FA.R

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```
fa <- principal(props, nfactors=3, rotate="varimax")
fa

## Principal Components Analysis
## Call: principal(r = props, nfactors = 3, rotate = "varimax")
## Standardized loadings (pattern matrix) based upon correlation matrix
##                  RC1   RC2   RC3   h2    u2 com
## Energy          0.78  0.10 -0.47 0.85 0.154 1.7
## Dancebility    -0.09  0.90 -0.22 0.86 0.143 1.1
## Loudness        0.90  0.10 -0.12 0.84 0.161 1.1
## Valence         0.43  0.79  0.03 0.81 0.193 1.6
## Acoustiveness  -0.24 -0.14  0.93 0.95 0.047 1.2
##
##                         RC1  RC2  RC3
## SS loadings            1.68 1.46 1.16
## Proportion Var         0.34 0.29 0.23
## Cumulative Var         0.34 0.63 0.86
## Proportion Explained   0.39 0.34 0.27
## Cumulative Proportion  0.39 0.73 1.00
##
## Mean item complexity =  1.3
## Test of the hypothesis that 3 components are sufficient.
##
## The root mean square of the residuals (RMSR) is  0.09
##  with the empirical chi square  90.7  with prob <  NA
##
## Fit based upon off diagonal values = 0.95

fa$loadings

##
## Loadings:
##                  RC1    RC2    RC3
## Energy          0.782  0.104 -0.473
## Dancebility            0.896 -0.216
## Loudness        0.904        -0.116
## Valence         0.431  0.788
## Acoustiveness  -0.243 -0.142  0.935
##
##                   RC1    RC2    RC3
## SS loadings     1.681  1.463  1.158
```

```
## Proportion Var 0.336 0.293 0.232
## Cumulative Var 0.336 0.629 0.860

fa$communality

##         Energy   Dancebility     Loudness     Valence Acoustiveness
##      0.8459641     0.8569342    0.8392380   0.8070382     0.9529272

fa$scores

##                   RC1          RC2          RC3
##   [1,]   1.359761617  0.617291611  0.595029114
##   [2,]   0.760055592  0.672645977  0.287996632
##   [3,]   1.192422696  0.816657117  0.149084172
##   [4,]   1.076293147  0.463270725 -0.482976921
##   [5,]   0.320918971 -0.412846982 -0.798266242
##   [6,]   0.308888600  0.305611009 -0.668165376
##   [7,]   0.719036286  1.081789367 -0.197030320
##   [8,]  -0.022724896 -1.023740707 -0.566012966
##   [9,]  -1.260999103 -1.216249696  2.395351108
##  [10,]   0.384640626  0.861239179  0.118262414
##  [11,]   0.901274309 -0.482412973 -0.550421822
##  [12,]   0.715763849 -0.276936429  0.734494352
##  [13,]   0.357237278  0.804821718  0.114937972
##  [14,]  -0.247564649  1.285886858 -0.783923201
##  [15,]  -0.029534472 -0.443300995 -0.553829822
##  [16,]  -0.550845324  0.229000065 -0.320904663
##  [17,]   0.408938846  1.088541442  0.296640939
##  [18,]  -1.261648194  0.702976495 -1.170872323
##  [19,]  -0.603752982 -0.499047641 -1.214016147
##  [20,]   0.045467636  1.463353390 -0.114005206
##  [21,]  -1.393705601  0.555560958 -1.143056543
##  [22,]   0.366845123 -1.274014804 -0.388308402
##  [23,]   0.014940318  0.902498679 -0.325162966
##  [24,]   0.408235876  0.635909979 -0.471620795
##  [25,]   1.742090329 -0.476274327  0.772693431
##  [26,]   0.560240692 -0.423969693 -0.394893002
##  [27,]   1.024496445  0.488295555 -0.170045009
##  [28,]   1.636592580  0.208943389 -0.192661567
##  [29,]   0.208625250  0.410832491 -0.598138388
##  [30,]   0.102729646  0.283781440 -0.829747867
##  [31,]   1.428694592  0.730426096  0.428770460
##  [32,]   1.182163618  0.677839298 -0.197779230
##  [33,]   0.991063172  0.296420585 -0.214867671
##  [34,]  -1.031412267 -0.297644424  0.060830427
##  [35,]   0.857412957 -0.769528937  0.204862220
##  [36,]  -0.146902263  1.517862442  0.105845618
##  [37,]   0.451403683 -2.486594579  3.319703456
##  [38,]   1.258590501  0.414178043 -0.249354205
##  [39,]   0.355956356  0.991312064 -0.523087012
##  [40,]   0.386450919 -1.514054963 -0.811656076
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##    [41,]   1.821281490 -0.264731496  1.990396007
##    [42,] -2.040140522 -0.466104614 -1.027136043
##    [43,]   0.934827753 -2.736987209 -0.606516467
##    [44,]   1.069406126  1.413672208  0.550024349
##    [45,]   0.150571766 -2.722749659  3.345727648
##    [46,]   0.070445763  0.478575344 -0.821794214
##    [47,]   1.201540284 -0.182060310 -0.387429139
##    [48,]   1.331911496  0.123841779 -0.175640337
##    [49,]   1.011747891 -1.009975769 -0.158626415
##    [50,]   0.601795020  0.177917981 -0.701496107
##    [51,] -1.043858905 -1.699465423  0.625221210
##    [52,] -1.238669645 -0.388493761  3.254316548
##    [53,]   1.554755771 -0.116300640  0.267328621
##    [54,]   0.320918971 -0.412846982 -0.798266242
##    [55,]   0.122193668  0.357618406 -0.157871073
##    [56,]   1.010551619  0.751266991 -0.416492478
##    [57,]   0.531328866  0.459896160 -0.390478620
##    [58,]   0.362904428  0.256586893 -0.091716862
##    [59,] -1.398454562 -0.214612992 -0.518677163
##    [60,]   0.521700681  0.828591963  0.064163147
##    [61,]   1.553372984  0.260001785 -0.108420846
##    [62,]   0.450646839 -0.521158986 -0.732193766
##    [63,] -0.823031717 -1.122192645 -1.338645718
##    [64,]   0.715763849 -0.276936429  0.734494352
##    [65,]   0.421623351 -1.061431493  0.058396965
##    [66,]   0.134055588 -0.027311536 -0.755186722
##    [67,]   0.269199103  0.641197093 -0.602273721
##    [68,]   0.977175738  0.157910963 -0.208853103
##    [69,] -0.910794296  0.334433394 -0.447730371
##    [70,] -1.840479493 -0.333981566 -0.639554080
##    [71,]   0.206605366  0.458454697 -0.200528467
##    [72,]   1.216477287  0.224661311  0.693598848
##    [73,]   1.293616620  0.475353803 -0.319952770
##    [74,]   0.383736628 -0.453791067  0.604559765
##    [75,]   1.098643532  0.809706311  0.175315315
##    [76,] -0.225769075 -0.798898114 -0.996790404
##    [77,]   0.796134628  0.267822699 -0.322031750
##    [78,] -0.511229392  0.027790343 -0.817270854
##    [79,] -0.959499258  1.051465732 -0.348562617
##    [80,]   0.578890653  1.091969119 -0.148480125
##    [81,]   0.396932286 -0.682636700 -0.031233879
##    [82,]   0.999694407 -0.185016182 -0.719443597
##    [83,]   0.725393914 -0.708728765 -0.832894472
##    [84,]   0.919298152  0.369207475 -0.506756532
##    [85,]   0.534188002  0.462194480 -0.352317540
##    [86,]   0.822260793 -0.769718768 -0.823881352
##    [87,] -0.672347624 -2.020852610  1.267551783
##    [88,] -0.065388103 -0.380029596 -0.762660279
##    [89,]   0.893317391  0.004096014 -0.067664537
##    [90,]   0.691934854  1.121822231  0.352617427
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##  [91,]   1.362107740 -0.084184629 -0.214858133
