

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.

$$X = [46, 43, 41, 37, 34, 31, 28, 25, 21, 19]$$

$$Y = [59, 52, 47, 62, 25, 43, 37, 12, 30, 19]$$

$$\tau_B = ?$$

Задача L-45.2.

$$X = [46, 42, 40, 37, 33, 31, 28, 26, 23, 19]$$

$$Y = [59, 48, 42, 23, 62, 20, 30, 11, 53, 36]$$

$$\tau_B = ?$$

Задача L-45.3.

$$X = [46, 43, 40, 36, 34, 32, 29, 26, 23, 20]$$

$$Y = [53, 49, 44, 24, 31, 12, 35, 59, 63, 16]$$

$$\tau_B = ?$$

Задача L-45.4.

$$X = [46, 43, 41, 37, 35, 31, 28, 24, 22, 19]$$

$$Y = [52, 63, 58, 43, 31, 23, 12, 49, 35, 18]$$

$$\tau_B = ?$$

Задача L-45.5.

$$X = [46, 43, 39, 37, 35, 30, 27, 25, 22, 19]$$

$$Y = [57, 54, 44, 36, 62, 18, 13, 28, 23, 48]$$

$$\tau_B = ?$$

Задача L-45.6.

$$X = [47, 44, 40, 38, 35, 30, 28, 25, 22, 19]$$

$$Y = [59, 53, 42, 29, 24, 17, 12, 35, 63, 49]$$

$$\tau_B = ?$$

Задача L-45.7.

$$X = [45, 42, 40, 36, 34, 32, 28, 25, 23, 19]$$

$$Y = [53, 49, 63, 35, 43, 15, 13, 57, 23, 30]$$

$$\tau_B = ?$$

Задача L-45.8.

$$X = [46, 43, 41, 36, 33, 31, 29, 25, 21, 19]$$

$$Y = [59, 52, 47, 43, 24, 37, 63, 13, 29, 17]$$

$$\tau_B = ?$$

Задача L-45.9.

$$X = [47, 44, 41, 37, 34, 30, 28, 26, 22, 19]$$

$$Y = [59, 53, 48, 22, 29, 44, 10, 63, 37, 18]$$

$$\tau_B = ?$$

Задача L-45.10.

$$X = [46, 43, 40, 38, 35, 32, 29, 25, 21, 18]$$

$$Y = [53, 58, 48, 31, 35, 26, 16, 12, 43, 63]$$

$$\tau_B = ?$$

Задача L-45.11.

$$X = [46, 43, 40, 36, 34, 31, 28, 25, 22, 20]$$

$$Y = [58, 52, 49, 62, 43, 12, 17, 37, 30, 24]$$

$$\tau_B = ?$$

Задача L-45.12.

