quintile

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Cluster by quintiles

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union

## Welcome! Want to learn more? See two factoextra-related books at https://goo.gl/ve3WBa

## Package 'clustertend' is deprecated.  Use package 'hopkins' instead.

## Loading required package: MASS

##
## Attaching package: 'MASS'

## The following object is masked from 'package:dplyr':
##
##     select
```
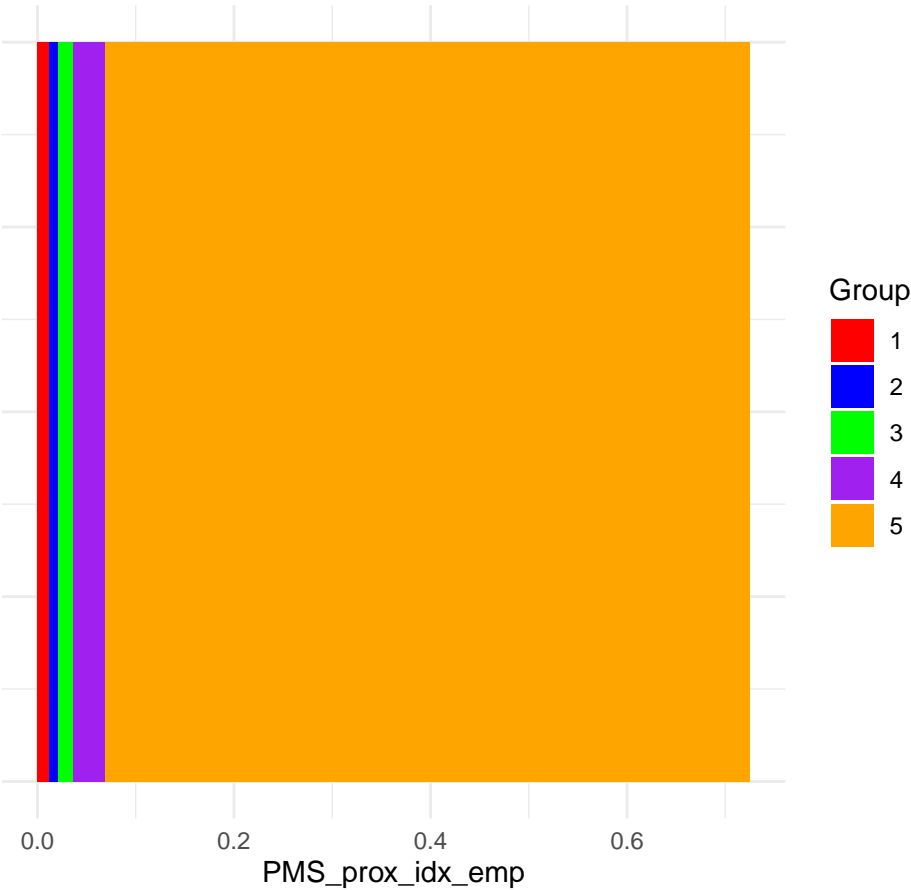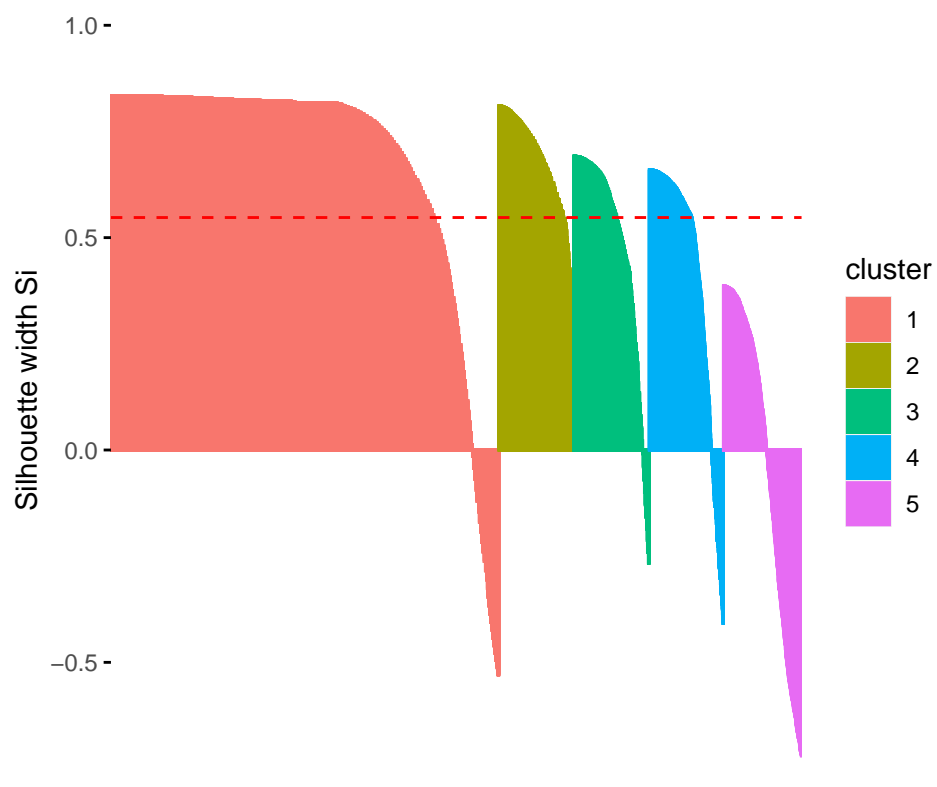
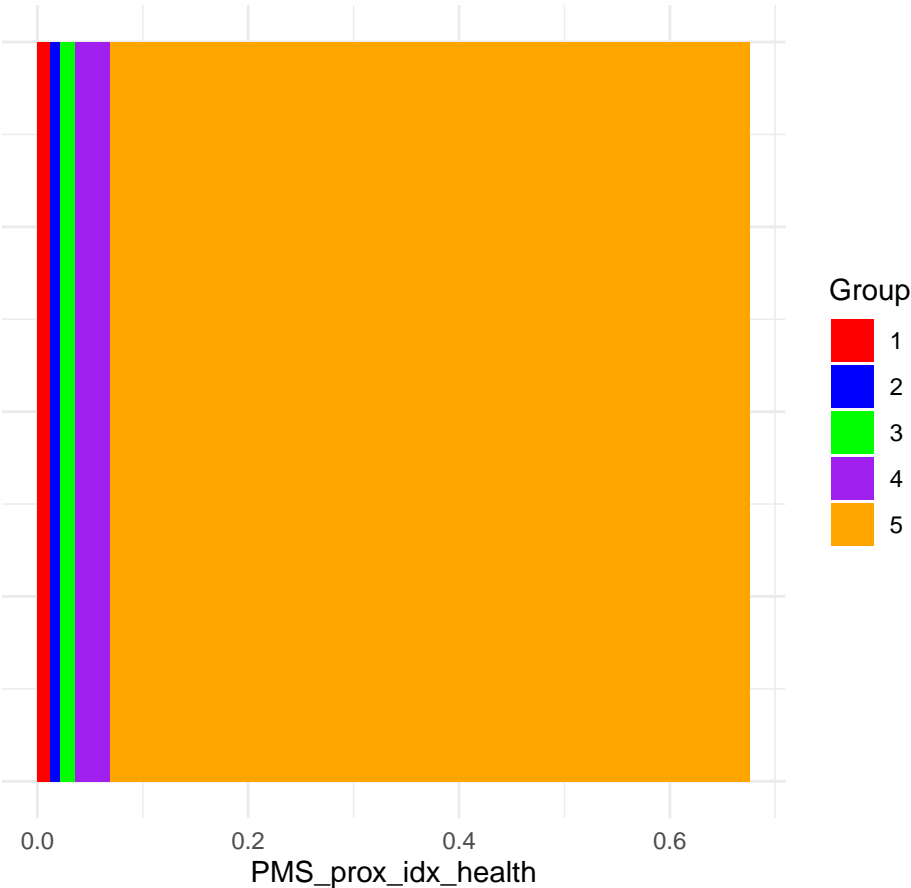**Employment**

Cutoff Values by Quartile


