

betaNB: Internal Tests

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Tests

```
#> test-betaNB-beta-nb-est
#> Call:
#> BetaNB(object = nb)
#>
#> Standardized regression slopes
#> type = "pc"
#>      est      se R  0.05%   0.5%   2.5%  97.5%  99.5% 99.95%
#> NARTIC  0.4951 0.1215 5 0.3851 0.3872 0.3967 0.7056 0.7185 0.7213
#> PCTGRT  0.3915 0.1140 5 0.1481 0.1515 0.1665 0.4444 0.4501 0.4514
#> PCTSUPP 0.2632 0.0739 5 0.2035 0.2035 0.2036 0.3627 0.3716 0.3736
#> Call:
#> BetaNB(object = nb)
#>
#> Standardized regression slopes
#> type = "pc"
#> Call:
#> BetaNB(object = nb)
#>
#> Standardized regression slopes
#> type = "bc"
#> Call:
#> BetaNB(object = nb)
#>
#> Standardized regression slopes
#> type = "bc"
#>      est      se R  0.05%   0.5%   2.5%  97.5%  99.5% 99.95%
#> NARTIC  0.4951 0.1215 5 0.3849 0.3849 0.3849 0.5404 0.6023 0.6870
#> PCTGRT  0.3915 0.1140 5 0.1884 0.2879 0.3564 0.4515 0.4515 0.4515
#> PCTSUPP 0.2632 0.0739 5 0.2037 0.2040 0.2042 0.3737 0.3738 0.3738
#> Call:
#> BetaNB(object = nb)
#>
#> Standardized regression slopes
#> type = "bca"
```

```

#> Call:
#> BetaNB(object = nb)
#>
#> Standardized regression slopes
#> type = "bca"
#>           est      se R  0.05%   0.5%   2.5%  97.5%  99.5% 99.95%
#> NARTIC  0.4951 0.1215 5 0.3849 0.3849 0.3849 0.5407 0.6048 0.6890
#> PCTGRT  0.3915 0.1140 5 0.1985 0.2997 0.3577 0.4515 0.4515 0.4515
#> PCTSUPP 0.2632 0.0739 5 0.2036 0.2040 0.2042 0.3737 0.3738 0.3738
#> Test passed
#> Call:
#> BetaNB(object = nb)
#>
#> Standardized regression slopes
#> type = "pc"
#>           est      se R  0.05%  0.5%   2.5%  97.5%  99.5% 99.95%
#> NARTIC 0.7622 0.0365 5 0.6884 0.689 0.6914 0.7781 0.7794 0.7797
#> Call:
#> BetaNB(object = nb)
#>
#> Standardized regression slopes
#> type = "pc"
#> Call:
#> BetaNB(object = nb)
#>
#> Standardized regression slopes
#> type = "bc"
#> Call:
#> BetaNB(object = nb)
#>
#> Standardized regression slopes
#> type = "bc"
#>           est      se R  0.05%  0.5%   2.5%  97.5%  99.5% 99.95%
#> NARTIC 0.7622 0.0365 5 0.6887 0.6907 0.6974 0.7793 0.7796 0.7797
#> Call:
#> BetaNB(object = nb)
#>
#> Standardized regression slopes
#> type = "bca"
#> Call:
#> BetaNB(object = nb)
#>
#> Standardized regression slopes
#> type = "bca"
#>           est      se R  0.05%  0.5%   2.5%  97.5%  99.5% 99.95%
#> NARTIC 0.7622 0.0365 5 0.6885 0.6898 0.6957 0.779 0.7796 0.7797

