TEMP\_run\_sim\_large\_sample\_s1

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## Loading required package: survival

## Loading required package: stats4

## Loading required package: splines

##   
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':  
##   
## filter, lag

## The following objects are masked from 'package:base':  
##   
## intersect, setdiff, setequal, union

## Loading required package: lattice

## Loading required package: Formula

## Loading required package: ggplot2

##   
## Attaching package: 'Hmisc'

## The following objects are masked from 'package:dplyr':  
##   
## src, summarize

## The following objects are masked from 'package:base':  
##   
## format.pval, units

## Loading required package: SparseM

##   
## Attaching package: 'SparseM'

## The following object is masked from 'package:base':  
##   
## backsolve

##   
## Attaching package: 'rms'

## The following objects are masked from 'package:VGAM':  
##   
## calibrate, lrtest

##   
## Attaching package: 'DescTools'

## The following objects are masked from 'package:Hmisc':  
##   
## Label, Mean, %nin%, Quantile

## The following object is masked from 'package:VGAM':  
##   
## Rank

##   
## Attaching package: 'kernlab'

## The following object is masked from 'package:ggplot2':  
##   
## alpha

## The following object is masked from 'package:VGAM':  
##   
## nvar

## [1] "seed = 1, N.devel.sim = 250"  
## [1] "seed = 1, N.devel.sim = 500"  
## [1] "seed = 1, N.devel.sim = 1000"  
## [1] "seed = 2, N.devel.sim = 250"  
## [1] "seed = 2, N.devel.sim = 500"  
## [1] "seed = 2, N.devel.sim = 1000"  
## [1] "seed = 3, N.devel.sim = 250"  
## [1] "seed = 3, N.devel.sim = 500"  
## [1] "seed = 3, N.devel.sim = 1000"

## [1] "SEED.COEF = 1, N.devel.sim = 250"

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| V1 | V2 | OvE.Y.1 | OvE.Y.2 | OvE.Y.3 | wc.po.Y.1 | wc.po.Y.2 | wc.po.Y.3 | wc.ms.LP1 | wc.ms.LP2 | wc.ms.LP3 | AUC.Y.1 | AUC.Y.2 | AUC.Y.3 | PDI |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| A | Mult | 1.00 | 1.01 | 1.00 | 0.00/0.88 | 0.01/0.90 | 0.00/0.91 | 0.01/0.90 | 0.00/0.90 | NA/NA | 0.74 | 0.78 | 0.82 | 0.65 |
| A | c-ratio | 1.00 | 1.01 | 1.01 | 0.00/0.90 | -0.01/0.92 | 0.00/0.97 | 0.00/0.90 | -0.01/0.90 | NA/NA | 0.73 | 0.77 | 0.81 | 0.64 |
| A | OvA-N | 0.99 | 1.01 | 1.01 | -0.02/0.97 | 0.01/1.01 | 0.02/1.04 | 0.00/0.90 | 0.01/0.92 | 0.00/0.92 | 0.74 | 0.77 | 0.82 | 0.65 |
| A | OvO-PC | 1.00 | 1.01 | 1.00 | 0.00/0.87 | 0.01/0.89 | 0.00/0.90 | -0.01/0.88 | 0.00/0.89 | 0.01/0.90 | 0.74 | 0.78 | 0.81 | 0.65 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| A | Mult | 1.01 | 1.01 | 1.00 | 0.01/0.84 | 0.01/0.90 | -0.01/0.91 | 0.00/0.89 | -0.02/0.90 | NA/NA | 0.75 | 0.76 | 0.78 | 0.63 |
| A | c-ratio | 1.01 | 1.01 | 1.00 | -0.01/0.90 | -0.01/0.88 | 0.01/0.90 | -0.01/0.90 | -0.02/0.89 | NA/NA | 0.76 | 0.76 | 0.78 | 0.64 |
| A | OvA-N | 1.01 | 1.01 | 1.00 | 0.01/0.95 | 0.01/1.00 | -0.01/1.02 | 0.01/0.90 | 0.01/0.89 | -0.01/0.91 | 0.75 | 0.76 | 0.78 | 0.63 |
| A | OvO-PC | 1.01 | 1.01 | 1.00 | 0.01/0.83 | 0.01/0.87 | -0.01/0.88 | 0.00/0.87 | 0.02/0.89 | 0.02/0.89 | 0.75 | 0.76 | 0.78 | 0.63 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| B | Mult | 1.01 | 1.01 | 1.00 | 0.01/0.91 | 0.00/0.82 | 0.00/0.89 | 0.00/0.87 | -0.01/0.89 | NA/NA | 0.78 | 0.67 | 0.75 | 0.60 |