```
##   cluster size ave.sil.width
## 1       1 6589          0.68
## 2       2 1270          0.68
## 3       3 1282          0.48
## 4       4 1259          0.41
## 5       5 1328         -0.03
```

Clusters silhouette plot
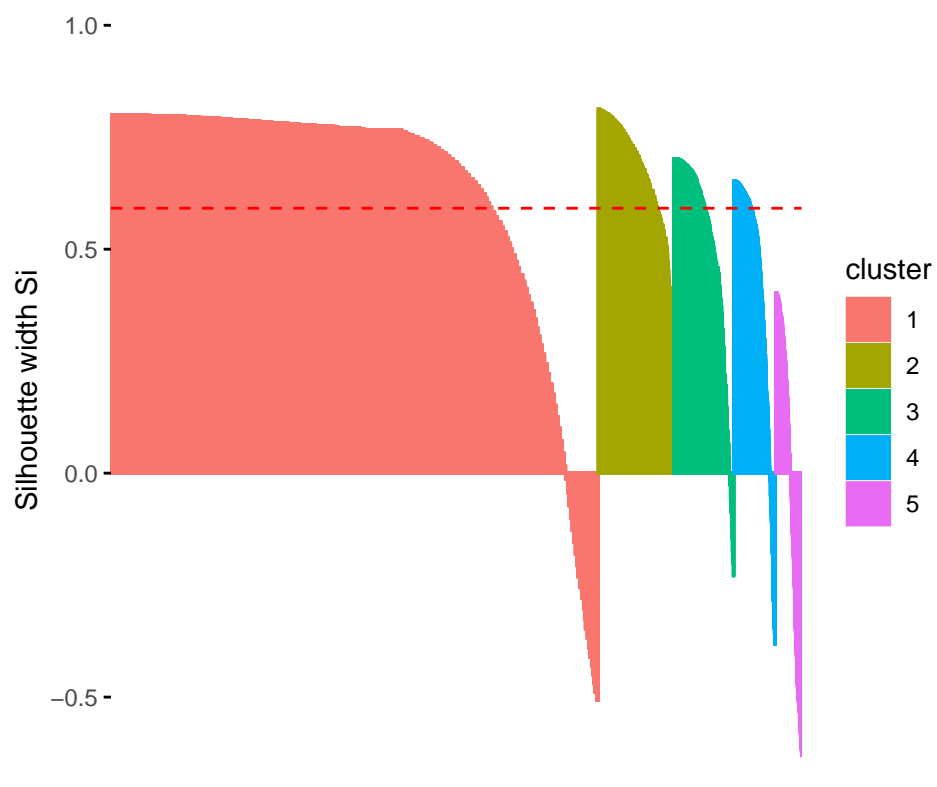 Average silhouette width: 0.55

Health
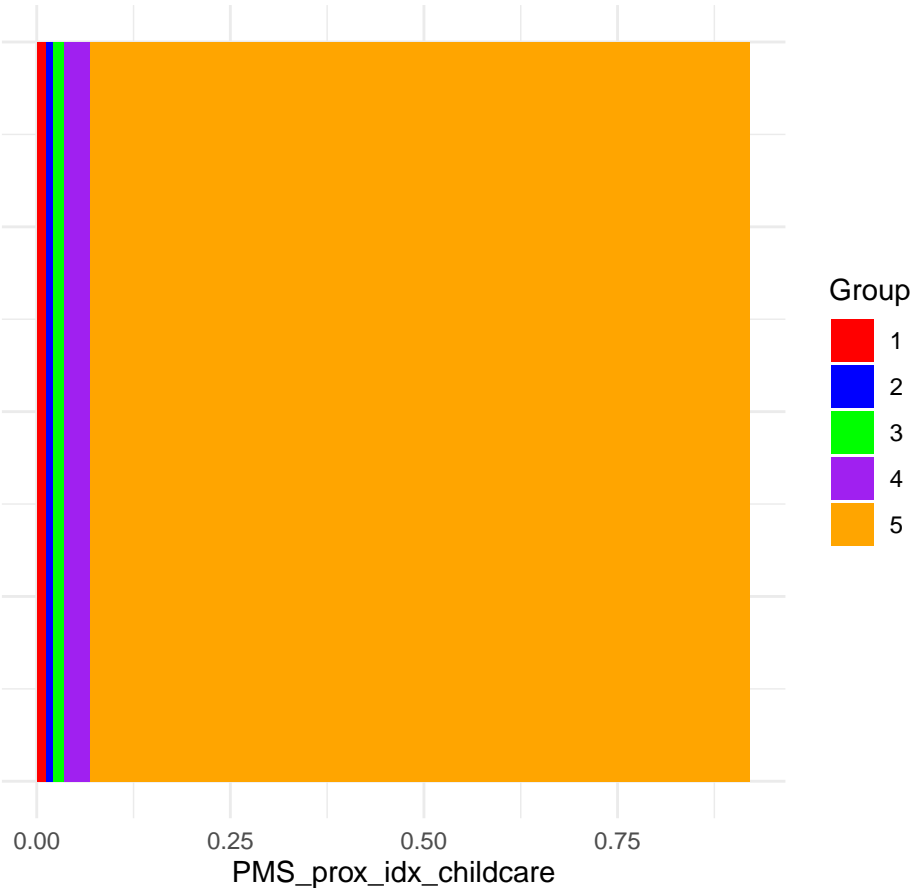
Cutoff Values by Quartile