```

```

#> test-betaNB-delta-r-sq-nb-est

#> Call:
#> DeltaRSqNB(object = nb)
#>
#> Improvement in R-squared
#> type = "pc"
#>
      est      se R  0.05%   0.5%   2.5%  97.5%  99.5% 99.95%
#> NARTIC  0.1859 0.0443 5 0.1087 0.1093 0.1120 0.2227 0.2267 0.2276
#> PCTGRT  0.1177 0.0315 5 0.0299 0.0309 0.0354 0.1058 0.1059 0.1059
#> PCTSUPP 0.0569 0.0232 5 0.0196 0.0203 0.0231 0.0803 0.0815 0.0817
#> Call:
#> DeltaRSqNB(object = nb)
#>
#> Improvement in R-squared
#> type = "pc"
#> Test passed
#> Test passed

#> test-betaNB-diff-beta-nb-est

#> Call:
#> DiffBetaNB(object = nb)
#>
#> Differences of standardized regression slopes
#> type = "pc"
#>
      est      se R   0.05%   0.5%   2.5%  97.5%  99.5% 99.95%
#> NARTIC-PCTGRT  0.1037 0.0983 5  0.0251  0.0263  0.0316 0.2496 0.2501 0.2502
#> NARTIC-PCTSUPP 0.2319 0.0753 5  0.1469  0.1476  0.1505 0.3253 0.3283 0.3290
#> PCTGRT-PCTSUPP 0.1282 0.1475 5 -0.0602 -0.0598 -0.0579 0.2863 0.3006 0.3038
#> Call:
#> DiffBetaNB(object = nb)
#>
#> Differences of standardized regression slopes
#> type = "pc"
#> Test passed
#> Test passed

#> test-betaNB-nb

#> Test passed
#> Call:
#> NB(object = object, R = 6)
#>
#> The first six bootstrap covariance matrices.
#>
#> [[1]]
#>
      [,1]      [,2]      [,3]

```

```

#> [1,] 1.0822806 0.506791893 0.529658479
#> [2,] 0.5067919 1.031955095 0.003273121
#> [3,] 0.5296585 0.003273121 1.039329742
#>
#> [[2]]
#>      [,1]      [,2]      [,3]
#> [1,] 0.9817073 0.4851887 0.4706588
#> [2,] 0.4851887 0.9606794 0.0338717
#> [3,] 0.4706588 0.0338717 0.9719655
#>
#> [[3]]
#>      [,1]      [,2]      [,3]
#> [1,] 1.0580736 0.50248569 0.50085994
#> [2,] 0.5024857 1.01991331 -0.01432606
#> [3,] 0.5008599 -0.01432606 1.01175697
#>
#> [[4]]
#>      [,1]      [,2]      [,3]
#> [1,] 0.9634100 0.4978239 0.4122622
#> [2,] 0.4978239 1.0011000 0.0309766
#> [3,] 0.4122622 0.0309766 0.8987554
#>
#> [[5]]
#>      [,1]      [,2]      [,3]
#> [1,] 1.0020913 0.48481015 0.51745952
#> [2,] 0.4848101 1.05731855 0.01299997
#> [3,] 0.5174595 0.01299997 1.01532434
#>
#> [[6]]
#>      [,1]      [,2]      [,3]
#> [1,] 0.9799075 0.439493308 0.537181470
#> [2,] 0.4394933 0.986995158 -0.009976084
#> [3,] 0.5371815 -0.009976084 1.010351140
#>
#> test-betaNB-p-cor-nb-est
#> Call:
#> PCorNB(object = nb)
#>
#> Squared partial correlations
#> type = "pc"
#>      est      se R  0.05%   0.5%   2.5%  97.5%  99.5%  99.95%
#> NARTIC  0.4874 0.0909 5 0.3481 0.3491 0.3538 0.5726 0.5774 0.5784
#> PCTGRT  0.3757 0.1039 5 0.2008 0.2010 0.2021 0.4448 0.4546 0.4568
#> PCTSUPP 0.2254 0.1577 5 0.1534 0.1539 0.1559 0.5028 0.5116 0.5136
#> Call:
#> PCorNB(object = nb)

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#>
#> Squared partial correlations
#> type = "pc"
#> Test passed
#> Test passed

#> test-betaNB-r-sq-mc-est

#> Call:
#> RSqNB(object = nb)
#>
#> R-squared and adjusted R-squared
#> type = "pc"
#>      est      se R  0.05%   0.5%   2.5%  97.5%  99.5% 99.95%
#> rsq 0.8045 0.0638 5 0.7489 0.7498 0.7541 0.9125 0.9175 0.9187
#> adj 0.7906 0.0683 5 0.7309 0.7320 0.7365 0.9063 0.9117 0.9129
#> Call:
#> RSqNB(object = nb)
#>
#> R-squared and adjusted R-squared
#> type = "pc"
#> Test passed
#> Call:
#> RSqNB(object = nb)
#>
#> R-squared and adjusted R-squared
#> type = "pc"
#>      est      se R  0.05%   0.5%   2.5%  97.5%  99.5% 99.95%
#> rsq 0.5809 0.1006 5 0.4515 0.4543 0.4670 0.7056 0.7082 0.7088
#> adj 0.5714 0.1029 5 0.4390 0.4419 0.4548 0.6989 0.7016 0.7021
#> Call:
#> RSqNB(object = nb)
#>
#> R-squared and adjusted R-squared
#> type = "pc"
#> Test passed

#> test-betaNB-s-cor-nb-est

#> Call:
#> SCorNB(object = nb)
#>
#> Semipartial correlations
#> type = "pc"
#>      est      se R  0.05%   0.5%   2.5%  97.5%  99.5% 99.95%
#> NARTIC 0.4312 0.0746 5 0.3296 0.3302 0.3325 0.5038 0.5079 0.5088
#> PCTGRT 0.3430 0.0629 5 0.3153 0.3157 0.3171 0.4579 0.4678 0.4701

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#> PCTSUPP 0.2385 0.1172 5 0.0864 0.0876 0.0929 0.3830 0.3961 0.3990
#> Call:
#> SCorNB(object = nb)
#>
#> Semipartial correlations
#> type = "pc"
#> Test passed
#> Test passed
#> [[1]]
#> [[1]][[1]]
#> [[1]][[1]]$value
#> [[1]][[1]]$value[[1]]
#>          est      se R  0.05%   0.5%   2.5% 97.5%  99.5% 99.95%
#> NARTIC 0.7622 0.0365 5 0.6885 0.6898 0.6957 0.779 0.7796 0.7797
#>
#>
#> [[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]]$value[[1]]
#> [[1]][[4]]$value[[1]][[1]]
#>          [,1]      [,2]      [,3]
#> [1,] 1.0822806 0.506791893 0.529658479

