

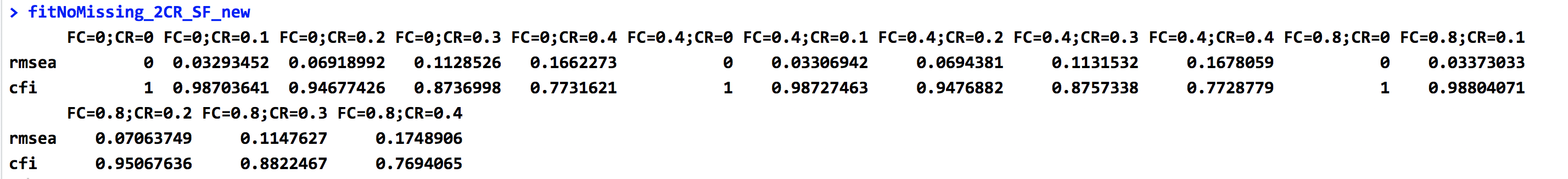
Population results: n=1000000

A picture containing text

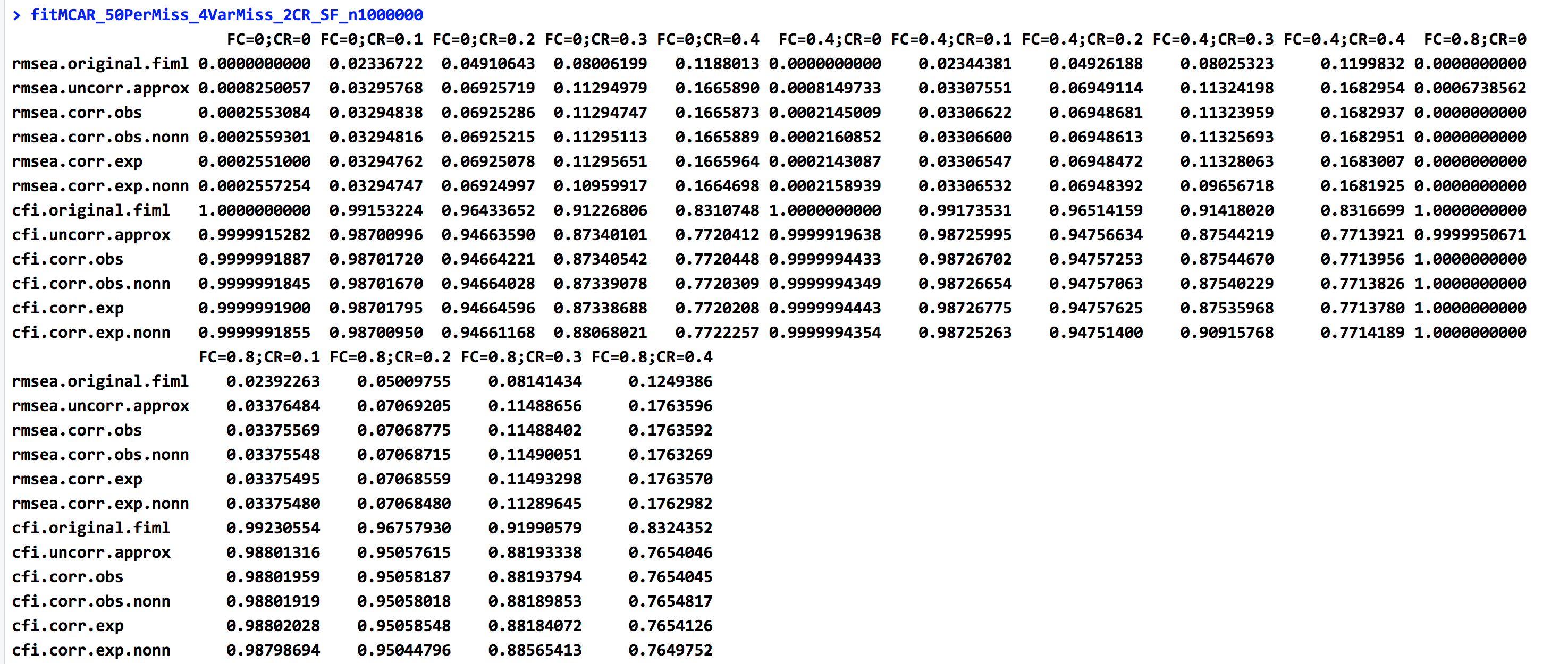
Description automatically generated

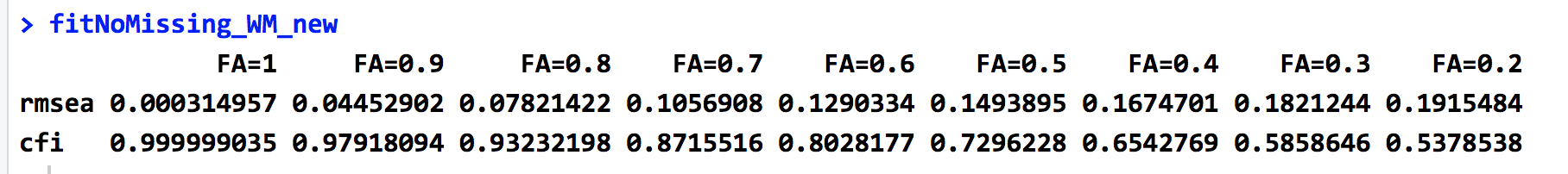
A picture containing window

