

# [Quantative reasoning](https://assignbuster.com/quantative-reasoning/)

Quantitative Maths The two measures of central tendency chosen to choose the group for the company are: a) Mean: The mean is calculated by adding all the values of the groups and then dividing it by the total number count of the values. The mean calculated has been calculated for both the groups of employees and is calculated to be 79. 1.   
Using this as a measure it would be difficult to decide which a better option is since both the groups have equal mean.   
b) Median: This is the second measure that has been used here to check for the central tendency. The median is simply the centre of all the values, this implies that half of the values fall above the median while the other half fall below the median.   
In the case of Group A, the median has been calculated to be 5. 5, which shows that the median for this group is 79. 5. This implies that half of the people of this group have a manual dexterity of over 79. 5 and the other half of the employees have a manual dexterity of over 79. 5.   
In the case of Group B, the median has been calculated to be 89. Here again this implies that half of the employees have a manual dexterity of over 89 and the other half above 89.   
Using this as a measure Group B is considered to be better than Group A, as this simply implies that the employees are less likely to break the fragile items.   
Group A   
Group B   
77   
100   
87   
99   
80   
62   
91   
57   
77   
95   
84   
96   
90   
69   
60   
32   
79   
83   
66   
98   
Total   
791   
791   
Mean   
79. 1   
79. 1   
Median   
79. 5   
89   
Measure of Dispersion: The measure of dispersion chosen for this problem is Standard deviation. This provides for the possible dispersion for each of the groups.   
Group A = 9. 44   
Group B = 22. 01   
Group A:   
To calculate the standard deviation of Group A, firstly the difference of the values and the mean is calculated, after which these numbers are squared. The total of the squares are then calculated and then divided by the number of values to provide the Variance. The last step is to take the square root of the variance. This provides the standard deviation for the group.   
Below are the calculations for Group A:   
X   
X-Avg.   
(X-Avg.)2   
77   
-2. 1   
4. 41   
87   
7. 9   
62. 41   
80   
0. 9   
0. 81   
91   
11. 9   
141. 61   
77   
-2. 1   
4. 41   
84   
4. 9   
24. 01   
90   
10. 9   
118. 81   
60   
-19. 1   
364. 81   
79   
-0. 1   
0. 01   
66   
-13. 1   
171. 61   
892. 9   
Variance   
89. 29   
Standard Deviation   
9. 44   
Group B:   
X   
X-Avg.   
(X-Avg.)2   
100   
20. 9   
436. 81   
99   
19. 9   
396. 01   
62   
-17. 1   
292. 41   
57   
-22. 1   
488. 41   
95   
15. 9   
252. 81   
96   
16. 9   
285. 61   
69   
-10. 1   
102. 01   
32   
-47. 1   
2218. 41   
83   
3. 9   
15. 21   
98   
18. 9   
357. 21   
4844. 9   
The solutions got from the Central tendency measures and the solutions of the standard Deviation do not allow giving a clear picture for which group is a better choice since:   
The Standard deviation along with the Mean, give the image of Group A to be a better option, whereas combining the Standard deviation and the median, Group B proves to be a better option. Thus these measures alone cannot be considered to make the choice. Other measures are to be kept in mind as well before making a decision by the company. Thus more data and analysis is required for this decision.   
2. From the information that has been provided the Mean has been calculated to be 7. 55 calls. For the mode however there are two possible answers, 4 as well as 8. This is because they are repeated the most number of times. However, 8 will be chosen as the Mode in this case as it is closer to the mean that has been calculated. The Median for in this case has been calculated to be 7. These numbers are quite accurate and are as expected. These values are all quite accurate, however the median can be considered as the most accurate measure.   
The Standard Deviation in this case has been calculated as 4. 421255. This implies that the number of calls can be 4. 421255 ­above or below the calculated mean. This deviation is considered to be good as the deviation is not very high and allows a clearer view of the number of calls the company can expect.   
Day   
No. of Calls   
X-Avg.   
(X-Avg.)2   
1   
4   
-3. 55   
12. 6025   
2   
20   
12. 45   
155. 0025   
3   
6   
-1. 55   
2. 4025   
4   
8   
0. 45   
0. 2025   
5   
9   
1. 45   
2. 1025   
6   
15   
7. 45   
55. 5025   
7   
11   
3. 45   
11. 9025   
8   
1   
-6. 55   
42. 9025   
9   
9   
1. 45   
2. 1025   
10   
4   
-3. 55   
12. 6025   
11   
8   
0. 45   
0. 2025   
12   
7   
-0. 55   
0. 3025   
13   
7   
-0. 55   
0. 3025   
14   
3   
-4. 55   
20. 7025   
15   
4   
-3. 55   
12. 6025   
16   
3   
-4. 55   
20. 7025   
17   
6   
-1. 55   
2. 4025   
18   
5   
-2. 55   
6. 5025   
19   
8   
0. 45   
0. 2025   
20   
13   
5. 45   
29. 7025   
  
Mean = 7. 55   
  
390. 95   
Total   
  
  
  
19. 5475   
Variance   
  
  
  
4. 421255   
Standard Deviation