fitDTVARMxID: Internal Tests

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Tests

```
#> test-fitDTVARMxID-alpha-fixed-false-default
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed

#> test-fitDTVARMxID-alpha-fixed-false

#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed

#> test-fitDTVARMxID-alpha-fixed-true-default

#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed

#> test-fitDTVARMxID-beta-fixed-false-default

#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
```

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#> Test passed
#> Test passed
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```
#> test-fitDTVARMxID-beta-fixed-false
```

```
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
```

```
#> test-fitDTVARMxID-beta-fixed-true-default
```

```
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
```

```
#> test-fitDTVARMxID-beta-fixed-true
```

```
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
```

```
#> test-fitDTVARMxID-fitdtvarmxid
#> Loading required package:  OpenMx
#> To take full advantage of multiple cores, use:
#>   mxOption(key='Number of Threads', value=parallel::detectCores()) #now
#>   Sys.setenv(OMP_NUM_THREADS=parallel::detectCores()) #before library(OpenMx)
#>
#> Attaching package:  'fitDTVARMxID'
#> The following objects are masked _by_ '.GlobalEnv':
#>
#>     converged, FitDTVARMxID, InvSoftplus, LDL, Softplus
#> Running DTVAR_ID1 with 9 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR_ID1 with 9 parameters
#>
#>  Lowest minimum so far:   5618.81317176073
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=5618.8132 (started at 15085.69)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.906986962573004,-0.0056837390422803 4,0.00179868906769319,0.913323883678886,-0.193713577323125,0
#> Running DTVAR_ID2 with 9 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR_ID2 with 9 parameters
#>
#>  Lowest minimum so far:   5691.8761122249
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=5691.8761 (started at 12980.366)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.885274649575449,-0.00486458231501151,0.00318153766013918,0.885462352034751,0.0904084152938576,0
#> Running DTVAR_ID3 with 9 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR_ID3 with 9 parameters
#>
#>  Lowest minimum so far:   5714.85061063228
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=5714.8506 (started at 14462.738)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.8731783955877 83,-0.00426021061423815,0.00670256246494175,0.9190064842704,-0.149522252681934,-0.
#> Running DTVAR_ID4 with 9 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR_ID4 with 9 parameters
#>
#>  Lowest minimum so far:   5682.40956789374
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=5682.4096 (started at 13805.524)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.881660050735116,0.0242853168954213,0.019494189899389,0.900165001625736,0.4780228626379 28,0.244
#> Running DTVAR_ID5 with 9 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR_ID5 with 9 parameters
#>
#>  Lowest minimum so far:   5625.12888769277
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=5625.1289 (started at 13627.367)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.891746512523638,-0.00925677424651857,-0.00444631787633236,0.898249545039009,0.326944328400006,0

#>
#> Estimated paramaters per individual.
#>                              beta_1_1     beta_2_1     beta_1_2  beta_2_2
#> FitDTVARMxID_DTVAR_ID1.Rds 0.9069870 -0.005683739  0.001798689 0.9133239
#> FitDTVARMxID_DTVAR_ID2.Rds 0.8852746 -0.004864582  0.003181538 0.8854624
#> FitDTVARMxID_DTVAR_ID3.Rds 0.8731784 -0.004260211  0.006702562 0.9190065
#> FitDTVARMxID_DTVAR_ID4.Rds 0.8816601  0.024285317  0.019494190 0.9001650
#> FitDTVARMxID_DTVAR_ID5.Rds 0.8917465 -0.009256774 -0.004446318 0.8982495
#>                                nu_1_1      nu_2_1    psi_l_2_1 psi_d_1_1
#> FitDTVARMxID_DTVAR_ID1.Rds -0.19371358  0.26785829  0.009341102 0.4156184
#> FitDTVARMxID_DTVAR_ID2.Rds  0.09040842  0.13263918 -0.020905016 0.5368656
#> FitDTVARMxID_DTVAR_ID3.Rds -0.14952225 -0.06159861 -0.034793590 0.6079818
#> FitDTVARMxID_DTVAR_ID4.Rds  0.47802286  0.24427524 -0.011795732 0.5179902
#> FitDTVARMxID_DTVAR_ID5.Rds  0.32694433  0.03732981 -0.053033012 0.5262920
#>                             psi_d_2_1
#> FitDTVARMxID_DTVAR_ID1.Rds 0.5772525
#> FitDTVARMxID_DTVAR_ID2.Rds 0.5694626
#> FitDTVARMxID_DTVAR_ID3.Rds 0.5327001
#> FitDTVARMxID_DTVAR_ID4.Rds 0.5689259
#> FitDTVARMxID_DTVAR_ID5.Rds 0.4653443
#> Test passed
#> Test passed
#> Test passed
#> Test passed
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```
#> test-fitDTVARMxID-mu0-fixed-false-default
```

