

COM 531, Multivariate Statistical Analyses

Spring 2009

Take-home midterm exam

Due: 6 pm, Thursday, March 12

Worth: 20 pts. (10% of your course grade); each item (one A and one B) is worth a maximum of 10 pts.

All write-ups should be typed, double-spaced, and handed in as hard copy. Please head each page with your student ID number (no names). For all analyses, be sure to “clean” your data (at least the variables you’re using).

1. Using any of the class data sets, conduct a factor analysis (principal components) on a set of 6 to 10 variables. You may select the rotation, and the criterion for selecting the number of factors. Justify all selections. Table your results according to the class examples (i.e., the final pages of Dr. N’s factor analysis example handout), and write a short description of these tabled findings. (NOTE: If you choose oblique rotation, you will want to add a table of correlations among your factors, and include a description of this as well.) You must also describe any data transformations (e.g., recodes to dummy, computes to create scales). Attach all relevant SPSS output, *with* syntax included. Comment on any problems that exist with your findings (e.g., low communalities, other violations of assumptions).

2. Using any of the class data sets, develop a hypothesis of the following type:

“X1 will contribute a significant amount (proportion) of variance to the prediction of Y, after controlling for X2, X3, and X4.”

State the hypothesis. Use multiple regression to test this hypothesis. Indicate whether your hypothesis was supported or not. You do not need to table up your results fully; include all the relevant information in your write-up. Attach all SPSS output, with syntax included. Comment on any problems that exist with your findings (e.g., multicollinearity, other violations of assumptions).