

The Computer Program A&NULR

This program carries out the calculations for the situation where one or more samples of unused resource units are compared with a single sample of available units. It is assumed that samples consist of only a small fraction of the possible units, but that enough units are selected to change the distribution over the sampled period of time.

Data Input

| | |
|-------------|--|
| Line | |
| 1 | Title for the data. |
| 2 | NUNIT,NSAMP,NX, the number of sampled resource units, the number of samples (available and used), and the number of X variables for which data are input. |
| 3 | T(2),T(3),...,T(NSAMP), the times when the samples of unused units are taken, where the first sample (of available units) is taken at time 0. |
| 4 | SPL(1),X(1,1),X(1,2),...,X(1,NX), the data for resource unit 1, consisting of the sample it is in (with the available sample as number 1), and the values for the X variables for this unit. |
| . | |
| . | |
| NUNIT+ 3 | SP((NUNIT),X(NUNIT,1),X(NUNIT,2),...,X(NUNIT,NX), the data for the last unit, in the same format as for resource unit 1. |

Example

Here there are 2333 individual corixids, eight samples (one of available units at time 0 and seven of unused units at times 3, 4, ..., 9), and 15 X-variables that describe the type of corixid involved.

Selection of Corixids by Minnows

```

2333 8 15
3 4 5 6 7 8 9
1 1 0 0 1 0 0 1 0 0 0 0 0 0 0
1 1 0 0 1 0 0 1 0 0 0 0 0 0 0
1 1 0 0 1 0 0 1 0 0 0 0 0 0 0
1 1 0 0 1 0 0 1 0 0 0 0 0 0 0
1 1 0 0 1 0 0 1 0 0 0 0 0 0 0
1 1 0 0 1 0 0 1 0 0 0 0 0 0 0
1 1 0 0 1 0 0 1 0 0 0 0 0 0 0
1 1 0 0 1 0 0 1 0 0 0 0 0 0 0
1 1 0 0 1 0 0 1 0 0 0 0 0 0 0
.
.
8 0 0 1 0 1 0 0 0 0 0 0 0 1 0
8 0 0 1 0 1 0 0 0 0 0 0 0 1 0
8 0 0 1 0 1 0 0 0 0 0 0 0 1 0
8 0 0 1 0 1 0 0 0 0 0 0 0 1 0
8 0 0 1 0 1 0 0 0 0 0 0 0 1 0

```

Computer Output

The output using the example set of data is as follows:

```
*****
*                                     *
*                               A&NULR                               *
*                                     *
* A program for polytomous logistic regression with                 *
* resource selection data, where there is one sample of           *
* available units, and one or more samples of unused              *
* units. This program is based on the program MAXLIK              *
* written by T.E. Reed for fitting a general multinomial          *
* model.                                                           *
*                                     *
* There can be up to 5000 resource units, with up to 9           *
* samples of unused units, and up to 100 estimated                *
* parameters.                                                     *
*                                     *
*                               Written by                           *
*                               Bryan F.J. Manly                    *
*                                     *
*                               Version 1.0, Dated July 2000       *
*****
```

Date: 12/ 7/2000 Time: 9: 9

Data Title: Selection of Corixids by Minnows
 Number of Units = 2333 Number of Samples = 8

Sample Times

0.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0

| Unit | Spl | X-Values | | | | | | | |
|------|-----|----------|------|------|------|------|------|------|------|
| | | 0.0 | 3.0 | 4.0 | 5.0 | 6.0 | 7.0 | 8.0 | 9.0 |
| 1 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 2 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 3 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 4 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 5 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 6 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 7 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 8 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 9 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 10 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 11 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 12 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 13 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 14 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 15 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 16 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 17 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 18 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 19 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 20 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| 21 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |

| | | | | | | | | | |
|------|---|------|------|------|------|------|------|------|------|
| 22 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 29 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 30 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 31 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 32 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 33 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 34 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 35 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 36 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 37 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 38 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 39 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 40 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 41 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 42 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 43 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 44 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 45 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 46 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 47 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 48 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 49 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 50 | 1 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| . | | | | | | | | | |
| . | | | | | | | | | |
| . | | | | | | | | | |
| 2333 | 8 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | |

Sample Sizes

1195 145 179 170 156 131 192 165

*** NULL MODEL FIT ***

The null model is fitted first. This just has the constant terms (Beta0) for samples 2 to 8 as parameters.