##  [92,]   1.120316569  1.562844633  0.159084697
##  [93,]   1.201540284 -0.182060310 -0.387429139
##  [94,] -0.325957613 -2.078603815  2.741602047
##  [95,]   1.011747891 -1.009975769 -0.158626415
##  [96,] -0.600582069 -1.956790031  3.438364483
##  [97,] -0.776089510  0.810577005 -0.690478536
##  [98,] -0.927311118  0.327957006 -0.783409935
##  [99,]   0.904769211  0.601760676 -0.403654020
## [100,]   1.464234906 -1.216135679  1.074354267
## [101,]   0.914472871  0.309346054 -0.272711591
## [102,]   0.654899824  0.171623431  0.093359207
## [103,]   0.319263504  0.916640856  1.803912377
## [104,]   0.599008001 -0.928495696 -0.496407739
## [105,]   0.662247368  1.174593348  0.230902497
## [106,] -0.872834080 -1.665290471 -0.770713772
## [107,] -0.008499238  0.449684072 -0.616614439
## [108,]   1.633702023  1.057002165  0.259241179
## [109,] -1.104483432  0.432296756 -0.321839939
## [110,] -1.190024277  1.124625610 -0.623742432
## [111,]   0.403090655  1.981523242  0.323629037
## [112,]   0.400587871 -0.412644598 -0.435857487
## [113,] -0.143976140  0.470002541 -0.310927923
## [114,]   1.462478705 -0.317696119 -0.167452125
## [115,] -0.941427132  0.259686513 -0.774478550
## [116,]   1.393134581  0.912023150  0.713889964
## [117,]   1.092717610  0.394028450 -0.098763232
## [118,]   1.250035538 -0.279924745 -0.216339901
## [119,]   0.603505526 -0.008892762 -0.666346102
## [120,]   0.496818916 -0.379883456 -0.696396747
## [121,]   1.288650914  0.167647348 -0.278610128
## [122,] -0.806781007 -0.198573301 -1.060820429
## [123,] -1.100311540  0.005765607 -0.734739443
## [124,]   0.780712698  0.555640680 -0.529296339
## [125,] -0.335899583  1.245608849 -0.088066297
## [126,] -0.247609342  0.052296424 -1.135135011
## [127,]   0.400237158 -0.605027030 -0.011974622
## [128,]   0.969700901  0.908962937 -0.066063851
## [129,]   0.334972063  1.017303952 -0.573418812
## [130,]   0.232203844 -0.115000006 -0.679317745
## [131,]   0.107276795  0.721397173 -0.382426444
## [132,]   0.313704783 -0.794165053  0.049563795
## [133,]   0.100472816 -0.834188973 -0.695538494
## [134,]   1.401786676  1.124892507 -0.152304824
## [135,]   0.834096609  1.190213337  2.131951425
## [136,]   1.359300875  0.479446249  0.135302201
## [137,]   0.083247267 -0.393607780  0.515919660
## [138,]   0.792260987 -0.427360298 -0.319429172
## [139,]   0.211619887 -0.378612887 -0.536272624
## [140,] -0.391111332 -0.710755905  0.072096737
```

```
## [141,]  -1.149192097   0.729522900   0.647279851
## [142,]   1.563066276  -1.095755707   0.094749824
## [143,]   0.353084027  -0.756100037  -0.656174891
## [144,]  -0.542910252  -0.247301940  -0.615034125
## [145,]   1.251238662  -0.599448279  -0.040327220
## [146,]  -1.181293263   1.610019164  -0.807033272
## [147,]  -0.603986101  -0.691648208   1.370590201
## [148,]   0.528311998  -1.912162871   0.026394888
## [149,]  -0.354879337   1.811133623  -0.208319874
## [150,]   0.632713685  -0.902143032  -0.244803236
## [151,]  -0.143976140   0.470002541  -0.310927923
## [152,]   0.175759349   0.933025981  -0.238792180
