Parallel analysis

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```
#Function to call the right data for adjectives
call_data <- function(dataType){

    file_path <- dir_ls(here::here("data"),  regexp = {{dataType}})
data <- rio::import(paste0(file_path), setclass = "tbl_df") %>%
  rio::characterize() %>%
  janitor::clean_names() %>%
  #Words between col numbers ["irascible":"open_handed"]
  select(irascible:open_handed)

   data
}
```

1 Data

```
data_Original <-  call_data("ORIGINAL")# %>% nrow()
data_Ipsatized <- call_data("IPSATIZED") #%>% nrow()

#check for any unmatched columns
table(names(data_Original) == names(data_Ipsatized))
```

```
##
## TRUE
##  360
```

```
#check for missing values
table(is.na(data_Original))
```

```
##
##  FALSE
## 276120
```

```
table(is.na(data_Ipsatized))
```

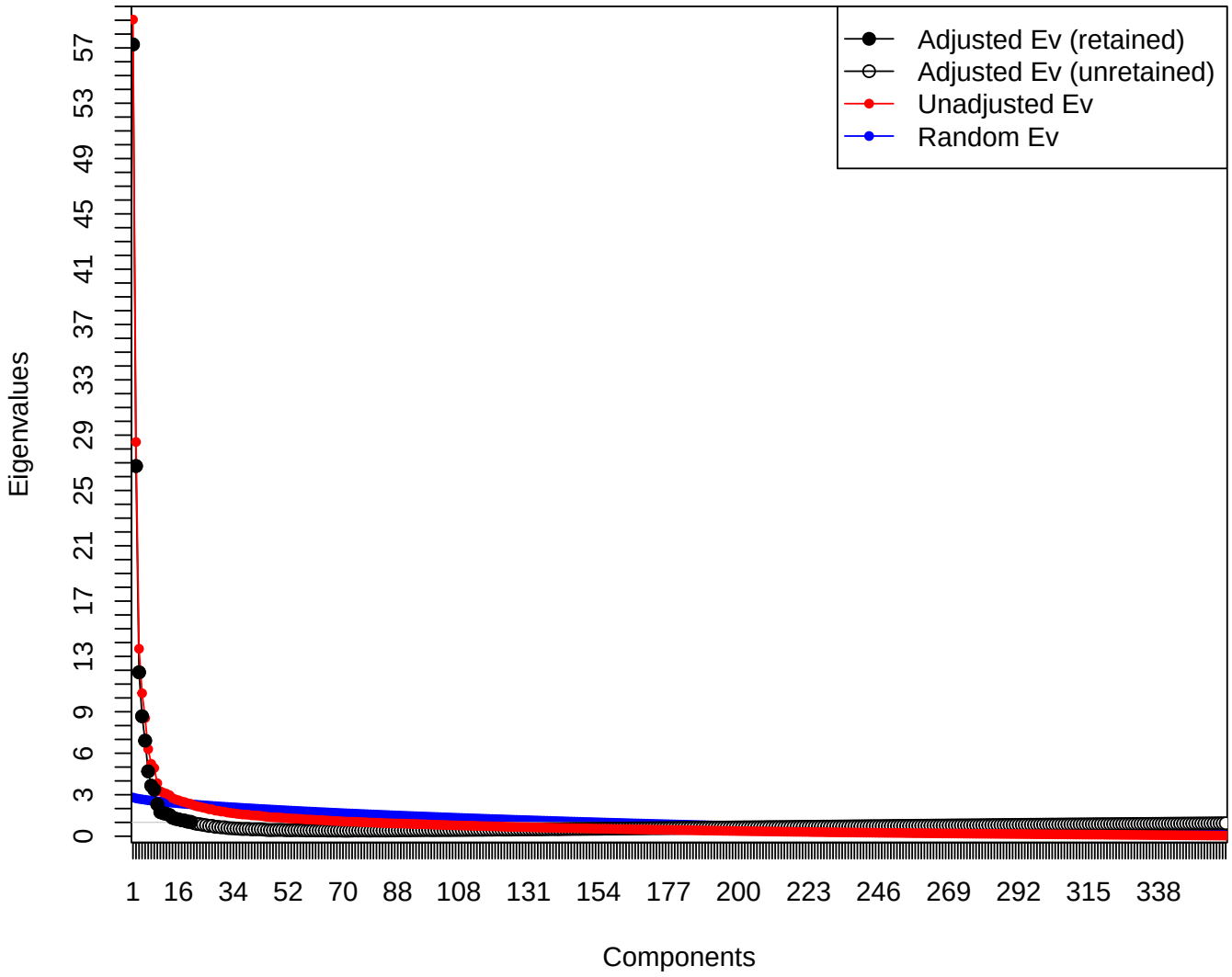
```
##
##  FALSE
## 276120
```

2 Parallel Analysis

2.0.1 PA - Original data

