**Call Times**

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**Introduction**

Call International maintains 200 global call centers and closely monitors the quality of service it provides its clients. The company collected quantitative data on its employees, call times, and customer satisfaction for the recent year. This report details descriptive analysis of the data and recommends areas of further exploration to understand how Call International can improve its service.

**Shift A Average Call Time**

The most frequent call time for Shift A was 10 minutes. A quarter of the calls did not exceed the mode. On average a customer was on a call with a representative for approximately 34 minutes. Fifty percent of the calls never went above an hour. However, the spread of the data ranged from a one-minute call all the way up to almost 2 hours. Given the range, the median of 29 would be the best measure of central tendency for Shift A (Holmes et al., 2018). The maximum time of 118 minutes represents an outlier. In total, there are 4 outliers for Shift A. Call centers #38, #50, #89, and #188 have z-scores of 3.04459, 2.376632, 2.413741, and 3.118808 respectively. The outliers exist near or at the maximum; inspecting the average customer satisfaction level may highlight why these centers are outliers. Moreover, the correlation coefficient for the Shift A average call time and the average customer satisfaction level is 0.885985567. This indicates a strong relationship between the two categories; both increase together (Holmes et al., 2018).

**Shift B Average Call Time**

In stark contrast to Shift A, the most frequent call time for Shift B was over an hour at 67 minutes. The maximum time reached 75 minutes; investigating the customer satisfaction level at this end of the distribution may provide insight into why this mode exists for Shift B. The median call was 43 minutes which is slightly higher than the mean of 40.6 minutes. Due to the mode’s proximity to the maximum of the data, relying on the median as the measure of central tendency would be a good fit (Holmes et al., 2018). Similar to Shift A, the correlation coefficient for the Shift B average call time and the average customer satisfaction level is 0.965341049. This represents a strong relationship between the categories as well.

**Average Customer Satisfaction Level**

The customer satisfaction feedback elicited a mean rating of 2.58 and a median rating of 3. The mean is a reliable measure of central tendency for this data; there are no outliers (Holmes et al., 2018). We can expect 50% of customers to fall within the interquartile range of “average” to “excellent.” This means on average customers maintained a satisfaction level above “poor.”

**Average Number of Employees**

The average number of employees at each call center was 61.565, not too dissimilar from the median of 60. The range of employees varied noticeably; the median functions as the optimal measure of central tendency. The minimum number of employees was 25 with the maximum at 100. Half of the results fall within a range of 42 to 80.75 employees. Both the minimum and the maximum fall almost near 2 standard deviations of the mean; approximately 95% of the results can be found between these metrics (Bishara et al., 2018). Notably, the correlation coefficient for the average number of employees and the average customer satisfaction level is 0.009987493. This is a very weak value and suggests no significant relationship exists between the two categories (Holmes et al., 2018).

**Conclusion**

Call International should further investigate the relationships between shifts and customer satisfaction. Shift B boasts an almost 10 percent higher correlation coefficient than Shift A for average customer satisfaction level. A comparison between the call times of these shifts could inform new employee call time policy and should be prioritized.

**References**

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