Aegis Home Inspections Inc.

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Background

       Aegis Inc. is a home inspection firm based in the Northern Virginia area. The President of the company, Ms. Rose Wilson, is concerned about the morale of the sales team. Ms. Wilson had contracted a local firm to survey the employees of Aegis Inc. and the results were delivered to her in an EXCEL spreadsheet. She has tasked her Vice President of Human Resources, Mark Wolfe, to analyse the results of the survey and to report the results to her. Ms. Wilson told Mark that she was concerned about the attitudes of the sales force. In addition to the questions that were asked some additional data were recorded: the most recent base annual salary, commission and total pay, the years of seniority, the sales region of the individual, the gender (0=male, 1=female) and the number of contracts written in the pay period.

The survey instructions indicated that the first 5 questions were measured using a 5-point scale using the following key: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree. The questions were as follows:

Q1:   Aegis Inc. has a good mentoring program
Q2:   Aegis Inc. is committed to delivering good value to customers
Q3:   Aegis Inc. has very traditional and conservative values
Q4:   Aegis Inc. company practices favor men
Q5:   Aegis Inc. has a lot of internal power politics.

The final question used a 1-10 scale:
Q6:   On a numeric scale, where 0 means totally autocratic and 10 means totally democratic, how would you rate the management style at Aegis Inc.?

There are only 2 divisional managers for Aegis Inc. The geographic regions of the sales team are as follows:

Region Number	Divisional Manager	Area	Size of Sales Force
1	A	South East	60
2	A	North East	93
3	A	Midwest	59
4	B	South West	49
5	B	Mountain States	80
6	B	West Coast	67
		Total	408

Region 4 was only established eight months ago. Prior to that time, the branches were part of Regions 1, 5 and 6.

INSTRUCTIONS

As a group: Answer the following questions involving Descriptive Statistics

1) Determine the mean, mode, median, variance, standard deviation, high value, low value and range for years of seniority, base salary, commission and total salary for your SAMPLE. Save yourself some work here by using the Excel Descriptive statistics function.

2) Determine the mean, mode, median, variance, standard deviation, high value, low value and range for years of seniority, base salary, commission and total salary for the POPULATION. Save yourself some work here by using the Excel Descriptive statistics function.

3) Briefly explain the differences between the population and your sample. Discuss. I am looking for a paragraph or so here of prose. I would expect more than a few sentences.

4) Briefly explain the similarities between the population and your sample. Discuss. I am looking for a paragraph or so here of analysis. I would expect more than a few sentences.

5) Is there a difference between your sample and the population in how the sales force is distributed within the regions? (Is the number of sales people in each of your sample regions proportionally the same as in the total population?) The best way to answer this is to set up a table of the regions in the population and the sample. The table would show how many people are associated with each region. Does the sample mimic the population? Discuss. Again, I am looking for analysis here so I would expect more than a few sentences.

Answer the following questions involving Inferential Statistics

6) Is there a relationship between years of seniority and base pay for the sample? The population? (Hint: Use a Scatter chart- the scatter chart is required and should be displayed for this question.) If you determine if there is a relationship comment if the relationship is linear, curvilinear or something else. Does it change as the values change? Discuss fully.

7) Is there a relationship between years of seniority and commission pay for the sample? The population? (Hint: Use a Scatter chart- the scatter chart is required and should be displayed for this question.) If you determine if there is a relationship comment if the relationship is linear, curvilinear or something else. Does it change as the values change? Discuss fully.

8) Is there a relationship between years of seniority and total pay for the sample? The population? (Hint: Use a Scatter chart- the scatter chart is required and should be displayed for this question.) If you determine if there is a relationship comment if the relationship is linear, curvilinear or something else. Does it change as the values change? Discuss fully.

9) Is there a large or small difference in your answers for the sample and the population for questions 8, 9 and 10?   (Hint: Compare the Scatter charts- the scatter charts in the prior questions can be referred to or you can copy them here.) Discuss fully.

Answer the following advanced questions involving Inferential Statistics

10) Is there a difference in the mean, mode, median, variance, standard deviation, high value, low value and range for years of seniority, base salary, commission and total

salary for your SAMPLE and the POPULATION for each of the two divisions (A and B). Here you need to determine how many employees from the population and the sample are in division A and B. Then you need to compare the sample and population statistics. Suggestion: Use the Excel Descriptive statistics function. Discuss fully.

11) Are total pay and years of seniority different for males and females in your sample? In the population? (Use scatter charts and linear regression – Display the Scatter chart and the results of the linear regression for this question.) Here you need to determine how many employees from the population and the sample are males and females. Then you need to compare the sample and population statistics. In a perfect world we would like to see these about the same. Can you think of any reasons why they might be different other than gender discrimination? Discuss fully.

12) Is there a correlation between years of seniority and total pay in your sample? In the population? (Use correlation – Display the correlation – Use Excel). What correlation would be considered a strong correlation? Is this correlation strong for the population and your sample?

13) How does the result you obtained in Question 14 influence the conclusion that you reached in question 13? Explain fully.

14) Are the perceptions measured by the five questions asked in the survey different across the regions? For this question look to see if the answers for the 5 questions asked in the survey are different for the population and your sample. Explain what you find fully.

15) Are perceptions of management style (autocratic versus democratic) different across the regions and what is the nature of any differences? In this question you are looking to see if any particular region is different from the others in your sample and the population. Fully explain what you find.

16) If you were Mark Wolfe what would be your findings and your thoughts regarding Ms. Wilson's concerns? Fully explain what you find.