| B | c-ratio | 1.01 | 1.01 | 1.00 | -0.01/0.91 | 0.00/0.81 | 0.00/0.90 | -0.01/0.91 | -0.01/0.84 | NA/NA | 0.78 | 0.67 | 0.75 | 0.60 |
| B | OvA-N | 1.02 | 1.00 | 1.00 | 0.02/1.01 | -0.01/0.90 | 0.00/0.98 | 0.01/0.91 | 0.00/0.84 | 0.00/0.90 | 0.78 | 0.67 | 0.75 | 0.60 |
| B | OvO-PC | 1.01 | 1.01 | 1.00 | 0.01/0.90 | 0.00/0.80 | 0.00/0.88 | 0.01/0.87 | 0.00/0.89 | 0.01/0.84 | 0.78 | 0.67 | 0.75 | 0.60 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| B | Mult | 1.00 | 1.01 | 1.01 | -0.01/0.86 | 0.01/0.89 | 0.01/0.93 | 0.02/0.82 | 0.02/0.90 | NA/NA | 0.76 | 0.68 | 0.82 | 0.61 |
| B | c-ratio | 1.00 | 1.01 | 1.01 | 0.01/0.91 | -0.01/0.82 | -0.01/0.93 | 0.01/0.91 | 0.00/0.90 | NA/NA | 0.76 | 0.69 | 0.82 | 0.61 |
| B | OvA-N | 1.00 | 1.00 | 1.02 | -0.01/0.97 | -0.01/1.00 | 0.03/1.07 | -0.01/0.91 | 0.01/0.84 | 0.01/0.93 | 0.76 | 0.67 | 0.82 | 0.60 |
| B | OvO-PC | 1.00 | 1.01 | 1.01 | -0.01/0.86 | 0.01/0.85 | 0.01/0.91 | -0.01/0.80 | -0.02/0.91 | 0.00/0.90 | 0.76 | 0.68 | 0.82 | 0.61 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| C | Mult | 1.01 | 1.01 | 1.00 | 0.01/0.84 | 0.01/0.91 | -0.02/0.92 | 0.00/0.89 | -0.02/0.92 | NA/NA | 0.71 | 0.81 | 0.84 | 0.66 |
| C | c-ratio | 1.01 | 1.01 | 1.00 | -0.01/0.85 | 0.00/0.94 | 0.01/1.01 | -0.01/0.85 | -0.01/0.89 | NA/NA | 0.67 | 0.80 | 0.84 | 0.64 |
| C | OvA-N | 1.00 | 1.01 | 1.01 | -0.02/0.97 | 0.02/1.05 | 0.01/1.08 | 0.01/0.85 | 0.01/0.92 | -0.02/0.92 | 0.70 | 0.81 | 0.84 | 0.66 |
| C | OvO-PC | 1.01 | 1.01 | 1.00 | 0.02/0.83 | 0.01/0.90 | -0.02/0.91 | 0.00/0.87 | 0.02/0.90 | 0.01/0.89 | 0.71 | 0.81 | 0.84 | 0.66 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| C | Mult | 1.01 | 1.00 | 1.01 | 0.00/0.83 | 0.00/0.90 | 0.01/0.90 | 0.00/0.89 | 0.01/0.88 | NA/NA | 0.76 | 0.80 | 0.74 | 0.63 |
| C | c-ratio | 1.00 | 1.00 | 1.01 | 0.00/0.90 | 0.00/0.90 | -0.01/0.86 | 0.00/0.90 | 0.01/0.89 | NA/NA | 0.76 | 0.80 | 0.74 | 0.64 |
| C | OvA-N | 1.01 | 1.01 | 1.00 | 0.00/0.95 | 0.01/1.03 | 0.00/1.00 | 0.00/0.90 | 0.00/0.91 | 0.01/0.89 | 0.76 | 0.80 | 0.73 | 0.63 |
| C | OvO-PC | 1.01 | 1.00 | 1.01 | 0.00/0.83 | 0.00/0.88 | 0.01/0.86 | 0.00/0.88 | -0.01/0.86 | -0.01/0.89 | 0.76 | 0.80 | 0.74 | 0.63 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| D | Mult | 1.00 | 1.01 | 1.01 | -0.01/0.76 | 0.01/0.91 | 0.01/0.92 | 0.01/0.88 | 0.01/0.91 | NA/NA | 0.66 | 0.83 | 0.86 | 0.65 |
| D | c-ratio | 1.00 | 1.01 | 1.01 | 0.01/0.68 | 0.00/0.97 | -0.02/1.04 | 0.01/0.68 | 0.01/0.90 | NA/NA | 0.59 | 0.82 | 0.85 | 0.61 |
| D | OvA-N | 0.98 | 1.01 | 1.02 | -0.04/0.95 | 0.02/1.08 | 0.04/1.11 | -0.01/0.68 | 0.01/0.92 | 0.01/0.93 | 0.64 | 0.83 | 0.85 | 0.64 |
| D | OvO-PC | 1.00 | 1.01 | 1.01 | -0.01/0.75 | 0.01/0.90 | 0.01/0.91 | -0.01/0.85 | -0.01/0.88 | -0.01/0.90 | 0.66 | 0.83 | 0.85 | 0.65 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| D | Mult | 1.01 | 1.00 | 1.00 | 0.01/0.85 | 0.00/0.92 | 0.00/0.87 | -0.01/0.89 | -0.01/0.80 | NA/NA | 0.76 | 0.82 | 0.68 | 0.61 |
| D | c-ratio | 1.01 | 1.00 | 1.01 | -0.01/0.91 | 0.00/0.92 | 0.00/0.81 | -0.01/0.91 | 0.00/0.89 | NA/NA | 0.76 | 0.82 | 0.69 | 0.61 |
| D | OvA-N | 1.01 | 1.01 | 0.99 | 0.01/0.97 | 0.02/1.07 | -0.02/0.98 | 0.01/0.91 | 0.00/0.92 | 0.00/0.81 | 0.76 | 0.82 | 0.67 | 0.60 |
| D | OvO-PC | 1.01 | 1.00 | 1.01 | 0.02/0.86 | -0.01/0.90 | 0.00/0.83 | 0.01/0.90 | 0.01/0.79 | 0.00/0.89 | 0.76 | 0.82 | 0.68 | 0.61 |

