2.

a. Study population of interest- All soccer players

b. Sample used by psychologist- 60 male soccer players with ages between 14-29 who played up to five times a week.

c. Two variable of interest- IQ (Response Variable), group of players grouped according to number of average headers a game (Explanatory Variable) we should be able to draw a graph between these variables to run our statistical analysis

d. The variable IQ is Quantitative, whereas the groups are Qualitative or categorical. Because it is not number of people with IQs 103 oe 112, they are group of players

e. The statistics describes the variation in the Average IQ of players along with the number of times they head the ball on average per game. We have to generalize it to all players not limit statistics to the sample space

f. Population Parameter: Average IQ of all soccer players.

Sample Statistics: Average IQ of sample of soccer players.

g. The response variable in this case(IQ), decreases with an increase in the Explanatory variable (average number of headers per game). The relationship is linear (form), with negative association (negative slope or direction). Since the number of observations about which the information is provided is only two, the strength of the relation is strong. We have to visualize a graph with IQ on x-axis and group of players on y-axis

3.

a. Study population of interest- Cleaning Crew of boutique hotels

b. The sample for this example consists the data about the number of occupied rooms and number of crew members each in 53 hotels.

c. Two variables- Number of occupied rooms (Explanatory Variable), number of crew members (Response Variable)

d. Both are Quantitative variables.

e. The statistics of our interest is the variation of the crew members (who are required to clean the occupied rooms) with the variation in the number of occupied rooms.

f. the histograms only show the variation of number of crew, number of occupied rooms separately across different boutiques but they do not provide a direct relation between the variation of Response Variable(number of crew members) and Explanatory Variable(Number of rooms occupied).

g. A graph is plotted to show the variation of number of crew across the variation of number of occupied rooms. The graph shows a moderately strong, positive linear association i.e. the number of crew members is found to increase with the increase in the number of occupied reasons, this graph will help us to approximately predict the number of crew members that are required to assist a given number of occupied rooms.

4. a.