

Chapter Review

Case Problem All-Time Movie Box-Office Data

The motion picture industry is an extremely competitive business. Dozens of movie studios produce hundreds of movies each year, many of which cost hundreds of millions of dollars to produce and distribute. Some of these movies will go on to earn hundreds of millions of dollars in box office revenues, while others will earn much less than their production cost.

Data from 50 of the top box-office-receipt-generating movies are provided in the file *Top50Movies*. The following table shows the first 10 movies contained in this data set. The categorical variables included in the data set for each movie are the rating and genre. Quantitative variables for the movie's release year, inflation- and noninflation-adjusted box-office receipts in the United States, budget, and the world box-office receipts are also included.



Title	Year Released	U.S. Box-Office Receipts (inflation-adjusted millions \$)	Rating	Genre	Budget (noninflation-adjusted millions \$)	World Box-Office Receipts (noninflation-adjusted millions \$)	U.S. Box-Office Receipts (noninflation-adjusted millions \$)
<i>Gone with the Wind</i>	1939	1,650	G	Drama	3	391	199
<i>Star Wars</i>	1977	1,426	PG	Scifi/fantasy	11	798	461
<i>The Sound of Music</i>	1965	1,145	G	Musical	—	163	163
<i>E.T.</i>	1982	1,132	PG	Scifi/fantasy	—	757	435
<i>Titanic</i>	1997	1,096	PG-13	Drama	200	2,185	659
<i>The Ten Commandments</i>	1956	1,053	G	Drama	14	80	80
<i>Jaws</i>	1975	1,029	PG	Action	12	471	260
<i>Doctor Zhivago</i>	1965	973	PG-13	Drama	11	112	112
<i>The Jungle Book</i>	1967	871	G	Animated	—	206	142
<i>Snow White and the Seven Dwarfs</i>	1937	854	G	Animated	1	185	185

Managerial Report

Use the data-visualization methods presented in this chapter to explore these data and discover relationships between the variables. Include the following in your report:

1. Create a scatter chart to examine the relationship between the year released and the inflation-adjusted U.S. box office receipts. Include a trendline for this scatter chart.

What does the scatter chart indicate about inflation-adjusted U.S. box office receipts over time for these top 50 movies?

2. Create a scatter chart to examine the relationship between the budget and the noninflation-adjusted world box office receipts. (*Note:* You may have to adjust the data in Excel to ignore the missing budget data values to create your scatter chart. You can do this by first sorting the data using Budget and then creating a scatter chart using only the movies that include data for Budget.) What does this scatter chart indicate about the relationship between the movie's budget and the world box office receipts?
3. Create a frequency distribution, percent frequency distribution, and histogram for inflation-adjusted U.S. box office receipts. Use bin sizes of \$100 million. Interpret the results. Do any data points appear to be outliers in this distribution?
4. Create a PivotTable for these data. Use the PivotTable to generate a crosstabulation for movie genre and rating. Determine which combinations of genre and rating are most represented in the top 50 movie data. Now filter the data to consider only movies released in 1980 or later. What combinations of genre and rating are most represented for movies after 1980? What does this indicate about how the preferences of moviegoers may have changed over time?
5. Use the PivotTable to display the average inflation-adjusted U.S. box-office receipts for each genre–rating pair for all movies in the data set. Interpret the results.

Chapter 3: Data Visualization Case Problem All-Time Movie Box-Office Data

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