Practical no 3:

**STATEMENT:**

THE FOLLOWING DATA REPRESENTS THE SCORES MADE IN AN INTELLIGENCE TEST BY TWO GROUPS OF STUDENT FROM SECTION A AND SECTION B OF THE COLLEGE.

|  |  |  |
| --- | --- | --- |
| Student no. | Section A | Section B |
| 1 | 9 | 10 |
| 2 | 8 | 8 |
| 3 | 10 | 6 |
| 4 | 6 | 8 |
| 5 | 7 | 9 |
| 6 | 8 | 8 |
| 7 | 5 | 7 |
| 8 | 6 | 8 |
| 9 | 7 | 5 |
| 10 | 8 | 8 |

BY USING THE APPROPRATE SOFTWARE, TEST WHICH GROUP IS MORE CONSISTENT.

**WORKING EXPRESSION:**

1. **Arithmetic Mean: -**

The ratio of sum of all the observations to the total number of observation is called arithmetic mean. It is denoted by  and given by;

Mean () = 

(Where x =numeric value of each observations

N= total no of frequency)

1. **Standard Deviation: -** It is the squared root of mean of the quared deviations from the arithmetic mean. it is denoted by S.D. or σ and is given by

σ =  =

Where, X = numeric value of each observation.

N = total no of frequency

1. **Coefficient of Variation:**

The co-efficient of variance (C.V) is the relative measure based on the standard deviation and is defined as the ratio of the standard deviation to the mean expressed in percent.

In symbols,

C.V = 

Where, σ= Standard deviation

 = average mean

1. **Relation of C.V with Consistency:**

C.V is inversely proportional to the consistency i.e. more the C.V less will be the consistency and vice-varsa.

Mathematically,

C.V 

**CALCULATION:**

The table for the computation of the arithmetic mean and standard deviation for the score made by section A and section B was as follows:

Let x and y represents the score made by the students of section A and section B respectively.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Student NO. | For section A | | For section B | |
|  | x | x2 | y | y2 |
| 1 | 9 | 81 | 10 | 100 |
| 2 | 8 | 64 | 8 | 64 |
| 3 | 10 | 100 | 6 | 36 |
| 4 | 6 | 36 | 8 | 64 |
| 5 | 7 | 49 | 9 | 81 |
| 6 | 8 | 64 | 8 | 64 |
| 7 | 5 | 25 | 7 | 49 |
| 8 | 6 | 36 | 8 | 64 |
| 9 | 7 | 49 | 5 | 25 |
| 10 | 8 | 64 | 8 | 64 |
|  | ΣX = 74 | ΣX2 = 568 | ΣY = 77 | ΣY2 = 611 |

For Mean,

Mean for A () = = = 7.4

Similarly,

Mean for B () =  = = 7.7

For Standard Deviation and C.V,

For A,

σ = = = 1.42

(C.V.)A =  = = 19.3%

For B,

σ = = = 1.34

(C.V.)B =  = = 17.40%

**RESULT**: Since coefficient of variation for the student section B is less than of the students of section A. So, students of section B is more consistent.

**CONCLUSION:** In this way, we can compute and compare the consistency of given data by using MS-Word and MS-Excel.