Description automatically generated



Population results: n=1000000



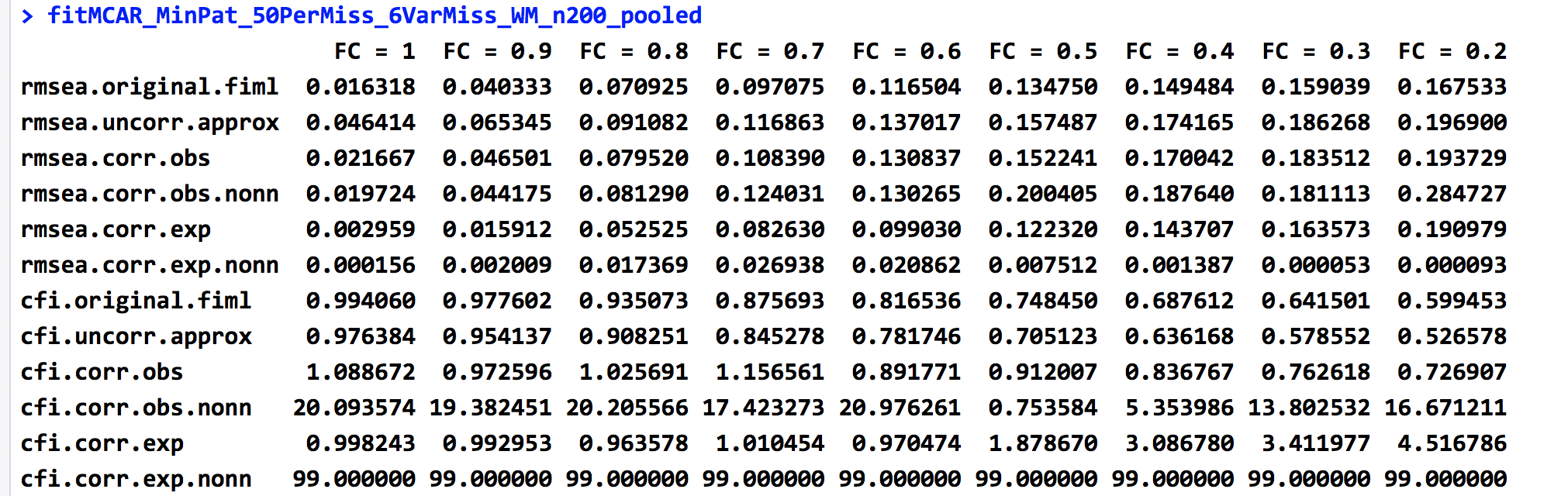


N=500

A close up of a piece of paper

Description automatically generated

N=200



CFI greater than 1?? How come?

Negative CFI….??