```
##   cluster size ave.sil.width
## 1       1 5995          0.63
## 2       2  932          0.68
## 3       3  739          0.50
## 4       4  512          0.41
## 5       5  320          0.01
```

Clusters silhouette plot
 Average silhouette width: 0.59
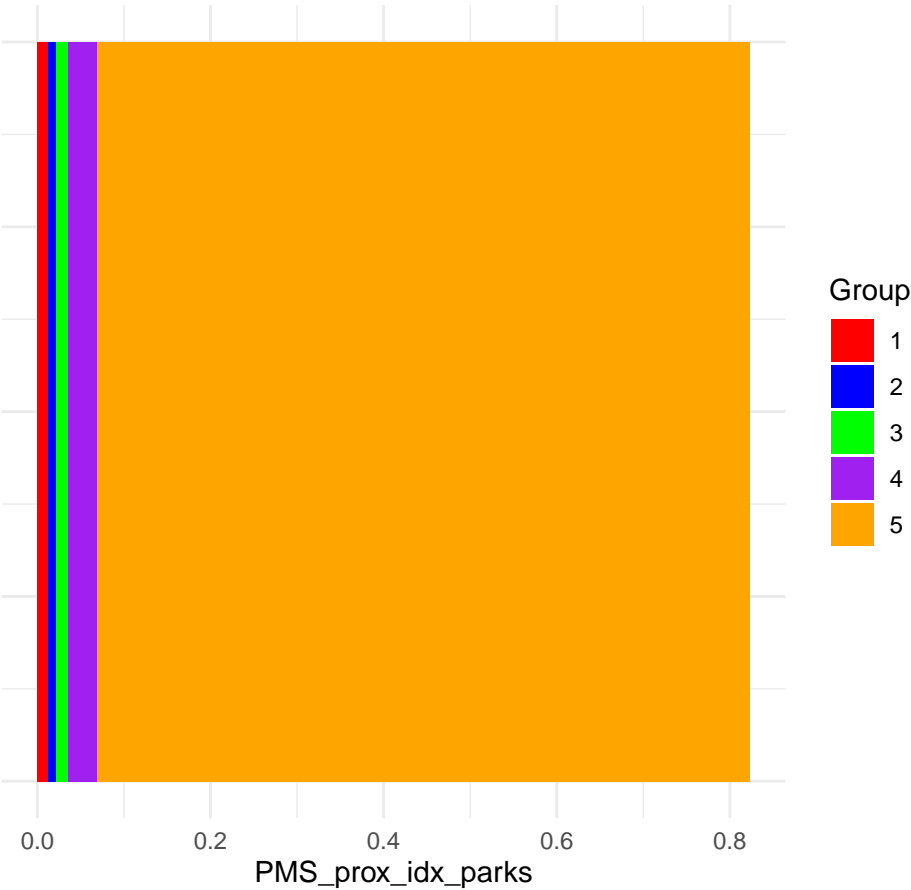
Childcare

Cutoff Values by Quartile

PMS_prox_idx_childcare

```
##   cluster size ave.sil.width
## 1       1 1171          0.63
## 2       2  746          0.58
## 3       3 1020          0.50
## 4       4 1600          0.43
## 5       5 2694         -0.07
```

Clusters silhouette plot
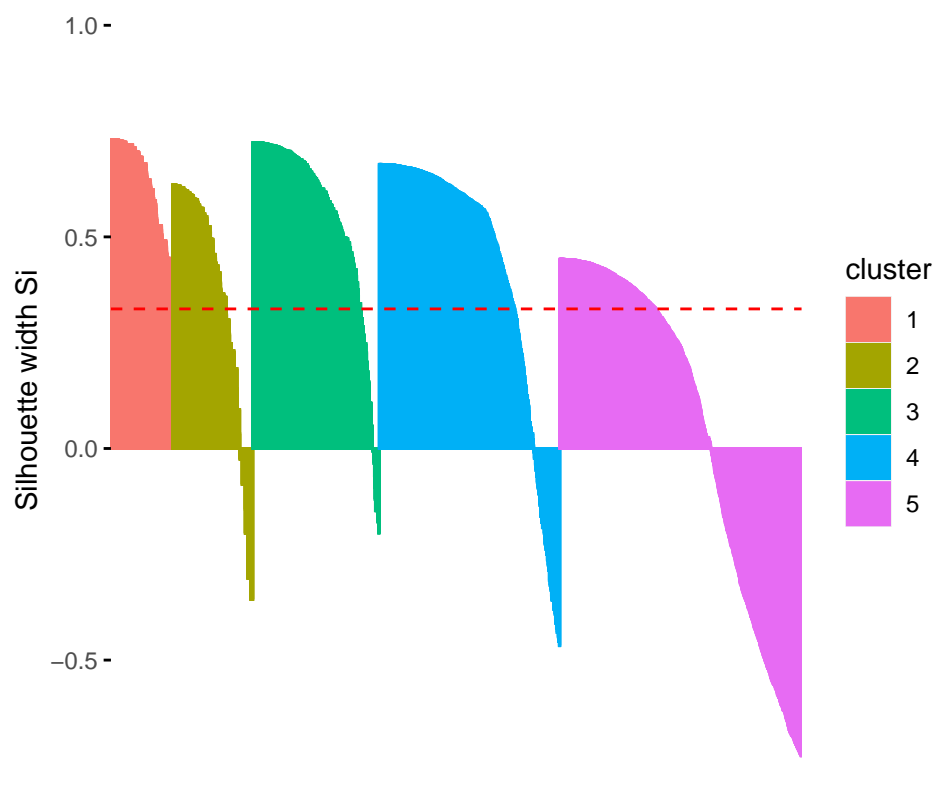 Average silhouette width: 0.3
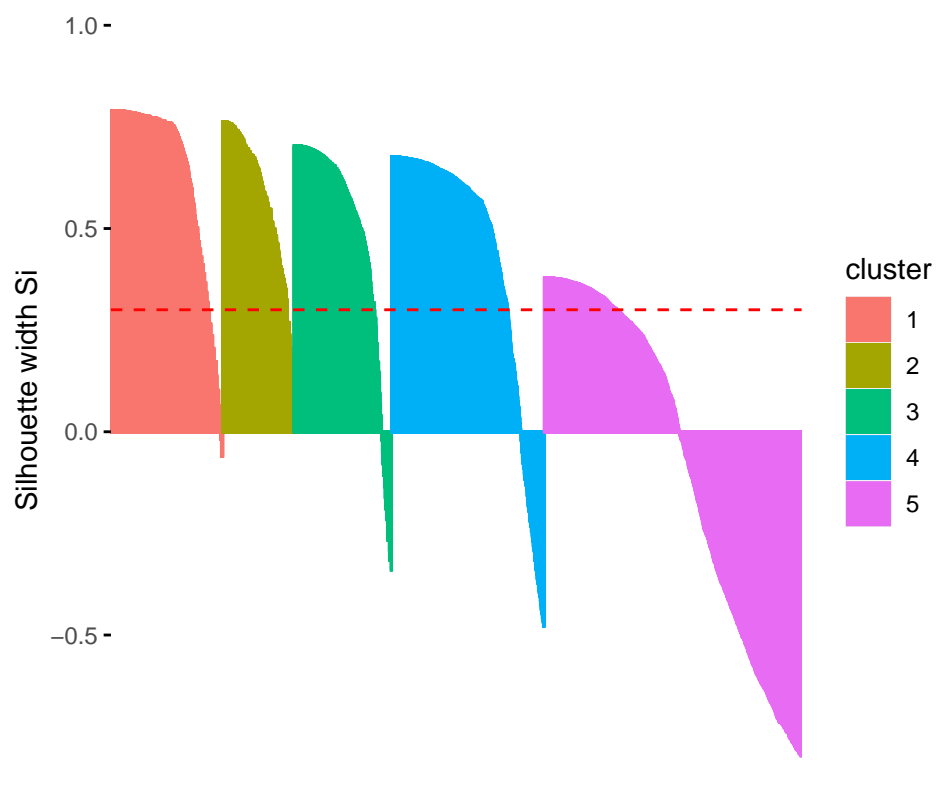
Parks
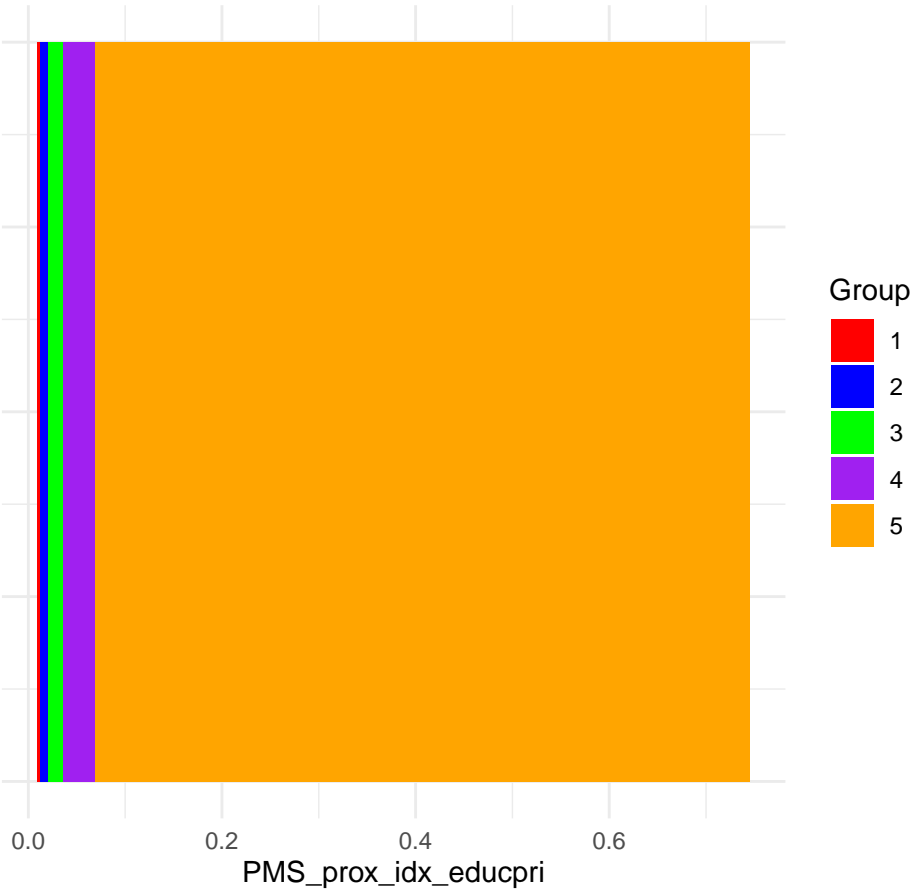
Cutoff Values by Quartile