```
PA_original <- paran::paran(data_Original, iterations = 100,
                            quietly = FALSE, status = FALSE,
                           all = FALSE, cfa = FALSE, graph = TRUE,
                           color = TRUE, col = c("black", "red", "blue"),
                           lty = c(1, 2, 3), lwd = 1, legend = TRUE,
                           file = "", width = 640, height = 640,
                           grdevice = "png", seed = 0)
```

```
##
## Using eigendecomposition of correlation matrix.
##
## Results of Horn's Parallel Analysis for component retention
## 100 iterations, using the mean estimate
##
## ------------------------------------------------
## Component   Adjusted    Unadjusted    Estimated
##             Eigenvalue  Eigenvalue    Bias
## ------------------------------------------------
## 1          57.249158   59.045728      1.796569
## 2          26.765776   28.505763      1.739986
## 3          11.850014   13.551021      1.701006
## 4           8.673702   10.338395      1.664693
## 5           6.907845    8.541457      1.633611
## 6           4.691725    6.294314      1.602589
## 7           3.654300    5.233342      1.579042
## 8           3.375370    4.927547      1.552177
## 9           2.304715    3.830696      1.525980
## 10          1.744721    3.247886      1.503165
## 11          1.663842    3.144363      1.480520
## 12          1.615520    3.073844      1.458323
## 13          1.532802    2.968896      1.436094
## 14          1.337078    2.755218      1.418140
## 15          1.262843    2.660258      1.397415
## 16          1.220587    2.597059      1.376472
## 17          1.151899    2.511385      1.359485
## 18          1.123670    2.465299      1.341628
## 19          1.054173    2.378201      1.324027
## 20          1.034097    2.339443      1.305345
## ------------------------------------------------
##
## Adjusted eigenvalues > 1 indicate dimensions to retain.
## (20 components retained)
```



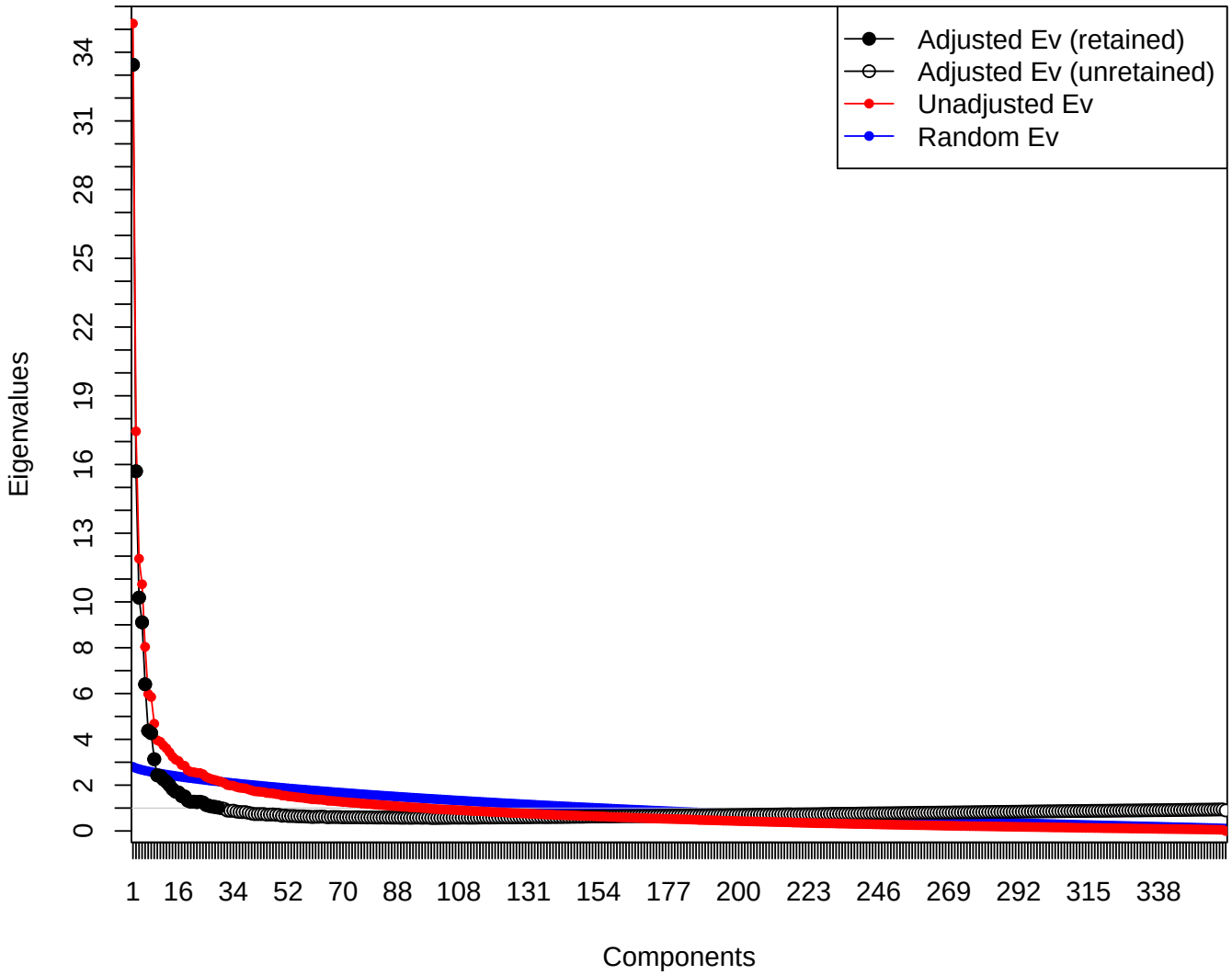
Parallel analysis suggested 20 components for Original data.

2.0.2 PA - Ipsatized data