Summary of Iterations

| Iter | Initial log-lik | Final log-lik | Halvings |
|------|-----------------|---------------|----------|
| 1 | -3822.921 | -3822.921 | 1 |

Final Deviance = 7645.84 with 2326 df

AIC = 7659.84

| Param | Final estimate | Standard error | Last change |
|-------|----------------|----------------|-------------|
| 1 | -2.1092 | 0.0879 | 0.0000 |
| 2 | -1.8985 | 0.0801 | 0.0000 |
| 3 | -1.9501 | 0.0820 | 0.0000 |
| 4 | -2.0360 | 0.0851 | 0.0000 |
| 5 | -2.2107 | 0.0920 | 0.0000 |
| 6 | -1.8284 | 0.0777 | 0.0000 |
| 7 | -1.9800 | 0.0830 | 0.0000 |

Correlation matrix for parameters

| | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|--|
| 1 | 1.000 | | | | | | | |
| 2 | 0.119 | 1.000 | | | | | | |
| 3 | 0.116 | 0.127 | 1.000 | | | | | |
| 4 | 0.112 | 0.123 | 0.120 | 1.000 | | | | |
| 5 | 0.103 | 0.113 | 0.111 | 0.107 | 1.000 | | | |
| 6 | 0.122 | 0.134 | 0.131 | 0.126 | 0.117 | 1.000 | | |
| 7 | 0.115 | 0.126 | 0.123 | 0.118 | 0.109 | 0.130 | 1.000 | |

Models allowing for selection related to the X-variables are now fitted. This process can be repeated as much as necessary. First, variables to be used are chosen. Then the constant selection model is fitted, followed by the model that allows selection to change from used sample to used sample.

Variables chosen for use are:

1 2 4 5

*** CONSTANT SELECTION MODEL FIT ***

Parameters of the fitted model are the constants (Beta0) for samples 2 to 8 followed by the coefficients of the X-variables. 4

Summary of Iterations

| Iter | Initial log-lik | Final log-lik | Halvings |
|------|-----------------|---------------|----------|
| 1 | -3822.921 | -3767.618 | 1 |
| 2 | -3767.618 | -3765.236 | 1 |
| 3 | -3765.236 | -3765.197 | 1 |
| 4 | -3765.197 | -3765.196 | 3 |

Final Deviance = 7530.39 with 2322 df
AIC = 7552.39

| Param | Final estimate | Standard error | Last change |
|-------|----------------|----------------|-------------|
| 1 | -2.5587 | 0.1486 | 0.0000 |
| 2 | -2.5096 | 0.1791 | 0.0000 |
| 3 | -2.7273 | 0.2172 | 0.0000 |
| 4 | -2.9833 | 0.2570 | 0.0000 |
| 5 | -3.3312 | 0.2985 | 0.0000 |
| 6 | -3.1251 | 0.3348 | 0.0000 |
| 7 | -3.4552 | 0.3771 | 0.0000 |
| 8 | 0.1064 | 0.0384 | 0.0000 |
| 9 | 0.0632 | 0.0503 | 0.0000 |
| 10 | -0.1581 | 0.0352 | -0.0001 |
| 11 | 0.0920 | 0.0173 | 0.0000 |

