

Math 3080 Group Fox Project 4 – Skill Project Cross-Reference Sheet 4-29-2013 K. Fisher

Task-Skill	Devore Ref.	Verzani Ref.	Paper Ref.	Slide Ref.
Best variable subsetting				
Scatterplot matrix	None	p. 109, 96-97	Fig. B 10, p. 29	
Mallow's C_k	p. 579-580	None	See Minitab C_k supplement attached	
Factor analysis†	p. 508-509; <i>see</i> 468-469 <i>re</i> deterministically related	p. 86-88	Table A 6, p. 19	
Correlation matrix‡	<i>See</i> p. 508-512	<i>See</i> p. 86-87	Table A 5, p. 19	
Orthogonality (principal component analysis)†	Not applicable		Table A 7, p. 19	
Data distribution analysis				
Outliers	<i>See</i> p. 40	p. 98-99; <i>see</i> p. 64-65	Table A 4, p. 18; Fig. B 7 and B 8, p. 27	
Influence points with Cook's Distance	p. 582-584	p. 287	Table A 4, p. 18; Fig. B 11, p. 30; B 12, lower-right hand box, p. 31	
Subpopulations in data‡	None	None	Table 1, p. 5; Fig. B 7, p. 27	
Model optimization and variable selection				
Consider transformations	p. 532, 534, 575	p. 95-96, 301, 304, 343-358	TC+TC ² model, Table A 9, p. 20	
B_1 ‡ as general indicator of causation-determinism.	None	None	Not used because best model was quadratic; not applicable.	
R^2	p. 579	p. 291-292	Table A 9, p. 20	
MSE using adj. R^2 as proxy	p. 579	p. 291-292	Table A 9, p. 20	
stepwise AIC (Akaike's Info. Criteria)	p. 579-580	p. 309-310	Table A 9, p. 20	
t-test on B_1 's proxied by p values	p. 563-565	p. 289-290, 323-325	Table A 9, p. 20	
Partial F-test	p. 565-565	p. 308, 291	Included in stepwise AIC analysis with R , but result not included in Table A 9	
Interaction variables	None	p. 338-340	Not needed since no interaction term was necessary, but variable interaction is considered in Minitab C_k supplement.	
Backward-forward step elimination	p. 581-582	<i>See</i> p. 304, 309-310	Table A 9, p. 20, <i>see</i> rows 6-10	
Multicollinearity	p. 584-585	None	Considered, but no model in Table A 9 has a $R^2 > 0.9$.	
Model statement				
Confidence and prediction intervals stated	p. 547-548	p. 294-297	Eq.s 1-5, p. 2-3; Fig. 1, p. 3; Fig. B 1, p. 23	
Standardized model version stated	p. 576-578, p. 548-549	None	Eq.s 3,4 and 5, p. 3; Fig. B 1, p. 23	
Testing of selected model				
Assumptions of test analysis (four box plot) - Normality and residuals plots	p. 567-568	p. 284-288	Table A 9, p. 20 – Shapiro-Wilk of e^* ; Fig. B 12, p. 31.	
Goodness-of-fit ANOVA analysis of reduced-to-fitted models	p. 562-563	p. 325-326	Table A 9, p. 20 – F-statistic; Table A 10, p. 21.	

Notes: † - Technique is not included in this course, but the technique is covered in later courses. ‡ - Discussed in lecture.

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Testing of selected model				
Assumptions of test analysis (four box plot) - Normality and residuals plots	p. 567-568	p. 284-288	Table A 9, p. 20 – Shapiro-Wilk of e^* ; Fig. B 12, p. 31.	
Goodness-of-fit ANOVA analysis of reduced-to-fitted models	p. 562-563	p. 325-326	Table A 9, p. 20 – F-statistic; Table A 10, p. 21.	

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