```
#> Test passed
#> Test passed
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#> Test passed
#> Test passed
#> Test passed
#> Test passed
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```
#> test-fitDTVARMxID-mu0-fixed-false
```

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#> Test passed
#> Test passed
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#> Test passed
#> Test passed
#> Test passed
#> Test passed
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```
#> test-fitDTVARMxID-mu0-fixed-true-default
```

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#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
```

```
#> test-fitDTVARMxID-mu0-func-true
```

```
#> Test passed
#> Test passed
```

```
#> test-fitDTVARMxID-nu-fixed-false-default
```

```
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
```

```
#> test-fitDTVARMxID-nu-fixed-false
```

```
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
```

```
#> test-fitDTVARMxID-psi-diag-false-default

#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed

#> test-fitDTVARMxID-psi-diag-false

#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed

#> test-fitDTVARMxID-psi-diag-true-default

#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed

#> test-fitDTVARMxID-sigma0-fixed-false-diag-false

#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed

#> test-fitDTVARMxID-sigma0-fixed-false-diag-true-default

#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed

#> test-fitDTVARMxID-sigma0-fixed-true-diag-false-default

#> Test passed
#> Test passed
#> Test passed
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#> Test passed
#> Test passed
#> Test passed
#> Test passed

#> test-fitDTVARMxID-sigma0-fixed-true-diag-true-default

#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed

#> test-fitDTVARMxID-sigma0-func-true

#> Test passed
#> Test passed

#> test-fitDTVARMxID-theta-default

#> Test passed
#> Test passed
#> Test passed

#> test-fitDTVARMxID-theta-fixed-false-default

#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed

#> test-fitDTVARMxID-theta-fixed-false

#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> Test passed
#> [[1]]
#> [[1]][[1]]
#> [[1]][[1]]$value
#> [[1]][[1]]$value[[1]]
#> [1] TRUE
#>
```

```
#>
#> [[1]][[1]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[2]]
#> [[1]][[2]]$value
#> [[1]][[2]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[2]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[3]]
#> [[1]][[3]]$value
#> [[1]][[3]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[3]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[4]]
#> [[1]][[4]]$value
#> [[1]][[4]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[4]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[5]]
#> [[1]][[5]]$value
#> [[1]][[5]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[5]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[6]]
```

```
#> [[1]][[6]]$value
#> [[1]][[6]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[6]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[7]]
#> [[1]][[7]]$value
#> [[1]][[7]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[7]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[8]]
#> [[1]][[8]]$value
#> [[1]][[8]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[8]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[9]]
#> [[1]][[9]]$value
#> [[1]][[9]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[9]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[10]]
#> [[1]][[10]]$value
#> [[1]][[10]]$value[[1]]
#> [1] TRUE
#>
#>
```

```
#> [[1]][[10]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[11]]
#> [[1]][[11]]$value
#> [[1]][[11]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[11]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[12]]
#> [[1]][[12]]$value
#> [[1]][[12]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[12]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[13]]
#> [[1]][[13]]$value
#> [[1]][[13]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[13]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[14]]
#> [[1]][[14]]$value
#> [[1]][[14]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[14]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[15]]
```

```
#> [[1]][[15]]$value
#> [[1]][[15]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[15]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[16]]
#> [[1]][[16]]$value
#> [[1]][[16]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[16]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[17]]
#> [[1]][[17]]$value
#> [[1]][[17]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[17]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[18]]
#> [[1]][[18]]$value
#> [[1]][[18]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[18]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[19]]
#> [[1]][[19]]$value
#> [[1]][[19]]$value[[1]]
#> [1] TRUE
#>
#>
```

```
#> [[1]][[19]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[20]]
#> [[1]][[20]]$value
#> [[1]][[20]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[20]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[21]]
#> [[1]][[21]]$value
#> [[1]][[21]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[21]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[22]]
#> [[1]][[22]]$value
#> [[1]][[22]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[22]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[23]]
#> [[1]][[23]]$value
#> [[1]][[23]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[23]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[24]]
```

```
#> [[1]][[24]]$value
#> [[1]][[24]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[24]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[25]]
#> [[1]][[25]]$value
#> [[1]][[25]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[25]]$visible
#> [1] TRUE
```

Environment

```
ls()

#> [1] "root"
```

Class

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

References

R Core Team. (2025). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. Vienna, Austria. https://www.R-project.org/