Dylan

DZ & VS

2023-05-02

##Prepare the library and import the data

##Describe the Data

| vars | n | mean | sd | median | trimmed | mad | min | max | range | skew | kurtosis | se |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 453 | 227.000000000000000000000000 | 130.9140940 | 227.00000000 | 227.0000000000 | 167.5338000 | 1.000000 | 453.000000 | 452.000000 | 0.00000000 | -1.20794989 | 6.15088070 |
| 2 | 452 | 2.190265486725663901523831 | 0.4254570 | 2.00000000 | 2.0966850829 | 0.0000000 | 2.000000 | 4.000000 | 2.000000 | 2.07665218 | 3.52654854 | 0.02001181 |
| 3 | 453 | 14.181015452538630938761344 | 5.4915778 | 13.00000000 | 13.5619834711 | 2.9652000 | 9.000000 | 90.000000 | 81.000000 | 6.39223004 | 79.75862276 | 0.25801683 |
| 4 | 440 | 115.509090909090915033630154 | 74.5821460 | 137.00000000 | 120.2017045455 | 74.1300000 | 1.000000 | 192.000000 | 191.000000 | -0.36647287 | -1.58949022 | 3.55556430 |
| 5 | 453 | 2.178807947019867352622668 | 1.7777612 | 1.00000000 | 1.8209366391 | 0.0000000 | 1.000000 | 7.000000 | 6.000000 | 1.33747718 | 0.64525490 | 0.08352651 |
| 6 | 281 | 32.989323843416372028514161 | 4.6410313 | 34.00000000 | 33.2577777778 | 5.9304000 | 24.000000 | 39.000000 | 15.000000 | -0.33541755 | -1.05918305 | 0.27686071 |
| 7 | 20 | 8.599999999999999644728632 | 2.9982451 | 8.00000000 | 8.5625000000 | 3.7065000 | 4.000000 | 13.000000 | 9.000000 | 0.25644978 | -1.35745386 | 0.67042799 |
| 8 | 50 | 10.160000000000000142108547 | 4.2874282 | 10.00000000 | 10.0750000000 | 5.1891000 | 4.000000 | 17.000000 | 13.000000 | 0.22266994 | -1.33808247 | 0.60633391 |
| 9 | 46 | 8.478260869565216850674005 | 2.0081958 | 9.00000000 | 8.6052631579 | 2.2239000 | 4.000000 | 11.000000 | 7.000000 | -0.44401359 | -0.87609311 | 0.29609231 |
| 10 | 19 | 13.157894736842104421725708 | 4.9245773 | 13.00000000 | 13.2941176471 | 5.9304000 | 4.000000 | 20.000000 | 16.000000 | -0.23526596 | -1.18937793 | 1.12977552 |
| 11 | 15 | 6.266666666666666607454772 | 0.9611501 | 7.00000000 | 6.3846153846 | 0.0000000 | 4.000000 | 7.000000 | 3.000000 | -0.94836746 | -0.35347575 | 0.24816789 |
| 12 | 20 | 7.750000000000000000000000 | 3.2585919 | 7.00000000 | 7.6875000000 | 4.4478000 | 4.000000 | 12.000000 | 8.000000 | 0.15118739 | -1.76369436 | 0.72864330 |
| 13 | 453 | 20.050772626931568254349258 | 12.6520690 | 17.00000000 | 18.3195592287 | 10.3782000 | 4.000000 | 54.000000 | 50.000000 | 1.09749971 | 0.52949630 | 0.59444606 |
| 14 | 453 | 25.203090507726269464683355 | 6.4508550 | 25.00000000 | 25.2066115702 | 5.9304000 | 0.000000 | 40.000000 | 40.000000 | -0.17364288 | 0.53070935 | 0.30308761 |
| 15 | 453 | 53.247240618101542963813699 | 8.8139959 | 52.00000000 | 52.8319559229 | 5.9304000 | 23.000000 | 90.000000 | 67.000000 | 0.54536384 | 2.02661482 | 0.41411765 |
| 16 | 453 | 3.460632818248712272435341 | 0.7310254 | 3.50000000 | 3.4586776860 | 0.7413000 | 1.000000 | 5.000000 | 4.000000 | -0.12272434 | 0.30571297 | 0.03434657 |
| 17 | 453 | 3.321980447808262404407742 | 0.7085677 | 3.28571429 | 3.3223140496 | 0.6354000 | 1.000000 | 5.000000 | 4.000000 | -0.08396303 | 0.33551089 | 0.03329141 |
| 18 | 453 | 3.070198675496688789365862 | 0.9551533 | 3.20000000 | 3.0842975207 | 0.8895600 | 1.000000 | 5.000000 | 4.000000 | -0.16014282 | -0.32871896 | 0.04487702 |
| 19 | 453 | 41.269315673289185042449390 | 10.4226124 | 42.00000000 | 41.3471074380 | 10.3782000 | 15.000000 | 71.000000 | 56.000000 | -0.07380461 | -0.11155966 | 0.48969705 |
| 20 | 453 | 14.041942604856512133437718 | 3.6555822 | 14.00000000 | 13.9421487603 | 2.9652000 | 5.000000 | 25.000000 | 20.000000 | 0.23791710 | 0.02189755 | 0.17175423 |
| 21 | 453 | 13.823399558498897121694426 | 4.3735609 | 14.00000000 | 13.7878787879 | 4.4478000 | 5.000000 | 25.000000 | 20.000000 | 0.07338566 | -0.24967972 | 0.20548782 |
| 22 | 453 | 13.403973509933774010960406 | 3.7579040 | 14.00000000 | 13.4435261708 | 2.9652000 | 5.000000 | 25.000000 | 20.000000 | -0.01167392 | -0.07066850 | 0.17656173 |
| 23 | 453 | 1.598233995584988909044455 | 0.8984729 | 1.00000000 | 1.4545454545 | 0.0000000 | 1.000000 | 4.000000 | 3.000000 | 1.16619954 | -0.01700156 | 0.04221394 |
| 24 | 453 | -0.000000000000000020329868 | 1.0000000 | -0.03148273 | 0.0005458288 | 0.9193200 | -3.906938 | 2.293790 | 6.200728 | -0.17364288 | 0.53070935 | 0.04698410 |
| 25 | 453 | 0.000000000000000261251079 | 1.0000000 | -0.14150683 | -0.0471165063 | 0.6728390 | -3.431728 | 4.169818 | 7.601547 | 0.54536384 | 2.02661482 | 0.04698410 |
| 26 | 453 | 2.044150110375275719576393 | 0.8481069 | 2.00000000 | 2.0550964187 | 1.4826000 | 1.000000 | 3.000000 | 2.000000 | -0.08359450 | -1.60785711 | 0.03984754 |
| 27 | 453 | 0.000000000000000002428804 | 1.0000000 | -0.01147358 | -0.0272990291 | 0.8111430 | -2.473462 | 2.997623 | 5.471085 | 0.23791710 | 0.02189755 | 0.04698410 |
| 28 | 453 | -0.000000000000000187811101 | 1.0000000 | 0.04037910 | -0.0081217047 | 1.0169745 | -2.017441 | 2.555492 | 4.572933 | 0.07338566 | -0.24967972 | 0.04698410 |
| 29 | 453 | 0.000000000000000222943081 | 1.0000000 | 0.15860610 | 0.0105251919 | 0.7890569 | -2.236346 | 3.085770 | 5.322116 | -0.01167392 | -0.07066850 | 0.04698410 |

