Industry Survey: Business Sector

- Data Accuracy -

The accuracy of data collected in a census survey is affected by non-sampling error. Examples of non-sampling error include coverage error, data response error, non-response error, and processing errors. Every effort is made to reduce these types of errors including verification of keyed data, consistency and validity edits, extensive follow up and consultation with government departments and industry associations.

Coverage errors occur as a result of an incomplete listing of in scope waste management businesses and misclassification of businesses. These errors are reduced if the survey is repeated at regular intervals and with sufficient frequency. Information collected on the questionnaire such as the waste management activity/service provided by the company helps eliminate misclassified businesses. Exclusion of some waste management activity is unavoidable especially if waste is managed on site. For example, industries that are not classified as waste management businesses may handle their own waste on site however these would not be included on our list of surveyed units. The mailing list for the waste management survey is well maintained and businesses are added and removed accordingly during each cycle of the survey.

Data response error occurs when a respondent misinterprets a question or an answer is incorrectly entered on the questionnaire. Questionnaire design is an important consideration to reduce this type of error. Feedback from respondents and the editing process identify areas on the questionnaire that are difficult to answer or are consistently answered incorrectly. Changes to questions are made to facilitate a good response. Respondents also become familiar with definitions and the information required after being surveyed regularly. The validity of data collected is assessed by comparing responses to trends of other data collected in the survey. For example, an increase in expenses associated with running a disposal facility would be justified by an increase in the amount of waste entering the facility. Economic trends are also considered. For example, an increase in economic activity and an active housing market are factors that affect waste generation.

Non response occurs when respondents refuse to answer the survey, are not located or are too late in responding to the survey. The overall response rate, based on the ratio of the number of completed and partially completed questionnaires to the total number of in-scope questionnaires, was 70%. An alternative response rate of 77% was calculated based on total revenues for the waste management business sector. Imputation was used to fill in the missing responses to certain questions. The imputation rate for total operating revenues, total operating expenditures and capital expenditures was 18%, 18% and 5% respectively. Data concerning waste disposal and recycling is manually imputed with data obtained through provincial and local government contacts, industry experts and publicly available sources such as the internet.

Processing errors occur at various stages of data processing such as data entry, editing and tabulation. Automated edits are performed at data entry and manual edits are performed on the data file before dissemination. Comparisons to historical responses are also made to eliminate outliers or flag large changes in reported values for follow up.