INSTRUCTOR'S SOLUTIONS MANUAL

JAMES LAPP

STATISTICAL METHODS FOR THE SOCIAL SCIENCES

FIFTH EDITION

Alan Agresti

University of Florida

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Chapter 1: Introduction

1.1. (a) an individual Prius (automobile)

(b) All Prius automobiles used in the EPA tests.

(c) All Prius automobiles that are or may be manufactured.

1.2. (a) all 7.3 million voters is the population. The sample is the 1824 voters surveyed.

(b) A statistic is the 60.5% who voted for Brown from the exit poll sample of size 1824; a parameter is the 60.0% who actually voted for Brown.

1.3. (a) all students at the University of Wisconsin

(b) A statistic, since it's calculated only for the 100 sampled students.

1.4. The values are statistics, since they is based on the 1028 adults in the sample.

1.5. (a) all adult Americans

(b) Proportion of all adult Americans who would answer definitely or probably true.

(c) The sample proportion 0.523 estimates the population proportion.

(d) No, it is a prediction of the population value but will not equal it exactly, because the sample is only a very small subset of the population.

1.6. (a) The most common response was 2 hours per day.

(b) This is a descriptive statistic because it describes the results of a sample.

1.7. (a) A total of 85.7% said "yes, definitely" or "yes, probably."

(b) In 1998, a total of 85.8% said "yes, definitely" or "yes, probably."

(c) A total of 74.4% said "yes, definitely" or "yes, probably." The percentages of yes responses were higher for HEAVEN than for HELL.

1.8. (a) Statistics, since they're based on a sample of 60,000 households, rather than all households.

(b) Inferential, predicting for a population using sample information.

1.9. The correct answer is (a).

1.10.

Race	Age	Sentence	Felony?	Prior Arrests	Prior Convictions
white	19	2	no	2	1
black	23	1	no	0	0
white	38	10	yes	8	3
Hispanic	20	2	no	1	1
white	41	5	yes	5	4

1.11. (a) There are 60 rows in the data.

(b) Answers will vary.

1.12. Answers will vary.

1.13. Answers will vary.

1.14. (a) A statistic is a numerical summary of the sample data, while a parameter is a numerical summary of the population. For example, consider an exit poll of voters on election day. The proportion voting for a particular candidate is a statistic. Once all of the votes have been counted, the proportion of voters who voted for that candidate would be known (and is the parameter).

(b) Description deals with describing the available data (sample or population), whereas inference deals with making predictions about a population using information in the sample. For example, consider a sample of voters on election day. One could use descriptive statistics to describe the voters in terms of gender, race, party, etc., and inferential statistics to predict the winner of the election.

1.15. If you have a census, you do not need to use the information from a sample to describe the population since you have information from the population as a whole.

1.16. (a) The descriptive part of this example is that the average age in the sample is 24.1 years.

(b) The inferential part of this example is that the sociologist estimates the average age of brides at marriage for the population to between 23.5 and 24.7 years.

(c) The population of interest is women in New England in the early eighteenth century.

1.17. (a) A statistic is the 78% of the sample of subjects interviewed in the UK who said yes.

(b) A parameter is the true percent of the 50 million adults in the UK who would say yes.

(c) A descriptive analysis is that the percentage of yes responses in the survey varied from 56% (in Denmark) to 95% (in Cyprus).

(d) An inferential analysis is that the percentage of adults in the UK who would say yes falls between 75% and 81%.

1.18. Answers will vary.

1.19. Answers will vary.