

project y

$$\text{Expected CF} = (40 \times 0.20) + (45 \times 0.20) + (50 \times 0.3) \\ = 45.50 \text{ p.a.}$$

$$\text{NPV} = (45.50 \times 2.487) - 80 = 43.16$$

② Standard deviation (Question & Tent-Hillier Model)

Project x

Standard deviation of CF

$$\begin{aligned} \text{1st YEAR } \sigma_{CF_1} &= \sqrt{(30-48.50)^2 \cdot 0.3 + (50-48.50)^2 \cdot 0.4 +} \\ &\quad (65-48.50)^2 \cdot 0.3} = 13.61 \end{aligned}$$

$$\begin{aligned} \text{2nd YEAR } \sigma_{CF_2} &= \sqrt{(30-41.53)^2 \cdot 0.3 + (40-41.53)^2 \cdot 0.4 +} \\ &\quad (55-41.53)^2 \cdot 0.3} = 9.76 \end{aligned}$$

3rd YEAR

$$\sigma_{cf3} = 5.94$$

$$\sigma_{NPV} = \frac{(13.61)^2}{(1.10)^2} + \frac{(9.76)^2}{(1.10)^4} + \frac{(5.94)^2}{(1.10)^6}$$
$$= 15.44$$

Simulation

Cost of project = ₹ 120000

Discounting Rate = 10%

<u>CFAT</u>	<u>probability</u>	<u>life</u>	<u>prob.</u>
60000	0.3	5	0.1
40000	0.5	6	0.4
30000	0.2	7	0.3
		8	0.2

Random No. CF (19) 55, 69, 17 7
life (30) 45, 99, 81, 12

Step 1 Calculate Cumulative
probability & Random No.
Range

<u>CFAI</u>	<u>prob.</u>	<u>Cum. prob.</u>	<u>Range</u>
60000	0.3	0.3	0-29
40000	<u>0.5</u>	0.8	30-79 ←
30000	0.2	1	80-99

<u>Life</u>	<u>prob.</u>	<u>Cum. prob.</u>	<u>Range</u>
5	0.1	0.1	0-9
6	0.4	0.5	10-49
7	0.3	0.8	50-79
8	0.2	1	80-99