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# Case Study - Wage Increment in a Company

## Instructions

1. Answer the below question in the boxes provided.
2. Please submit the assignment through TalentLabs Learning System.

**Scenario**

Within a company, the employees are fighting for a raise in salary with their boss Mr. Cook. The employees' main argument is this:

"Our workers need more money to cope with the rising cost of living. No one in our Union earns more than $17,500 a month."

While Mr. Cook's main argument is this:

"The average salary in our company is $19 000. It is already higher than what you are asking for. I don't see why we need to increase the salary now."

To resolve this argument, they sit down and look at the data together:

| Position | Number of Employees | Monthly Salary | Part of the Employees Fighting for Pay Raise |
|---|---|---|---|
| President | 1 | 150,000 | N |
| Vice-president | 2 | 90,000 | N |
| Director | 3 | 60,000 | N |
| Branch Manager | 3 | 45,000 | N |
| Supervisor | 3 | 30,000 | N |
| Foreman | 6 | 17,500 | Y |
| Payroll Clerk | 3 | 14,000 | Y |
| Secretary | 6 | 12,500 | Y |
| Workman | 30 | 12,000 | Y |

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|---|---|---|---|
| Sales Clerk | 15 | 8,000 | Y |
| General Clerk | 6 | 7,500 | Y |

They found that the main issue is that the average salary is not really a good measure of how most of the employees are getting paid. The average salary is affected by the high salary of the executives and senior management. So, they calculated the below:

| **Measurement of Central Tendency** | **Value** |
|---|---|
| Mean/Average | $19,000 |
| Mode | $12,000 |
| Median | $12,000 |

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**Question 1 (3 points)**
Who would favor the use of mean, mode and median in the discussion of pay raise?

| **Measurement** | **Who would favor the use of the measurement?** |
|---|---|
| Mean | boss Mr. Cook |
| Mode | Workman, Sales Clerk and General Clerk |
| Median | Workman, Sales Clerk and General Clerk |

**Question 2 (6 points)**
If the salaries of the 21 clerks with the lowest salaries are raised to $12,000, what is the new mean, mode and median?
(You should include the calculation steps and method in the answer, instead of just the final answer)

| Measurement | Calculation |
|---|---|
| The new mean | Weighted salary sum<br>= (1 * 150,000) + (2 * 90,000) + (3 * 60,000) + (3 * 45,000) + (3 * 30,000) + (6 * 17,500) + (3 * 14,000) + (6 * 12,500) + (30 * 12,000) + (15*12,000) + (6 * 7,500)<br>= 1542000<br><br>Total number of employees<br>= (1 + 2 + 3 + 3 + 3 + 6 + 3 + 6 + 30 +15 + 6)<br>= 78<br><br>New mean = 1542000 / 78<br>= $19769.23 |
| The new mode | $12,000<br><br>It's because most workers are having a monthly salary of $12,000. |

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|---|---|
| The new median | Total number of workers = 78<br><br>Median position = (78+1)/2 = 39.5$^{th}$<br>Median = $12,000 |

**Question 3 (2 points)**

The president decided to make the numbers look nicer by increasing his own salary only. What should be his new salary if he wants to increase the average salary by $2000?
(You should include the calculation steps and method in the answer, instead of just the final answer)

To Increase Average salary by + $2,000, how much the president needs to increase his own salary:

Total number of workers = 78
Assuming current average salary = $19,000
Adjusted average salary = $19,000 + $2,000 = $21,000

21,000 = ((1 * (150,000+ x)) + (2 * 90,000) + (3 * 60,000) + (3 * 45,000) + (3 * 30,000) + (6 * 17,500) + (3 * 14,000) + (6 * 12,500) + (30 * 12,000) + (15*12,000) + (6 * 7,500))/78

21,000 = (150,000+x+1,392,000)/78
21,000 = x/78 + 19769.23
x = $96,000.06

The president could increase his salary by $96,000.06

**Question 4 (6 points)**

The president has come up with another plan, which is to address the ask of the biggest group only - the workmans. He decided to raise their pay to 13,000. What would be the new mean, mode and median?
(You should include the calculation steps and method in the answer, instead of just the final answer)

| Measurement | Calculation |
|---|---|

| | |
|---|---|
| The new mean | Workman's salary increases from $12,000 to $13,000.<br><br>Weighted salary sum<br>= (1 * 150,000) + (2 * 90,000) + (3 * 60,000) + (3 * 45,000) + (3 * 30,000) + (6 * 17,500) + (3 * 14,000) + (6 * 12,500) + (30 * 13,000) + (15*12,000) + (6 * 7,500)<br>= 1,572,000<br><br>Total number of employees<br>= (1 + 2 + 3 + 3 + 3 + 6 + 3 + 6 + 30 +15 + 6)<br>= 78<br><br>New mean = 1,572,000/78 = $20,153.84 |
| The new mode | New mode = $13,000 |
| The new median | Median position = (78 + 1)/2 = $39.5^{th}$<br><br>Median = $13,000 |

**Question 5 (2 points)**

If you are the leader of the employees, what are the statistics that you would suggest Mr. Cook to look into before making a decision? Why?

| |
|---|
| I would suggest to Mr. Cook that he should not only look at mean, but also median and mode when analyzing salary data.<br><br>1. Mean – While it calculates the average salary value, it's easily influenced by outliers, so it potentially misrepresenting the typical salary every worker gets.<br>2. Median – It provides insight into the middle salary value and is less affected by outliers, giving a more balanced perspective compared to mean.<br>3. Mode – It provides insight into the most common salary that workers receive.<br><br>With analyzing these 3 statistics (especially median and mode), Mr. Cook could understand more about the typical salary received by most of its workers. |