

# fitDTVARMx: Internal Tests

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## Tests

```
#> test
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#> Lowest minimum so far: 1524.97939232148
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=1524.9794 (started at 1557.0026) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> 0.681884399637485,0.505025206662044,0.00506050712459571,-0.00880844481963858,0.602653154400743,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#> Lowest minimum so far: 1681.83659549401
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=1681.8366 (started at 1722.7204) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> 0.714644526600792,0.446353628350174,-0.137212335576357,-0.00257767734097513,0.597640293449949,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#> Lowest minimum so far: 1601.71644591383
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=1601.7164 (started at 1635.9302) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> 0.71800476258364,0.528419880764906,-0.10482940602939,0.00736362924235293,0.574273814464634,0.494
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#> Lowest minimum so far: 1531.86993218524
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=1531.8699 (started at 1560.1578) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> 0.704974586601325,0.554273394486945,-0.0872848548383361,0.0247250026156107,0.599417592387886,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#> Lowest minimum so far: 1543.75235268953
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=1543.7524 (started at 1589.4452) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> 0.688872864914547,0.416165274525854,-0.205786834125367,-0.00462434593125426,0.68632548923827,0.4
#>
#> Means of the estimated paramaters per individual.
#>      beta_11      beta_21      beta_31      beta_12      beta_22
#> 0.7016762281 0.4900474770 -0.1060105847 0.0032156328 0.6120620688
#>      beta_32      beta_13      beta_23      beta_33      psi_11
#> 0.4357929180 -0.0142610619 0.0060008648 0.4769960324 0.0995165965
#>      psi_21      psi_22      psi_31      psi_32      psi_33
```

```

#> 0.0003752334 0.0991479235 0.0006857331 0.0001355808 0.0981329868
#>
#> Estimated paramaters per individual.
#>      beta_11  beta_21  beta_31  beta_12  beta_22  beta_32
#> [1,] 0.6818844 0.5050252 0.005060507 -0.008808445 0.6026532 0.3434701
#> [2,] 0.7146445 0.4463536 -0.137212336 -0.002577677 0.5976403 0.5129555
#> [3,] 0.7180048 0.5284199 -0.104829406 0.007363629 0.5742738 0.4944551
#> [4,] 0.7049746 0.5542734 -0.087284855 0.024725003 0.5994176 0.4088297
#> [5,] 0.6888729 0.4161653 -0.205786834 -0.004624346 0.6863255 0.4192542
#>      beta_13  beta_23  beta_33  psi_11  psi_21  psi_22
#> [1,] 0.028766356 0.056455542 0.5183970 0.09611164 0.0016516299 0.09990868
#> [2,] -0.024434500 -0.005013675 0.4821948 0.10392615 -0.0005053215 0.10229592
#> [3,] 0.007565429 0.030893065 0.4147986 0.09818614 -0.0056369997 0.10348546
#> [4,] -0.047154981 -0.029503897 0.4987864 0.10376766 0.0050355505 0.08977813
#> [5,] -0.036047613 -0.022826711 0.4708034 0.09559139 0.0013313077 0.10027143
#>      psi_31  psi_32  psi_33
#> [1,] -7.865557e-04 0.002525390 0.09533547
#> [2,] -2.856564e-03 -0.002869898 0.10001677
#> [3,] 2.348042e-05 0.002602347 0.09774676
#> [4,] 6.226675e-03 -0.004183038 0.09992354
#> [5,] 8.216292e-04 0.002603103 0.09764238

#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#> Lowest minimum so far: 1526.00731414886
#>
#> Solution found

#>
#> Solution found! Final fit=1526.0073 (started at 1557.0026) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> 0.681893265716128,0.505053274890204,0.00510867946731734,-0.00880537044501161,0.602624580422842,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#> Lowest minimum so far: 1683.45326767594
#>
#> Solution found

```

```

#>
#> Solution found! Final fit=1683.4533 (started at 1722.7204) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> 0.714804676374992,0.446703804639109,-0.137212072446384,-0.00286225478262943,0.597355821730222,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#> Lowest minimum so far: 1605.51702315236
#>
#> Solution found

```

```

#>
#> Solution found! Final fit=1605.517 (started at 1635.9302) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> 0.718078154356792,0.52839255628165,-0.104829069626879,0.00732747689871291,0.57430031210843,0.494
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#> Lowest minimum so far: 1540.5851271712
#>
#> Solution found

```

```

#>
#> Solution found! Final fit=1540.5851 (started at 1560.1578) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> 0.704947419473423,0.554348588558669,-0.0873190767870889,0.024687071043122,0.599422931825699,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#> Lowest minimum so far: 1544.6953978122
#>
#> Solution found

```

```

#>
#> Solution found! Final fit=1544.6954 (started at 1589.4452) (1 attempt(s): 1
valid, 0 errors)

```

```

#> Start values from best fit:
#> 0.688879065105914,0.416188710841178,-0.205800583956037,-0.00462531692461861,0.686315176835109,0.
#>
#> Means of the estimated paramaters per individual.
#>      beta_11      beta_21      beta_31      beta_12      beta_22      beta_32
#> 0.701720516 0.490137387 -0.106010425 0.003144321 0.612003765 0.435809011
#>      beta_13      beta_23      beta_33      psi_11      psi_22      psi_33
#> -0.014208226 0.006029652 0.476983840 0.099522288 0.099143081 0.098132333
#>
#> Estimated paramaters per individual.
#>      beta_11      beta_21      beta_31      beta_12      beta_22      beta_32
#> [1,] 0.6818933 0.5050533 0.005108679 -0.008805370 0.6026246 0.3434339
#> [2,] 0.7148047 0.4467038 -0.137212072 -0.002862255 0.5973558 0.5128712
#> [3,] 0.7180782 0.5283926 -0.104829070 0.007327477 0.5743003 0.4944582
#> [4,] 0.7049474 0.5543486 -0.087319077 0.024687071 0.5994229 0.4090176
#> [5,] 0.6888791 0.4161887 -0.205800584 -0.004625317 0.6863152 0.4192641
#>      beta_13      beta_23      beta_33      psi_11      psi_22      psi_33
#> [1,] 0.028747373 0.056477097 0.5183946 0.09611176 0.09990714 0.09533267
#> [2,] -0.024206159 -0.004791158 0.4822680 0.10395017 0.10226568 0.10002053
#> [3,] 0.007524563 0.030858687 0.4148173 0.09818539 0.10348888 0.09775025
#> [4,] -0.047063124 -0.029584381 0.4986395 0.10377264 0.08978277 0.09991549
#> [5,] -0.036043783 -0.022811982 0.4707998 0.09559149 0.10027094 0.09764272
#> Test passed
#> [[1]]
#> [[1]][[1]]
#> [[1]][[1]]$value
#> [[1]][[1]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[1]]$visible
#> [1] TRUE

```

## Environment

```
ls()  
#> [1] "root"
```

## Class

```
#> [[1]]  
#> [1] "root_criterion"
```

## References

R Core Team. (2024). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. Vienna, Austria. <https://www.R-project.org/>