```
##    cluster size ave.sil.width
## 1        1  621          0.63
## 2        2  811          0.37
## 3        3 1275          0.55
## 4        4 1823          0.43
## 5        5 2439          0.05
```

Clusters silhouette plot
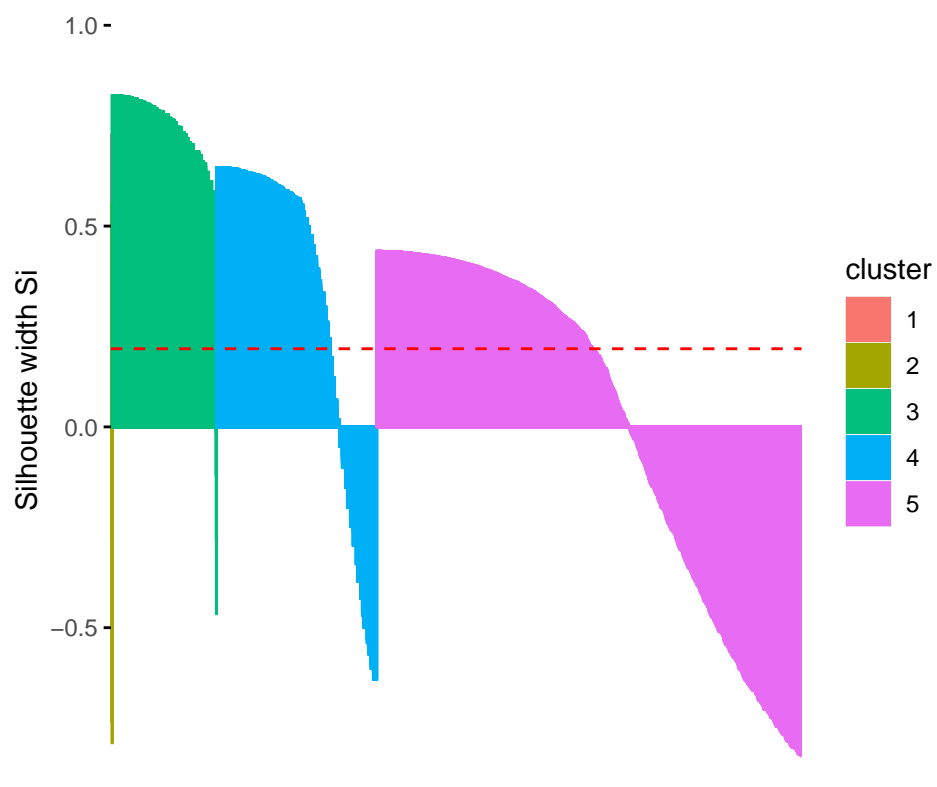Average silhouette width: 0.33

Education Primary

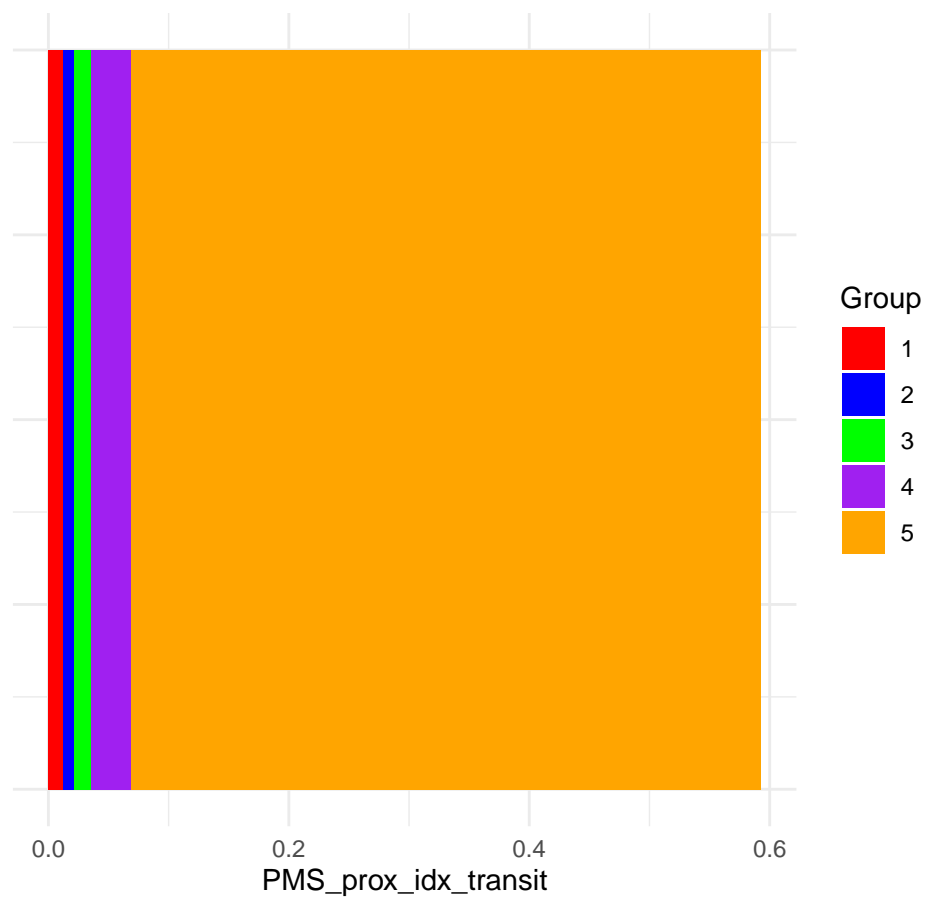## Cutoff Values by Quartile


