

Errata - *Using Multivariate Statistics, 4th edition*

This is a compilation of all errors, updated as more are reported. Any and all such errors may already be corrected in the book that you have received.

Chapter 3

Page 53, Equation 3.28

Equation is for r (correlation), not z

Chapter 4

Page 70, second full paragraph, last line, add the following:

SPSS DISCRIMINANT provides outliers in the solution.

Page 85, first full paragraph, next to last line:

...tioning index < 30 for a given dimension...

Chapter 5

Page 117, fifth paragraph, first line:

If statistical (stepwise) regression....

Page 125, second paragraph, fifth line:

References to Appendices A.4 (matrix multiplication) and A.5 (matrix inversion or division) should be changed to A.5 and A.6, respectively.

Page 132, Figure 5.2(a):

empty overlap portion between IV_2 and IV_3 should be labeled e .

Page 141,

next to last line before Table 5.10, add pr_5 :

... is the significance test for sr_i^2 , B_i , pr_5 and \hat{a}_i , as discussed in Section 5.6.2.

Replace Table 5.10 with the following:

TABLE 5.10 Procedures for Finding sr_i^2 AND pr_i^2 Through SPSS, SAS, and SYSTAT for Standard Multiple and Sequential Regression.

	sr_i^2	pr_i^2
Standard Multiple Regression		
SPSS REGRESSION	STATISTICS ZPP Part	STATISTICS ZPP Partial
SAS REG	SCORR2	PCORR2
SYSTAT REGRESS	Use Eq. 5.9	Not available
Sequential Regression		
SPSS REGRESSION	R Square Change in Model Summary table	Not available
SAS REG	SCORR1	PCORR1
SYSTAT REGRESS	Get by subtraction of R^2 in sequential steps	Not available

Page 143, first line of Section 5.6.2.2, add pr_i :

...the same significance test evaluates B_i , β_i , pr_i , and sr_i .

Page 144, explanation for Equation 5.12, third line:

... m is the number of IVs in the new block; and...

Page 145, First and second paragraphs of Section 5.6.2.4:

References should be to Equation 5.13 rather than 5.14.

Page 146, first full paragraph, third line:

...for example, Y'_a is prediction from personality scores and Y'_b is prediction from past...

Page 149, first line of last paragraph:

Reference to Equation should be 3.5, not 3.8.

Page 162, Second line of Table 5.17:

(unique) should be centered under column labeled sr_i^2 not column labeled B

Page 168,

Second line of Table 5.20:

(incremental) should be centered under column labeled sr_i^2

Delete Table 5.20 footnote a and reference to it after $R^2 = .38$.

Page 169, third paragraph, first sentence:

Table 5.20 displays the....

Chapter 6

Page 213, Table 6.15

Entry for LPHYHEAL in *Correlation* column of **Second Canonical Variate** should be -.05, not -.53

Page 215, third line from bottom, delete following text:

negative of (log of) number of physical health symptoms,

Page 216, next to last line of Results section, delete following text:

fewer physical health symptoms (-.53),

Chapter 7

Page 232, last line of page:

Reference to Section 7.5.4 should be Section 7.5.3.

Page 241, end of second paragraph:

Reference to section 7.5.3.2 should be Section 12.6.7.

Page 253, fifth line of Section 7.5.3.3:

Reference to Section 7.5.4.1 should be Section 7.5.3.1.

Page 269, last line of first paragraph:

Reference to Table should be 7.19, not 7.20.

Page 274, first line of Section 7.7.3:

SYSTAT LOGLIN (SPSS Inc, 1999f)...

Chapter 9

Page 335, Large equation in lower half of page:

all \mathbf{DT}_{km} and \mathbf{Y}_{ikm} should be bolded and not italicized, to indicate matrices.

Page 338, equation for s :

$$s = \sqrt{\frac{(2)^2(2)^2 - 4}{(2)^2 + (2)^2 - 5}} = 2$$

Page 360, last line before Table 9.13:

..., critical $\chi^2_5 = 22.458$...

Page 389, third paragraph, fourth line:

Reference to Section should be 9.6, not 10.7.

Chapter 10

Page 393, last line:

Reference to Sections should be 10.4 and 10.6, not 10.4 and 10.7.

Page 394, first paragraph, last line:

Reference to Sections should be 10.4 and 10.6, not 10.4 and 10.7.

Page 400, matrix for \mathbf{M}_3 :

First (top) entry should be 3.0, not 3.2

Page 411, first paragraph, fifth line:

Reference to Section should be 10.6.2, not 10.7 2

Page 430, second paragraph, last line:

Reference to Equation should be 10.10, not 6.27.

Page 435,

Next to last paragraph, final sentence, change to:

These are based on marginal means and standard deviations for each subtest (not shown here).

Last paragraph, first sentence:

....compensate for multiple testing, a wide confidence interval...

Page 445, first line:

Reference to Table should be 9.13, not 9.12.

Chapter 11

Page 465,

Explanation for $df_{wg} = 6$ in middle of page:

...an alternative equation for df_{wg} is $N - k$, where...

Equation for s :

$$s = \sqrt{\frac{(4)^2(2)^2 - 4}{(4)^2 + (2)^2 - 5}} = 2$$

Page 491, equation for df_{wg} , lower half of page:

$$df_{wg} = N - k = 6$$

Page 502, Figure 11.3:

Signs for plotting points for second discriminant function should be reversed. Actual points are at

end of Table 11.10 in section labeled Canonical scores of group means. For example, WORKING women should be plotted as 0.141 for First discriminant function and -0.151 for Second discriminant function rather than 0.141 for First discriminant function and 0.151 for Second discriminant function.

