Lorenz curve

Q. Prepare a Lorenz curve with the help of following distribution data.

RICE - AREA (in Hectare)	NO. OF VILLAGE
60	30
80	12
100	4
120	2
140	2

Calculation table :-

RICE - AREA			VILLAGE		
RICE AREA (In Hectare)	Cumulative value	Cumulative %	No. of village	Cumulative value	Cumulative %
60	60	12	30	30	60
80	140	28	12	42	84
100	240	48	4	46	92
120	360	72	2	48	96
140	500	100	2	50	100
total = 500			total = 50		

Cumulative percentage (%) ~~संचयी (%)~~

$\frac{\overset{12}{\cancel{60} \times 100}}{\cancel{500}} = 12\%$

$\frac{140 \times 100}{500} = 28\%$

$\frac{30 \times 100}{50} = 60\%$

$\frac{42 \times \overset{2}{\cancel{100}}}{\cancel{80}} = 84\%$

Lorenz curve is a geographical representation of the inequality distribution. It was developed by Max Lorenz in 1905 for representing inequality of the area and wealth distribution. The regional distribution of various geographical facts remains concentrated and scattered, its statistical methods have been used to measure the trends of distribution, in which Lorenz curve is the most important. An effective means of presenting inequality is the Lorenz curve.

The following types of calculations and operations are performed to construct the Lorenz curve.

1. The given data convert the values of the series into cumulative values and find the percentage of remaining cumulative values by taking the final cumulative values as 100%.

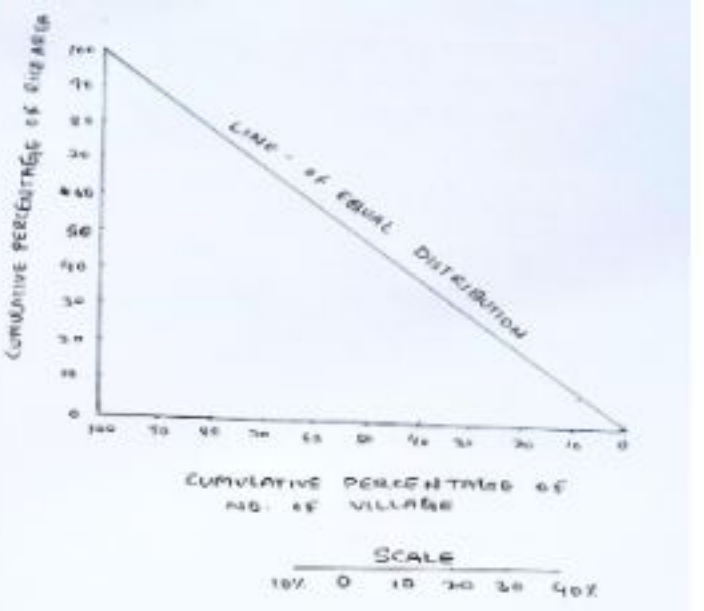
(2) Similarly make the frequencies cumulative and taking the last cumulative frequency equal to 100, calculate the value in percentage of the remaining cumulative frequencies.

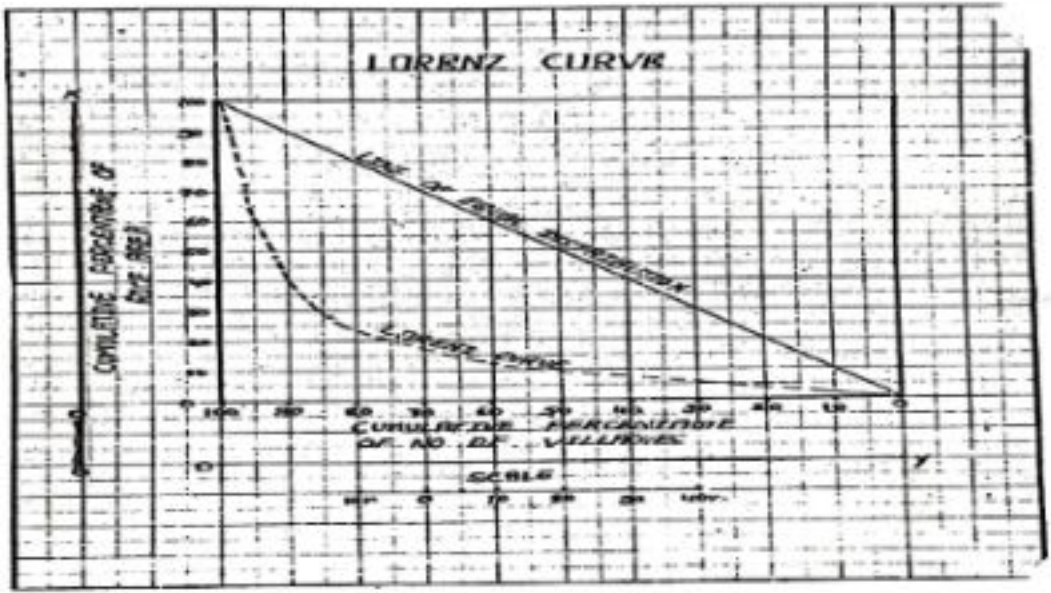
(3) After completing the above calculation work, draw two straight lines intersecting each other at right angles on the graph paper. The line lying in these is called the horizontal axis (horizontal or X-axis), the vertical line is called the vertical axis (vertical or Y-axis) and the point of intersection of both the axes will be called the point of origin.

(4) Draw a scale for the percentage of cumulative values on the vertical axis and a scale for the percentage of cumulative frequencies on the horizontal axis. It is especially noteworthy here that in the scale of the vertical axis, taking the value of the origin as 0%, at an appropriate distance interval, mark the upwards up to 100%. On the contrary, in the scale of the horizontal axis, assuming the value of the origin as 100%, at the same distance interval, write the values up to 0% on the right side in reverse order. In this way, the value of the origin is kept as 0% in the vertical scale and the value of this point is kept at 100% in the horizontal scale.

(5) Draw a straight line joining the 100% mark on the vertical scale to the 0% mark on the horizontal scale. This straight line is called a line of equal distribution because both the cumulative percentage values of each point on this line are equal to each other. In other words, if the value of the cumulative value of a point on this straight line is 10%, then the value of the cumulative frequency of this point will also be 10%.

(6) Now like a simple linear graph, measure the percentage of the cumulative value on the vertical axis and the percentage of the cumulative frequency on the horizontal axis, and mark the graph-paper. The smooth curve drawn joining the marks in this way is called Lorenz curve.nowright angle toand horizontal.norpercentage valueat intervalKat intervalup toWill do And5100% andhappened onego somewhereon axisfrequencyto receiveAnkitof categoryuthe


LINE OF EQUAL DISTRIBUTION
CUMULATIVE PERCENTAGE OF VILLAGES
CUMULATIVE PERCENTAGES OF NOS. OF VILLAGES
SCALE
10% 0 10 20 30 40%


LORENZ CURVE
CUMULATIVE PERCENTAGE OF
CUMULATIVE PERCENTAGE
OF NO. OF VILLAGES
SCALE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