

Ранговая корреляция Спирмена

Два эксперта X и Y выставили оценки десяти образцам продукции завода. Найти выборочный коэффициент корреляции Спирмена $\rho_{\text{в}}$ между их оценками.¹

Задача L-44.1.

3

$$X = [47, 42, 40, 36, 33, 31, 27, 24, 22, 20]$$

$$Y = [58, 52, 62, 37, 43, 24, 12, 48, 28, 16]$$

Задача L-44.2.

3

$$X = [45, 43, 40, 36, 34, 31, 28, 26, 22, 18]$$

$$Y = [53, 63, 47, 22, 58, 17, 12, 34, 43, 27]$$

Задача L-44.3.

3

$$X = [47, 42, 39, 37, 34, 31, 29, 25, 22, 20]$$

$$Y = [58, 49, 52, 30, 25, 18, 11, 63, 43, 36]$$

Задача L-44.4.

3

$$X = [46, 42, 39, 37, 35, 30, 28, 25, 21, 18]$$

$$Y = [52, 48, 62, 35, 23, 18, 12, 27, 43, 58]$$

Задача L-44.5.

3

$$X = [45, 42, 39, 36, 33, 31, 28, 25, 23, 20]$$

$$Y = [53, 48, 44, 63, 29, 18, 11, 33, 23, 57]$$

Задача L-44.6.

3

$$X = [46, 44, 40, 36, 33, 31, 28, 24, 22, 19]$$

$$Y = [57, 52, 64, 48, 23, 34, 12, 30, 43, 17]$$

Задача L-44.7.

3

$$X = [46, 43, 40, 36, 33, 31, 28, 25, 21, 18]$$

$$Y = [59, 47, 52, 43, 23, 62, 18, 12, 34, 29]$$

Задача L-44.8.

3

$$X = [45, 42, 40, 36, 34, 31, 28, 25, 22, 19]$$

$$Y = [52, 49, 43, 36, 25, 59, 11, 28, 62, 17]$$

Задача L-44.9.

3

$$X = [47, 43, 39, 38, 34, 30, 27, 25, 22, 19]$$

$$Y = [57, 54, 48, 63, 20, 23, 36, 10, 31, 44]$$

Задача L-44.10.

3

$$X = [46, 42, 40, 37, 33, 30, 28, 25, 22, 20]$$

$$Y = [58, 48, 44, 25, 62, 53, 12, 35, 29, 17]$$

Задача L-44.11.

3

$$X = [46, 44, 40, 37, 33, 32, 29, 26, 23, 20]$$

$$Y = [59, 54, 64, 44, 22, 18, 11, 29, 48, 35]$$

Задача L-44.12.

3

$$X = [46, 42, 40, 37, 33, 31, 27, 25, 22, 19]$$

$$Y = [53, 57, 44, 35, 19, 47, 28, 12, 24, 62]$$

Задача L-44.13.

3

$$X = [45, 42, 40, 38, 34, 31, 28, 26, 22, 18]$$

$$Y = [54, 48, 58, 25, 18, 42, 36, 11, 30, 62]$$

Задача L-44.14.

3

$$X = [47, 42, 39, 36, 34, 31, 27, 24, 22, 20]$$

$$Y = [57, 62, 43, 37, 52, 13, 15, 48, 29, 23]$$

¹Гмурман В.Е. Руководство к решению задач по теории вероятностей и математической статистике. М.:1969. с. 202.

Задача L-44.15.

3

$$X = [47, 43, 40, 37, 34, 31, 28, 25, 23, 19]$$

$$Y = [57, 48, 63, 54, 23, 14, 36, 31, 43, 17]$$

Задача L-44.16.

3

$$X = [47, 43, 40, 37, 34, 30, 28, 25, 22, 20]$$

$$Y = [59, 48, 52, 43, 22, 13, 36, 29, 62, 17]$$

Задача L-44.17.

3

$$X = [46, 43, 39, 36, 35, 30, 27, 25, 23, 19]$$

$$Y = [53, 49, 62, 28, 57, 13, 36, 42, 23, 18]$$

Задача L-44.18.

3

$$X = [46, 42, 39, 38, 34, 31, 29, 26, 22, 19]$$

$$Y = [58, 48, 43, 30, 18, 54, 63, 13, 24, 34]$$

Задача L-44.19.