| Var1 |  | Var2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | Gender | age | Country\_Residence | Game | LoL\_rank | Apex\_rank | Valorant\_rank | R6\_rank | DOTA\_rank | OW\_rank | CS\_GO\_Rank | H\_PW | ResTotal | MT\_Total | PFC | EFC | AC | AB\_Total | RA | Exhaustion | Sport\_Devaluation | Class | ResTotalz | MT\_Totalz | Burn\_Class | RAz | Exhaustionz | Sport\_Devaluationz | Total |
|  | Count | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 203 (100.0%) |
| Mar. pct (1) | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% | 100.0% ; 3.4% |  |
| Total | Count | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 7 (3.4%) | 203 (100.0%) |
| (1) Columns and rows percentages | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

## LPA with Mental toughness and Resilience

## Compare tidyLPA solutions:  
##   
## Model Classes AIC BIC AWE CLC KIC Warnings  
## 1 2 6107.919 6136.731 6198.961 6095.501 6117.919   
## 1 3 6032.738 6073.897 6163.491 6014.302 6045.738   
## 1 4 5982.920 6036.426 6153.408 5958.445 5998.920   
## 2 2 6093.446 6130.489 6211.159 6076.820 6105.446   
## 2 3 5993.247 6050.870 6177.208 5966.531 6010.247   
## 2 4 5944.937 6023.139 6194.988 5908.291 5966.937   
## 3 2 5977.186 6010.113 6081.251 5962.975 5988.186   
## 3 3 5952.018 5997.292 6095.701 5931.884 5966.018 Warning   
## 3 4 5969.269 6026.892 6153.500 5942.284 5986.269   
## 6 2 5915.749 5961.024 6060.559 5894.489 5929.749   
## 6 3 5915.708 5985.678 6139.914 5882.442 5935.708   
## 6 4 5889.441 5984.106 6192.520 5844.693 5915.441   
##   
## Best model according to AIC is Model 6 with 4 classes.  
## Best model according to BIC is Model 6 with 2 classes.  
## Best model according to AWE is Model 6 with 2 classes.  
## Best model according to CLC is Model 6 with 4 classes.  
## Best model according to KIC is Model 6 with 4 classes.  
##   
## An analytic hierarchy process, based on the fit indices AIC, AWE, BIC, CLC, and KIC (Akogul & Erisoglu, 2017), suggests the best solution is Model 6 with 2 classes.

