R deltaScoring package description

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1 Instalation

2 Item responses

The dihotomous item response (0/1) should be in a numeric array. For example

```
install.packages("random")
library("random")

itemData<- randomNumbers(n = 5000,min = 0,max = 1,col = 20)
```

3 Estimating item delta

Estimating the main item parameter **delta**, reffered as δ in the refferences is estimated by a bootstrap procedure

```
Itm<-dS.deltaBootstrap(itemData)
```

The result is a list with **delta** and **conf** fields, containig delta values and their 90% confidence interval respectivelly.

```
> Itm$delta
        delta
 [1,]   0.492
 [2,]   0.500
 [3,]   0.508
 [4,]   0.544
 [5,]   0.464
 [6,]   0.504
 [7,]   0.496
 [8,]   0.508
 [9,]   0.516
  .
  .
  .


 > Itm$conf
         0.05     0.95
 [1,]   0.4400  0.5480
 [2,]   0.4480  0.5520
 [3,]   0.4560  0.5600
 [4,]   0.4920  0.5960
 [5,]   0.4120  0.5200
  .
  .
  .
```

4 Person D-score

Person D-score (see [1]) is caclulated by the person response vector and the item deltas

```
Dscores<-dS.personDscore(itemData,Itm$delta)
```

```
> Dscores
            [,1]
[1,]  0.5521669
[2,]  0.7018459
[3,]  0.5565811
[4,]  0.3976726
[5,]  0.4069021
[6,]  0.4434189
[7,]  0.5425361
[8,]  0.5052167
.
.
.
```

References

[1] Dimitrov, Dimiter. (2019). Modeling of Item Response Functions Under the D -Scoring Method. Educational and Psychological Measurement. 80. 001316441985417. 10.1177/0013164419854176.