data wide\_lead;

input ID TRT $ PB1 - PB4;

datalines;

1 P 30.8 26.9 25.8 23.8

2 A 26.5 14.8 19.5 21.0

3 A 25.8 23.0 19.1 23.2

4 P 24.7 24.5 22.0 22.5

5 A 20.4 2.8 3.2 9.4

6 A 20.4 5.4 4.5 11.9

7 P 28.6 20.8 19.2 18.4

8 P 33.7 31.6 28.5 25.1

9 P 19.7 14.9 15.3 14.7

10 P 31.1 31.2 29.2 30.1

11 P 19.8 17.5 20.5 27.5

12 A 24.8 23.1 24.6 30.9

13 P 21.4 26.3 19.5 19.0

14 A 27.9 6.3 18.5 16.3

15 P 21.1 20.3 18.4 20.8

16 P 20.6 23.9 19.0 17.0

17 P 24.0 16.7 21.7 20.3

18 P 37.6 33.7 34.4 31.4

19 A 35.3 25.5 26.3 30.3

20 A 28.6 15.8 22.9 25.9

21 P 31.9 27.9 27.3 34.2

22 A 29.6 15.8 23.7 23.4

23 A 21.5 6.5 7.1 16.0

24 P 26.2 26.8 25.3 24.8

25 A 21.8 12.0 16.8 19.2

26 A 23.0 4.2 4.0 16.2

27 A 22.2 11.5 9.5 14.5

28 P 20.5 21.1 17.4 21.1

29 A 25.0 3.9 12.8 12.7

30 P 33.3 26.2 34.0 28.2

31 A 26.0 21.4 21.0 22.4

32 A 19.7 13.2 14.6 11.6

33 P 27.9 21.6 23.6 27.7

34 P 24.7 21.2 22.9 21.9

35 P 28.8 26.4 23.8 22.0

36 A 29.6 17.5 21.0 24.2

37 P 32.0 30.2 30.2 27.5

38 P 21.8 19.3 16.4 17.6

39 A 24.4 16.4 11.6 16.6

40 A 33.7 14.9 14.5 63.9

41 P 24.9 20.9 22.2 19.8

42 P 19.8 18.9 18.9 15.5

43 A 26.7 6.4 5.1 15.1

44 A 26.8 20.4 19.3 23.8

45 A 20.2 10.6 9.0 16.0

46 P 35.4 30.4 26.5 28.1

47 P 25.3 23.9 22.2 27.2

48 A 20.2 17.5 17.4 18.6

49 A 24.5 10.0 15.6 15.2

50 P 20.3 21.0 16.7 13.5

51 P 20.4 17.2 15.9 17.7

52 P 24.1 20.1 17.9 18.7

53 A 27.1 14.9 18.1 21.3

54 A 34.7 39.0 28.8 34.7

55 P 28.5 32.6 27.5 22.8

56 P 26.6 22.4 21.8 21.0

57 A 24.5 5.1 8.2 23.6

58 P 20.5 17.5 19.6 18.4

59 P 25.2 25.1 23.4 22.2

60 P 34.7 39.5 38.6 43.3

61 P 30.3 29.4 33.1 28.4

62 P 26.6 25.3 25.1 27.9

63 P 20.7 19.3 21.9 21.8

64 A 27.7 4.0 4.2 11.7

65 A 24.3 24.3 18.4 27.8

66 A 36.6 23.3 40.4 39.3

67 P 28.9 28.9 32.8 31.8

68 A 34.0 10.7 12.6 21.2

69 A 32.6 19.0 16.3 18.6

70 A 29.2 9.2 8.3 18.4

71 A 26.4 15.3 24.6 32.4

72 A 21.8 10.6 14.4 18.7

73 P 27.2 28.5 35.0 30.5

74 P 22.4 22.0 19.1 18.7

75 P 32.5 25.1 27.8 27.3

76 P 24.9 23.6 21.2 21.1

77 P 24.6 25.0 21.7 23.9

78 P 23.1 20.9 21.7 19.9

79 A 21.1 5.6 7.3 12.3

80 P 25.8 21.9 23.6 24.8

81 P 30.0 27.6 24.0 23.7

82 A 22.1 21.0 8.6 24.6

83 P 20.0 22.7 21.2 20.5

84 P 38.1 40.8 38.0 32.7

85 A 28.9 12.5 16.7 22.2

86 P 25.1 28.1 27.5 24.8

87 A 19.8 11.6 13.0 23.1

88 P 22.1 21.1 21.5 20.6

89 A 23.5 7.9 12.4 18.9

90 A 29.1 16.8 15.1 18.8

91 A 30.3 3.5 3.0 11.5

92 P 25.4 24.3 22.7 20.1

93 A 30.6 28.2 27.0 25.5

94 A 22.4 7.1 17.2 18.7

95 A 31.2 10.8 19.8 22.2

96 A 31.4 3.9 7.0 17.8

97 A 41.1 15.1 10.9 27.1

98 A 29.4 22.1 25.3 4.1

99 A 21.9 7.6 10.8 13.0

100 A 20.7 8.1 25.7 12.3

;

run;

Proc corr data = wide\_lead cov pearson;

Var PB1 PB2 PB3 PB4;

Run;