## [1] "SEED.COEF = 1, N.devel.sim = 500"

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| V1 | V2 | OvE.Y.1 | OvE.Y.2 | OvE.Y.3 | wc.po.Y.1 | wc.po.Y.2 | wc.po.Y.3 | wc.ms.LP1 | wc.ms.LP2 | wc.ms.LP3 | AUC.Y.1 | AUC.Y.2 | AUC.Y.3 | PDI |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| A | Mult | 1.00 | 1.00 | 1.01 | 0.00/0.94 | 0.00/0.94 | 0.01/0.95 | 0.00/0.95 | 0.00/0.95 | NA/NA | 0.74 | 0.78 | 0.82 | 0.66 |
| A | c-ratio | 1.00 | 1.00 | 1.01 | 0.00/0.95 | 0.01/0.98 | -0.01/1.03 | 0.00/0.95 | 0.01/0.94 | NA/NA | 0.73 | 0.78 | 0.82 | 0.65 |
| A | OvA-N | 0.99 | 1.00 | 1.01 | -0.02/1.03 | 0.00/1.06 | 0.02/1.08 | 0.00/0.95 | 0.00/0.95 | 0.00/0.96 | 0.74 | 0.78 | 0.82 | 0.66 |
| A | OvO-PC | 1.00 | 1.00 | 1.00 | 0.00/0.94 | 0.00/0.94 | 0.01/0.95 | 0.00/0.94 | -0.01/0.95 | -0.01/0.94 | 0.74 | 0.78 | 0.82 | 0.66 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| A | Mult | 1.01 | 1.00 | 1.00 | 0.01/0.88 | 0.00/0.97 | 0.00/0.96 | -0.01/0.95 | -0.01/0.94 | NA/NA | 0.76 | 0.77 | 0.78 | 0.64 |
| A | c-ratio | 1.01 | 1.00 | 1.00 | -0.01/0.94 | 0.00/0.95 | 0.00/0.94 | -0.01/0.94 | 0.00/0.95 | NA/NA | 0.76 | 0.77 | 0.78 | 0.64 |
| A | OvA-N | 1.01 | 1.00 | 1.00 | 0.01/0.99 | 0.00/1.06 | 0.00/1.06 | 0.01/0.94 | 0.00/0.96 | 0.00/0.95 | 0.76 | 0.77 | 0.78 | 0.64 |
| A | OvO-PC | 1.01 | 1.00 | 1.00 | 0.01/0.88 | 0.00/0.93 | 0.00/0.93 | 0.01/0.94 | 0.01/0.93 | 0.00/0.95 | 0.76 | 0.77 | 0.78 | 0.64 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| B | Mult | 1.01 | 1.00 | 1.01 | 0.01/0.95 | -0.01/0.90 | 0.01/0.94 | -0.01/0.93 | 0.00/0.94 | NA/NA | 0.79 | 0.68 | 0.76 | 0.60 |
| B | c-ratio | 1.01 | 1.00 | 1.01 | -0.01/0.95 | 0.01/0.90 | -0.01/0.96 | -0.01/0.95 | 0.01/0.91 | NA/NA | 0.79 | 0.68 | 0.76 | 0.60 |
| B | OvA-N | 1.01 | 0.99 | 1.01 | 0.02/1.06 | -0.02/0.98 | 0.01/1.03 | 0.01/0.95 | -0.01/0.92 | 0.01/0.95 | 0.79 | 0.68 | 0.76 | 0.60 |
| B | OvO-PC | 1.01 | 1.00 | 1.01 | 0.01/0.95 | -0.01/0.90 | 0.01/0.94 | 0.01/0.94 | 0.00/0.94 | -0.01/0.91 | 0.79 | 0.68 | 0.76 | 0.60 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| B | Mult | 1.00 | 1.00 | 1.01 | 0.00/0.90 | -0.01/0.98 | 0.01/0.97 | 0.00/0.90 | 0.01/0.95 | NA/NA | 0.76 | 0.69 | 0.83 | 0.61 |
| B | c-ratio | 1.00 | 1.00 | 1.01 | 0.00/0.96 | 0.01/0.91 | -0.01/0.97 | 0.00/0.96 | 0.01/0.96 | NA/NA | 0.77 | 0.69 | 0.83 | 0.62 |
| B | OvA-N | 1.00 | 0.99 | 1.02 | 0.00/1.02 | -0.02/1.09 | 0.03/1.12 | 0.00/0.96 | -0.01/0.91 | 0.01/0.97 | 0.77 | 0.68 | 0.83 | 0.61 |
| B | OvO-PC | 1.00 | 1.00 | 1.01 | 0.00/0.92 | -0.01/0.93 | 0.01/0.95 | 0.00/0.89 | -0.01/0.95 | -0.01/0.96 | 0.76 | 0.69 | 0.83 | 0.61 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| C | Mult | 1.01 | 1.00 | 1.00 | 0.02/0.92 | -0.01/0.96 | -0.01/0.97 | -0.01/0.95 | -0.01/0.97 | NA/NA | 0.71 | 0.82 | 0.85 | 0.67 |
| C | c-ratio | 1.01 | 1.00 | 1.00 | -0.01/0.93 | 0.01/1.03 | 0.00/1.09 | -0.01/0.93 | 0.00/0.96 | NA/NA | 0.68 | 0.81 | 0.84 | 0.65 |
| C | OvA-N | 1.00 | 1.00 | 1.01 | -0.01/1.05 | 0.00/1.10 | 0.02/1.14 | 0.01/0.93 | -0.01/0.96 | -0.01/0.97 | 0.70 | 0.82 | 0.85 | 0.67 |
| C | OvO-PC | 1.01 | 1.00 | 1.00 | 0.02/0.92 | -0.01/0.95 | -0.01/0.96 | 0.02/0.94 | 0.01/0.95 | 0.00/0.96 | 0.71 | 0.82 | 0.85 | 0.67 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| C | Mult | 1.01 | 1.01 | 1.00 | 0.01/0.89 | 0.01/0.97 | -0.01/0.97 | 0.00/0.96 | -0.01/0.95 | NA/NA | 0.76 | 0.81 | 0.74 | 0.64 |
| C | c-ratio | 1.01 | 1.01 | 1.00 | 0.00/0.96 | -0.01/0.96 | 0.01/0.94 | 0.00/0.96 | 0.00/0.95 | NA/NA | 0.77 | 0.81 | 0.75 | 0.64 |
| C | OvA-N | 1.01 | 1.01 | 0.99 | 0.01/1.01 | 0.01/1.09 | -0.02/1.06 | 0.00/0.96 | 0.01/0.97 | -0.01/0.95 | 0.77 | 0.81 | 0.74 | 0.64 |
| C | OvO-PC | 1.01 | 1.00 | 1.00 | 0.01/0.90 | 0.00/0.94 | -0.01/0.93 | 0.00/0.95 | 0.01/0.93 | 0.00/0.95 | 0.76 | 0.81 | 0.75 | 0.64 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| D | Mult | 1.00 | 1.01 | 1.00 | 0.00/0.87 | 0.01/0.96 | 0.00/0.96 | 0.00/0.94 | 0.00/0.96 | NA/NA | 0.67 | 0.83 | 0.86 | 0.66 |
| D | c-ratio | 1.00 | 1.00 | 1.01 | 0.00/0.82 | 0.00/1.05 | -0.01/1.11 | 0.00/0.82 | 0.00/0.95 | NA/NA | 0.60 | 0.82 | 0.85 | 0.62 |
| D | OvA-N | 0.99 | 1.01 | 1.01 | -0.03/1.10 | 0.01/1.13 | 0.03/1.15 | 0.00/0.82 | 0.00/0.96 | 0.00/0.96 | 0.65 | 0.83 | 0.86 | 0.65 |
| D | OvO-PC | 1.00 | 1.00 | 1.00 | 0.00/0.86 | 0.01/0.95 | 0.00/0.96 | 0.00/0.93 | 0.00/0.94 | 0.00/0.95 | 0.67 | 0.83 | 0.86 | 0.66 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| D | Mult | 1.00 | 1.00 | 1.00 | 0.00/0.89 | 0.00/0.96 | 0.00/0.97 | 0.00/0.94 | 0.00/0.90 | NA/NA | 0.77 | 0.83 | 0.69 | 0.62 |
| D | c-ratio | 1.00 | 1.00 | 1.00 | 0.00/0.95 | 0.00/0.96 | 0.00/0.89 | 0.00/0.95 | 0.00/0.95 | NA/NA | 0.77 | 0.83 | 0.69 | 0.62 |
| D | OvA-N | 1.00 | 1.01 | 0.99 | 0.00/1.01 | 0.02/1.11 | -0.01/1.07 | 0.00/0.95 | 0.00/0.96 | 0.00/0.90 | 0.77 | 0.83 | 0.68 | 0.61 |
| D | OvO-PC | 1.00 | 1.00 | 1.00 | 0.00/0.91 | 0.00/0.94 | 0.00/0.92 | 0.00/0.95 | 0.00/0.88 | 0.00/0.95 | 0.76 | 0.83 | 0.69 | 0.61 |