Correlation matrix for parameters

| | | | | | | | | | | | | | | | | | | | | |
|----|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|-------|--|--|--|--|--|--|--|--|--|
| 1 | 1.000 | | | | | | | | | | | | | | | | | | | |
| 2 | 0.752 | 1.000 | | | | | | | | | | | | | | | | | | |
| 3 | 0.772 | 0.850 | 1.000 | | | | | | | | | | | | | | | | | |
| 4 | 0.782 | 0.862 | 0.889 | 1.000 | | | | | | | | | | | | | | | | |
| 5 | 0.785 | 0.866 | 0.894 | 0.908 | 1.000 | | | | | | | | | | | | | | | |
| 6 | 0.800 | 0.883 | 0.912 | 0.927 | 0.934 | 1.000 | | | | | | | | | | | | | | |
| 7 | 0.800 | 0.884 | 0.913 | 0.929 | 0.935 | 0.955 | 1.000 | | | | | | | | | | | | | |
| 8 | -0.756 | -0.839 | -0.868 | -0.883 | -0.890 | -0.909 | -0.910 | 1.000 | | | | | | | | | | | | |
| 9 | -0.569 | -0.631 | -0.652 | -0.662 | -0.666 | -0.680 | -0.680 | 0.737 | 1.000 | | | | | | | | | | | |
| 10 | -0.197 | -0.210 | -0.210 | -0.208 | -0.205 | -0.206 | -0.204 | 0.048 | -0.041 | 1.000 | | | | | | | | | | |
| 11 | -0.306 | -0.344 | -0.360 | -0.370 | -0.377 | -0.388 | -0.393 | 0.050 | 0.015 | 0.407 | 1.000 | | | | | | | | | |

*** VARIABLE SELECTION MODEL FIT ***

Parameters of the fitted model are the constants (Beta0) for samples 2 to 8 followed by the coefficients of the X variables for sample 2, then sample 3, and so on. 4