```

```

#> [2,] 0.5067919 1.031955095 0.003273121
#> [3,] 0.5296585 0.003273121 1.039329742
#>
#> [[1]][[4]]$value[[1]][[2]]
#>      [,1]      [,2]      [,3]
#> [1,] 0.9817073 0.4851887 0.4706588
#> [2,] 0.4851887 0.9606794 0.0338717
#> [3,] 0.4706588 0.0338717 0.9719655
#>
#> [[1]][[4]]$value[[1]][[3]]
#>      [,1]      [,2]      [,3]
#> [1,] 1.0580736 0.50248569 0.50085994
#> [2,] 0.5024857 1.01991331 -0.01432606
#> [3,] 0.5008599 -0.01432606 1.01175697
#>
#> [[1]][[4]]$value[[1]][[4]]
#>      [,1]      [,2]      [,3]
#> [1,] 0.9634100 0.4978239 0.4122622
#> [2,] 0.4978239 1.0011000 0.0309766
#> [3,] 0.4122622 0.0309766 0.8987554
#>
#> [[1]][[4]]$value[[1]][[5]]
#>      [,1]      [,2]      [,3]
#> [1,] 1.0020913 0.48481015 0.51745952
#> [2,] 0.4848101 1.05731855 0.01299997
#> [3,] 0.5174595 0.01299997 1.01532434
#>
#> [[1]][[4]]$value[[1]][[6]]
#>      [,1]      [,2]      [,3]
#> [1,] 0.9799075 0.439493308 0.537181470
#> [2,] 0.4394933 0.986995158 -0.009976084
#> [3,] 0.5371815 -0.009976084 1.010351140
#>
#>
#>
#> [[1]][[4]]$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
```


Environment

```
ls()  
#> [1] "nas1982" "root"    "tex_file"
```

Class

```
#> [[1]]  
#> [1] "data.frame"  
#>  
#> [[2]]  
#> [1] "root_criterion"  
#>  
#> [[3]]  
#> [1] "character"
```

References

R Core Team. (2023). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. Vienna, Austria. <https://www.R-project.org/>