

Appendix- K
Calculation of Reliability of coefficient- Yashwantrao Chavan Maharashtra Open University, Nasik. (Split up)

Class Intervals	261-270	271-280	281-290	291-300	301-310	311-320	321-330	331-340	341-350	351-360	f	y'	f y'	fy' ²	ΣXY
351-360										20 3 60	3	4	12	48	60
341-350									12 4 48		4	3	12	36	48
331-340						4	1 4	6 4 24			5	2	10	20	28
321-330						2	3 6				3	1	3	3	6
311-320					0 5 0						5	0	0	0	0
301-310					0 5 0						5	-1	-5	5	0
291-300				2 4 8							4	-2	-8	16	8
281-290			6 3 18								3	-3	-9	27	18
271-280		12 4 48									4	-4	-16	64	48
261-270	20 4 80										4	-5	-20	100	80
F	4	4	3	4	5	5	4	4	4	3	40		-21	319	296
X'	-4	-3	-2	-1	0	1	2	3	4	5					
fX'	-16	-12	-6	-4	0	5	8	12	16	15	18				
fX' ²	64	36	12	4	0	5	16	36	64	75	312				
ΣX'Y'	80	48	18	8	0	0	10	24	48	60	296				

$$r = \frac{\sum x' y' - C_x C_y}{\sigma_x \cdot \sigma_y}$$

1) Find out the values of C_x and C_y

$$C_x = \frac{\sum fx'}{N} = 0.45$$

$$C_y = \frac{\sum fy'}{N} = -0.525$$

2) Find out the values of σ_x and σ_y

$$\sigma_x = \sqrt{\frac{\sum fx^2}{N} - C_x^2} = 2.756$$

$$\sigma_y = \sqrt{\frac{\sum fy'^2}{N} - C_y^2} = 2.775$$

3) Find out the value of

$$\frac{\sum x' y'}{N} = 7.4$$

$$r = \frac{7.4 - (0.45) \times (-0.525)}{(2.756 \times 2.775)} = 0.99$$