

Applied Data Analytics

Statistics — Dispersion & concentration

Lorenz curves

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Example

Ordered data

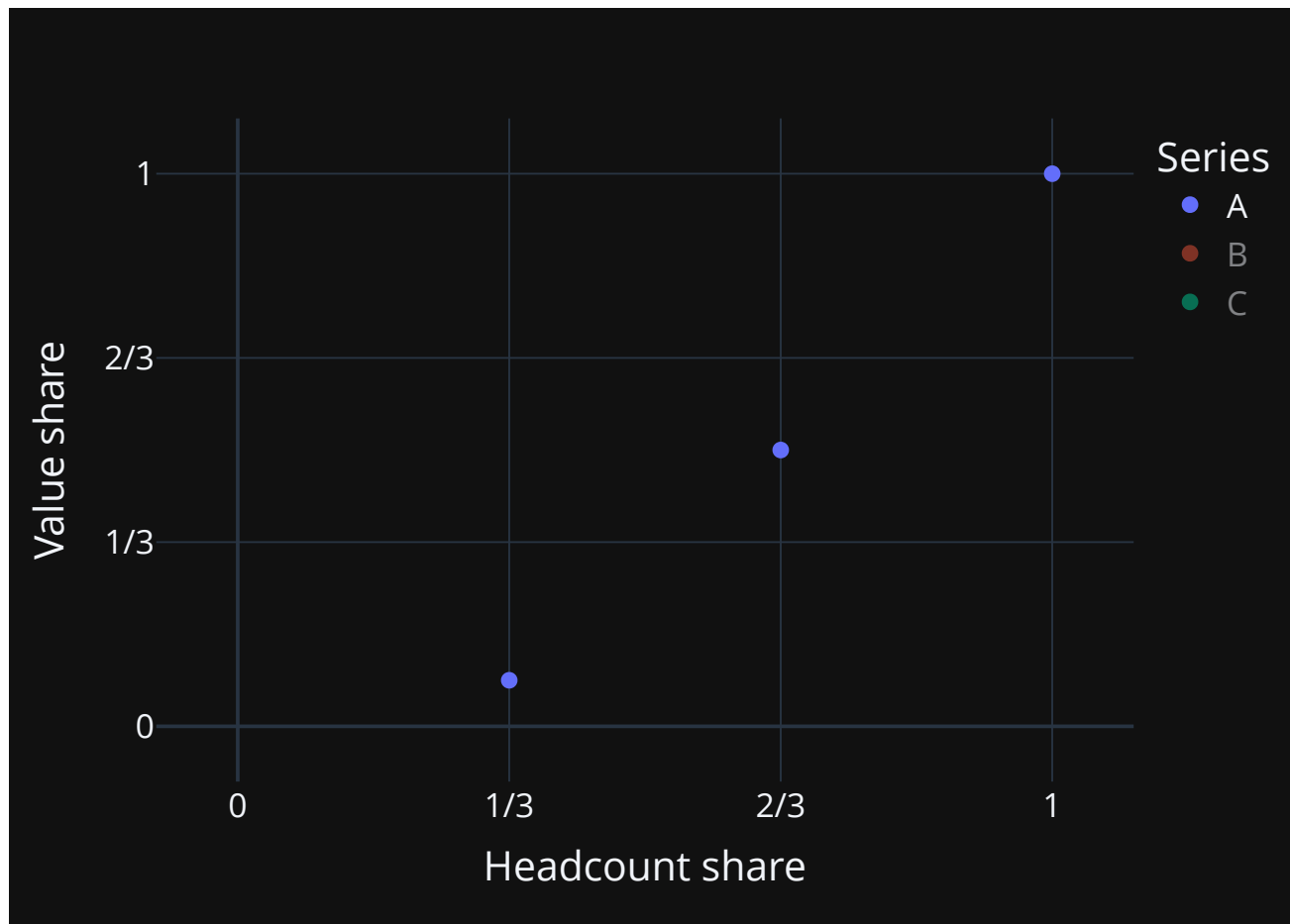