> ch <- matrix(0, nrow=1000, ncol=9)

> for(i in 1:1000){

+ ch[i,] <- fitMCAR\_MinPat\_50PerMiss\_6VarMiss\_WM\_n200[[i]]["cfi.corr.obs",]

+ }

>

>

> ch

[,1] [,2] [,3] [,4] [,5] [,6] [,7] [,8] [,9]

[1,] 0.9890215 0.9719011 0.9804511 0.9165733 0.7971586 0.6066197 0.64414391 0.56202481 0.51691885

[2,] 0.9937565 0.9651570 0.9273713 0.8123327 0.7579708 0.6556544 0.66503311 0.75952943 0.66690862

[3,] 1.0000000 0.9760223 0.8898461 0.8892779 0.8121269 0.5875790 0.58384841 0.76163202 0.47520799

[4,] 1.0000000 0.9688935 0.9038777 0.8038334 0.8059793 0.7209288 0.68358354 0.64279465 0.58842079

[5,] 0.9767047 0.9245806 0.9466626 0.8601847 0.7367463 0.7190337 0.56862300 0.62577229 0.58661881

[6,] 0.9988519 0.9822974 0.8877364 0.8859952 0.8106410 0.6917207 0.63420711 0.65105291 0.50728187

[7,] 0.9424820 0.9882264 0.9470933 0.8786706 0.6953121 0.7287924 0.63258546 0.49754634 0.70598452

[8,] 1.0000000 0.9955064 0.9265671 0.7766240 0.8181695 0.6626190 0.56795613 0.44263730 0.65032888

[9,] 1.0000000 0.9835802 0.9426868 0.8113961 0.7860941 0.6715984 0.70223426 0.53771828 0.57350177

[10,] 0.9989577 0.9870753 0.9925739 0.8118122 0.7796881 0.6637652 0.62348400 0.26711767 0.57607592

[11,] 1.0000000 0.9939268 0.9134108 0.9217678 0.7610441 0.7391304 0.57432290 0.59592980 0.59895791

[12,] 0.9891099 0.9827460 0.9373841 0.8133628 0.8957020 0.8374335 0.73862172 0.57299608 0.49017783

[13,] 0.9962131 0.9879288 0.9514075 0.7741645 0.8237164 0.6817474 0.60399092 0.66435598 0.60701368

[14,] 0.9958283 0.9403758 0.8963905 0.9110886 0.7960534 0.8079077 0.55779661 0.64145430 0.45451699

[15,] 0.9759080 0.9857093 0.9057301 0.8413998 0.7888067 0.6958146 0.59040174 0.60678037 0.65244308

[16,] 0.9845657 0.9428936 0.9764743 0.8720673 0.7359988 0.7466127 0.54926831 0.63742958 0.51378784

[17,] 0.9856165 1.0000000 0.9563220 0.8339717 0.7739175 0.8242427 0.69160070 0.61060891 0.49052634

[18,] 0.9925455 0.9935967 0.8936472 0.8283446 0.7392792 0.7868057 0.59632657 0.61140352 0.50489051

[19,] 0.9941273 0.9731743 0.9375390 0.8895459 0.8480981 0.6208904 0.61802761 0.52957774 0.60045316

[20,] 1.0000000 0.9681887 0.9380479 0.8538880 0.8170375 0.7412220 0.66418499 0.56501331 0.48791534

[21,] 1.0000000 1.0000000 0.9555527 0.8274616 0.8429943 0.7023303 0.62095507 0.57828070 0.42942166

[22,] 1.0000000 0.9726632 0.9100128 0.8852492 0.7529832 0.7958627 0.58360051 0.60506192 0.60705013

[23,] 1.0000000 0.9688324 0.9507602 0.8617137 0.8283929 0.7173144 0.63931103 0.56081230 0.46115631

[24,] 1.0000000 0.9730768 0.9162694 0.8824511 0.8365589 0.7353767 0.50721348 0.56963976 0.40239279

[25,] 1.0000000 0.9092303 0.9612475 0.9142322 0.7939363 0.7415172 0.63704655 0.59047519 0.64208063

[26,] 0.9724092 0.9621181 0.9353400 0.8543459 0.8119691 0.7338632 0.78236474 0.50572522 0.50623066

[27,] 0.9883913 0.9493014 0.8656512 0.8323815 0.7571027 0.7366115 0.64587160 0.73874273 0.64916319