3

$$X = [46, 43, 40, 37, 34, 31, 28, 24, 21, 18]$$

$$Y = [52, 48, 29, 35, 26, 18, 63, 13, 42, 57]$$

Задача L-44.20.

3

$$X = [46, 43, 40, 36, 35, 31, 28, 25, 22, 20]$$

$$Y = [52, 62, 43, 25, 58, 13, 16, 30, 36, 49]$$

Задача L-44.21.

3

$$X = [46, 43, 40, 37, 34, 31, 28, 24, 22, 19]$$

$$Y = [52, 48, 42, 37, 29, 13, 63, 58, 22, 17]$$

Задача L-44.22.

3

$$X = [46, 43, 41, 36, 34, 31, 29, 25, 22, 20]$$

$$Y = [59, 52, 49, 24, 64, 35, 11, 28, 43, 16]$$

Задача L-44.23.

3

$$X = [47, 43, 41, 38, 35, 30, 27, 24, 21, 19]$$

$$Y = [58, 53, 63, 44, 24, 19, 12, 31, 48, 37]$$

Задача L-44.24.

3

$$X = [47, 43, 41, 36, 33, 32, 28, 24, 21, 19]$$

$$Y = [58, 64, 47, 43, 24, 52, 15, 12, 37, 28]$$

Задача L-44.25.

3

$$X = [45, 42, 39, 38, 34, 31, 28, 24, 21, 18]$$

$$Y = [53, 47, 42, 57, 28, 17, 11, 63, 22, 35]$$

Задача L-44.26.

3

$$X = [45, 42, 39, 37, 34, 31, 27, 24, 22, 19]$$

$$Y = [52, 48, 57, 35, 62, 13, 28, 42, 23, 17]$$

Задача L-44.27.

3

$$X = [46, 44, 41, 37, 34, 30, 28, 26, 23, 20]$$

$$Y = [54, 63, 59, 24, 37, 16, 12, 29, 49, 44]$$

Задача L-44.28.

3

$$X = [45, 44, 39, 37, 34, 31, 28, 26, 22, 19]$$

$$Y = [54, 63, 48, 29, 25, 18, 58, 12, 44, 33]$$

L-44

Ответы.**Ранговая корреляция Спирмена**

06-Nov-18

№	$\sum d_i^2$	ρ_B	y_i
1	44	0.733	2,3,1,6,5,8,10,4,7,9
2	78	0.527	3,1,4,8,2,9,10,6,5,7
3	122	0.261	2,4,3,7,8,9,10,1,5,6
4	124	0.248	3,4,1,6,8,9,10,7,5,2
5	112	0.321	3,4,5,1,7,9,10,6,8,2
6	42	0.745	2,3,1,4,8,6,10,7,5,9
7	66	0.600	2,4,3,5,8,1,9,10,6,7
8	116	0.297	3,4,5,6,8,2,10,7,1,9
9	66	0.600	2,3,4,1,9,8,6,10,7,5
10	68	0.588	2,4,5,8,1,3,10,6,7,9
11	76	0.539	2,3,1,5,8,9,10,7,4,6
12	118	0.285	3,2,5,6,9,4,7,10,8,1
13	132	0.200	3,4,2,8,9,5,6,10,7,1
14	58	0.648	2,1,5,6,3,10,9,4,7,8
15	54	0.673	2,4,1,3,8,10,6,7,5,9
16	98	0.406	2,4,3,5,8,10,6,7,1,9
17	58	0.648	3,4,1,7,2,10,6,5,8,9
18	100	0.394	2,4,5,7,9,3,1,10,8,6
19	166	-0.006	3,4,7,6,8,9,1,10,5,2
20	100	0.394	3,1,5,8,2,10,9,7,6,4
21	110	0.333	3,4,5,6,7,10,1,2,8,9
22	62	0.624	2,3,4,8,1,6,10,7,5,9
23	76	0.539	2,3,1,5,8,9,10,7,4,6
24	48	0.709	2,1,4,5,8,3,9,10,6,7
25	104	0.370	3,4,5,2,7,9,10,1,8,6
26	56	0.661	3,4,2,6,1,10,7,5,8,9
27	92	0.442	3,1,2,8,6,9,10,7,4,5
28	94	0.430	3,1,4,7,8,9,2,10,5,6

L-44 файл 44L3-AnsA