```
##   cluster size ave.sil.width
## 1       1    3          0.70
## 2       2    9          0.12
## 3       3 1011          0.75
## 4       4 1553          0.32
## 5       5 4115          0.01
```

Clusters silhouette plot
Average silhouette width: 0.19

Transit

Cutoff Values by Quartile


```
##   cluster size ave.sil.width
## 1       1 3034          0.57
## 2       2  848          0.65
## 3       3  683          0.49
## 4       4  564          0.46
## 5       5  189          0.10
```

Clusters silhouette plot
Average silhouette width: 0.55
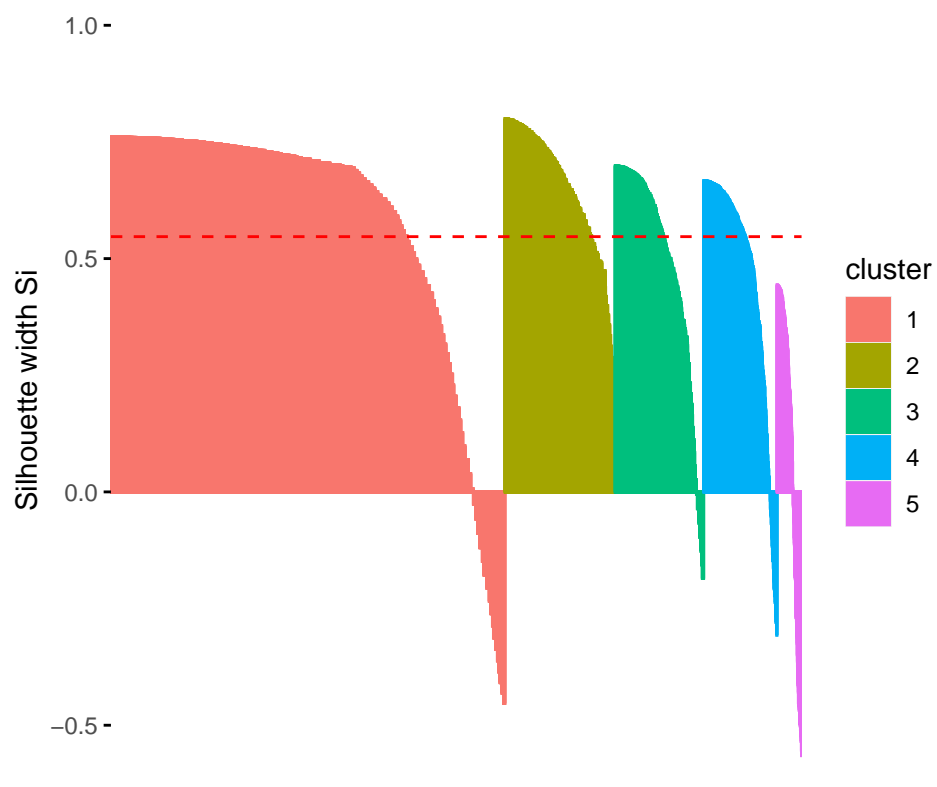
Pharma

Cutoff Values by Quartile
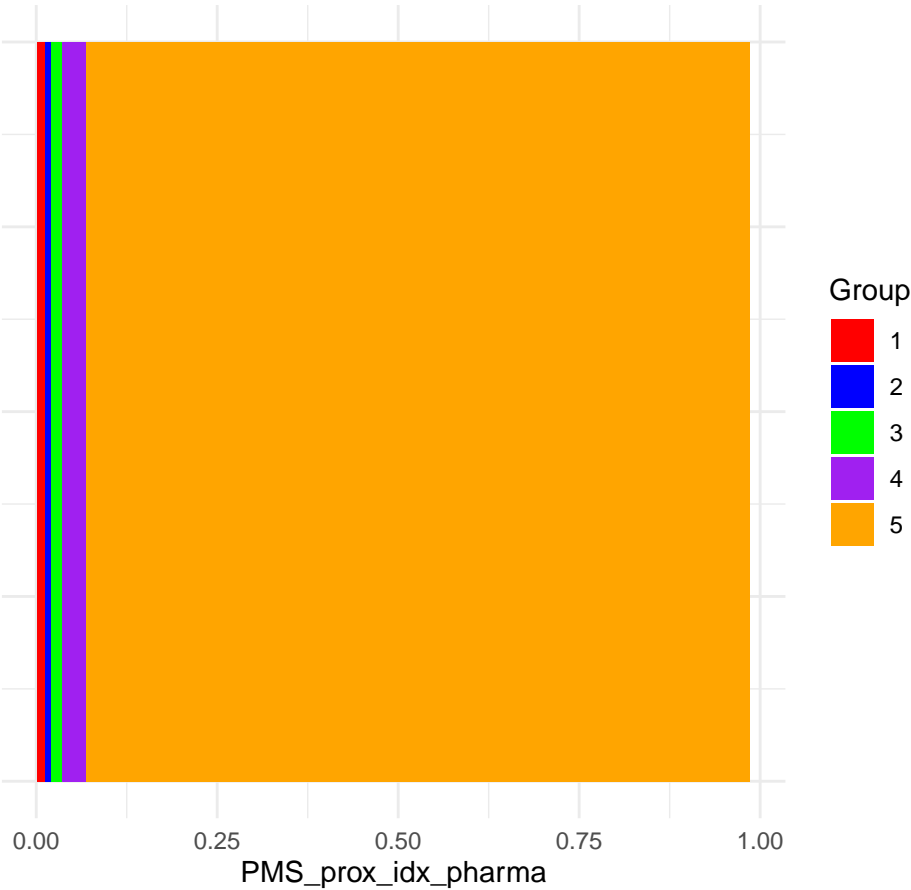

