

Выборочный коэффициент ранговой корреляции Кендалла

Два эксперта X и Y выставили оценки десяти образцам продукции завода. Найти выборочный коэффициент корреляции Кендалла τ_B между их оценками.¹

Задача L-45.1.

$$X = [45, 43, 39, 37, 35, 32, 29, 26, 22, 19]$$

$$Y = [53, 63, 48, 31, 23, 43, 12, 35, 58, 20]$$

$$\tau_B = ?$$

Задача L-45.2.

$$X = [46, 43, 39, 37, 34, 31, 28, 26, 22, 19]$$

$$Y = [54, 62, 58, 34, 23, 17, 47, 12, 44, 29]$$

$$\tau_B = ?$$

Задача L-45.3.

$$X = [46, 44, 40, 37, 33, 32, 29, 25, 21, 18]$$

$$Y = [58, 52, 64, 43, 30, 24, 36, 19, 11, 47]$$

$$\tau_B = ?$$

Задача L-45.4.

$$X = [45, 43, 41, 38, 35, 32, 29, 26, 23, 19]$$

$$Y = [54, 49, 30, 23, 17, 59, 12, 42, 34, 64]$$

$$\tau_B = ?$$

Задача L-45.5.

$$X = [47, 43, 39, 38, 35, 30, 28, 26, 23, 19]$$

$$Y = [58, 49, 42, 29, 17, 54, 12, 36, 24, 63]$$

$$\tau_B = ?$$

Задача L-45.6.

$$X = [47, 44, 40, 37, 34, 32, 28, 24, 21, 18]$$

$$Y = [57, 35, 48, 64, 32, 52, 22, 12, 43, 20]$$

$$\tau_B = ?$$

Задача L-45.7.

$$X = [46, 43, 39, 37, 34, 32, 28, 25, 23, 19]$$

$$Y = [54, 57, 42, 34, 18, 24, 48, 13, 30, 63]$$

$$\tau_B = ?$$

Задача L-45.8.

$$X = [46, 44, 40, 37, 34, 31, 29, 26, 23, 19]$$

$$Y = [59, 54, 31, 22, 17, 35, 43, 13, 48, 64]$$

$$\tau_B = ?$$

Задача L-45.9.

$$X = [47, 42, 41, 38, 34, 31, 28, 25, 21, 18]$$

$$Y = [59, 48, 35, 42, 23, 62, 18, 12, 29, 53]$$

$$\tau_B = ?$$

Задача L-45.10.

$$X = [46, 43, 39, 38, 34, 30, 27, 24, 22, 20]$$

$$Y = [53, 48, 43, 57, 30, 19, 13, 35, 63, 24]$$

$$\tau_B = ?$$

Задача L-45.11.

$$X = [46, 43, 41, 37, 35, 31, 27, 24, 22, 19]$$

$$Y = [52, 62, 58, 43, 35, 25, 12, 31, 49, 18]$$

$$\tau_B = ?$$

Задача L-45.12.

$$X = [46, 42, 40, 37, 34, 31, 28, 24, 22, 19]$$

$$Y = [52, 48, 63, 42, 30, 57, 16, 12, 24, 36]$$

$$\tau_B = ?$$

¹Гмурман В.Е. Руководство к решению задач по теории вероятностей и математической статистике. М.:1969. с. 204.

Задача L-45.13.

3

$$X = [46, 42, 40, 37, 34, 30, 28, 26, 22, 18]$$

$$Y = [59, 48, 42, 23, 62, 29, 17, 12, 35, 53]$$

$$\tau_B = ?$$

Задача L-45.14.

3

$$X = [46, 44, 41, 37, 35, 31, 28, 24, 22, 19]$$

$$Y = [58, 53, 49, 30, 64, 16, 12, 36, 23, 42]$$

$$\tau_B = ?$$

Задача L-45.15.

3

$$X = [45, 44, 41, 37, 34, 32, 29, 25, 21, 18]$$

$$Y = [53, 64, 31, 35, 24, 47, 16, 59, 12, 42]$$

$$\tau_B = ?$$

Задача L-45.16.

3

$$X = [46, 43, 40, 37, 34, 30, 27, 25, 22, 18]$$

$$Y = [57, 53, 48, 42, 36, 24, 19, 11, 31, 62]$$

$$\tau_B = ?$$

Задача L-45.17.

3

$$X = [45, 42, 40, 38, 34, 30, 27, 24, 22, 20]$$

$$Y = [53, 49, 44, 62, 35, 10, 31, 58, 22, 17]$$

$$\tau_B = ?$$

Задача L-45.18.

3

$$X = [46, 43, 40, 36, 34, 30, 27, 25, 22, 19]$$

$$Y = [58, 53, 44, 34, 23, 31, 17, 13, 47, 62]$$

$$\tau_B = ?$$

Задача L-45.19.

3

$$X = [46, 44, 41, 37, 33, 31, 29, 25, 21, 18]$$

$$Y = [59, 52, 64, 37, 23, 43, 47, 19, 12, 31]$$

$$\tau_B = ?$$

Задача L-45.20.

3

$$X = [45, 44, 41, 37, 34, 32, 29, 25, 21, 18]$$

$$Y = [53, 64, 43, 34, 24, 48, 17, 12, 59, 29]$$

$$\tau_B = ?$$

Задача L-45.21.