## [1] "SEED.COEF = 2, N.devel.sim = 250"

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| V1 | V2 | OvE.Y.1 | OvE.Y.2 | OvE.Y.3 | wc.po.Y.1 | wc.po.Y.2 | wc.po.Y.3 | wc.ms.LP1 | wc.ms.LP2 | wc.ms.LP3 | AUC.Y.1 | AUC.Y.2 | AUC.Y.3 | PDI |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| A | Mult | 1.00 | 1.01 | 1.01 | -0.01/0.84 | 0.00/0.91 | 0.01/0.92 | 0.01/0.90 | 0.01/0.90 | NA/NA | 0.71 | 0.82 | 0.82 | 0.66 |
| A | c-ratio | 1.00 | 1.01 | 1.01 | 0.01/0.85 | -0.01/0.97 | -0.01/0.98 | 0.01/0.85 | 0.00/0.89 | NA/NA | 0.68 | 0.81 | 0.81 | 0.64 |
| A | OvA-N | 0.99 | 1.02 | 1.02 | -0.03/0.94 | 0.02/1.05 | 0.03/1.06 | -0.01/0.85 | 0.00/0.92 | 0.01/0.92 | 0.70 | 0.82 | 0.82 | 0.66 |
| A | OvO-PC | 1.00 | 1.01 | 1.01 | 0.00/0.82 | 0.00/0.90 | 0.01/0.90 | 0.00/0.88 | -0.01/0.88 | 0.00/0.89 | 0.71 | 0.82 | 0.82 | 0.66 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| A | Mult | 1.01 | 1.00 | 1.01 | 0.01/0.86 | -0.01/0.91 | 0.01/0.88 | -0.01/0.90 | 0.00/0.88 | NA/NA | 0.78 | 0.78 | 0.73 | 0.64 |
| A | c-ratio | 1.01 | 1.00 | 1.01 | -0.01/0.91 | 0.01/0.90 | -0.01/0.86 | -0.01/0.91 | 0.01/0.88 | NA/NA | 0.79 | 0.78 | 0.73 | 0.64 |
| A | OvA-N | 1.02 | 1.00 | 1.00 | 0.02/0.98 | -0.01/1.02 | -0.01/0.97 | 0.01/0.91 | -0.01/0.91 | 0.00/0.88 | 0.79 | 0.78 | 0.73 | 0.64 |
| A | OvO-PC | 1.01 | 1.00 | 1.01 | 0.01/0.86 | -0.01/0.88 | 0.01/0.85 | 0.02/0.89 | 0.00/0.86 | -0.01/0.88 | 0.78 | 0.78 | 0.73 | 0.64 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| B | Mult | 1.00 | 1.00 | 1.01 | 0.00/0.91 | -0.01/0.87 | 0.02/0.90 | 0.00/0.89 | 0.01/0.90 | NA/NA | 0.78 | 0.73 | 0.75 | 0.62 |
| B | c-ratio | 1.00 | 1.00 | 1.02 | 0.01/0.92 | 0.01/0.88 | -0.02/0.92 | 0.01/0.92 | 0.01/0.88 | NA/NA | 0.78 | 0.73 | 0.75 | 0.62 |
| B | OvA-N | 1.01 | 1.00 | 1.01 | 0.01/1.01 | -0.01/0.95 | 0.01/0.99 | -0.01/0.92 | -0.01/0.88 | 0.01/0.91 | 0.78 | 0.73 | 0.75 | 0.62 |
| B | OvO-PC | 1.00 | 1.00 | 1.01 | 0.00/0.90 | -0.01/0.87 | 0.02/0.89 | 0.00/0.89 | -0.02/0.90 | -0.01/0.88 | 0.78 | 0.73 | 0.75 | 0.62 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| B | Mult | 1.01 | 1.01 | 1.01 | 0.01/0.87 | 0.00/0.88 | 0.00/0.92 | -0.01/0.85 | -0.01/0.90 | NA/NA | 0.78 | 0.70 | 0.81 | 0.63 |
| B | c-ratio | 1.01 | 1.01 | 1.01 | -0.01/0.91 | 0.00/0.83 | 0.00/0.92 | -0.01/0.91 | 0.01/0.89 | NA/NA | 0.79 | 0.70 | 0.81 | 0.63 |
| B | OvA-N | 1.02 | 0.99 | 1.01 | 0.02/0.99 | -0.02/0.97 | 0.01/1.05 | 0.01/0.91 | 0.00/0.84 | 0.00/0.92 | 0.78 | 0.69 | 0.81 | 0.62 |
| B | OvO-PC | 1.01 | 1.01 | 1.00 | 0.01/0.87 | 0.00/0.84 | 0.00/0.90 | 0.01/0.85 | 0.01/0.90 | -0.01/0.89 | 0.78 | 0.70 | 0.81 | 0.63 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| C | Mult | 1.01 | 1.00 | 1.00 | 0.01/0.87 | 0.00/0.93 | 0.00/0.92 | -0.01/0.92 | 0.00/0.92 | NA/NA | 0.73 | 0.81 | 0.82 | 0.67 |
| C | c-ratio | 1.01 | 1.00 | 1.01 | 0.00/0.88 | 0.00/0.98 | 0.00/0.99 | 0.00/0.88 | 0.01/0.91 | NA/NA | 0.70 | 0.81 | 0.82 | 0.65 |
| C | OvA-N | 1.00 | 1.01 | 1.01 | -0.02/0.97 | 0.01/1.07 | 0.02/1.06 | 0.00/0.88 | 0.00/0.94 | 0.00/0.93 | 0.72 | 0.81 | 0.82 | 0.67 |
| C | OvO-PC | 1.01 | 1.00 | 1.00 | 0.01/0.86 | 0.00/0.92 | 0.00/0.91 | 0.01/0.90 | 0.01/0.89 | -0.01/0.91 | 0.73 | 0.81 | 0.82 | 0.67 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| C | Mult | 1.01 | 1.01 | 1.01 | 0.00/0.87 | 0.00/0.92 | 0.00/0.91 | 0.00/0.91 | 0.00/0.90 | NA/NA | 0.78 | 0.78 | 0.75 | 0.65 |
| C | c-ratio | 1.01 | 1.01 | 1.01 | 0.00/0.92 | 0.00/0.91 | 0.00/0.89 | 0.00/0.92 | 0.00/0.90 | NA/NA | 0.79 | 0.78 | 0.76 | 0.65 |
| C | OvA-N | 1.01 | 1.01 | 1.00 | 0.01/0.99 | 0.00/1.03 | -0.01/1.01 | 0.00/0.92 | 0.00/0.92 | 0.00/0.91 | 0.78 | 0.78 | 0.75 | 0.65 |
| C | OvO-PC | 1.01 | 1.00 | 1.01 | 0.00/0.86 | 0.00/0.89 | 0.00/0.87 | 0.00/0.90 | 0.00/0.89 | 0.00/0.90 | 0.78 | 0.78 | 0.75 | 0.65 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| D | Mult | 1.01 | 1.00 | 1.00 | 0.01/0.81 | 0.00/0.93 | 0.00/0.94 | -0.01/0.91 | 0.00/0.92 | NA/NA | 0.68 | 0.83 | 0.84 | 0.66 |
| D | c-ratio | 1.01 | 1.00 | 1.01 | -0.01/0.78 | 0.00/1.01 | 0.00/1.03 | -0.01/0.78 | 0.00/0.91 | NA/NA | 0.62 | 0.83 | 0.84 | 0.63 |
| D | OvA-N | 0.99 | 1.01 | 1.02 | -0.02/0.96 | 0.01/1.09 | 0.02/1.11 | 0.01/0.78 | 0.00/0.93 | 0.00/0.94 | 0.66 | 0.83 | 0.84 | 0.65 |
| D | OvO-PC | 1.01 | 1.00 | 1.00 | 0.01/0.80 | 0.00/0.92 | 0.00/0.93 | 0.01/0.88 | 0.00/0.90 | 0.00/0.91 | 0.68 | 0.83 | 0.84 | 0.66 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| D | Mult | 1.01 | 1.01 | 1.01 | 0.00/0.88 | 0.01/0.92 | 0.00/0.88 | 0.01/0.91 | 0.00/0.87 | NA/NA | 0.78 | 0.81 | 0.70 | 0.63 |
| D | c-ratio | 1.01 | 1.01 | 1.01 | 0.00/0.92 | -0.01/0.92 | 0.00/0.84 | 0.00/0.92 | -0.01/0.90 | NA/NA | 0.79 | 0.81 | 0.70 | 0.63 |
| D | OvA-N | 1.01 | 1.01 | 1.00 | 0.01/1.00 | 0.02/1.06 | -0.02/0.98 | 0.00/0.92 | 0.01/0.93 | 0.00/0.85 | 0.78 | 0.81 | 0.68 | 0.62 |
| D | OvO-PC | 1.01 | 1.01 | 1.01 | 0.00/0.88 | 0.01/0.91 | 0.00/0.84 | -0.01/0.91 | 0.00/0.85 | 0.01/0.90 | 0.78 | 0.81 | 0.70 | 0.63 |