```
##   cluster size ave.sil.width
## 1       1 1228          0.75
## 2       2  967          0.58
## 3       3 1042          0.49
## 4       4 1086          0.43
## 5       5  908         -0.08
```

Clusters silhouette plot
Average silhouette width: 0.45
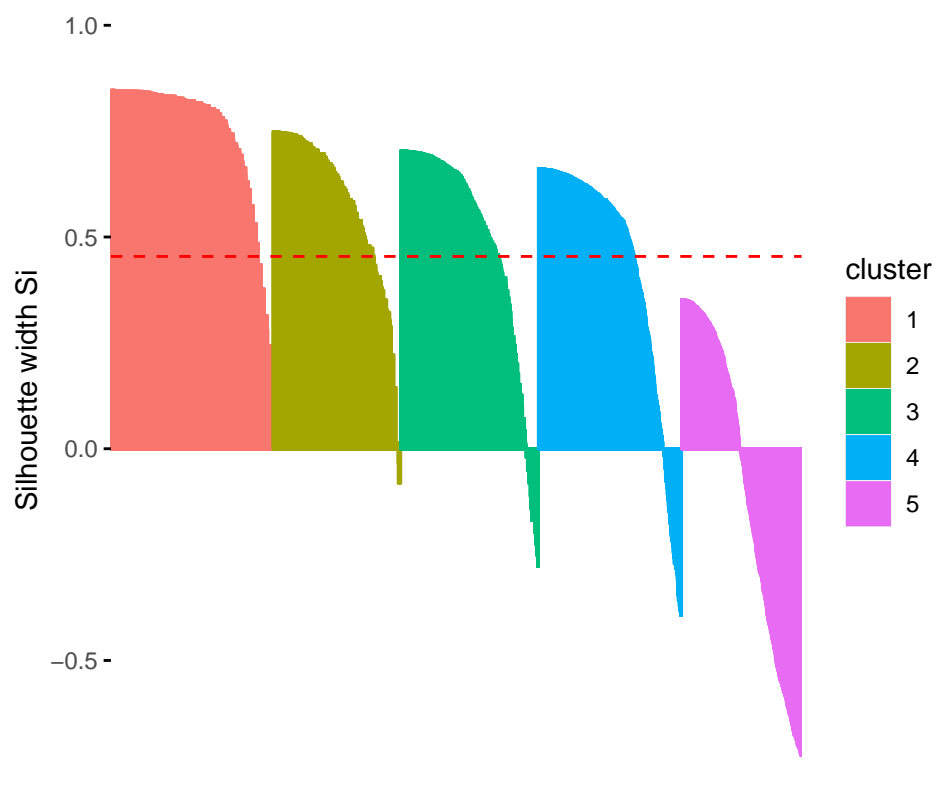
Education Secondary

Cutoff Values by Quartile
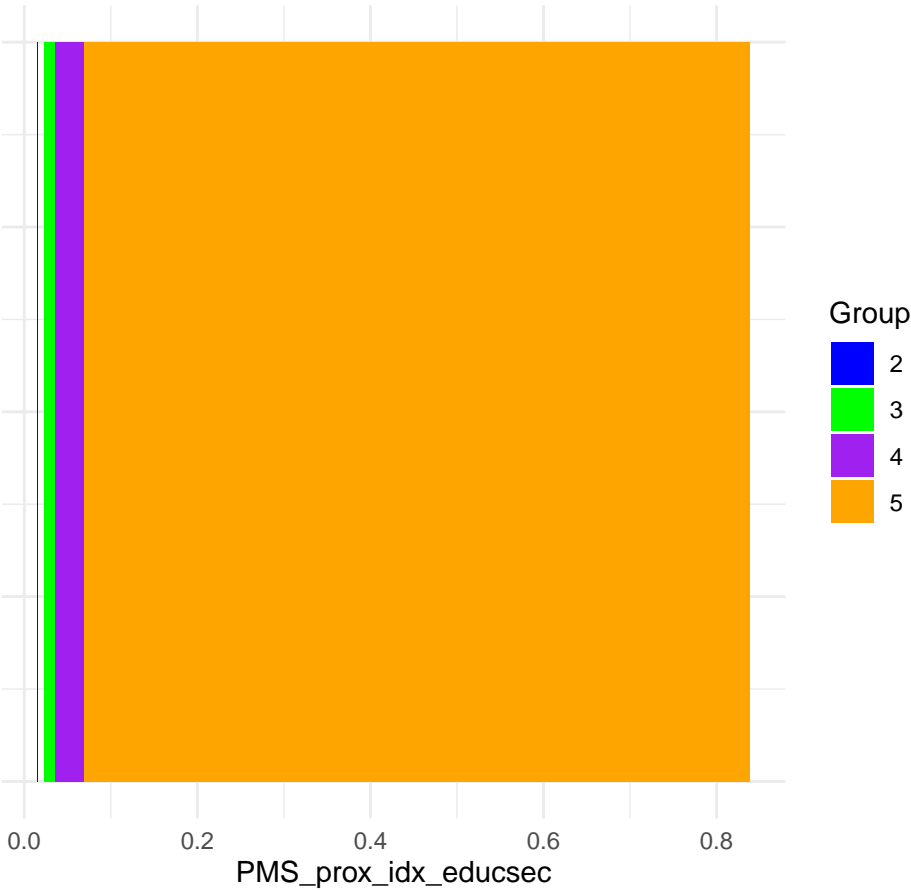

