

Chris- onyebinihia Favour Chiamaka

Mechanical engineering

19/eng06/015

STA 132

GROUP A

CLASS INTERVAL	MIDPOINT (x)	f	Fx	$x - \bar{x}$	$(x - \bar{x})^2$	$f(x - \bar{x})^2$
1- 5	3	0	0	- 14.8	219.04	0
6- 10	8	7	56	- 9.8	96.04	672.28
11- 15	13	10	130	- 4.8	23.04	230.4
16- 20	18	2	36	0.2	0.04	0.08
21- 25	23	1	23	5.2	27.04	27.04
26- 30	28	5	140	10.2	520.2	520.2
31- 35	33	4	130	15.2	924.16	924.16
		$\Sigma f = 29$	$\Sigma fx = 517$			$\Sigma f(x - \bar{x})^2 = 2374.16$

$$\bar{x}(\text{mean}) = \frac{\Sigma fx}{\Sigma f} = \frac{517}{29} = 17.8 \quad 9$$

$$\text{Variance} = \frac{\Sigma f(x - \bar{x})^2}{\Sigma f} = \frac{2374.16}{29} = 81.87$$

$$\text{Standard deviation} = \sqrt{\text{Variance}} = \sqrt{81.87} = 9.05$$

$$\text{C.V} = \frac{\text{S.D}}{\bar{x}} \times 100 = \frac{9.05}{17.8} \times 100 = 50.8\%$$

GROUP B

CLASS INTERVAL	x	Fx	F	X- \bar{X}	(x- \bar{x}) ²	F (x- \bar{x}) ²
1- 5	3	6	2	- 17.14	243.78	587.56
6- 10	8	32	4	- 12.14	147.38	589.52
11- 15	13	91	7	- 7.14	50.98	356.36
16- 20	18	360	20	- 2.14	4.58	91.6
21- 25	23	368	16	2.86	8.18	130.88
26- 30	28	280	10	7.86	61.78	617.8
31- 35	33	132	4	12.86	166.38	661.52
		$\Sigma f x = 1269$	$\Sigma f = 63$			$\Sigma f (x - \bar{x})^2 = 3035.74$

$$\bar{x} = \frac{\Sigma f x}{\Sigma f} = \frac{1269}{63} = 20.14$$

$$\text{Variance} = \frac{\Sigma f (x - \bar{x})^2}{\Sigma f} = \frac{3035.74}{63} = 48.19$$

$$\text{S.D} = \sqrt{\text{Variance}} = \sqrt{48.19} = 6.94$$

$$\text{C.v} = \frac{\text{S.D}}{\bar{x}} \times 100$$

$$= \frac{6.94}{20.14} \times 100 = 34.5\%$$

Group B has less variable distribution