## [1] "SEED.COEF = 2, N.devel.sim = 500"

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| V1 | V2 | OvE.Y.1 | OvE.Y.2 | OvE.Y.3 | wc.po.Y.1 | wc.po.Y.2 | wc.po.Y.3 | wc.ms.LP1 | wc.ms.LP2 | wc.ms.LP3 | AUC.Y.1 | AUC.Y.2 | AUC.Y.3 | PDI |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| A | Mult | 1.00 | 1.01 | 1.00 | -0.01/0.91 | 0.01/0.95 | 0.00/0.97 | 0.02/0.94 | 0.01/0.96 | NA/NA | 0.71 | 0.82 | 0.82 | 0.67 |
| A | c-ratio | 0.99 | 1.01 | 1.00 | 0.01/0.92 | -0.02/1.04 | 0.00/1.05 | 0.01/0.92 | -0.02/0.95 | NA/NA | 0.68 | 0.82 | 0.82 | 0.65 |
| A | OvA-N | 0.98 | 1.02 | 1.01 | -0.04/1.02 | 0.03/1.10 | 0.02/1.11 | -0.01/0.92 | 0.01/0.96 | 0.00/0.97 | 0.70 | 0.82 | 0.82 | 0.66 |
| A | OvO-PC | 1.00 | 1.01 | 1.00 | -0.01/0.91 | 0.01/0.94 | 0.00/0.96 | -0.01/0.93 | -0.01/0.95 | 0.02/0.95 | 0.71 | 0.82 | 0.82 | 0.67 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| A | Mult | 1.01 | 1.00 | 1.00 | 0.01/0.93 | 0.00/0.96 | 0.00/0.96 | -0.01/0.96 | -0.01/0.95 | NA/NA | 0.79 | 0.79 | 0.74 | 0.64 |
| A | c-ratio | 1.01 | 1.00 | 1.00 | -0.01/0.97 | 0.00/0.96 | 0.00/0.93 | -0.01/0.97 | 0.00/0.94 | NA/NA | 0.79 | 0.79 | 0.74 | 0.65 |
| A | OvA-N | 1.01 | 1.00 | 0.99 | 0.02/1.05 | 0.00/1.07 | -0.01/1.04 | 0.01/0.97 | 0.00/0.96 | 0.00/0.94 | 0.79 | 0.79 | 0.73 | 0.64 |
| A | OvO-PC | 1.01 | 1.00 | 1.00 | 0.01/0.93 | -0.01/0.94 | 0.00/0.93 | 0.01/0.96 | 0.01/0.94 | 0.00/0.94 | 0.79 | 0.79 | 0.74 | 0.64 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| B | Mult | 1.00 | 1.01 | 1.00 | 0.00/0.95 | 0.01/0.94 | -0.01/0.94 | 0.00/0.95 | -0.01/0.95 | NA/NA | 0.78 | 0.74 | 0.75 | 0.63 |
| B | c-ratio | 1.00 | 1.01 | 1.00 | 0.00/0.95 | -0.01/0.95 | 0.01/0.96 | 0.00/0.95 | -0.01/0.93 | NA/NA | 0.78 | 0.73 | 0.75 | 0.63 |
| B | OvA-N | 1.01 | 1.00 | 1.00 | 0.01/1.05 | 0.00/1.02 | -0.01/1.03 | 0.00/0.95 | 0.01/0.95 | -0.01/0.95 | 0.78 | 0.73 | 0.75 | 0.63 |
| B | OvO-PC | 1.00 | 1.01 | 1.00 | 0.00/0.95 | 0.01/0.93 | -0.01/0.94 | 0.00/0.95 | 0.01/0.94 | 0.01/0.93 | 0.78 | 0.74 | 0.75 | 0.63 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| B | Mult | 1.01 | 1.00 | 1.00 | 0.01/0.91 | 0.00/0.95 | 0.00/0.96 | -0.01/0.92 | 0.00/0.95 | NA/NA | 0.79 | 0.70 | 0.82 | 0.63 |
| B | c-ratio | 1.01 | 1.00 | 1.00 | -0.01/0.95 | 0.00/0.90 | 0.00/0.96 | -0.01/0.95 | 0.00/0.94 | NA/NA | 0.79 | 0.71 | 0.82 | 0.64 |
| B | OvA-N | 1.01 | 0.99 | 1.01 | 0.01/1.03 | -0.02/1.04 | 0.01/1.09 | 0.01/0.95 | 0.00/0.91 | 0.00/0.96 | 0.79 | 0.69 | 0.82 | 0.63 |
| B | OvO-PC | 1.01 | 1.00 | 1.00 | 0.01/0.92 | 0.00/0.91 | 0.00/0.94 | 0.01/0.91 | 0.00/0.95 | 0.00/0.94 | 0.79 | 0.70 | 0.82 | 0.63 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| C | Mult | 1.00 | 1.00 | 1.00 | 0.00/0.93 | 0.00/0.96 | 0.00/0.95 | 0.00/0.96 | 0.00/0.95 | NA/NA | 0.73 | 0.82 | 0.83 | 0.68 |
| C | c-ratio | 1.00 | 1.00 | 1.00 | 0.00/0.94 | 0.00/1.03 | 0.00/1.04 | 0.00/0.94 | 0.00/0.95 | NA/NA | 0.71 | 0.81 | 0.82 | 0.66 |
| C | OvA-N | 0.99 | 1.01 | 1.01 | -0.03/1.04 | 0.02/1.10 | 0.02/1.10 | 0.00/0.94 | 0.00/0.97 | 0.00/0.96 | 0.73 | 0.82 | 0.83 | 0.67 |
| C | OvO-PC | 1.00 | 1.00 | 1.00 | 0.00/0.93 | 0.00/0.96 | 0.00/0.95 | 0.00/0.95 | 0.00/0.94 | 0.00/0.95 | 0.73 | 0.82 | 0.83 | 0.68 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| C | Mult | 1.01 | 1.00 | 1.01 | 0.01/0.91 | -0.01/0.97 | 0.01/0.97 | -0.01/0.96 | 0.00/0.95 | NA/NA | 0.79 | 0.79 | 0.76 | 0.65 |
| C | c-ratio | 1.01 | 1.00 | 1.01 | -0.01/0.96 | 0.01/0.96 | -0.01/0.95 | -0.01/0.96 | 0.01/0.96 | NA/NA | 0.79 | 0.79 | 0.76 | 0.66 |
| C | OvA-N | 1.01 | 1.00 | 1.00 | 0.02/1.04 | -0.01/1.08 | 0.00/1.06 | 0.01/0.96 | -0.01/0.97 | 0.01/0.96 | 0.79 | 0.79 | 0.76 | 0.65 |
| C | OvO-PC | 1.01 | 1.00 | 1.01 | 0.01/0.91 | -0.01/0.94 | 0.00/0.94 | 0.01/0.95 | 0.00/0.94 | -0.01/0.96 | 0.79 | 0.79 | 0.76 | 0.65 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| D | Mult | 1.00 | 1.00 | 1.00 | 0.00/0.89 | 0.01/0.97 | 0.00/0.96 | 0.00/0.96 | 0.00/0.95 | NA/NA | 0.69 | 0.84 | 0.85 | 0.67 |
| D | c-ratio | 1.00 | 1.00 | 1.00 | 0.00/0.87 | 0.00/1.07 | 0.00/1.09 | 0.00/0.87 | 0.00/0.96 | NA/NA | 0.63 | 0.83 | 0.84 | 0.64 |
| D | OvA-N | 0.98 | 1.01 | 1.01 | -0.03/1.06 | 0.02/1.14 | 0.02/1.14 | 0.00/0.87 | 0.01/0.97 | 0.00/0.97 | 0.67 | 0.84 | 0.85 | 0.66 |
| D | OvO-PC | 1.00 | 1.00 | 1.00 | 0.00/0.89 | 0.01/0.96 | 0.00/0.96 | 0.00/0.95 | 0.00/0.94 | 0.00/0.96 | 0.69 | 0.84 | 0.85 | 0.67 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| D | Mult | 1.00 | 1.00 | 1.01 | 0.00/0.91 | -0.01/0.96 | 0.01/0.96 | -0.01/0.95 | 0.00/0.92 | NA/NA | 0.79 | 0.82 | 0.70 | 0.63 |
| D | c-ratio | 1.00 | 1.00 | 1.01 | 0.00/0.95 | 0.01/0.96 | -0.01/0.91 | 0.00/0.95 | 0.01/0.95 | NA/NA | 0.79 | 0.82 | 0.71 | 0.64 |
| D | OvA-N | 1.01 | 1.00 | 1.00 | 0.01/1.03 | 0.00/1.09 | -0.01/1.05 | 0.00/0.95 | -0.01/0.96 | 0.01/0.92 | 0.79 | 0.82 | 0.69 | 0.63 |
| D | OvO-PC | 1.01 | 1.00 | 1.01 | 0.00/0.92 | -0.01/0.94 | 0.01/0.92 | 0.01/0.94 | 0.00/0.91 | -0.01/0.95 | 0.79 | 0.82 | 0.70 | 0.63 |