[28,] 1.0000000 0.9851849 0.9003302 0.8207310 0.7745617 0.7174067 0.62513591 0.55039311 0.45092831

[29,] 0.9573287 1.0000000 0.9048284 0.8162499 0.7932903 0.6899321 0.61877303 0.47854124 0.53564856

[30,] 0.9644579 0.9715633 0.9339146 0.8628358 0.7809653 0.7457556 0.57637104 0.53000388 0.61349588

[31,] 0.9741597 0.9396895 0.9644544 0.8498951 0.8204025 0.6658747 0.64906399 0.67495254 0.80225685

[32,] 1.0000000 0.9621081 0.9371293 99.0000000 0.2771207 0.7816765 0.76376684 0.55914442 0.54135487

[33,] 1.0000000 0.9581108 0.9217581 0.8619328 0.7366077 0.6401603 0.91492647 0.58617339 0.52287006

[34,] 1.0000000 1.0000000 0.9813965 0.8488976 0.8223357 0.7425631 0.55685682 0.62003509 0.58384749

[35,] 0.9755898 0.9891837 0.9054140 0.8864616 0.8701835 0.7575042 0.63009349 0.67731969 0.47560012

[36,] 0.9796415 0.9757660 0.9296368 0.8563185 0.8080483 0.7113526 0.68202079 0.59582618 0.52140548

[37,] 0.9596972 0.9863149 0.8389575 0.9210905 0.7136151 0.7034167 0.67707356 0.54878997 0.46219837

[38,] 0.9964241 0.9877793 0.8970924 0.8848506 0.8252478 0.8056091 0.62078723 0.66839570 0.56395677

[39,] 0.9919390 0.9335140 0.8785074 0.8662899 0.8689222 0.6046359 0.67382502 0.59502686 0.44612337

[40,] 0.9690026 0.9228531 0.8850190 0.8478926 0.8188514 0.7392358 0.69162783 0.66264465 0.49213185

[41,] 0.9794715 0.9947523 0.9714732 0.8854991 0.7041837 0.6843556 0.65626273 0.56697012 0.51874093

[42,] 1.0000000 0.9522976 0.9149238 0.9021077 0.7522527 0.7389874 0.53081886 0.52674656 0.46597865

[43,] 0.9884827 0.9679399 0.9225633 0.8522879 0.7994424 0.7512774 0.53916469 0.63115436 0.50774481

[44,] 1.0000000 0.9839294 0.9519076 0.8501054 0.8119949 0.6801204 0.60264006 0.61976623 0.67930531

[45,] 1.0000000 0.9243072 0.9460497 0.8522006 0.7534144 0.7684067 0.61196539 0.68440486 0.55423439

[46,] 0.9553122 0.9977224 0.9479663 0.9013472 0.7987306 0.8019734 0.58917951 0.55510199 0.45910104

[47,] 1.0000000 0.9067991 0.9381227 0.8819520 0.7868248 0.6826346 0.56836252 0.53436021 0.49710676

[48,] 0.9907755 0.9491224 0.9075873 0.9063465 0.7105039 0.7228729 0.71457045 0.62940922 0.47446180

[49,] 0.9786316 0.9693787 0.8585688 0.8767418 0.8377508 0.8074064 0.54030747 0.62416627 0.50546109

[50,] 1.0000000 0.9939825 0.9121086 0.8441008 0.7482952 0.6576706 0.61656494 0.58540768 0.76229123

[51,] 1.0000000 0.9738534 0.9450343 0.8751683 0.7887337 0.6451556 0.59868918 0.55344235 0.45167478

[52,] 1.0000000 0.9277046 0.9328745 0.8469270 0.7605569 0.7767577 0.65563729 0.66433182 0.39174893

[53,] 0.9944310 0.9514346 0.9271463 0.8361921 0.8545937 0.5887740 0.70917994 0.59192374 0.48422993

[54,] 0.9859382 0.9672361 0.9058147 0.8659841 0.7861896 0.7175465 0.36292719 0.65127547 0.58523400

[55,] 0.9870077 1.0000000 0.8507158 0.8665274 0.7259619 0.6733664 0.52740055 0.60992591 0.43947185