```
##   cluster size ave.sil.width
## 2       2    2          0.98
## 3       3  307          0.92
## 4       4 1677          0.06
## 5       5 2203         -0.02
```

Clusters silhouette plot
Average silhouette width: 0.08
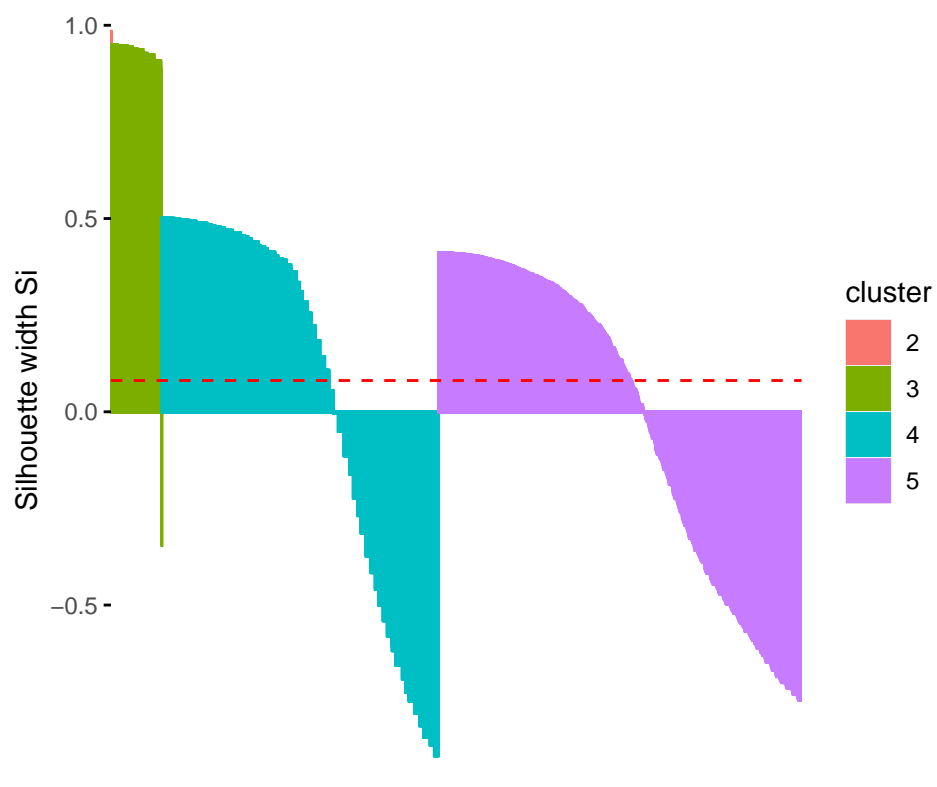
Grocery

Cutoff Values by Quartile
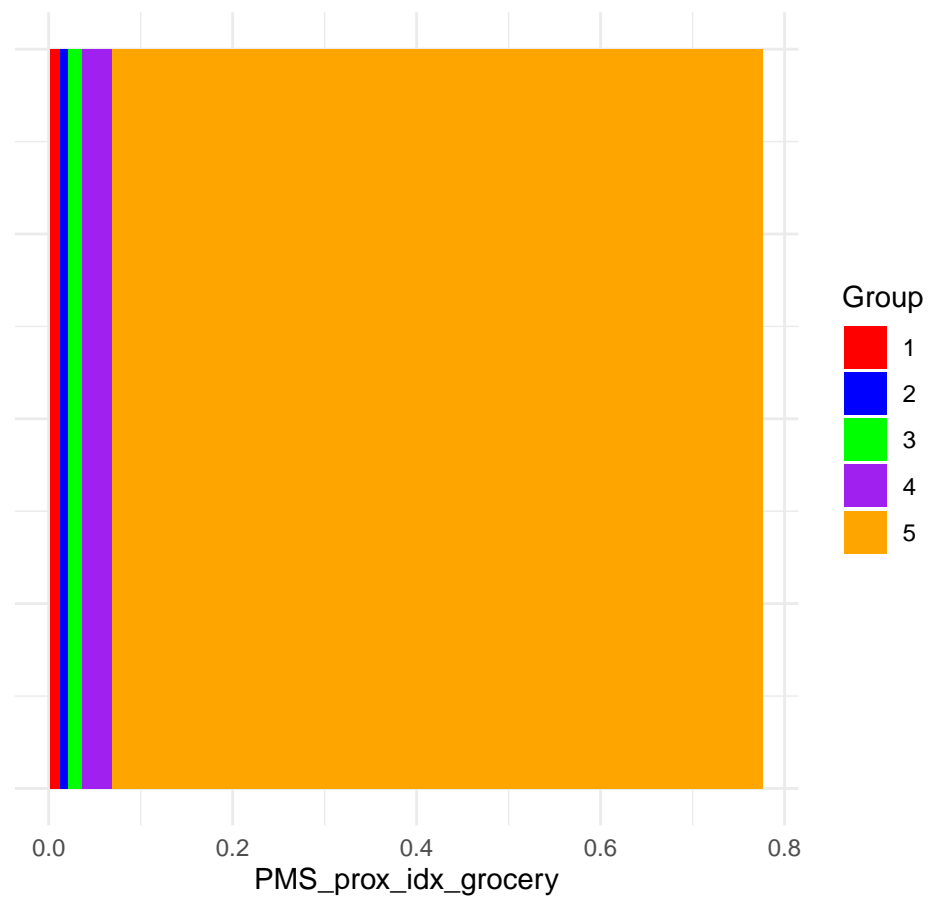

```
##   cluster size ave.sil.width
## 1       1  332          0.74
## 2       2  387          0.60
## 3       3 1022          0.49
## 4       4 1130          0.40
## 5       5 1324         -0.07
```

Clusters silhouette plot
Average silhouette width: 0.32
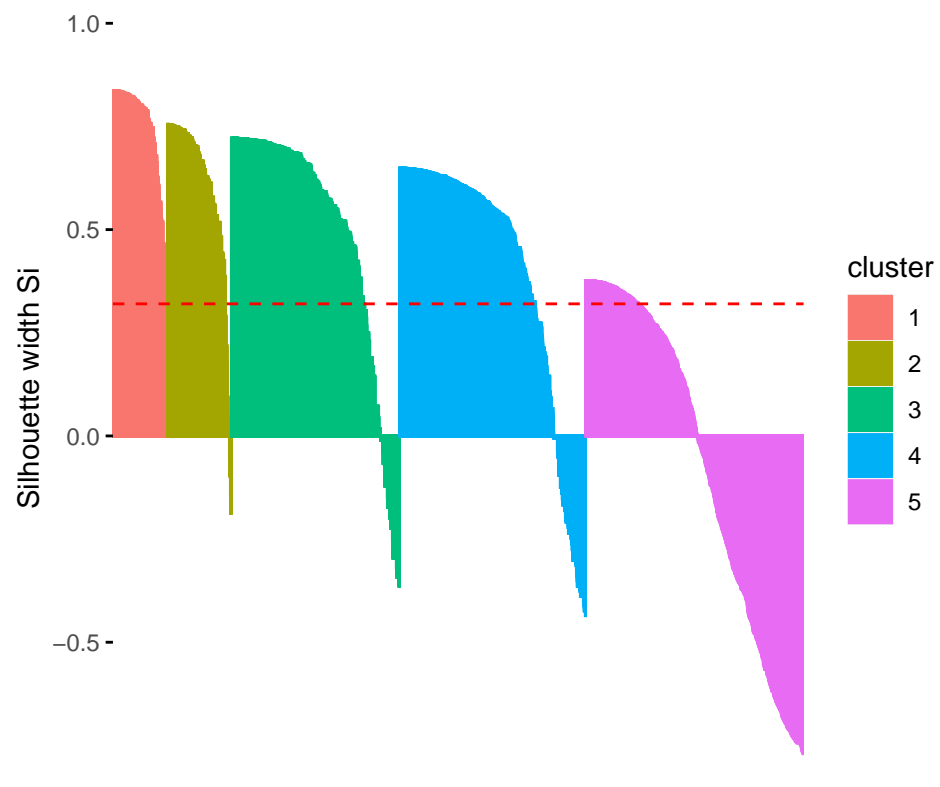
Library

Cutoff Values by Quartile
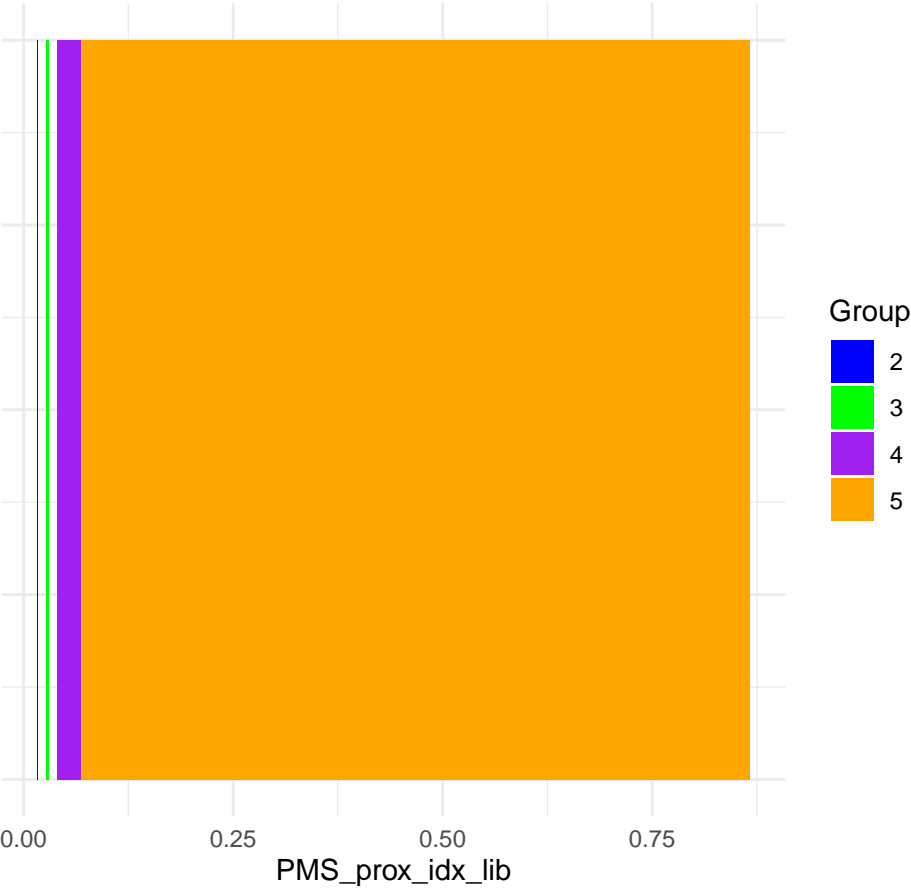

