

Chapter 2: Descriptive Statistics: Tabular and Graphical Displays

1. Tabular and graphical summaries for each of the four variables along with a discussion of what each summary tells us about the motion picture industry.

	Opening Gross sales	Total Gross Sales	Number of Theatres	Weeks in Release
Mean	24.47402	88.86713	3101.31	14.70115
Standard Error	2.844045	6.962449	64.62591	0.563791
Median	19.06	70.66	3118	15
Mode	N/A	35.06	3555	16
Standard Deviation	26.52748	69.94141	602.7903	5.258691
Sample Variance	703.7073	4217.386	363356.2	27.65384
Kurtosis	12.04667	4.648255	1.529809	9.166315
Skewness	3.112373	1.953341	-0.78531	2.003665
Range	168.59	351.87	3337	37
Minimum	0.6	29.14	1038	6
Maximum	169.19	381.01	4375	43
Sum	2390.24	7731.44	269814	1279
Count	87	87	87	87
Confidence Level(95.0%)	5.653774	13.84089	128.4721	1.120779

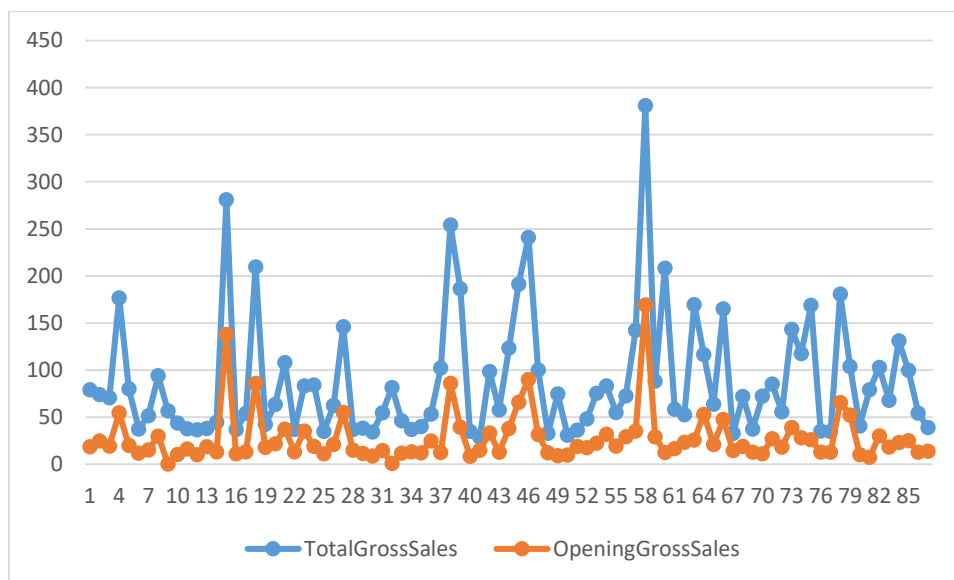
The opening gross sales for the year had a mean of \$27,474,020 which was quite a high figure. The median was \$19,060,000. The standard deviation was at \$26,527,480 which was lower than the mean value.

For the total gross sales, the mean for the year was at \$88,867,130 which was more than three times the mean of the opening gross sales. The median was recorded at \$ 70,660,000 while the mode was \$35,060,000. The standard deviation was at \$69,941,410.

The mean for the number of theatres where the movies were played was 3,101, with a median and mode of 3,118 and 3,555 respectively. The standard deviation was 602.7903.

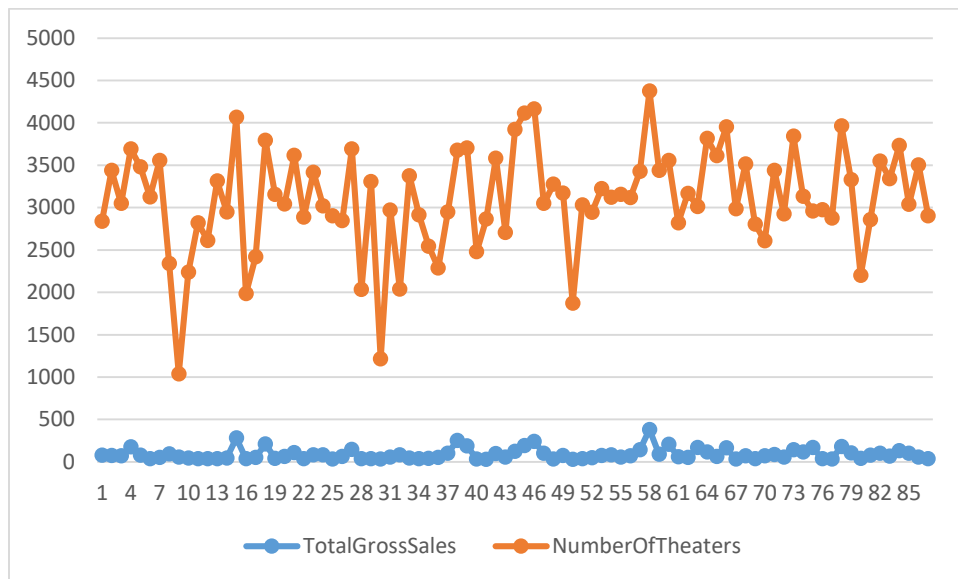
For all the movies, the mean for the weeks in release was 14.7. The median was 15 while the mode was 16. The range was 37 while the standard deviation was 5.258691. The maximum number was 43 and the minimum at 6.

