betaSandwich: Methods

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```
object <- lm(
  QUALITY ~ NARTIC + PCTGRT + PCTSUPP,
  data = stevens
)
```

```
out <- BetaHC(object, type = "hc5")
str(out)

#> List of 7
#>  $ call     : language BetaHC(object = object, type = "hc5")
#>  $ type     : chr "hc5"
#>  $ beta     : Named num [1:3] 0.495 0.391 0.263
#>   ..- attr(*, "names")= chr [1:3] "NARTIC" "PCTGRT" "PCTSUPP"
#>  $ beta.vcov: num [1:3, 1:3] 0.00533 -0.00309 -0.0017 -0.00309 0.00572 ...
#>   ..- attr(*, "dimnames")=List of 2
#>   .. ..$ : chr [1:3] "NARTIC" "PCTGRT" "PCTSUPP"
#>   .. ..$ : chr [1:3] "NARTIC" "PCTGRT" "PCTSUPP"
#>  $ n        : int 46
#>  $ p        : num 3
#>  $ df       : int 42
#>  - attr(*, "class")= chr [1:2] "betaSandwich" "list"
```

print

```
print(out)

#> Call:
#> BetaHC(object = object, type = "hc5")
#>
#> Standardized regression slopes with HC5 standard errors:
#>            est     se      t      p   0.05%   0.5%   2.5%  97.5%  99.5% 99.95%
#> NARTIC  0.4951 0.0730 6.7834 0.0000  0.2369 0.2982 0.3478 0.6425 0.6921 0.7534
#> PCTGRT  0.3915 0.0757 5.1749 0.0000  0.1239 0.1874 0.2388 0.5442 0.5956 0.6591
#> PCTSUPP 0.2632 0.0794 3.3142 0.0019 -0.0178 0.0489 0.1030 0.4235 0.4776 0.5443
```

coef

```
coef(out)

#>    NARTIC    PCTGRT   PCTSUPP
#> 0.4951451 0.3914887 0.2632477
```

vcov

```
vcov(out)

#>                NARTIC       PCTGRT      PCTSUPP
#> NARTIC   0.005328091 -0.003085603 -0.001704003
#> PCTGRT  -0.003085603  0.005723252 -0.002098042
#> PCTSUPP -0.001704003 -0.002098042  0.006309111
```

confint

```
confint(out, level = 0.95)

#>           2.5%  97.5%
#> NARTIC  0.3478 0.6425
#> PCTGRT  0.2388 0.5442
#> PCTSUPP 0.1030 0.4235
```

summary

```
summary(out)

#> Call:
#> BetaHC(object = object, type = "hc5")
#>
#> Standardized regression slopes with HC5 standard errors:
#>            est     se      t      p   0.05%   0.5%   2.5%  97.5%  99.5% 99.95%
#> NARTIC  0.4951 0.0730 6.7834 0.0000  0.2369 0.2982 0.3478 0.6425 0.6921 0.7534
#> PCTGRT  0.3915 0.0757 5.1749 0.0000  0.1239 0.1874 0.2388 0.5442 0.5956 0.6591
#> PCTSUPP 0.2632 0.0794 3.3142 0.0019 -0.0178 0.0489 0.1030 0.4235 0.4776 0.5443
```

References

Dudgeon, P. (2017). Some improvements in confidence intervals for standardized regression coefficients. *Psychometrika*, *82*(4), 928–951. https://doi.org/10.1007/s11336-017-9563-z

R Core Team. (2022). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. Vienna, Austria. https://www.R-project.org/