Session 4

Exercise Answers

Exercise D1:

Using "autoprixb.sav", estimate a CCR.lm model using the step-down option (include all 6 predictors) and 10 rounds with 6 folds for tuning parameters. Be sure to check the "Include Missing" box.

1. Is a 1-component or a 2 –component model best?
2. Which are the most important predictors?
3. Are any predictors excluded from the model?

CORExpress Exercise D1 Answers:

1. The 1-component model has a slightly higher CV-R^2 than the 2-component model (0.7065 vs. 0.6919).

   1-component model:

Predictors	Std.Coefficient	CC1
CYLINDER	0.1738	0.2002
POWER	0.1948	0.2244
SPEED	0.1510	0.1740
WEIGHT	0.2031	0.2340
LENGTH	0.1951	0.2247
WIDTH	0.1625	0.1872

   2-component model:

Predictors	Std.Coefficient	CC1	CC2
CYLINDER	0.1748	0.2002	-0.1252
POWER	0.3221	0.2244	0.4174
SPEED	0.2260	0.1740	0.2186
WEIGHT	0.2777	0.2340	0.1781
LENGTH	0.0489	0.2247	-0.7915
WIDTH	0.0693	0.1872	-0.5331

2. According to the absolute value of the standardized coefficients, WEIGHT is the most important predictor in the 1-component model, and POWER is the most important predictor in the 2-component model. The most important pair of predictors are WEIGHT and POWER according to both the 1-component and 2-component models.

3. All predictors enter into the final model. No predictors are excluded.

XLSTAT-CCR Exercise D1 Answers:

1. The 1-component model has a slightly higher CV-R^2 than the 2-component model (0.714 vs. 0.694).

1-component model:

Standardized coefficients:

Variable	Coefficient
CYLINDER	0.174
POWER	0.195
SPEED	0.151
WEIGHT	0.203
LENGTH	0.195
WIDTH	0.163

2-component model:

Standardized coefficients:

Variable	Coefficient
CYLINDER	0.175
POWER	0.322
SPEED	0.226
WEIGHT	0.278
LENGTH	0.049
WIDTH	0.069

2. According to the absolute value of the standardized coefficients, WEIGHT is the most important predictor in the 1-component model, and POWER is the most important predictor in the 2-component model. The most important pair of predictors are WEIGHT and POWER according to both the 1-component and 2-component models.

3. All predictors enter into the final model. No predictors are excluded.