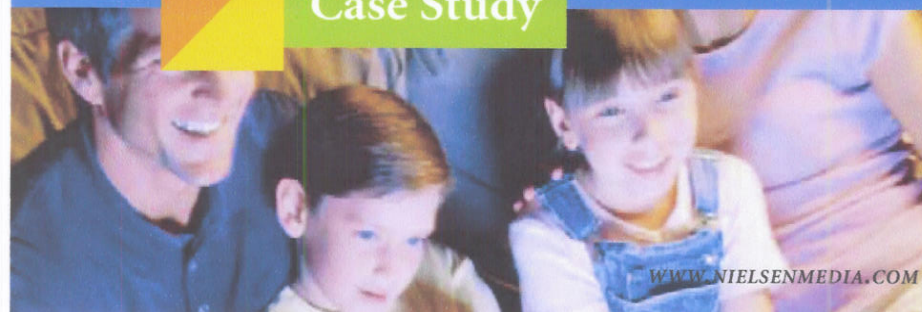


## Case Study



### Rating Television Shows in the United States

Nielsen Media Research has been rating television programs for nearly 50 years. Nielsen uses several sampling procedures, but its main one is to track the viewing patterns of 5000 households. These contain over 13,000 people and are chosen to form a cross section of the overall population. The households represent various locations, ethnic groups, and income brackets. The data gathered from the Nielsen sample of 5000 households are used to draw inferences about the population of all households in the United States.

TV programs viewed by all households in the United States (108.4 million households)

TV programs viewed by Nielsen sample (5000 households)

#### Top-Ranked Programs in Prime Time for the Week of 3/08/04 – 3/14/04

Rank	Rank last week	Program name	Network	Day, Time	Rating	Share	Audience
1	3	<i>CSI</i>	CBS	Thu., 9:00 P.M.	16.8	25	27,402,000
2	1	<i>American Idol–Tuesday</i>	FOX	Tue., 8:00 P.M.	14.5	22	24,569,000
3	7	<i>American Idol–Wednesday</i>	FOX	Wed., 8:30 P.M.	13.0	20	22,023,000
4	9	<i>Without a Trace</i>	CBS	Thu., 10:00 P.M.	13.0	22	19,683,000
5	2	<i>Survivor</i>	CBS	Thu., 8:00 P.M.	12.6	20	22,630,000
6	4	<i>Apprentice</i>	NBC	Thu., 9:00 P.M.	12.3	18	19,207,000
7	8	<i>Everybody Loves Raymond</i>	CBS	Mon., 9:00 P.M.	10.8	17	16,692,000
8	11	<i>Friends</i>	NBC	Thu., 8:00 P.M.	10.8	17	16,572,000
9	14	<i>Will &amp; Grace</i>	NBC	Thu., 8:30 P.M.	10.4	16	15,611,000
10	5	<i>CSI: Miami</i>	CBS	Mon., 10:00 P.M.	10.3	17	15,382,000

#### Exercises

- Rating Points** Each rating point represents 1,084,000 households, or 1% of the households in the United States. Does a program with a rating of 8.4 have twice the number of households as a program with a rating of 4.2? Explain your reasoning.
- Sampling Percent** What percentage of the total number of U.S. households is used in the Nielsen sample?
- Nominal Level of Measurement** Which columns in the table contain data at the nominal level?
- Ordinal Level of Measurement** Which columns in the table contain data at the ordinal level? Describe two ways that the data can be ordered.
- Interval Level of Measurement** Which column in the table contains data at the interval level? How can these data be ordered? What is the unit of measure for the difference of two entries in the data set?
- Ratio Level of Measurement** Which three columns contain data at the ratio level?
- Share** The column listed as “Share” gives the percentage of televisions in use at a given time. Does the Nielsen rating rank shows by rating or by share? Explain your reasoning.
- Inferences** What decisions (inferences) can be made on the basis of the Nielsen ratings?