## [153,]   0.969883927  -1.723740239  -0.561705631
## [154,]  -0.346074133  -1.478690802  -1.317325047
## [155,]   1.711201547  -0.833162983   0.132366912
## [156,]   1.614275970  -0.657343211  -0.196732806
## [157,]  -2.013485535   0.287225488  -0.994391413
## [158,]   1.224791739  -0.333679189  -0.474337206
## [159,]   1.847959698   0.552199698   0.110698634
## [160,]   1.463265596  -0.450558369   0.373652728
## [161,]  -1.416327680   1.420580938  -0.602814053
## [162,]   0.127321624   0.711489964   0.210821415
## [163,]   1.269904011  -0.118890653  -0.093749873
## [164,]   1.472264780   0.524743247  -0.026434146
## [165,]   0.589351790   0.021573193  -0.316278456
## [166,]  -0.727866653  -0.963478370   0.204922668
## [167,]  -0.850076279  -0.467806243  -0.126312466
## [168,]  -1.267486593   1.176722537  -0.330730595
## [169,]  -0.086102492  -1.485395809  -0.009031071
## [170,]   1.900938853   0.661659942   1.316894854
## [171,]  -0.246858077   0.375988442  -0.251051323
## [172,]  -1.091451265   0.527334710  -0.979357868
## [173,]   1.509916633   0.750181524  -0.133204516
## [174,]   1.265490830   0.498490894  -0.164586955
## [175,]  -0.249080079  -0.346862855  -0.786078908
## [176,]  -0.246554861  -0.154363065  -0.464498019
## [177,]  -0.837089778   0.612614605  -0.722630065
## [178,]  -0.067188040   1.544147195  -0.490373207
## [179,]   1.197080253  -0.899333875  -0.433212567
## [180,]   2.018170105  -0.869480818  -0.152732100
## [181,]  -0.801514026  -0.101368677   0.175245329
## [182,]  -0.210464445   0.073397498   0.294093114
## [183,]   0.137280872  -0.402784943  -0.578847975
## [184,]   1.062253315  -0.397392902  -0.451951893
## [185,]  -1.272742837  -0.989812759   3.567057967
## [186,]   0.017408960  -0.996047357  -0.630736394
## [187,]  -0.730911010  -0.222352491  -0.814591062
## [188,]   0.948107352  -0.522406110  -0.298660636
## [189,]   0.148477584   0.449131504  -0.432301724
## [190,]   1.315117478  -0.674620429  -0.518858561
```

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## [191,]  -0.751086314 -2.399927774  1.967050877
## [192,]  -0.751705283 -0.704256846 -1.322817495
## [193,]  -0.118885408 -0.779103253 -0.571340663
## [194,]   0.833758043  0.466616089 -0.104292862
## [195,]   0.808370149 -0.091936746  1.176846384
## [196,]   0.704773547  0.014053191 -0.529728798
## [197,]   2.311040970  0.717087500  0.364211141
## [198,]   0.326096648 -0.010655927  0.528074212
## [199,]   2.151584477 -1.783029366  0.111329950
## [200,]   0.408411335  0.185328262 -0.418969000
## [201,]  -0.169912878  0.757775282 -0.064044622
## [202,]   0.494439844 -0.136622863 -0.330019600
## [203,]  -0.363910159  1.265274747 -0.432758807
## [204,]  -0.094970070 -0.813366309 -0.768784788
## [205,]   0.875735152  0.091691166 -0.070021503
## [206,]  -3.174505342 -1.254603028 -0.500281255
## [207,]   0.959662013  0.503920639  0.267429235
## [208,]   0.278871468 -0.233240050 -0.198429848
## [209,]  -0.616213569 -0.967723541  3.869597681
## [210,]  -0.351369102 -1.601270398  2.066155198
## [211,]   1.198410024  0.076342014 -0.158786843
## [212,]   1.020989101  1.011881658  0.924379210
## [213,]   0.376851283  1.527059752 -0.004372476