2. A scatter diagram to explore the relationship between Total Gross sales and Opening Weekend Gross Sales. Discuss



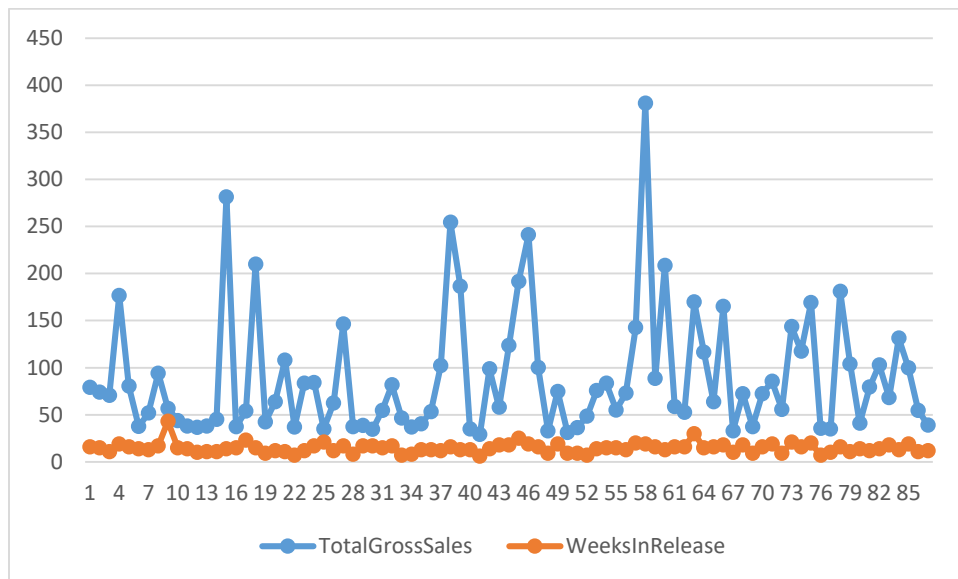
The total gross sales and the Opening weekend gross sales seemed to have a significant relationship. For the movies that recorded high opening gross sales, the same was realized in the total gross sale. For the movies that happened to record lower opening gross sales, their total gross sales were also low but higher than the opening gross sale. One example would be the Harry Potter movie which recorded \$169,190,000 at the opening gross sale while for the total gross sale it recorded \$381,010,000. All the movies recorded higher total gross sales as compared to the opening gross sales.

3. A scatter diagram to explore the relationship between Total Gross sales and number of theatres.
Discuss



The relationship between the total gross sales and number of theatres was significant. The higher the number of theatres that a movie played in translated into a higher number in terms of total gross sales. For the movies that had lower number of theatres, their total gross sales were also low. In the movie courageous, the number of theatres was 1214 which resulted into a total gross sale of \$34,520,000 while for a movie like the Twilight Saga, it had 4066 theatres and the total gross sales were \$281,290,000.

4. A scatter diagram to explore the relationship between Total Gross sales and Number of weeks in release. Discuss.



For the relationship between total gross sales and number of weeks in release, the movies that recorded higher number of weeks also did happen to record slightly higher total gross sales as compared to those that had lower number of weeks in release. Additionally, with an increased number of weeks in release, it would translate that more theatres and people would have access hence higher sales. In the movie Priest which had only 6 weeks in release, its total gross sale was \$29,140,000. On the other hand, Rise of the Planet of the Apes had 19 weeks in release and a total gross sale of \$176,760,000.

Chapter 3 Descriptive Statistics: Numerical Measures

1.Descriptive Statistics for each of the four variables along with a discussion of what the descriptive statistics tell us about the motion picture industry.

	Opening gross sales	Total gross sales	Number of theatres	Weeks in release
Mean	27.47402	88.86713	3101.31	14.70115
Median	19.06	70.66	3118	15
Mode	N/A	35.06	3555	16
Standard Deviation	26.52748	64.94141	602.7903	5.258691

The motion picture industry made a mean of \$27,474,020 at the opening gross sale and \$88,867,130 as the total gross sale. This translated that the industry was able to record high total gross sales despite a slight lower opening gross sale. The average number of theatres was 3101 while their median and mode were 3118 and 3555 respectively. In terms of weeks in release, the motion pictures industry has a mean of 14.7, a median of 15 and a mode of 16 weeks.

2. What motion pictures, if any, should be considered high performance outliers? Explain.

The Twilight saga and Harry Potter would be classified as high performance outliers. Both of the movies had high values that were more than the means for the opening gross sale, total gross sales and number of theatres. Twilight saga had \$138,120,000 for opening gross sale, \$281,290,000 for total gross sales and 4066 number of theatres. For Harry Potter, it had \$169,190,000 for opening gross sale, \$381,010,000 for total gross sale and 4375 number of theatres.

3. Descriptive statistics showing the relationship between total gross sales and each of the other variables.

TABLE OF COEFFICIENTS				
	OpeningGrossSales	TotalGrossSales	NumberOfTheaters	WeeksInRelease
OpeningGrossSales	1			
TotalGrossSales	0.880772939	1		
NumberOfTheaters	0.632101003	0.629363924	1	
WeeksInRelease	0.162043572	0.338993041	-0.050074872	1

For the relationship between the total gross sales and each of the other variables, the coefficient correlation method was the best fit to determine the significance of the relationship that did exist. For all the variables, there existed a close relationship with some slightly higher than others. The r values were;

Total gross sales and opening gross sale = 0.880772939

Total gross sales and number of theatres = 0.629363924

Total gross sales and weeks in release = 0.338993041

Given that all the r values were positive, it meant that as one value increased, the other value increased. This is conclusive of the analysis which concluded that higher number of variables was matched with higher total gross sales.