## [1] "SEED.COEF = 3, N.devel.sim = 250"

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| V1 | V2 | OvE.Y.1 | OvE.Y.2 | OvE.Y.3 | wc.po.Y.1 | wc.po.Y.2 | wc.po.Y.3 | wc.ms.LP1 | wc.ms.LP2 | wc.ms.LP3 | AUC.Y.1 | AUC.Y.2 | AUC.Y.3 | PDI |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| A | Mult | 1.01 | 1.01 | 1.00 | 0.00/0.74 | 0.01/0.90 | 0.00/0.89 | 0.01/0.89 | 0.00/0.87 | NA/NA | 0.63 | 0.77 | 0.76 | 0.58 |
| A | c-ratio | 1.00 | 1.01 | 1.00 | 0.00/0.75 | -0.01/0.96 | 0.00/0.94 | 0.00/0.75 | -0.01/0.89 | NA/NA | 0.61 | 0.77 | 0.76 | 0.57 |
| A | OvA-N | 1.00 | 1.02 | 1.01 | -0.02/0.84 | 0.02/1.01 | 0.01/1.00 | 0.00/0.75 | 0.01/0.91 | 0.00/0.90 | 0.62 | 0.77 | 0.76 | 0.58 |
| A | OvO-PC | 1.01 | 1.01 | 1.00 | 0.00/0.74 | 0.01/0.90 | 0.00/0.88 | -0.01/0.86 | 0.00/0.83 | 0.01/0.89 | 0.63 | 0.77 | 0.76 | 0.58 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| A | Mult | 1.01 | 1.01 | 1.00 | 0.01/0.87 | 0.00/0.90 | -0.01/0.81 | 0.00/0.88 | -0.01/0.84 | NA/NA | 0.73 | 0.73 | 0.65 | 0.56 |
| A | c-ratio | 1.01 | 1.01 | 1.00 | -0.01/0.89 | 0.00/0.90 | 0.00/0.79 | -0.01/0.89 | -0.01/0.86 | NA/NA | 0.73 | 0.73 | 0.65 | 0.56 |
| A | OvA-N | 1.02 | 1.01 | 1.00 | 0.02/0.95 | 0.01/0.98 | -0.01/0.88 | 0.01/0.89 | 0.00/0.91 | -0.01/0.81 | 0.73 | 0.73 | 0.65 | 0.56 |
| A | OvO-PC | 1.01 | 1.01 | 1.00 | 0.01/0.86 | 0.00/0.89 | -0.01/0.79 | 0.01/0.89 | 0.01/0.83 | 0.01/0.86 | 0.73 | 0.73 | 0.65 | 0.56 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| B | Mult | 1.00 | 1.01 | 1.01 | -0.01/0.90 | 0.01/0.87 | 0.01/0.85 | 0.01/0.88 | 0.01/0.87 | NA/NA | 0.74 | 0.70 | 0.69 | 0.57 |
| B | c-ratio | 1.00 | 1.01 | 1.01 | 0.01/0.91 | -0.01/0.88 | -0.01/0.86 | 0.01/0.91 | 0.00/0.84 | NA/NA | 0.74 | 0.70 | 0.69 | 0.57 |
| B | OvA-N | 1.00 | 1.01 | 1.01 | 0.00/0.97 | 0.00/0.93 | 0.01/0.91 | -0.01/0.91 | 0.00/0.88 | 0.01/0.86 | 0.74 | 0.70 | 0.69 | 0.57 |
| B | OvO-PC | 1.00 | 1.01 | 1.01 | -0.01/0.89 | 0.01/0.86 | 0.01/0.84 | -0.01/0.88 | -0.01/0.88 | 0.00/0.84 | 0.74 | 0.70 | 0.69 | 0.57 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| B | Mult | 1.02 | 1.00 | 1.01 | 0.02/0.88 | -0.01/0.81 | 0.00/0.90 | -0.02/0.82 | -0.01/0.88 | NA/NA | 0.75 | 0.65 | 0.77 | 0.58 |
| B | c-ratio | 1.02 | 1.00 | 1.01 | -0.02/0.91 | 0.01/0.78 | 0.00/0.90 | -0.02/0.91 | 0.01/0.86 | NA/NA | 0.76 | 0.65 | 0.77 | 0.58 |
| B | OvA-N | 1.02 | 1.00 | 1.01 | 0.02/0.98 | -0.02/0.89 | 0.01/1.00 | 0.02/0.91 | -0.01/0.79 | 0.00/0.91 | 0.75 | 0.64 | 0.77 | 0.58 |
| B | OvO-PC | 1.02 | 1.00 | 1.00 | 0.02/0.88 | -0.01/0.78 | 0.00/0.89 | 0.01/0.83 | 0.01/0.90 | -0.01/0.86 | 0.75 | 0.65 | 0.77 | 0.58 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| C | Mult | 1.01 | 1.01 | 1.00 | 0.00/0.78 | 0.01/0.90 | 0.00/0.92 | 0.00/0.88 | 0.00/0.91 | NA/NA | 0.66 | 0.80 | 0.79 | 0.61 |
| C | c-ratio | 1.01 | 1.01 | 1.00 | 0.00/0.79 | -0.01/0.97 | 0.00/0.97 | 0.00/0.79 | -0.01/0.89 | NA/NA | 0.62 | 0.79 | 0.78 | 0.59 |
| C | OvA-N | 1.00 | 1.02 | 1.01 | -0.02/0.90 | 0.02/1.02 | 0.01/1.04 | 0.00/0.79 | 0.01/0.90 | 0.00/0.92 | 0.65 | 0.79 | 0.79 | 0.61 |
| C | OvO-PC | 1.01 | 1.01 | 1.00 | 0.00/0.77 | 0.01/0.89 | 0.00/0.91 | 0.00/0.85 | 0.00/0.88 | 0.01/0.89 | 0.65 | 0.79 | 0.79 | 0.61 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| C | Mult | 1.01 | 1.00 | 1.01 | 0.01/0.86 | 0.00/0.89 | 0.00/0.84 | 0.00/0.88 | 0.00/0.84 | NA/NA | 0.75 | 0.76 | 0.67 | 0.59 |
| C | c-ratio | 1.01 | 1.00 | 1.01 | -0.01/0.89 | 0.00/0.89 | 0.00/0.82 | -0.01/0.89 | 0.00/0.86 | NA/NA | 0.76 | 0.76 | 0.68 | 0.59 |
| C | OvA-N | 1.01 | 1.01 | 1.00 | 0.01/0.96 | 0.00/0.98 | -0.01/0.92 | 0.01/0.89 | 0.00/0.89 | 0.00/0.84 | 0.75 | 0.76 | 0.67 | 0.59 |
| C | OvO-PC | 1.01 | 1.00 | 1.01 | 0.01/0.85 | 0.00/0.87 | 0.00/0.82 | 0.00/0.88 | 0.00/0.83 | 0.00/0.86 | 0.75 | 0.76 | 0.67 | 0.59 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| D | Mult | 1.01 | 1.00 | 1.01 | 0.00/0.74 | 0.00/0.93 | 0.01/0.91 | 0.00/0.91 | 0.00/0.89 | NA/NA | 0.64 | 0.80 | 0.80 | 0.61 |
| D | c-ratio | 1.01 | 1.01 | 1.01 | 0.00/0.69 | 0.00/0.99 | -0.01/0.98 | 0.00/0.69 | 0.01/0.90 | NA/NA | 0.59 | 0.80 | 0.79 | 0.59 |
| D | OvA-N | 0.99 | 1.01 | 1.02 | -0.02/0.87 | 0.01/1.06 | 0.02/1.04 | 0.00/0.69 | 0.00/0.94 | 0.01/0.92 | 0.62 | 0.80 | 0.80 | 0.60 |
| D | OvO-PC | 1.01 | 1.00 | 1.01 | 0.00/0.74 | 0.00/0.92 | 0.00/0.90 | 0.00/0.88 | 0.00/0.85 | -0.01/0.90 | 0.64 | 0.80 | 0.80 | 0.61 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| D | Mult | 1.01 | 1.00 | 1.01 | 0.01/0.88 | 0.00/0.91 | 0.00/0.82 | -0.01/0.89 | 0.00/0.83 | NA/NA | 0.75 | 0.77 | 0.65 | 0.58 |
| D | c-ratio | 1.01 | 1.00 | 1.01 | -0.01/0.91 | 0.00/0.91 | 0.00/0.79 | -0.01/0.91 | 0.00/0.87 | NA/NA | 0.76 | 0.77 | 0.65 | 0.58 |
| D | OvA-N | 1.02 | 1.01 | 1.00 | 0.01/0.97 | 0.00/1.01 | -0.01/0.90 | 0.01/0.91 | 0.00/0.91 | 0.00/0.80 | 0.75 | 0.77 | 0.64 | 0.58 |
| D | OvO-PC | 1.01 | 1.00 | 1.01 | 0.01/0.88 | 0.00/0.89 | 0.00/0.79 | 0.01/0.90 | 0.00/0.83 | 0.00/0.87 | 0.75 | 0.77 | 0.65 | 0.58 |