## [214,]   0.781440801  0.920754621  0.185377181
## [215,]  -0.859741204 -0.343110941 -0.861287531
## [216,]   0.410174860 -0.752453693 -0.531135520
## [217,]  -0.164066131  1.328388038 -0.231908329
## [218,]  -0.018321715  2.108099765 -0.012108688
## [219,]  -0.740735172 -1.108846356  0.846445023
## [220,]   0.412027101  0.196238989 -0.484298923
## [221,]  -0.272254132  0.283167700 -0.364437640
## [222,]  -1.077926738  0.139302335 -0.146662423
## [223,]   0.508961814 -1.701502946 -1.125470182
## [224,]   0.446734098 -0.829637452 -0.368384878
## [225,]  -0.162536472 -1.121681819 -0.432641784
## [226,]  -0.295275169  1.149824365 -0.037642120
## [227,]   0.539992446 -0.919510312  0.549384649
## [228,]   1.337154065 -1.282090561 -0.689481021
## [229,]  -0.172257652  0.897529363 -0.542084142
## [230,]  -0.836204366  1.225011061 -0.449372568
## [231,]  -0.722612760  0.953259825  1.484159019
## [232,]  -0.618631280 -1.539325007 -0.052499896
## [233,]   0.799961193 -0.432359757  1.529577927
## [234,]  -0.769855610  0.860931434 -0.174488943
## [235,]   1.266111546  0.690829026  0.307239101
## [236,]  -0.318486375  0.927836445 -0.206595942
## [237,]   1.342336321  1.171154490 -0.091570203
## [238,]  -0.837089778  0.612614605 -0.722630065
## [239,]   1.185151847  0.760625839 -0.473639305
## [240,]  -3.196724497 -1.610958666 -1.442899456
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```
## [241,]   0.211959536   1.133561214   0.260966482
## [242,]   1.470827394  -0.322642634  -0.418292864
## [243,]   1.036150211  -0.532587158   0.127559963
## [244,]  -0.417230638  -1.386808934  -0.794260623
## [245,]   0.204171096  -1.677298620  -0.481375686
## [246,]   1.056275940   0.798247099   0.382712625
## [247,]   0.820539988  -2.821877369  -0.625857459
## [248,]  -2.086087576  -1.244824722   3.072234631
## [249,]  -0.594720883  -1.372470650  -1.101395175
## [250,]  -0.076443638   2.368772525   0.619614588
## [251,]   1.913391057  -1.778478089   0.247766355
## [252,]  -1.073666031  -1.539066967  -0.797163716
## [253,]   1.181725549  -0.448279709  -0.635423068
## [254,]  -2.173158526  -1.017384257   3.639285081
## [255,]  -0.937508742  -0.501626750  -0.850326838
## [256,]  -1.136794652   1.980642927  -0.450938922
## [257,]   0.834402994   0.291796282  -0.104061054
## [258,]   0.268482380   0.908666993   0.051672273
## [259,]  -1.639737751   0.926499413   3.137676430
## [260,]  -2.254660048  -0.940295707   0.169583640
## [261,]  -0.679167880   0.213642666   0.633978439
## [262,]  -1.540070998   0.572033954  -0.282016523
## [263,]   1.357074808  -0.555127270  -0.178569578
## [264,]  -1.833676963   0.251865586  -0.513667119
## [265,]   0.025025179   0.760073369   1.284481927
## [266,]  -0.768998779   1.163742649   1.687081226
## [267,]  -0.485272583   0.405494978   1.874170632
## [268,]  -1.285821340  -1.122659192  -0.875209884
## [269,]  -1.826296540   0.493715269   2.947239205
## [270,]  -1.003534710   2.167669548  -0.348453957
## [271,]   0.657152242  -0.405625470   2.323676983
## [272,]  -0.291831160   1.380100732  -0.299265781
## [273,]   0.536963344  -0.382393104  -0.304161961
## [274,]  -0.615893068  -0.168639425   3.663015022
## [275,]  -0.100808753  -2.380017857   0.453216300
## [276,]  -0.924183470   0.208845479   1.318786304
## [277,]  -1.035675501   2.055742582   2.009461291
## [278,]  -0.565222006   1.101626666  -0.611053408
## [279,]  -0.577065274   1.013563926  -0.612346948
## [280,]   0.177369200   0.692371906  -0.214130278
## [281,]  -2.517198828   1.012176682  -1.219890475
## [282,]  -0.928826535   0.248038710   2.886985608
## [283,]   0.503227538  -0.185190505  -0.832121523
## [284,]  -0.414820133  -0.965966400  -1.065298418
## [285,]   0.557360025  -1.701280370  -0.614855725
## [286,]   0.338340583  -2.376347283  -0.668975385
## [287,]   1.218847322  -1.835137262  -0.482516170
## [288,]   0.217780481   1.210985260  -0.396729516
## [289,]  -0.324556698  -0.430555093  -0.945876246
## [290,]  -0.976710565   1.718797284  -0.411985098
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## [293,]  -0.550912227 -1.137174333  0.977429155
## [294,]   0.922443355  0.830239662  1.504741891
## [295,]  -0.134243095  0.548952897 -0.607996597
## [296,]   0.470601998 -0.007094552 -0.291497538
## [297,]   0.866211893 -0.267593343  0.703139016
## [298,]   0.191647603  0.888888106  0.555214263
## [299,]   0.444053248 -0.600746579 -0.186739124
## [300,]   0.717205929  1.911104001  1.420765155
## [301,]   0.310063147 -0.122638017 -0.535884232
## [302,]   0.836272766  1.028152625  0.506678649
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## [304,]   0.562581510 -1.067119467 -0.595313598
## [305,]   1.001914241 -1.077689785 -0.393553725
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## [307,]   0.766862029  0.333878536  2.182832046
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## [309,]   0.021534114 -0.111459595 -0.341431153
## [310,]   1.165721500 -0.964375942 -0.583043015
## [311,]   0.567404578  1.581763971 -0.028635554
## [312,]  -0.747121656 -2.428662422 -0.874670967
## [313,]   1.213290542 -1.991128612 -0.198568439
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## [316,]   1.296080589  0.265073662  0.250868073
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## [330,]   0.329435560 -1.441420125 -0.351111251
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## [344,]  0.102132272 -0.316124103 -0.736070344
## [345,] -0.734308242 -0.375680824 -0.785316194
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## [348,]  1.539487388  0.906769079  0.140397992
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## [350,] -1.817792414 -2.356165920  2.081375919
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## [355,]  0.323100346 -0.611863898 -0.835606273
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## [406,]  -0.282610353  -0.888876910  -0.463523735
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## [408,]  -0.564244746  -1.069323065   2.292041703
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## [412,]  -0.417445867  -1.130228918  -1.029126613
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## [463,]   1.336053878   0.396549113   1.760377774
## [464,]  -0.315310715   1.034350239  -0.647516981
## [465,]   0.749256251  -1.232726755  -0.200568534
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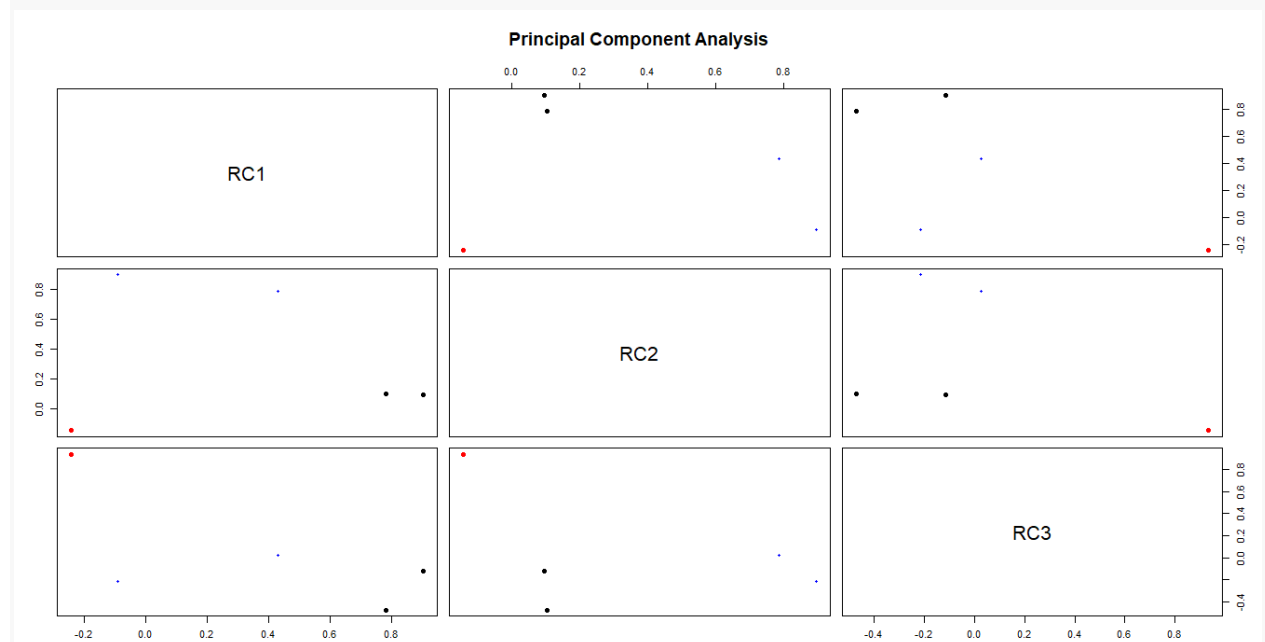
