

Minnesota Manufacturing Business Conditions Survey Methodology – Summer 2002

The February 2002 Harris Info Source Selectory of Minnesota Manufacturers provided the population of 9,612 manufacturing businesses for the survey. Businesses were categorized by size (i.e., small with less than 50 employees, medium with 50 to 249 employees and large with 250 or more employees). These categories created three groups of manufacturers where independent, random samples were taken.

Since almost 80 percent of all manufacturing businesses are small (less than 50 employees), it is very likely that a simple random sample would draw mostly small businesses and very few large businesses. Yet, 51 percent of manufacturing jobs are provided by the few large businesses, compared to only 18 percent of jobs provided by all small businesses. Hence, stratified random sampling was utilized by drawing independent samples from each of the three groups. Each group consisted of 330 randomly chosen businesses for a total sample of 990 businesses.

Two mailings of a post card survey were sent to each of the selected businesses. The first mailing was on August 13th and the second mailing went out to businesses that had not responded by August 29th. The cutoff for survey responses was September 17^h. A total of 246 usable surveys were received, for a response rate of 25 percent. Of the usable surveys, 27 were from respondents indicating that their specific location had no manufacturing on site. An additional 54 surveys were returned as undeliverable or were unusable.

Survey results were tabulated for all manufacturers and for the three groups of manufacturers which reflect business size. The two sets of results reflect: 1) Results representative of manufacturing businesses, where each business in the population was considered equally; and 2) Results representative of employment at Minnesota's manufacturing businesses. Weighting for the first set of results simply re-balanced the results to account for the stratified sampling. These results are reflective of Minnesota's manufacturing businesses, with each business being considered as an equal to all others.

Weighting for the second set of results was based on employment at the respondent's site. Small, medium and large businesses were weighted according to their size group's representation of employment among Minnesota's manufacturers. For example, while large businesses accounted for a total of only four percent of the weight in the first set of results (i.e., business weights), they account for 50 percent of the weight in the second set of results (i.e., employment weights). These results are more reflective of Minnesota's overall manufacturing business conditions.

Confidence intervals for sampling error were calculated. The 95 percent confidence interval for the table of results for all manufacturers is plus or minus 6.5 percentage points. Results are also subject to errors introduced by other factors such as the wording of questions and differences between survey respondents and non-respondents.