A	B	C
1	2	4
5	2	4
6	8	4

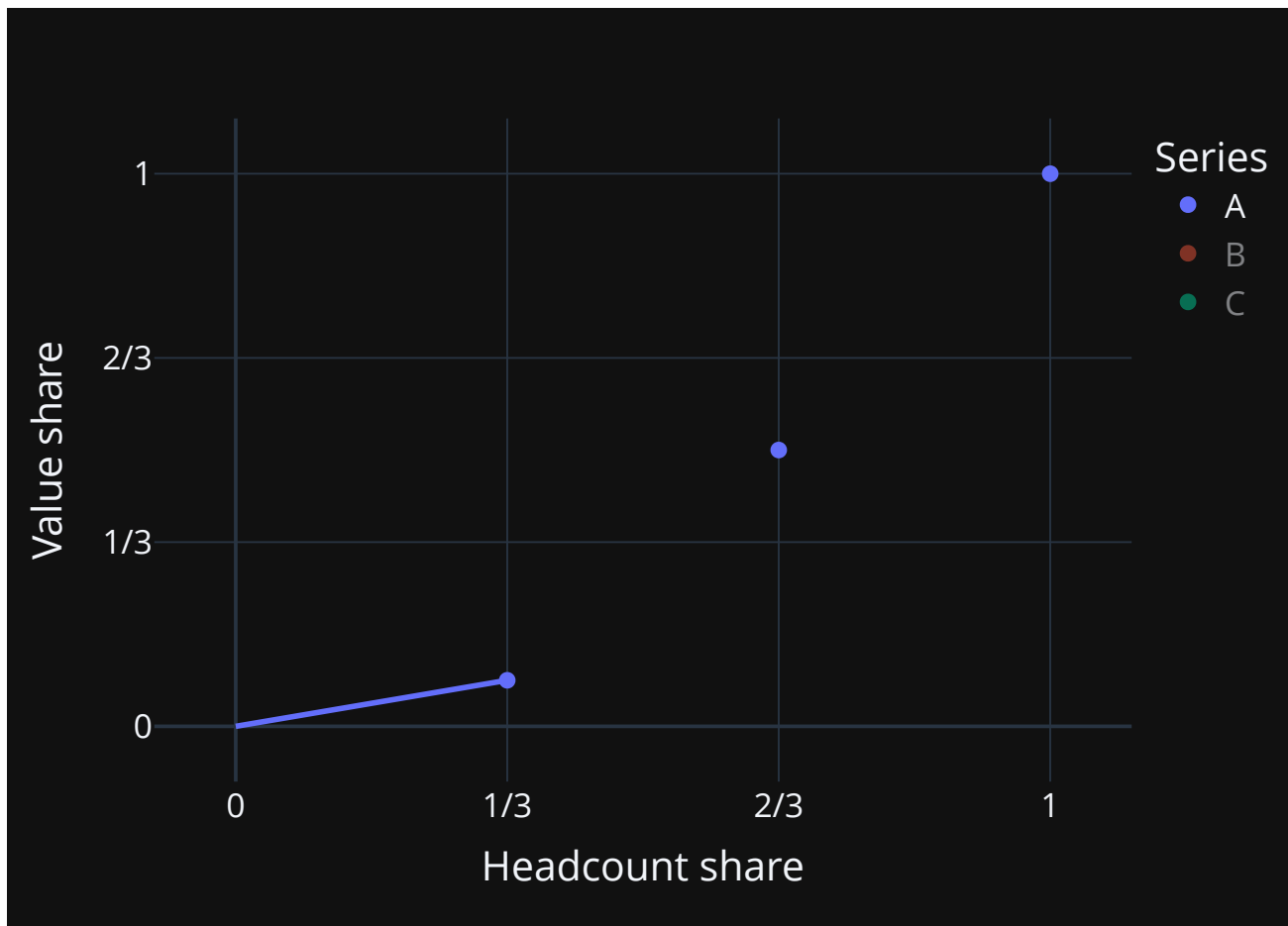
Cum. sum

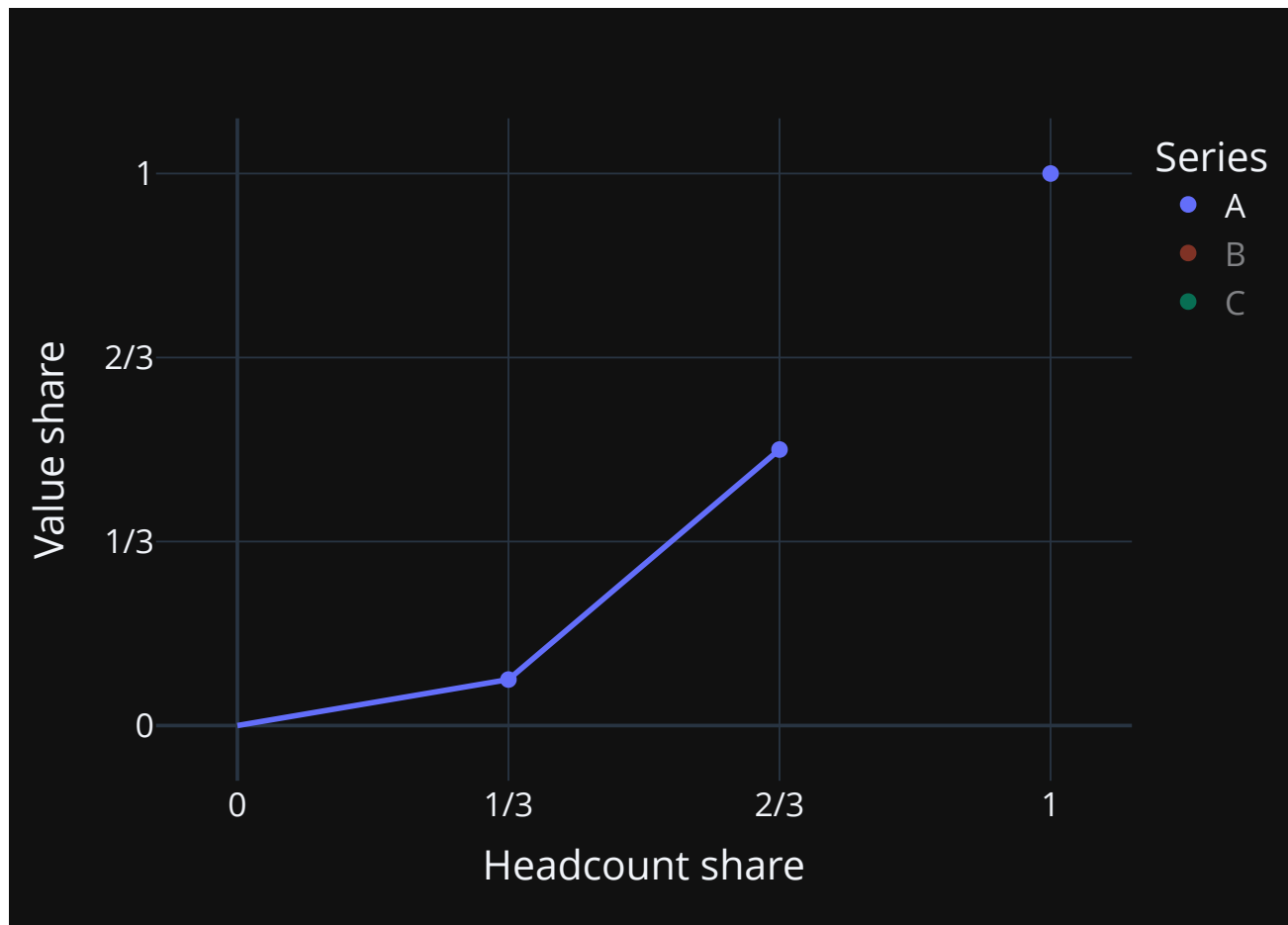