## Selecting best model

## # A tibble: 3 x 8  
## Model Classes LogLik AIC BIC Entropy n\_min BLRT\_p  
## <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>  
## 1 6 2 -2947. 5916. 5961. 0.370 0.483 0.00990  
## 2 6 3 -2941. 5916. 5986. 0.367 0.0795 0.109   
## 3 6 4 -2922. 5889. 5984. 0.626 0.0353 0.00990

## Proportion of participants en each profile

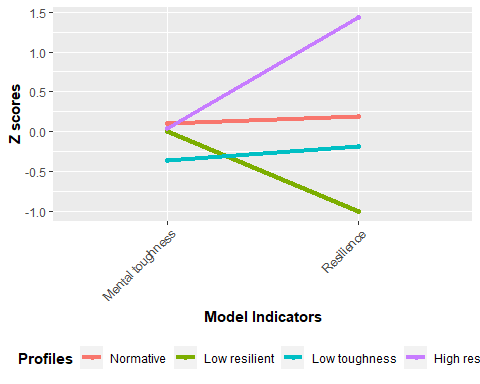
## # A tibble: 4 x 3  
## # Groups: Class [4]  
## Class n Perc  
## <fct> <int> <dbl>  
## 1 1 294 64.9   
## 2 2 63 13.9   
## 3 3 80 17.7   
## 4 4 16 3.53

## Raw and Std values

## # A tibble: 4 x 3  
## Class MT\_Total ResTotal  
## <fct> <dbl> <dbl>  
## 1 1 54.1 26.4  
## 2 2 53.2 18.7  
## 3 3 50 24   
## 4 4 53.6 34.5

| Class | MT\_Totalz | ResTotalz |
| --- | --- | --- |
| factor | numeric | numeric |
| 1 | 0.1 | 0.2 |
| 2 | -0.0 | -1.0 |
| 3 | -0.4 | -0.2 |
| 4 | 0.0 | 1.4 |

## Plot



## LPA with Burnout

## Compare tidyLPA solutions:  
##   
## Model Classes AIC BIC AWE CLC KIC Warnings  
## 1 2 7173.999 7215.158 7304.758 7155.557 7186.999   
## 1 3 7016.410 7074.032 7200.004 6990.061 7033.410   
## 1 4 6954.560 7028.646 7191.113 6920.179 6975.560   
## 2 2 7169.828 7223.335 7340.217 7145.453 7185.828   
## 2 3 7014.245 7096.563 7277.351 6975.775 7037.245   
## 2 4 6911.840 7022.969 7267.501 6859.437 6941.840   
## 3 2 6932.119 6985.626 7103.236 6907.016 6948.119   
## 3 3 6891.226 6961.196 7115.011 6858.381 6911.226   
## 3 4 6869.822 6956.256 7146.242 6829.270 6893.822   
## 6 2 6848.042 6926.244 7098.691 6810.796 6870.042   
## 6 3 6838.917 6958.278 7221.542 6782.014 6870.917   
## 6 4 Warning   
##   
## Best model according to AIC is Model 6 with 3 classes.  
## Best model according to BIC is Model 6 with 2 classes.  
## Best model according to AWE is Model 6 with 2 classes.  
## Best model according to CLC is Model 6 with 3 classes.  
## Best model according to KIC is Model 6 with 2 classes.  
##   
## An analytic hierarchy process, based on the fit indices AIC, AWE, BIC, CLC, and KIC (Akogul & Erisoglu, 2017), suggests the best solution is Model 6 with 2 classes.

## Filtering models

## # A tibble: 2 x 8  
## Model Classes LogLik AIC BIC Entropy n\_min BLRT\_p  
## <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>  
## 1 6 2 -3405. 6848. 6926. 0.377 0.406 0.00990  
## 2 6 3 -3390. 6839. 6958. 0.549 0.280 0.0891

## Proportion of participants en each profile

## # A tibble: 3 x 3  
## # Groups: Burn\_Class [3]  
## Burn\_Class n Perc  
## <fct> <dbl> <dbl>  
## 1 1 153 33.8  
## 2 2 127 28.0  
## 3 3 173 38.2

## Raw and Std values

## # A tibble: 3 x 4  
## Burn\_Class Exhaustion RA Sport\_Devaluation  
## <fct> <dbl> <dbl> <dbl>  
## 1 1 9.80 10.9 9.60  
## 2 2 15.4 14.4 15.4   
## 3 3 16.2 16.5 15.3

## # A tibble: 3 x 4  
## Burn\_Class Exhaustionz RAz Sport\_Devaluationz  
## <fct> <dbl> <dbl> <dbl>  
## 1 1 -0.921 -0.855 -1.01   
## 2 2 0.354 0.0962 0.538  
## 3 3 0.555 0.686 0.500

## Plot