Page 512, SPSS DISCRIMINANT, Mahalanobis'

Yes^f

Add footnote: ^fOutliers in the solution.

Page 515, SPSS DISCRIMINANT, Mahalanobis'

Yes^d

Add footnote: ^dOutliers in the solution.

Chapter 12

Page 523, Section 12.3.2.6, next to last line of section:

replace frankly with truly

Page 527, Equation 12.9

x (lower case x) should be bold, non-italicized, in both places

Page 528, Table 12.24:

Last entry in last column should be -3.326 (negative)

Page 545, Equation 12.12:

Change second *B* to 0 (zero)

Page 548, last paragraph, fourth line:

Reference should be to Table 12.5, not 12.6.

Page 549, third paragraph:

Delete first sentence, beginning. In the health sciences....

Change beginning of sentence directly below the calculated odds ratio to:

Odds are 30:1 that a child will be hyperactive given a familial history...

Page 551, Table 12.12, first line of syntax should read:

RECODE age sel (0=SYSMIS).

Page 566, first paragraph, last three sentences should read:

The first table compares working women with role-dissatisfied housewives, while the second compares role-satisfied with role-dissatisfied women. Using a criterion $\alpha = .0045$ (to compensate for inflated Type I error rate with 11 predictors), the critical value of z (the Wald test) = 2.84 for a two-tailed test. By this criterion, only ATTHOUSE (attitude toward housework) reliably separates role-satisfied from role-dissatisfied housewives. No predictor reliably separates working women from role-dissatisfied housewives.

Page 580, third paragraph, next to last line:

...the last) vs. the last. Three....

Chapter 13

Page 596, Table 13.4:

first entry in Factor 1 column should be -.086, not .000.

Chapter 14

Page 653, affiliation:

...*San Bernardino*

Page 658, first paragraph, last line:

Reference to Tables should be 14.4.5, 14.6.1.3, and 14.6.2.4, not 14.6.3, 14.6.4, and 14.6.8.

Page 663, Table 14.1

Column headings (NUMYRS, etc.) should not be italicized

Page 667, Matrix

Delete vertical lines outside of brackets

$\Phi =$ should be at left of matrix, not used as column heading

Page 671,

Figure 14.5 caption should be directly below flow diagram, above matrix

Delete “(continued)” near bottom of page, right side

Page 672,

Second matrix should be labeled Φ

Delete **FIGURE 14.5 Continued**

Equation near bottom of page should be:

$$(.08924)(99) = 8.835$$

Page 676,

Delete **6.191** just above the STANDARDIZED SOLUTION table.

Page 718, last line before Section 14.5.8:

...Duncan and Duncan (1998).

Page 759, last paragraph:

First line, reference to Equation should be 14.36, not 14.34.

Third line, reference to Equation should be 14.37, not 14.35.

Chapter 16

Page 845, second paragraph, second and third sentences should be changed to:

The first value in Table 16.2, for example, is 19 and the second value is 21. Thus the lag 1 difference is 2.

Page 847, Section 16.4.1.2, fourth and fifth sentences and Equation 16.3, lower-case phi was omitted:

...the correlation coefficient ϕ_1 is the magnitude of the relationship. When the value of p is 2,and the correlation coefficient ϕ_2 is the magnitude.....

For example...

$$Y_t = \phi_1 Y_{t-1} + \phi_2 Y_{t-2} + a_t$$

Page 848, lower-case phi was omitted from Equation 16.5:

$$Y_t = \phi_1 Y_{t-1} + \theta_1 a_{t-1} + a_t$$

Page 854, Section 16.4.2, item 2. Lower-case phi was omitted from text and equations:

...all auto-regressive parameters, ϕ , must be between -1 and ...

$$\phi_1 + \phi_2 < 1 \text{ and}$$

$$\phi_2 - \phi_1 < 1$$

Page 882, Paragraph after explanation for Equation 16.15 should be changed to:

SAS ARIMA provides the standard deviation of the differenced series which is first converted to variance by squaring and then converted to SS by multiplication by $(N - 1)$. Table 16.15 shows that **Standard deviation** = 6.44, so that the variance (s_y^2) = $(6.44)^2 = 41.47$. With $N = 40$, $SS_{y,t} = (41.47)(39) = 1617.33$ for the small-sample example. Table 16.15 shows the variance for the residuals: **Variance estimate** (s_a^2) = 23.35, with $df = (N - \text{number of parameters} - 1) = (40 - 3 - 1) = 36$, so that $s_a^2 = (23.35)(36) = 840.60$. (In this example, there is one parameter for auto-regression, one for trend, and one for intervention.) When these values are plugged into Equation 16.15:

$$R^2 = 1 - \frac{840.60}{1617.33} = .48$$

Thus, 48% of the variance in the intervention analysis of Table 16.15 is explained by the ARIMA (1, 1, 0) model with an abrupt, permanent effect.

Appendix A

Page 914, first matrix of Equation A.13, left hand side should be:

$$\mathbf{A}^{-1} =$$

Page 914, second matrix of Equation A.13, upper right cell should be:

bf - ce

References

Page 937

First entry, insert **Aand@** between Stein, J.A., and Bentler, P.M.

Add following as second entry:

Aiken, L. S. and West, S. G. (1991). *Multiple Regression: Testing and Interpreting Interactions*. Newbury Park, CA: Sage Publications.

Page 941

MacCallum et al entry should be: ...*Psychological Methods, 1*, 130-149.

Index

Page 959, near end of first column:

Change Screen test to Scree test. Move entries for Schwarz's Bayesian Criterion and Scree test to precede entry for Screening data.

Page 963, 12th entry in second column:

Change reference to "recursive" to 692 (not 792)