Summary of Iterations

| | | | | | | | | | | |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 21 | -0.045 | -0.041 | -0.045 | -0.647 | -0.041 | -0.046 | -0.050 | 0.048 | 0.080 | -0.007 |
| | 0.003 | 0.042 | 0.060 | -0.003 | 0.002 | 0.048 | 0.079 | -0.006 | 0.002 | 0.694 |
| | 1.000 | | | | | | | | | |
| 22 | -0.021 | -0.019 | -0.021 | -0.242 | -0.018 | -0.021 | -0.022 | 0.005 | -0.004 | 0.054 |
| | 0.041 | 0.003 | -0.003 | 0.052 | 0.055 | 0.005 | -0.004 | 0.057 | 0.040 | 0.052 |
| | -0.038 | 1.000 | | | | | | | | |
| 23 | -0.036 | -0.032 | -0.036 | -0.399 | -0.032 | -0.036 | -0.039 | 0.006 | 0.002 | 0.040 |
| | 0.098 | 0.004 | 0.001 | 0.037 | 0.129 | 0.006 | 0.002 | 0.042 | 0.094 | 0.042 |
| | 0.012 | 0.460 | 1.000 | | | | | | | |
| 24 | -0.059 | -0.054 | -0.059 | -0.059 | -0.918 | -0.060 | -0.066 | 0.064 | 0.051 | 0.004 |
| | 0.006 | 0.056 | 0.038 | 0.003 | 0.008 | 0.065 | 0.050 | 0.004 | 0.006 | 0.065 |
| | 0.044 | 0.004 | 0.006 | 1.000 | | | | | | |
| 25 | -0.046 | -0.041 | -0.046 | -0.045 | -0.719 | -0.046 | -0.051 | 0.048 | 0.082 | -0.008 |
| | 0.003 | 0.042 | 0.061 | -0.003 | 0.002 | 0.049 | 0.081 | -0.007 | 0.002 | 0.049 |
| | 0.071 | -0.003 | 0.002 | 0.772 | 1.000 | | | | | |
| 26 | -0.012 | -0.011 | -0.012 | -0.012 | -0.162 | -0.012 | -0.013 | 0.003 | -0.004 | 0.033 |
| | 0.025 | 0.002 | -0.003 | 0.030 | 0.032 | 0.003 | -0.004 | 0.034 | 0.024 | 0.003 |
| | -0.003 | 0.032 | 0.024 | 0.031 | -0.030 | 1.000 | | | | |
| 27 | -0.032 | -0.028 | -0.032 | -0.032 | -0.404 | -0.032 | -0.034 | 0.005 | 0.002 | 0.035 |
| | 0.086 | 0.004 | 0.001 | 0.032 | 0.113 | 0.005 | 0.002 | 0.036 | 0.083 | 0.005 |
| | 0.002 | 0.035 | 0.082 | 0.039 | 0.011 | 0.320 | 1.000 | | | |
| 28 | -0.067 | -0.060 | -0.067 | -0.066 | -0.060 | -0.913 | -0.074 | 0.072 | 0.057 | 0.005 |
| | 0.006 | 0.062 | 0.042 | 0.004 | 0.009 | 0.073 | 0.056 | 0.005 | 0.006 | 0.073 |
| | 0.049 | 0.005 | 0.006 | 0.066 | 0.050 | 0.003 | 0.006 | 1.000 | | |
| 29 | -0.048 | -0.043 | -0.048 | -0.048 | -0.044 | -0.676 | -0.054 | 0.051 | 0.086 | -0.007 |
| | 0.003 | 0.044 | 0.063 | -0.003 | 0.002 | 0.052 | 0.085 | -0.006 | 0.003 | 0.051 |
| | 0.074 | -0.004 | 0.002 | 0.047 | 0.077 | -0.004 | 0.002 | 0.731 | 1.000 | |
| 30 | -0.020 | -0.018 | -0.020 | -0.020 | -0.017 | -0.246 | -0.021 | 0.004 | -0.004 | 0.054 |
| | 0.041 | 0.003 | -0.003 | 0.051 | 0.054 | 0.004 | -0.004 | 0.056 | 0.039 | 0.004 |
| | -0.004 | 0.054 | 0.039 | 0.003 | -0.004 | 0.032 | 0.034 | 0.042 | -0.035 | 1.000 |
| 31 | -0.036 | -0.032 | -0.036 | -0.036 | -0.031 | -0.414 | -0.038 | 0.006 | 0.002 | 0.039 |
| | 0.096 | 0.004 | 0.001 | 0.036 | 0.127 | 0.006 | 0.002 | 0.041 | 0.092 | 0.006 |
| | 0.002 | 0.039 | 0.092 | 0.006 | 0.002 | 0.023 | 0.080 | 0.035 | 0.010 | 0.485 |
| | 1.000 | | | | | | | | | |
| 32 | -0.075 | -0.067 | -0.075 | -0.075 | -0.068 | -0.076 | -0.888 | 0.081 | 0.064 | 0.005 |
| | 0.007 | 0.070 | 0.047 | 0.004 | 0.010 | 0.082 | 0.063 | 0.005 | 0.007 | 0.082 |
| | 0.055 | 0.005 | 0.007 | 0.075 | 0.056 | 0.003 | 0.006 | 0.084 | 0.059 | 0.004 |
| | 0.007 | 1.000 | | | | | | | | |
| 33 | -0.054 | -0.049 | -0.054 | -0.054 | -0.050 | -0.055 | -0.651 | 0.057 | 0.097 | -0.010 |
| | 0.004 | 0.049 | 0.072 | -0.003 | 0.003 | 0.058 | 0.096 | -0.008 | 0.003 | 0.057 |
| | 0.084 | -0.004 | 0.002 | 0.053 | 0.087 | -0.004 | 0.002 | 0.059 | 0.091 | -0.005 |
| | 0.002 | 0.720 | 1.000 | | | | | | | |
| 34 | -0.015 | -0.013 | -0.015 | -0.015 | -0.013 | -0.015 | -0.209 | 0.004 | -0.004 | 0.039 |
| | 0.029 | 0.003 | -0.003 | 0.036 | 0.039 | 0.004 | -0.004 | 0.040 | 0.028 | 0.004 |
| | -0.003 | 0.038 | 0.028 | 0.003 | -0.004 | 0.023 | 0.025 | 0.004 | -0.004 | 0.038 |
| | 0.028 | 0.038 | -0.033 | 1.000 | | | | | | |
| 35 | -0.034 | -0.030 | -0.034 | -0.034 | -0.030 | -0.034 | -0.467 | 0.005 | 0.002 | 0.037 |
| | 0.092 | 0.004 | 0.001 | 0.034 | 0.120 | 0.006 | 0.002 | 0.039 | 0.088 | 0.006 |
| | 0.002 | 0.037 | 0.087 | 0.005 | 0.002 | 0.022 | 0.076 | 0.006 | 0.002 | 0.036 |
| | 0.085 | 0.042 | 0.012 | 0.365 | 1.000 | | | | | |