[56,] 1.0000000 0.9439779 0.9544836 0.9313812 0.7525096 0.6385990 -0.29707504 0.60394633 0.57199265

[57,] 0.9746538 0.9783760 0.8971509 0.8888637 0.7203753 0.7046083 0.60546096 0.55291242 0.51952964

[58,] 0.9712982 0.9627529 0.9663068 0.8921609 0.7445928 0.7663782 0.60218015 0.53949174 0.43769400

[59,] 1.0000000 0.9837099 0.9524715 0.9020683 0.7893890 0.6672144 0.67315835 0.55317812 0.48550699

[60,] 0.9481237 0.9619895 0.9286173 0.8256912 0.8795351 0.5883056 0.67157827 0.03459618 0.57156954

[61,] 0.9918181 0.9437035 0.9057405 0.8773885 0.8368994 0.6579158 0.63938780 0.55346554 0.51668867

[62,] 0.9892986 0.9918011 0.9043458 0.8459990 0.8050084 0.6523248 0.55431060 0.53329385 0.60343127

[63,] 1.0000000 1.0000000 0.9387432 0.8484639 0.8447246 0.8082836 0.75603027 0.45618361 0.50432620

[64,] 0.9798562 0.9081480 0.9216526 0.9337472 0.8001812 0.7185576 0.65666847 0.58025242 0.41208197

[65,] 0.9875081 0.9862330 0.9197182 0.8346258 0.7775666 0.5964616 0.64051266 0.68146657 0.56412801

[66,] 0.9896274 0.9647172 0.9025210 0.8860748 0.8452049 0.7467882 0.40553193 0.61795217 0.50620981

[67,] 0.9809015 1.0000000 0.9164666 0.8867969 0.7932095 0.7896052 0.57598402 0.53838217 0.54825374

[68,] 0.9869003 0.9910284 0.8357386 0.8161126 0.8437150 0.8361428 0.51488329 0.57806123 0.52821399

[69,] 0.9798550 1.0000000 0.9422856 0.8648999 0.6927655 0.7518944 0.62848561 0.49262100 0.50872776

[70,] 1.0000000 0.9500194 0.8912344 0.8963506 0.8475353 0.6121152 0.59384052 0.61576725 0.68285923

[71,] 0.9984441 0.9808952 0.9018609 0.8214930 0.7798247 0.6936235 0.80601863 0.40735454 0.63360203

[72,] 0.9659909 0.9786158 0.9637575 0.8148634 0.8297707 0.7295623 0.60563911 0.40317389 0.59781954

[73,] 0.9727595 0.9666703 0.9269076 0.9387512 0.7333249 0.7390610 0.64356935 0.57426637 0.56207411

[74,] 0.9820130 0.9851523 0.9349253 0.8116444 0.7708927 0.6801946 0.63928959 0.53177067 0.50703424

[75,] 0.9966068 0.9865360 0.9343159 0.8664284 0.7869812 0.7548870 0.62024442 0.52728140 0.54198194

[76,] 1.0000000 0.9739868 0.9054938 0.9089364 0.9032881 0.7334046 0.36314553 0.62139186 0.46724477

[77,] 0.9796930 0.9568498 0.9613217 0.9810936 0.7371120 0.7286264 0.69556173 0.61445810 0.43047225

[78,] 0.9526689 0.9973045 0.8787229 0.9100809 0.8219547 0.6553595 0.77704618 0.50760090 0.51042643

[79,] 0.9815749 0.9872308 0.9223334 0.8630445 0.8107178 0.7461901 0.64281625 0.65280673 0.51157259

[80,] 0.9744705 0.9550416 0.9169131 0.7499439 0.8240204 0.8046343 0.66845766 0.52603348 0.51922316

[81,] 1.0000000 0.9617100 0.9520345 0.8783035 0.7741544 0.7669765 0.64794598 0.50631598 0.53243759

[82,] 0.9639163 1.0000000 0.9285655 0.8493160 0.7927962 0.7404536 0.70864682 0.73618758 0.62618599

[83,] 0.9965940 0.9899660 0.9749589 0.8587700 0.8447365 0.7711117 0.47697356 0.51644716 0.49786537