## [1] "SEED.COEF = 3, N.devel.sim = 500"

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| V1 | V2 | OvE.Y.1 | OvE.Y.2 | OvE.Y.3 | wc.po.Y.1 | wc.po.Y.2 | wc.po.Y.3 | wc.ms.LP1 | wc.ms.LP2 | wc.ms.LP3 | AUC.Y.1 | AUC.Y.2 | AUC.Y.3 | PDI |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| A | Mult | 1.00 | 1.01 | 1.00 | 0.00/0.86 | 0.01/0.95 | 0.00/0.95 | 0.01/0.94 | 0.00/0.94 | NA/NA | 0.64 | 0.78 | 0.77 | 0.59 |
| A | c-ratio | 1.00 | 1.01 | 1.00 | 0.00/0.86 | -0.01/1.02 | 0.00/1.02 | 0.00/0.86 | -0.01/0.95 | NA/NA | 0.62 | 0.77 | 0.76 | 0.58 |
| A | OvA-N | 0.99 | 1.01 | 1.01 | -0.02/0.96 | 0.02/1.06 | 0.00/1.06 | 0.00/0.86 | 0.01/0.95 | 0.00/0.95 | 0.63 | 0.78 | 0.77 | 0.59 |
| A | OvO-PC | 1.00 | 1.01 | 1.00 | 0.00/0.85 | 0.01/0.94 | 0.00/0.95 | -0.01/0.92 | 0.00/0.92 | 0.01/0.95 | 0.64 | 0.78 | 0.77 | 0.59 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| A | Mult | 1.01 | 1.00 | 1.00 | 0.01/0.92 | 0.00/0.94 | 0.00/0.90 | -0.01/0.93 | 0.00/0.92 | NA/NA | 0.74 | 0.74 | 0.66 | 0.57 |
| A | c-ratio | 1.01 | 1.00 | 1.00 | -0.01/0.94 | 0.00/0.94 | 0.00/0.88 | -0.01/0.94 | 0.00/0.92 | NA/NA | 0.74 | 0.74 | 0.66 | 0.57 |
| A | OvA-N | 1.01 | 1.00 | 1.00 | 0.01/1.00 | 0.00/1.02 | -0.01/0.96 | 0.01/0.94 | 0.00/0.94 | 0.00/0.89 | 0.74 | 0.74 | 0.65 | 0.57 |
| A | OvO-PC | 1.01 | 1.00 | 1.00 | 0.01/0.92 | 0.00/0.92 | 0.00/0.88 | 0.00/0.93 | 0.01/0.91 | 0.00/0.92 | 0.74 | 0.74 | 0.66 | 0.57 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| B | Mult | 1.00 | 1.00 | 1.00 | 0.00/0.95 | 0.00/0.94 | 0.00/0.94 | 0.00/0.94 | 0.00/0.94 | NA/NA | 0.74 | 0.71 | 0.70 | 0.57 |
| B | c-ratio | 1.00 | 1.00 | 1.00 | 0.00/0.96 | 0.00/0.95 | 0.00/0.95 | 0.00/0.96 | 0.00/0.93 | NA/NA | 0.74 | 0.70 | 0.70 | 0.57 |
| B | OvA-N | 1.01 | 1.00 | 1.00 | 0.01/1.03 | 0.00/1.00 | 0.00/1.00 | 0.00/0.96 | 0.00/0.95 | 0.00/0.94 | 0.74 | 0.70 | 0.70 | 0.57 |
| B | OvO-PC | 1.00 | 1.00 | 1.00 | 0.00/0.95 | 0.00/0.93 | 0.00/0.93 | 0.00/0.95 | 0.00/0.94 | 0.00/0.93 | 0.74 | 0.70 | 0.70 | 0.57 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| B | Mult | 1.00 | 1.00 | 1.00 | 0.00/0.93 | 0.00/0.92 | 0.00/0.96 | 0.00/0.91 | 0.00/0.94 | NA/NA | 0.76 | 0.66 | 0.77 | 0.59 |
| B | c-ratio | 1.00 | 1.00 | 1.00 | 0.00/0.95 | 0.00/0.88 | 0.00/0.96 | 0.00/0.95 | 0.00/0.94 | NA/NA | 0.76 | 0.66 | 0.77 | 0.59 |
| B | OvA-N | 1.01 | 1.00 | 1.01 | 0.01/1.02 | -0.01/0.99 | 0.01/1.06 | 0.00/0.95 | 0.00/0.88 | 0.00/0.96 | 0.76 | 0.65 | 0.77 | 0.58 |
