

AE**Additional Exercises****Exercises**

1. Jakob Nielsen, a website consultant, recently conducted an eye-tracking survey to determine whether people ignore purely decorative images when viewing web pages. An aspect of the study compared a set of products on Pottery Barn's furniture website and a page of televisions on Amazon.com. The study found that consumers tended to ignore the televisions on Amazon.com because they were generic, making the product image less inviting. When consumers viewed Pottery Barn's website, they were more inclined to view the photos of the bookcases for longer periods of time because they were images of the actual products for sale.

Source: New York Times

- a. Identify the population of interest.
 - b. What characteristic of the population is being measured?
 - c. Is the purpose of the data collection to perform descriptive or inferential statistics?
2. A recent study at Britain's Oxford and Exeter Universities explored whether a woman's diet before conception affects the gender of her child. Researchers studied the eating habits of 740 women during their first-time pregnancies and found that higher caloric intake prior to conception can significantly increase the chances of having a son while more restricted diets are more likely to produce daughters. They found that high potassium diets (eating bananas) and calcium rich diets (cereal and milk) were associated with having a baby boy. Researchers concluded that eating a bowl of cereal for breakfast can increase the chances of a male birth. "Of women eating cereals daily, 59 percent had boys, compared with only 43 percent who bore boys in the group eating less than a bowlful per week."

Source: CNNHealth.com

- a. Identify the population of interest.
 - b. What characteristic of the population is being measured?
 - c. Identify the sample.
 - d. Is the purpose of the data collection to perform descriptive or inferential statistics?
 - e. What are some problems that could be associated with collecting data in this study?
3. Researchers at The Ohio State University and Zeppelin University Friedrichshafen, in Germany, recently conducted a study regarding the elderly and negative news coverage. The researchers presented 276 subjects with several stories (with photos) about either old or young people. Participants were presented with one of two versions of each story. In one version the main character was painted in a positive light and in the other the same character was described negatively. After the participants finished reading their self-esteem was measured. The study found that older readers were more inclined to read the negative stories about youth. In addition, they found that the more negative stories older people read about younger individuals, the higher their self-esteem tended to be. This could explain the prominence of negative media coverage on networks with an older audience such as Fox News and MSNBC.

Source: Huffpost Media

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- e. Is the purpose of this study to perform descriptive or inferential statistics?

4. Researchers at Pepperdine University's Graziadio School of Business and Management recently conducted a study to determine whether the capital crunch is affecting small businesses' abilities to expand. The companies studied included alternative lenders, venture capitalists, and private equity firms, among others. The project surveyed 559 privately held businesses and 1430 lenders and investors nationwide. The study found that 78 percent of businesses had solid growth strategies but only 40 percent had access to the resources needed to grow. Lenders and investors rejected 90 percent of loan applications or investment proposals that would be secured by a business's real estate holdings and 73 percent of loan applications or investment proposals that are based on a business's cash flow. According to the survey author John Paglia, "The study shows private business owners feel they are being constrained by access to financial capital. Owners currently expect a 10 percent revenue growth over the next 12 months. If they were to receive additional capital, they estimate their revenue growth rate to jump to 25 percent."

Source: smallbiztrends.com

- a. Identify the population of interest.
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 - c. Identify the sample.
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5. Ruder Finn, one of the world's largest independent public relations agencies, recently announced the *Mobile Intent Index* which studies mobile phone user habits and explores the underlying reasons that people have for accessing the internet on mobile devices. The *Mobile Intent Index* asked 500 American adults 18 years of age and older how often they use their mobile phones to access the internet for 295 reasons. The study found that 91% of mobile phone users go online to socialize compared to 79% of desktop users. In addition, 60% of mobile internet users go online to manage finances compared to only 45% of desktop users. They also found that mobile users were less likely to use the internet for educational purposes, only 42% compared to 92% of desktop users. Finally, unsurprisingly, mobile phones are not used for creative purposes; only 42% of mobile users personally express themselves online compared to 54% of desktop users.

Source: PR Newswire

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 - e. Is the purpose of this study to perform descriptive or inferential statistics?
6. A personnel director is interested in determining how effective a new reading course will be in improving the reading comprehension of her company's employees. The director randomly selects twenty employees and determines the average reading comprehension both before and after instruction in the reading course.
- a. Identify the population.
 - b. What characteristic of the population is being measured?
 - c. Identify the sample.
 - d. Is the purpose of the data collection to perform descriptive or inferential statistics?

7. In 2009 and 2010 the market research firm Chadwick Martin Bailey conducted several studies to provide insights into recent dating behavior in the United States. The data were collected through research via an online Consumer Research Panel. In the “Marriage Survey” (a survey of recently married people), 7000 adults 18 years of age and older who were married in the past 5 years were polled. The study found that 17% of couples married within the last 3 years met each other on an online dating site. This is compared to 26% that met their significant other through a friend or family member, 36% who met through work or school, 4% who met through a church or place of worship, 11% who met through bars, clubs, or social events, and 7% who met in some other manner.

Source: Chadwick Martin Bailey/Match.com

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 - c. Identify the sample.
 - d. What are some problems that could be associated with this study?
8. In a recent study, seat belt users were found to have 20% fewer fatalities than those who do not wear seat belts. Do these results prove that seat belts reduce the chances of a fatality?
9. States having an abundance of coastline have an obvious advantage over landlocked states, or states with little coastline, in that their economies may profit from an extensive fishing industry, tourism, shipping, or other water related activities. Alaska, the leader by far in miles of coastline, has a total of 6640 miles, of which 5580 miles border the Pacific Ocean and 1060 miles border the Arctic. Florida, the leader in the continental United States, has a total of 1350 miles with 580 miles on the Atlantic Ocean and 770 miles on the Gulf of Mexico. Of all states with some coastline, New Hampshire, with 13 miles of coastline, is in last place.
- a. Identify the population.
 - b. What characteristic is being measured?
10. A young actuary (statistician usually working in the insurance industry) has been asked to summarize the number of automobile accident claims by region for his company. He randomly selects 50 automobile accident claims which his company has settled in the last year and counts the number of accidents in each region: North, South, East, and West. He summarizes the counts by region in a chart and gives the results to his supervisor.
- a. Identify the population.
 - b. What characteristic of the population is being measured?
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