**The CORR Procedure**

|  |  |
| --- | --- |
| **4 Variables:** | PB1 PB2 PB3 PB4 |

| **Covariance Matrix, DF = 99** | | | | |
| --- | --- | --- | --- | --- |
|  | **PB1** | **PB2** | **PB3** | **PB4** |
| **PB1** | 24.98905455 | 18.16066061 | 18.92146263 | 21.78219798 |
| **PB2** | 18.16066061 | 75.22486768 | 59.24103838 | 37.48690505 |
| **PB3** | 18.92146263 | 59.24103838 | 65.38538990 | 36.54235556 |
| **PB4** | 21.78219798 | 37.48690505 | 36.54235556 | 60.15897374 |

| **Simple Statistics** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **N** | **Mean** | **Std Dev** | **Sum** | **Minimum** | **Maximum** |
| **PB1** | 100 | 26.40600 | 4.99891 | 2641 | 19.70000 | 41.10000 |
| **PB2** | 100 | 19.09100 | 8.67323 | 1909 | 2.80000 | 40.80000 |
| **PB3** | 100 | 19.79200 | 8.08612 | 1979 | 3.00000 | 40.40000 |
| **PB4** | 100 | 22.20400 | 7.75622 | 2220 | 4.10000 | 63.90000 |

| **Pearson Correlation Coefficients, N = 100 Prob > |r| under H0: Rho=0** | | | | |
| --- | --- | --- | --- | --- |
|  | **PB1** | **PB2** | **PB3** | **PB4** |
| **PB1** | 1.00000 | 0.41887  <.0001 | 0.46810  <.0001 | 0.56179  <.0001 |
| **PB2** | 0.41887  <.0001 | 1.00000 | 0.84470  <.0001 | 0.55725  <.0001 |
| **PB3** | 0.46810  <.0001 | 0.84470  <.0001 | 1.00000 | 0.58265  <.0001 |
| **PB4** | 0.56179  <.0001 | 0.55725  <.0001 | 0.58265  <.0001 | 1.00000 |

**proc sort data = wide\_lead;**

**by trt;**

**run;**

**Proc corr data = wide\_lead cov pearson;**

**by trt;**

**Var PB1 PB2 PB3 PB4;**

**Run;**

**The CORR Procedure**

**TRT=A**

|  |  |
| --- | --- |
| **4 Variables:** | PB1 PB2 PB3 PB4 |

| **Covariance Matrix, DF = 49** | | | | |
| --- | --- | --- | --- | --- |
|  | **PB1** | **PB2** | **PB3** | **PB4** |
| **PB1** | 25.20979592 | 15.46542857 | 15.13800000 | 22.98542857 |
| **PB2** | 15.46542857 | 58.86705714 | 44.02907347 | 35.96595510 |
| **PB3** | 15.13800000 | 44.02907347 | 61.65714694 | 33.02197143 |
| **PB4** | 22.98542857 | 35.96595510 | 33.02197143 | 85.49464898 |

| **Simple Statistics** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **N** | **Mean** | **Std Dev** | **Sum** | **Minimum** | **Maximum** |
| **PB1** | 50 | 26.54000 | 5.02094 | 1327 | 19.70000 | 41.10000 |
| **PB2** | 50 | 13.52200 | 7.67249 | 676.10000 | 2.80000 | 39.00000 |
| **PB3** | 50 | 15.51400 | 7.85221 | 775.70000 | 3.00000 | 40.40000 |
| **PB4** | 50 | 20.76200 | 9.24633 | 1038 | 4.10000 | 63.90000 |

| **Pearson Correlation Coefficients, N = 50 Prob > |r| under H0: Rho=0** | | | | |
| --- | --- | --- | --- | --- |
|  | **PB1** | **PB2** | **PB3** | **PB4** |
| **PB1** | 1.00000 | 0.40146  0.0039 | 0.38397  0.0059 | 0.49511  0.0003 |
| **PB2** | 0.40146  0.0039 | 1.00000 | 0.73082  <.0001 | 0.50697  0.0002 |
| **PB3** | 0.38397  0.0059 | 0.73082  <.0001 | 1.00000 | 0.45482  0.0009 |
| **PB4** | 0.49511  0.0003 | 0.50697  0.0002 | 0.45482  0.0009 | 1.00000 |

**The CORR Procedure**

**TRT=P**

|  |  |
| --- | --- |
| **4 Variables:** | PB1 PB2 PB3 PB4 |

| **Covariance Matrix, DF = 49** | | | | |
| --- | --- | --- | --- | --- |
|  | **PB1** | **PB2** | **PB3** | **PB4** |
| **PB1** | 25.24164898 | 22.74946939 | 24.26097959 | 21.41784490 |
| **PB2** | 22.74946939 | 29.82448980 | 27.04122449 | 23.38412245 |
| **PB3** | 24.26097959 | 27.04122449 | 33.09846939 | 28.21895918 |
| **PB4** | 21.41784490 | 23.38412245 | 28.21895918 | 31.80743265 |

| **Simple Statistics** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **N** | **Mean** | **Std Dev** | **Sum** | **Minimum** | **Maximum** |
| **PB1** | 50 | 26.27200 | 5.02411 | 1314 | 19.70000 | 38.10000 |
| **PB2** | 50 | 24.66000 | 5.46118 | 1233 | 14.90000 | 40.80000 |
| **PB3** | 50 | 24.07000 | 5.75313 | 1204 | 15.30000 | 38.60000 |
| **PB4** | 50 | 23.64600 | 5.63981 | 1182 | 13.50000 | 43.30000 |

| **Pearson Correlation Coefficients, N = 50 Prob > |r| under H0: Rho=0** | | | | |
| --- | --- | --- | --- | --- |
|  | **PB1** | **PB2** | **PB3** | **PB4** |
| **PB1** | 1.00000 | 0.82914  <.0001 | 0.83935  <.0001 | 0.75588  <.0001 |
| **PB2** | 0.82914  <.0001 | 1.00000 | 0.86067  <.0001 | 0.75922  <.0001 |
| **PB3** | 0.83935  <.0001 | 0.86067  <.0001 | 1.00000 | 0.86971  <.0001 |
| **PB4** | 0.75588  <.0001 | 0.75922  <.0001 | 0.86971  <.0001 | 1.00000 |