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## [543,]  -1.104542819  1.607273792 -0.484396638
## [544,]  -0.608248311  0.470628402  0.432916646
## [545,]  -1.063048701 -0.826294755 -1.113566459
## [546,]  -0.621196402  0.425426446 -0.878186297
## [547,]  -1.618028889  0.609892379 -1.701952281
## [548,]   0.174830850 -1.501994809 -1.008746006
## [549,]   0.034626567 -0.911758261 -0.418386348
## [550,]   0.628363526 -0.515328126 -0.457671222
## [551,]  -0.240845707 -0.068697762 -0.118855287
## [552,]  -0.415511795 -2.043721100 -0.672235775
## [553,]  -0.143946085  1.422073751 -0.195518521
## [554,]  -0.460931776 -0.406037722  0.433111271
## [555,]  -1.303291288  0.024198747  3.027386957
## [556,]  -1.584145050 -0.095148502  2.027420031
## [557,]   0.124315584  0.075871449 -0.565062940
## [558,]   1.046285003  1.275730619 -0.065399585
## [559,]  -0.183436163  0.413982810  0.418693218
## [560,]  -0.748088219  0.916292441 -0.329159023
## [561,]   0.312872816 -0.796978037 -0.064288603
## [562,]  -0.891727376 -0.445669539 -0.447446680
## [563,]  -1.749632083  0.149767372 -1.237922685
## [564,]  -1.157080884  0.697697374 -1.142010704
## [565,]   0.644880348 -0.508851738 -0.121991657
## [566,]  -2.370644573  1.196689881 -1.404165447
## [567,]   0.658258435  0.144047794 -0.012785436
## [568,]  -1.051296942  1.275274301  3.404926534
## [569,]  -2.030495080 -1.172926771  1.432791777
## [570,]  -0.102054277 -0.474351729  3.126778361
## [571,]  -0.767264293  1.238092809 -0.140445533
## [572,]   0.315740289 -1.264781141  0.060747321
## [573,]  -0.755829128  1.535254174  0.032268836
## [574,]  -0.386296240  0.156057548  2.131780727
## [575,]   1.271047107  0.429610693  0.644142322
## [576,]   0.402482016  0.038634412  0.071528764
## [577,]   1.486264238 -0.164780180  0.761255726
## [578,]  -0.996370778 -0.031143705 -0.992057207
## [579,]  -0.759656699  1.785693528  0.366013176
## [580,]  -1.102079090  0.183599245 -0.373564503
## [581,]   0.163316051  1.952307666 -0.014520188
## [582,]   1.193238321 -0.766252536  0.401210956
## [583,]   0.058160422  1.533365726  0.159083183
## [584,]  -3.024496388  1.214693802 -1.123774605
## [585,]   0.665487261  0.806885089 -0.624813064
## [586,]  -1.420800006 -0.762165991 -0.325518245
## [587,]   0.745099962  0.411664011  1.322074820
## [588,]  -1.092837536  1.193991410  1.606868371
## [589,]  -0.050517338 -0.240050164  0.237664390
## [590,]  -1.788172745 -0.419083350 -0.639833501
```

```
## [591,]   0.716736222   1.214427736   0.358595510
## [592,]   0.521354221   1.095092031   0.113623122
## [593,]   1.280965259   0.475536295   0.305584579
## [594,] -1.135311819 -1.011601992 -1.281219645
## [595,] -0.070303395   0.733769731   0.125149911
## [596,]   0.647933646 -0.363893689 -0.016532179
## [597,] -0.336732417 -0.999530869 -1.177475293
## [598,] -2.589524901 -0.118190386 -1.084567101
```

```
fa.parallel(props)
```

```
## Parallel analysis suggests that the number of factors =  3  and the number
of components =  2
```

```
fa.plot(fa)
```


Principal Component Analysis

```
fa.diagram(fa) #Visualization of the factors between relationships
```

Components Analysis