A	B	C
1	2	4
6	4	8
12	12	12

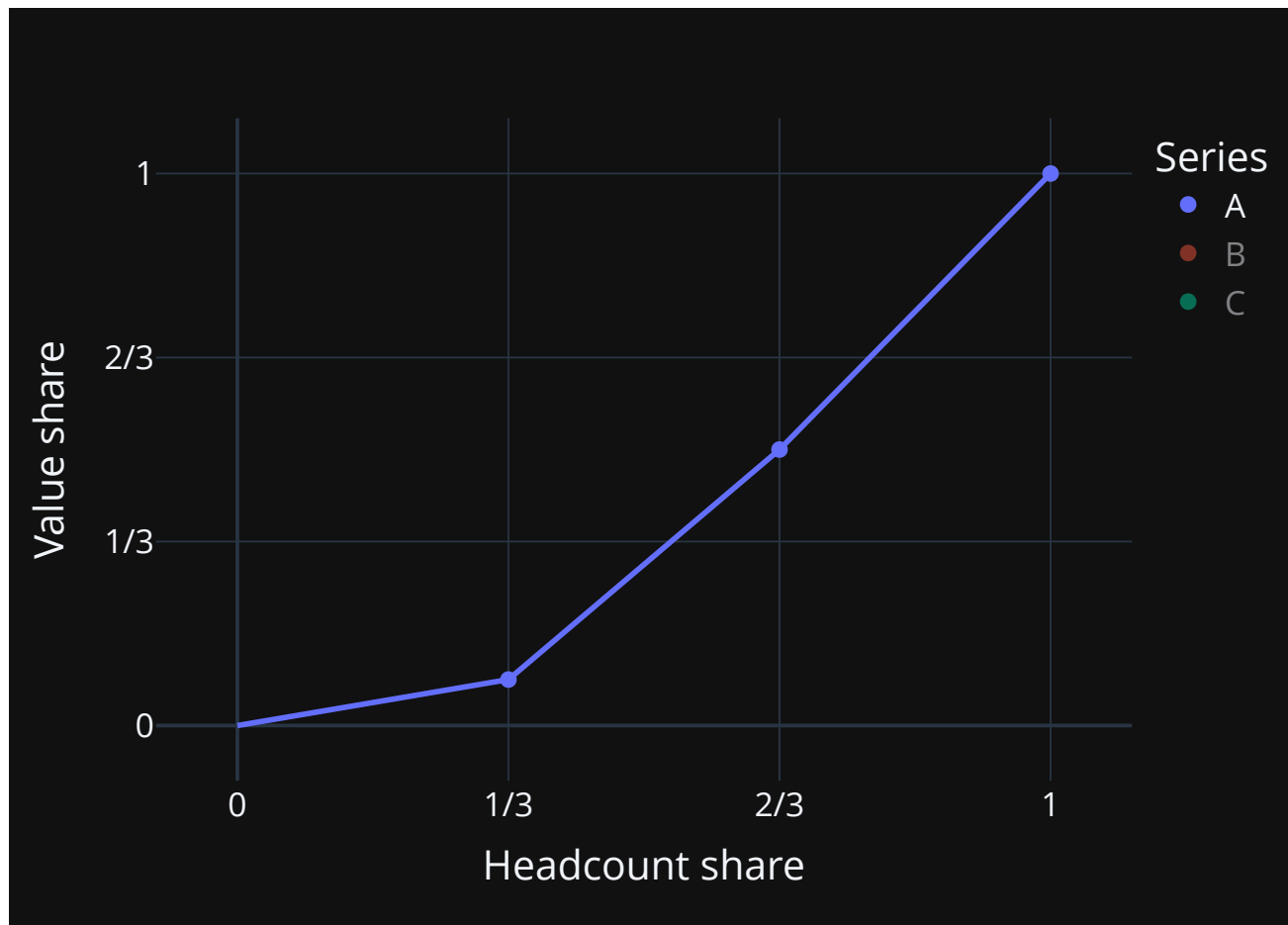
Cum. dist.