```
PA_ipsatized <- paran::paran(data_Ipsatized, iterations = 100,
                             quietly = FALSE, status = FALSE,
                            all = FALSE, cfa = FALSE, graph = TRUE,
                            color = TRUE, col = c("black", "red", "blue"),
                            lty = c(1, 2, 3), lwd = 1, legend = TRUE,
                            file = "", width = 640, height = 640,
                            grdevice = "png", seed = 0)
```

```
##
## Using eigendecomposition of correlation matrix.
##
## Results of Horn's Parallel Analysis for component retention
## 100 iterations, using the mean estimate
##
## ----------------------------------------------------
```

```
## Component   Adjusted    Unadjusted    Estimated
##             Eigenvalue  Eigenvalue    Bias
## -------------------------------------------------
## 1           33.453935   35.252882     1.798946
## 2           15.704999   17.446997     1.741997
## 3           10.185680   11.887049     1.701368
## 4            9.108560   10.773667     1.665107
## 5            6.402433    8.036224     1.633791
## 6            4.372989    5.980799     1.607809
## 7            4.271008    5.849802     1.578793
## 8            3.131238    4.683081     1.551843
## 9            2.428343    3.954949     1.526605
## 10           2.387740    3.892303     1.504562
## 11           2.252460    3.733791     1.481330
## 12           2.146001    3.604619     1.458618
## 13           1.998128    3.435525     1.437397
## 14           1.826046    3.243430     1.417383
## 15           1.715990    3.114065     1.398074
## 16           1.677647    3.054570     1.376922
## 17           1.522991    2.881512     1.358521
## 18           1.504497    2.844247     1.339749
## 19           1.326612    2.648255     1.321643
## 20           1.274587    2.580022     1.305435
## 21           1.278252    2.566541     1.288288
## 22           1.261921    2.535038     1.273116
## 23           1.274997    2.530610     1.255613
## 24           1.240773    2.480130     1.239356
## 25           1.138748    2.360467     1.221719
## 26           1.098845    2.303864     1.205018
## 27           1.064926    2.254828     1.189901
## 28           1.048416    2.224703     1.176287
## 29           1.023650    2.185161     1.161510
## -------------------------------------------------
##
## Adjusted eigenvalues > 1 indicate dimensions to retain.
## (29 components retained)
```



Parallel analysis suggested 29 components for Ipsatized data.