```
##   cluster size ave.sil.width
## 2       2    1          0.00
## 3       3    3          0.83
## 4       4 1251          0.72
## 5       5 2035         -0.12
```

Clusters silhouette plot
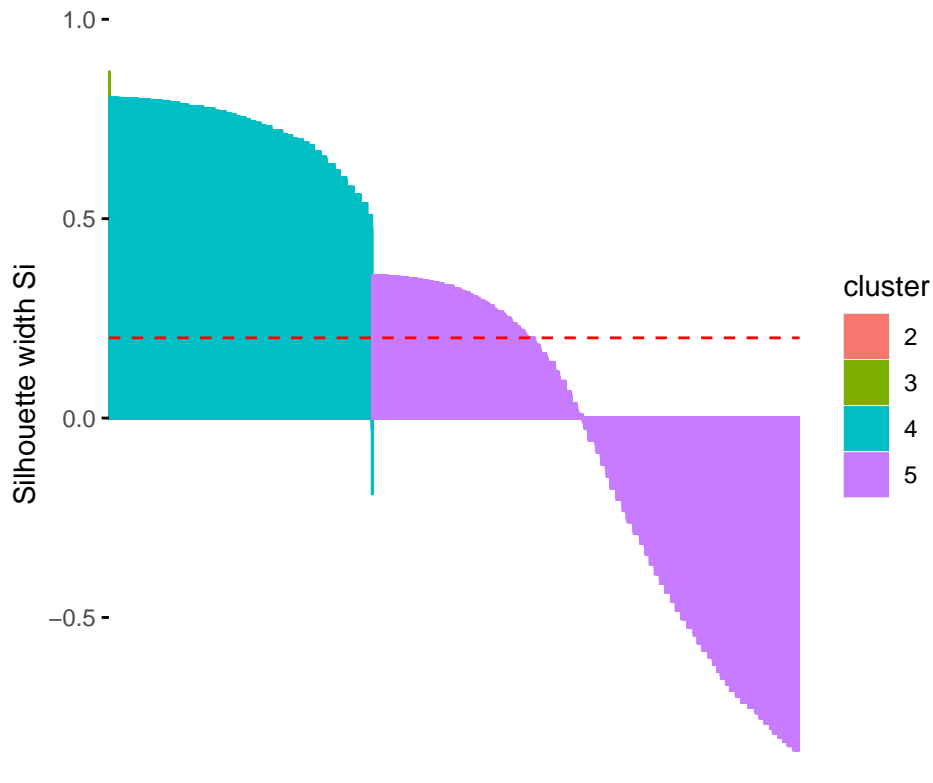Average silhouette width: 0.2

```
## [1] "Silhouette Coefficients"

##  [1] 0.54734391 0.45408143 0.30015977 0.59154223 0.32008321 0.19455710
##  [7] 0.08093067 0.20113969 0.32982235 0.54705554

## [1] "Dunn Index"

##  [1] 0.0001524855 0.0001090988 0.0001174122 0.0001648533 0.0002828054
##  [6] 0.0001479071 0.0002602472 0.0003763171 0.0001326436 0.0001910220

## [1] "Xie Beni"

##  [1]   85977.67 169594.58 412328.81   20935.17   82817.50 544678.49 124511.75
##  [8]   72224.12 184146.53   17728.48

## [1] "Calinski Harabasz"

##  [1] 5963.6320 1590.3831 1753.8854 6157.0656 1033.9202 1051.6750   625.9694
##  [8]   258.7814 2414.5033 4134.9338

## [1] "Davies Bouldin"

##  [1] 0.8927360 0.9843783 0.9028139 0.8766295 0.8980886 0.8353581 0.8737781
##  [8] 0.9922624 0.8949231 0.8726548
```

Cut-offs

```
## $PMS_prox_idx_emp
## [1] 0.0120 0.0210 0.0360 0.0689 0.7249
##
## $PMS_prox_idx_pharma
## [1] 0.0120 0.0210 0.0360 0.0690 0.9857
##
## $PMS_prox_idx_childcare
## [1] 0.0120 0.0210 0.0360 0.0690 0.9208
##
## $PMS_prox_idx_health
## [1] 0.0120 0.0210 0.0360 0.0689 0.6759
##
## $PMS_prox_idx_grocery
## [1] 0.0120 0.0208 0.0360 0.0689 0.7763
##
## $PMS_prox_idx_educpri
## [1] 0.0119 0.0203 0.0359 0.0690 0.7452
##
## $PMS_prox_idx_educsec
## [1] 0.0156 0.0359 0.0690 0.8384
##
## $PMS_prox_idx_lib
## [1] 0.0166 0.0293 0.0690 0.8665
##
## $PMS_prox_idx_parks
## [1] 0.012 0.021 0.036 0.069 0.823
##
## $PMS_prox_idx_transit
## [1] 0.0120 0.0210 0.0360 0.0687 0.5926
```