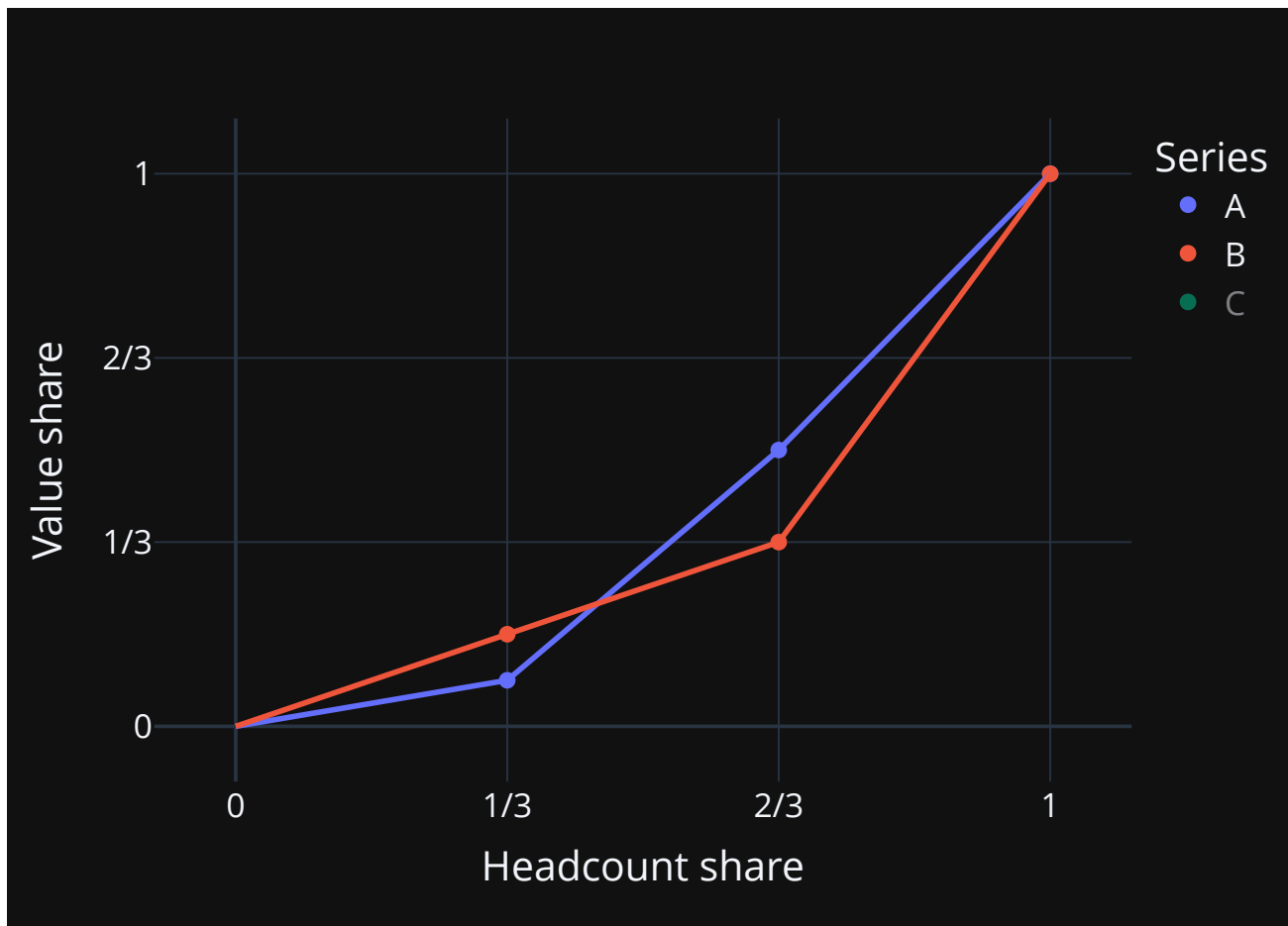
A	B	C
0.08	0.17	0.33
0.5	0.33	0.67
1	1	1