| B | OvO-PC | 1.01 | 1.00 | 1.00 | 0.00/0.93 | 0.00/0.89 | 0.00/0.95 | 0.00/0.90 | 0.00/0.95 | 0.00/0.94 | 0.76 | 0.66 | 0.77 | 0.59 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| C | Mult | 1.00 | 1.00 | 1.00 | 0.00/0.89 | 0.00/0.96 | 0.00/0.96 | 0.00/0.96 | 0.00/0.95 | NA/NA | 0.66 | 0.80 | 0.80 | 0.62 |
| C | c-ratio | 1.00 | 1.01 | 1.00 | 0.00/0.89 | -0.01/1.05 | 0.00/1.03 | 0.00/0.89 | 0.00/0.95 | NA/NA | 0.63 | 0.80 | 0.79 | 0.60 |
| C | OvA-N | 0.99 | 1.01 | 1.01 | -0.02/1.01 | 0.02/1.09 | 0.01/1.08 | 0.00/0.89 | 0.00/0.97 | 0.00/0.96 | 0.65 | 0.80 | 0.80 | 0.62 |
| C | OvO-PC | 1.00 | 1.00 | 1.00 | 0.00/0.88 | 0.00/0.96 | 0.00/0.95 | 0.00/0.94 | 0.00/0.93 | 0.00/0.95 | 0.66 | 0.80 | 0.80 | 0.62 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| C | Mult | 1.01 | 1.00 | 1.00 | 0.00/0.93 | 0.00/0.95 | 0.00/0.94 | 0.00/0.95 | 0.00/0.93 | NA/NA | 0.76 | 0.76 | 0.68 | 0.60 |
| C | c-ratio | 1.01 | 1.00 | 1.00 | 0.00/0.96 | 0.00/0.95 | 0.00/0.91 | 0.00/0.96 | -0.01/0.94 | NA/NA | 0.76 | 0.76 | 0.68 | 0.60 |
| C | OvA-N | 1.01 | 1.01 | 0.99 | 0.01/1.03 | 0.01/1.05 | -0.01/1.00 | 0.00/0.96 | 0.00/0.96 | 0.00/0.92 | 0.76 | 0.76 | 0.68 | 0.59 |
| C | OvO-PC | 1.01 | 1.00 | 1.00 | 0.01/0.93 | 0.00/0.94 | 0.00/0.91 | 0.00/0.95 | 0.01/0.93 | 0.01/0.94 | 0.76 | 0.76 | 0.68 | 0.60 |
| NA | NA | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial | DGM multinomial |
| D | Mult | 1.00 | 1.00 | 1.00 | 0.00/0.87 | 0.00/0.96 | 0.00/0.96 | 0.00/0.95 | 0.00/0.95 | NA/NA | 0.65 | 0.81 | 0.80 | 0.62 |
| D | c-ratio | 1.00 | 1.00 | 1.00 | 0.00/0.85 | 0.00/1.05 | 0.00/1.05 | 0.00/0.85 | -0.01/0.95 | NA/NA | 0.60 | 0.80 | 0.80 | 0.60 |
| D | OvA-N | 0.99 | 1.01 | 1.01 | -0.02/1.03 | 0.01/1.09 | 0.01/1.10 | 0.00/0.85 | 0.00/0.96 | 0.00/0.96 | 0.63 | 0.81 | 0.80 | 0.61 |
| D | OvO-PC | 1.00 | 1.00 | 1.00 | 0.00/0.86 | 0.00/0.95 | 0.00/0.96 | 0.00/0.93 | 0.00/0.94 | 0.01/0.95 | 0.65 | 0.81 | 0.80 | 0.62 |
| NA | NA | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio | DGM c-ratio |
| D | Mult | 1.01 | 1.00 | 1.00 | 0.01/0.93 | -0.01/0.95 | 0.00/0.92 | -0.01/0.94 | 0.00/0.92 | NA/NA | 0.76 | 0.77 | 0.66 | 0.59 |
| D | c-ratio | 1.01 | 1.00 | 1.00 | -0.01/0.95 | 0.01/0.95 | 0.00/0.88 | -0.01/0.95 | 0.01/0.93 | NA/NA | 0.76 | 0.77 | 0.66 | 0.59 |
| D | OvA-N | 1.01 | 1.00 | 1.00 | 0.01/1.02 | 0.00/1.06 | -0.01/0.99 | 0.01/0.95 | -0.01/0.95 | 0.00/0.88 | 0.76 | 0.77 | 0.65 | 0.58 |
| D | OvO-PC | 1.01 | 1.00 | 1.00 | 0.01/0.93 | -0.01/0.94 | 0.00/0.89 | 0.01/0.95 | 0.01/0.91 | -0.01/0.93 | 0.76 | 0.77 | 0.66 | 0.59 |