INTERPRETATION

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 BSC 2

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# Q1. GRAPHICAL REPRESENTATION OF DATA.

IN this we can see that the graph reaches its peak at 105 i.e. 20

Where Y-axis represents frequency and x-axis represents the Xi.

# Q2. MEASURES OF CENTRAL TENDENCIES

There are 3 measures of central tendencies mean, median & mode.

Where mean represents the average of the values and median represents the center point of X-axis and mode represents the highest frequency at a point.

The values of mean, median and mode are as follows;

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **MEAN=** | | | **151.1710037** | | |
|  | | |  | | |
| **Median=** | | **149.9442379** | | |  | |
| **MODE=** | **105** | | |

In the above case as we can see that MODE<MEDIAN<MEAN. So most of the data is in the left side of the total.

# Q3. MEASURES OF DISPERSION

As we know that there are many formulas to find the Dispersion and every formula has 2 forms Relative and Absolute.

As follows:-

|  |  |  |
| --- | --- | --- |
| MEASURES | RELATIVE | ABSOLUTE |
| RANGE | 1 | **300** |
| QUARTILE DEV. | **0.331401** | **79.76894** |
| MAD (about Mean) | **0.382159** | **49.49728** |
| MAD (about Median) | **0.475604** | **52.75206** |
| STD DEV. | **5.218543(coefficient of variation)** | **6.759057** |

Relative tells us the dispersion in comparison of another set of values.

Absolute tells us about the dispersion of data of current set of values.

So by the above values we can say that the data is

NOT VERY DISPERSED

# Q4. COMBINED MEAN AND VARIANCE AND COFFICIENT OF VARIATION

COMBINED MEAN AND VARIANCE it tells us the mean and variance of two set of data using their mean and variance.

COFFICIENT OF VARIATION TELLS us about the dispersion of data with respect to mean.

|  |  |
| --- | --- |
| **coefficient of variation of x =** | **51.69125** |

|  |  |
| --- | --- |
| **coefficient of variation of y =** | **55.02952** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Combined mean = ( N1\*(x1)' + N2\*(x2)' ) / (N1 +N2) =** | | | | | | **138.6363636** |
|  |  |  |  |  |  |  |
| **Combined Variance =** | | **(N1\*σ1^2+N2\*σ2^2+N1\*D1+N2\*D2) =** | | | | **5602.343752** |

# Q5. MOMENTS, SKEWNESS AND KURTOSIS

MOMENTS are used to measure the dispersion of data about mean or an arbitrary point.

SKEWNESS tells us that in which side does most of the values resides.

KURTOSIS tells us that whether the curve is high or less (i.e. leptokurtic or mesokurtic or platytokurtic).

For our data:-

|  |  |
| --- | --- |
| **MOMENTS** |  |
| **μ1=** | **0** |
|  |  |
| **μ2=** | **4482.37** |
|  |  |
| **μ3=** | **177418.7** |
|  |  |
| **μ4=** | **53192512** |

And

|  |  |  |
| --- | --- | --- |
| **β1=** | **-0.349523117** | **(skewness)** |
|  |  |  |
| **β2=** | **0.001689863** | **(kurtosis)** |

SO as the Skewness is Greater than 0 so the data is

POSITIVELY SKEWED

And as Kurtosis is Less than 3 so data is

Data is:-

PLATYKURTIC

# Q7. KARL PEARSON COEFFICIENT OF CORRELATION

Karl Pearson coefficient of correlation tells us that how much the two data is related.

And its value is always in between -1<r<1.

SO, as the correlation coefficient of our data is:-

|  |  |
| --- | --- |
| **r =** | **-0.18885** |

Which is near to 0 (zero) so we can say that the data

WEKLY DEPENDENT

# Q8. PARTIAL AND MULTIPLE CORRELATION

Partial correlation means that the relationship between 2 data sets while other remains constant.

Multiple correlation states that relationship of a data set with 2 or more data sets.

The partial correlation is:

|  |  |
| --- | --- |
|  |  |

|  |  |
| --- | --- |
| **R12.3=** | **0.129684** |

|  |  |
| --- | --- |
| **R23.1 =** | **0.134461** |

|  |  |
| --- | --- |
| **R13.2 =** | **-0.04028** |

The multiple correlation is:

|  |  |
| --- | --- |
| **R1.23 =** | **0.1328614** |

|  |  |
| --- | --- |
| **R2.13 =** | **0.1846802** |

|  |  |
| --- | --- |
| **R3.12 =** | **0.1375249** |

The above correlation shows

That the data is:

WEAKLY DEPENDENT

# Q9. RANK CORRELATION

Rank correlation is another method of finding the correlation between 2 data sets based on their ranks.

It is done in two ways when there are no ties

In that case our Rank Correlation is:

RANK CORRELATION WITH NO TIES

|  |  |
| --- | --- |
| **r=1-6∑D1/n(n^2-1) =** | **0.126585** |

And

IN case where there are tied ranks

In that case our result is

RANK CORRELATION WITH TIED RANKS

|  |  |
| --- | --- |
| **r =** | **0.128254** |

As the above rank correlation tells that the data is:

WEAKLY RELATED