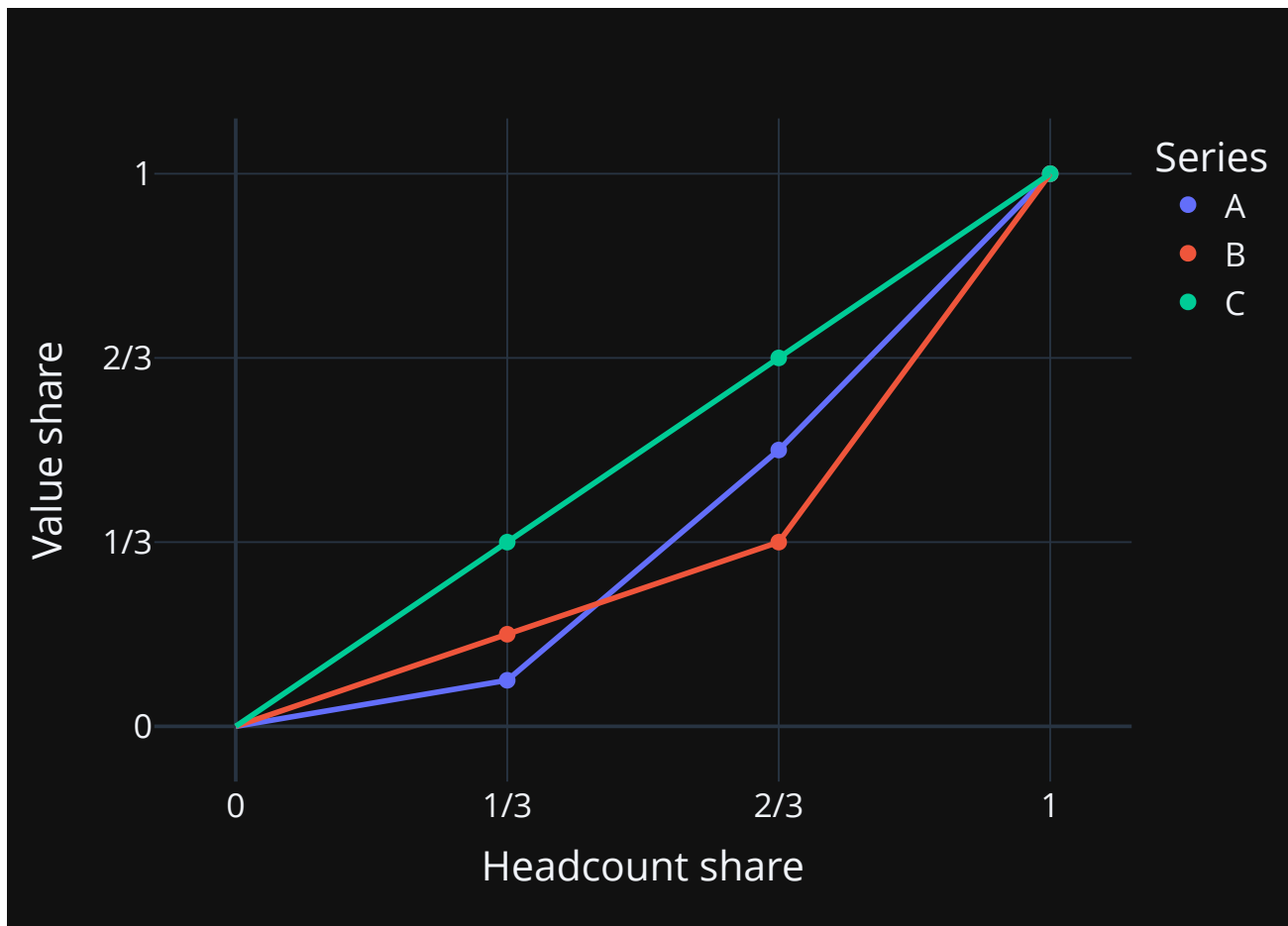












Lorenz curve: Definition

$$u_k = \frac{k}{n}$$

$$v_k = \frac{\sum_{i=1}^k x_i}{\sum_{i=1}^n x_i}$$

Lorenz curve connects the origin and all points $(u_k, v_k), k \in (1, \dots, n)$