3

$$X = [45, 43, 40, 37, 33, 32, 29, 25, 21, 18]$$

$$Y = [53, 63, 47, 59, 22, 43, 15, 30, 12, 35]$$

$$\tau_B = ?$$

Задача L-45.22.

3

$$X = [47, 42, 39, 37, 35, 32, 28, 25, 22, 19]$$

$$Y = [57, 63, 44, 53, 31, 23, 13, 48, 36, 18]$$

$$\tau_B = ?$$

Задача L-45.23.

3

$$X = [47, 44, 40, 36, 33, 30, 28, 25, 22, 19]$$

$$Y = [58, 52, 48, 43, 30, 25, 17, 13, 63, 37]$$

$$\tau_B = ?$$

Задача L-45.24.

3

$$X = [46, 44, 41, 38, 34, 31, 28, 25, 22, 20]$$

$$Y = [53, 63, 34, 59, 23, 12, 43, 30, 49, 17]$$

$$\tau_B = ?$$

Задача L-45.25.

3

$$X = [47, 42, 39, 37, 33, 30, 27, 24, 22, 20]$$

$$Y = [57, 48, 43, 62, 29, 18, 13, 35, 53, 22]$$

$$\tau_B = ?$$

Задача L-45.26.

3

$$X = [45, 44, 40, 37, 34, 30, 27, 24, 21, 19]$$

$$Y = [52, 63, 48, 44, 57, 30, 12, 17, 34, 23]$$

$$\tau_B = ?$$

Задача L-45.27.

3

$$X = [46, 42, 40, 37, 35, 31, 28, 25, 22, 19]$$

$$Y = [58, 49, 62, 52, 31, 26, 13, 43, 36, 19]$$

$$\tau_B = ?$$

Задача L-45.28.

3

$$X = [46, 42, 40, 37, 35, 30, 28, 26, 23, 20]$$

$$Y = [53, 49, 43, 24, 29, 12, 35, 59, 62, 19]$$

$$\tau_B = ?$$

Ответы.**Выборочный коэффициент ранговой корреляции Кендалла**

06-Nov-18

№	$\sum R_i$	τ_B	y_i	R_i
1	31	0.378	3,1,4,7,8,5,10,6,2,9	7,8,6,3,2,3,0,1,1
2	33	0.467	3,1,2,6,8,9,4,10,5,7	7,8,7,4,2,1,3,0,1
3	35	0.556	2,3,1,5,7,8,6,9,10,4	8,7,7,5,3,2,2,1,0
4	23	0.022	3,4,7,8,9,2,10,5,6,1	7,6,3,2,1,3,0,1,0
5	27	0.200	2,4,5,7,9,3,10,6,8,1	8,6,5,3,1,3,0,1,0
6	33	0.467	2,6,4,1,7,3,8,10,5,9	8,4,5,6,3,4,2,0,1
7	27	0.200	3,2,5,6,9,8,4,10,7,1	7,7,5,4,1,1,2,0,0
8	23	0.022	2,3,7,8,9,6,5,10,4,1	8,7,3,2,1,1,1,0,0
9	29	0.289	2,4,6,5,8,1,9,10,7,3	8,6,4,4,2,4,1,0,0
10	29	0.289	3,4,5,2,7,9,10,6,1,8	7,6,5,5,3,1,0,1,1
11	35	0.556	3,1,2,5,6,8,10,7,4,9	7,8,7,5,4,2,0,1,1
12	33	0.467	3,4,1,5,7,2,9,10,8,6	7,6,7,5,3,4,1,0,0
13	29	0.289	2,4,5,8,1,7,9,10,6,3	8,6,5,2,5,2,1,0,0
14	31	0.378	2,3,4,7,1,9,10,6,8,5	8,7,6,3,5,1,0,1,0
15	29	0.289	3,1,7,6,8,4,9,2,10,5	7,8,3,3,2,3,1,2,0
16	33	0.467	2,3,4,5,6,8,9,10,7,1	8,7,6,5,4,2,1,0,0
17	33	0.467	3,4,5,1,6,10,7,2,8,9	7,6,5,6,4,0,2,2,1
18	29	0.289	2,3,5,6,8,7,9,10,4,1	8,7,5,4,2,2,1,0,0
19	35	0.556	2,3,1,6,8,5,4,9,10,7	8,7,7,4,2,3,3,1,0
20	31	0.378	3,1,5,6,8,4,9,10,2,7	7,8,5,4,2,3,1,0,1
21	35	0.556	3,1,4,2,8,5,9,7,10,6	7,8,6,6,2,4,1,1,0
22	35	0.556	2,1,5,3,7,8,10,4,6,9	8,8,5,6,3,2,0,2,1
23	33	0.467	2,3,4,5,7,8,9,10,1,6	8,7,6,5,3,2,1,0,1
24	31	0.378	3,1,6,2,8,10,5,7,4,9	7,8,4,6,2,0,2,1,1
25	31	0.378	2,4,5,1,7,9,10,6,3,8	8,6,5,6,3,1,0,1,1
26	35	0.556	3,1,4,5,2,7,10,9,6,8	7,8,6,5,5,3,0,0,1
27	35	0.556	2,4,1,3,7,8,10,5,6,9	8,6,7,6,3,2,0,2,1
28	25	0.111	3,4,5,8,7,10,6,2,1,9	7,6,5,2,2,0,1,1,1