

Appendix 1: Pearson LCCI Level 2 Certificate in Business Statistics (VRQ) – formulae sheet

Median for grouped data $l_{m+\frac{c_m}{f_m}\left(\frac{n}{2}-F_{m-1}\right)}$

where l_m , c_m and f_m are the lower boundary, width and frequency respectively of the median class, n is the total number of observations and F_{m-1} is the cumulative frequency corresponding to l_m .

Mean for ungrouped data $\bar{x} = \frac{\sum x}{n}$

Mean for grouped data $\bar{x} = \frac{\sum fx}{\sum f}$

Standard deviation for ungrouped data $S = \sqrt{\frac{\sum x^2}{n} - (\bar{x})^2}$

Standard deviation for grouped data $S = \sqrt{\frac{\sum fx^2}{\sum f} - \left(\frac{\sum fx}{\sum f}\right)^2}$

Quartile deviation $\frac{Q_3 - Q_1}{2}$

Mean deviation $\frac{\sum f|x - \text{mean}|}{\sum f}$

Coefficient of variation $\frac{S}{\bar{x}} \times 100$

Product moment correlation coefficient $r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}}$

Spearman's rank correlation coefficient $r_s = 1 - \frac{6\sum d^2}{n(n^2 - 1)}$

Least squares regression line $\hat{y} = a + bx$

$$b = \frac{n \sum xy - (\sum x)(\sum y)}{n \sum x^2 - (\sum x)^2}$$

$$a = \frac{\sum y}{n} - \frac{b \sum x}{n}$$

	Price	Quantity
Laspeyres index	$\frac{\sum p_1 q_0}{\sum p_0 q_0} \times 100$	$\frac{\sum p_0 q_1}{\sum p_0 q_0} \times 100$
Paasche index	$\frac{\sum p_1 q_1}{\sum p_0 q_1} \times 100$	$\frac{\sum p_1 q_1}{\sum p_1 q_0} \times 100$
Weighted index	$\frac{\sum WI}{\sum W}$	

Multiplication rule of probability $P(A \cap B) = P(A) \times P(B)$ if A and B independent

Addition rule of probability $P(A \cup B) = P(A) + P(B) - P(A \cap B)$