

Survey: Have you ever been hit with a computer virus?

The world in which we live is now saturated with surveys. Surveys are essential tools used in marketing. Surveys determine what television shows we watch. Surveys guide political candidates. Surveys shape business practices and many other aspects of our lives. Surveys provide us with understanding about the thinking of the rest of the world. Let's consider one particular survey dealing with a topic of great concern to all of us who have embraced the use of computer technology. The survey question and responses are given below, and Figure 1-1 graphically depicts the survey results. (Figure 1-1 was generated using Minitab statistical software.)

"Have you ever been hit by a computer virus?"

- Yes: 106,685
- No: 63,378

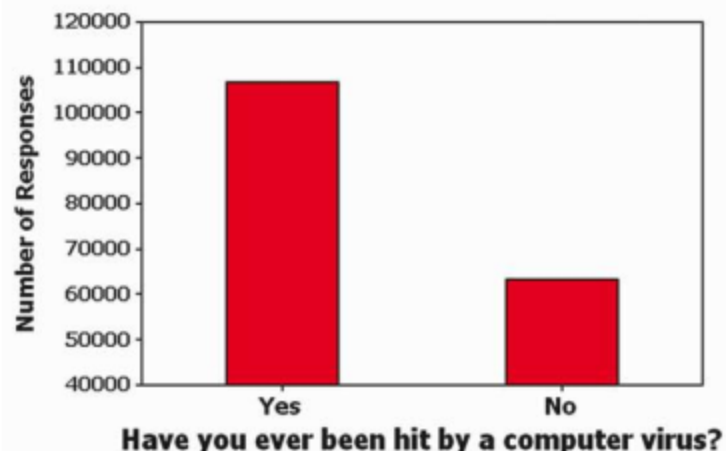


Figure 1-1 Survey Results

- 1-1** Review and Preview
- 1-2** Statistical and Critical Thinking
- 1-3** Types of Data
- 1-4** Collecting Sample Data

The results of the survey appear to be quite dramatic. The total number of respondents is 170,063 adults, and that is a very large number of respondents. Many polls have only about one thousand or two thousand respondents. Also, by looking at the bars in Figure 1-1, we see that roughly three times as many respondents have been hit by computer viruses as have not been hit. One important objective of this text is to encourage the use of critical thinking so that such results are not blindly accepted. We might question whether the survey results are valid. Who conducted the survey? How were respondents selected? Does the graph in Figure 1-1 depict the results in a way that is not misleading?

The survey results presented here have two major flaws. Because these two flaws are among the most common, it is especially important to recognize them. Following are brief descriptions of each of the two major flaws.