$$X = [46, 42, 40, 37, 33, 32, 29, 25, 21, 18]$$

$$Y = [52, 36, 42, 59, 21, 47, 63, 18, 11, 30]$$

$$\tau_B = ?$$

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

Задача L-45.13.*1*

$$X = [46, 42, 40, 38, 34, 30, 28, 26, 23, 20]$$

$$Y = [54, 48, 43, 24, 19, 62, 11, 59, 30, 34]$$

$$\tau_B - ?$$

Задача L-45.14.*1*

$$X = [45, 43, 39, 36, 34, 31, 28, 26, 22, 18]$$

$$Y = [53, 62, 42, 58, 23, 35, 18, 30, 12, 47]$$

$$\tau_B - ?$$

Задача L-45.15.*1*

$$X = [46, 43, 39, 37, 34, 30, 27, 25, 22, 18]$$

$$Y = [53, 62, 43, 34, 29, 23, 20, 11, 57, 48]$$

$$\tau_B - ?$$

Задача L-45.16.*1*

$$X = [45, 43, 40, 37, 35, 32, 29, 26, 23, 20]$$

$$Y = [54, 63, 59, 23, 17, 12, 35, 31, 49, 43]$$

$$\tau_B - ?$$

Задача L-45.17.*1*

$$X = [46, 42, 41, 37, 35, 32, 29, 26, 23, 20]$$

$$Y = [53, 63, 59, 24, 37, 14, 43, 29, 49, 17]$$

$$\tau_B - ?$$

Задача L-45.18.*1*

$$X = [46, 43, 41, 37, 33, 31, 29, 26, 23, 19]$$

$$Y = [54, 63, 59, 24, 17, 48, 35, 13, 28, 42]$$

$$\tau_B - ?$$

Задача L-45.19.*1*

$$X = [46, 43, 41, 37, 35, 31, 29, 25, 22, 20]$$

$$Y = [59, 49, 28, 43, 23, 14, 64, 53, 36, 18]$$

$$\tau_B - ?$$

Задача L-45.20.*1*

$$X = [45, 43, 41, 37, 35, 30, 27, 25, 23, 20]$$

$$Y = [53, 62, 49, 44, 25, 11, 35, 58, 31, 18]$$

$$\tau_B - ?$$

Задача L-45.21.*1*

$$X = [46, 43, 40, 38, 35, 31, 27, 24, 22, 20]$$

$$Y = [57, 53, 49, 62, 38, 13, 24, 44, 30, 17]$$

$$\tau_B - ?$$

Задача L-45.22.*1*

$$X = [45, 44, 40, 38, 35, 31, 29, 25, 22, 20]$$

$$Y = [53, 64, 32, 49, 24, 12, 44, 34, 59, 19]$$

$$\tau_B - ?$$

Задача L-45.23.*1*

$$X = [46, 42, 39, 36, 34, 31, 27, 24, 22, 20]$$

$$Y = [57, 49, 43, 62, 30, 11, 17, 36, 23, 52]$$

$$\tau_B - ?$$

Задача L-45.24.*1*

$$X = [46, 43, 40, 38, 34, 31, 27, 25, 23, 19]$$

$$Y = [58, 48, 42, 63, 20, 54, 36, 14, 23, 30]$$

$$\tau_B - ?$$

Задача L-45.25.*1*

$$X = [46, 43, 40, 37, 34, 30, 28, 25, 22, 20]$$

$$Y = [53, 62, 43, 49, 21, 13, 30, 59, 34, 17]$$

$$\tau_B - ?$$

Задача L-45.26.*1*

$$X = [45, 44, 40, 37, 34, 30, 28, 26, 23, 20]$$

$$Y = [54, 63, 44, 22, 15, 11, 34, 59, 49, 28]$$

$$\tau_B - ?$$

Задача L-45.27.*1*

$$X = [46, 43, 40, 38, 33, 31, 28, 25, 22, 19]$$

$$Y = [58, 54, 43, 37, 22, 18, 29, 11, 63, 47]$$

$$\tau_B - ?$$

Задача L-45.28.*1*

$$X = [45, 43, 40, 36, 35, 31, 28, 26, 22, 19]$$

$$Y = [53, 48, 58, 29, 24, 36, 13, 63, 43, 18]$$

$$\tau_B - ?$$

Ответы.**Выборочный коэффициент ранговой корреляции Кендалла**

06-Nov-18

| № | $\sum R_i$ | τ_B | y_i | R_i |
|----|------------|----------|----------------------|-------------------|
| 1 | 37 | 0.644 | 2,3,4,1,8,5,6,10,7,9 | 8,7,6,6,2,4,3,0,1 |
| 2 | 29 | 0.289 | 2,4,5,8,1,9,7,10,3,6 | 8,6,5,2,5,1,1,0,1 |
| 3 | 25 | 0.111 | 3,4,5,8,7,10,6,2,1,9 | 7,6,5,2,2,0,1,1,1 |
| 4 | 35 | 0.556 | 3,1,2,5,7,8,10,4,6,9 | 7,8,7,5,3,2,0,2,1 |
| 5 | 31 | 0.378 | 2,3,5,6,1,9,10,7,8,4 | 8,7,5,4,5,1,0,1,0 |
| 6 | 27 | 0.200 | 2,3,5,7,8,9,10,6,1,4 | 8,7,5,3,2,1,0,0,1 |
| 7 | 31 | 0.378 | 3,4,1,6,5,9,10,2,8,7 | 7,6,7,4,4,1,0,2,0 |
| 8 | 35 | 0.556 | 2,3,4,5,8,6,1,10,7,9 | 8,7,6,5,2,3,3,0,1 |
| 9 | 31 | 0.378 | 2,3,4,8,7,5,10,1,6,9 | 8,7,6,2,2,3,0,2,1 |
| 10 | 29 | 0.289 | 3,2,4,7,6,8,9,10,5,1 | 7,7,6,3,3,2,1,0,0 |
| 11 | 35 | 0.556 | 2,3,4,1,5,10,9,6,7,8 | 8,7,6,6,5,0,0,2,1 |
| 12 | 29 | 0.289 | 3,6,5,2,8,4,1,9,10,7 | 7,4,4,5,2,3,3,1,0 |
| 13 | 27 | 0.200 | 3,4,5,8,9,1,10,2,7,6 | 7,6,5,2,1,4,0,2,0 |
| 14 | 33 | 0.467 | 3,1,5,2,8,6,9,7,10,4 | 7,8,5,6,2,3,1,1,0 |
| 15 | 31 | 0.378 | 3,1,5,6,7,8,9,10,2,4 | 7,8,5,4,3,2,1,0,1 |
| 16 | 27 | 0.200 | 3,1,2,8,9,10,6,7,4,5 | 7,8,7,2,1,0,1,0,1 |
| 17 | 31 | 0.378 | 3,1,2,8,6,10,5,7,4,9 | 7,8,7,2,3,0,2,1,1 |
| 18 | 31 | 0.378 | 3,1,2,8,9,4,6,10,7,5 | 7,8,7,2,1,4,2,0,0 |
| 19 | 29 | 0.289 | 2,4,7,5,8,10,1,3,6,9 | 8,6,3,4,2,0,3,2,1 |
| 20 | 33 | 0.467 | 3,1,4,5,8,10,6,2,7,9 | 7,8,6,5,2,0,2,2,1 |
| 21 | 35 | 0.556 | 2,3,4,1,6,10,8,5,7,9 | 8,7,6,6,4,0,1,2,1 |
| 22 | 29 | 0.289 | 3,1,7,4,8,10,5,6,2,9 | 7,8,3,5,2,0,2,1,1 |
| 23 | 29 | 0.289 | 2,4,5,1,7,10,9,6,8,3 | 8,6,5,6,3,0,0,1,0 |
| 24 | 33 | 0.467 | 2,4,5,1,9,3,6,10,8,7 | 8,6,5,6,1,4,3,0,0 |
| 25 | 31 | 0.378 | 3,1,5,4,8,10,7,2,6,9 | 7,8,5,5,2,0,1,2,1 |
| 26 | 27 | 0.200 | 3,1,5,8,9,10,6,2,4,7 | 7,8,5,2,1,0,1,2,1 |
| 27 | 29 | 0.289 | 2,3,5,6,8,9,7,10,1,4 | 8,7,5,4,2,1,1,0,1 |
| 28 | 29 | 0.289 | 3,4,2,7,8,6,10,1,5,9 | 7,6,6,3,2,2,0,2,1 |

L-45 файл 45L1-AnsA