[84,] 1.0000000 0.9931371 0.8708484 0.8408628 0.7915137 0.6310359 0.63572796 0.60058681 0.57872668

[85,] 0.9877392 0.9427473 0.9833375 0.6766717 0.8059158 0.6870066 0.66383910 0.57968066 0.49772141

[86,] 0.9983622 0.9671169 0.8540811 0.9028532 0.8704751 0.6714597 0.69808352 0.59412586 0.44173294

[87,] 1.0000000 0.9932891 0.9352022 0.8886601 0.8422068 0.7889705 0.52953916 0.56468790 0.47073320

[88,] 1.0000000 0.9507362 0.9387132 0.8973267 0.6902262 0.6801649 0.68137674 0.64625343 0.51426838

[89,] 0.9720182 1.0000000 0.8567739 0.7574440 0.7382107 0.7013778 0.66751958 0.66801660 0.44567955

[90,] 1.0000000 0.9566942 0.9614796 0.9150092 0.8093071 0.7938129 0.62870022 0.53980807 0.54379147

[91,] 1.0000000 0.9658677 0.9731585 0.8796810 0.7207127 0.6913679 0.73438187 0.54499841 0.49127656

[92,] 1.0000000 0.9597986 0.9193478 0.8459083 0.7238741 0.6994780 0.64491690 0.54276539 0.51322687

[93,] 0.9972243 0.9991770 0.9680414 0.8636006 0.8558118 0.6577535 0.49393191 0.61163714 0.59202467

[94,] 0.9709766 0.9557904 0.9651026 0.9069886 0.7947203 0.7265723 0.56033834 0.56638509 0.55289557

[95,] 0.9884312 0.9863600 0.9334283 0.8805614 0.7069950 0.7214394 0.75442605 0.55113369 0.51737065

[96,] 1.0000000 0.9784315 0.8906053 0.8128194 0.7071518 0.7562580 0.69159354 0.61292954 0.63443110

[97,] 1.0000000 0.9419636 0.9438349 0.8551885 0.7522265 0.7191446 0.60396458 0.56614453 0.58525314

[98,] 1.0000000 0.9702610 0.9834940 0.8520488 0.7134309 0.7757714 0.68911317 0.57796312 0.53757136

[99,] 0.9865092 0.9982735 0.9563010 0.9076776 0.7751559 0.6279268 0.63190826 1.00000000 0.62765958

[100,] 0.9968865 0.9226820 0.9749304 0.8918240 0.8675790 0.8494931 0.68592350 0.56876857 0.51920998

[101,] 1.0000000 0.9739372 0.9458046 0.8315392 0.7985753 0.6702894 0.61730219 0.60268480 0.50166290

[102,] 0.9640642 0.9853605 0.9724732 0.9070929 0.8035634 0.6316498 0.70331287 0.55386391 0.50224525

[103,] 0.9755133 0.9819427 0.9328379 0.8683804 0.8499529 0.8091606 -1.25971058 0.61972532 0.49620773

[104,] 0.9701180 0.9531428 0.9683366 0.8376938 0.6953323 0.6049087 0.80068923 0.70075582 0.45945427

[105,] 1.0000000 0.9888086 0.9288168 0.8609908 0.8567244 0.6760719 0.72921326 0.55789042 0.54066603

[106,] 1.0000000 0.9723091 0.9181432 0.8556341 0.7958021 0.6577320 0.68221466 0.65108185 0.52454352

[107,] 0.9988776 0.9936084 0.9385844 0.8314401 0.8296515 0.7670718 0.77088806 0.61116177 0.48598978

[108,] 0.9761409 0.9568951 0.9163642 0.8510175 0.8610856 0.6872539 0.66381814 0.70681906 -0.12910207

[109,] 0.9931319 0.9836492 0.9196950 0.9086857 0.8218970 0.7084013 0.72275781 0.60222207 0.48448579

[110,] 0.9992720 0.9508987 0.8900830 0.8991668 0.8749867 0.7085075 0.64780268 0.69317206 0.46675970

[111,] 0.9879303 0.9602195 0.9433515 0.9009821 0.8274039 0.7575068 0.65153667 0.54786386 0.52806488

Checking "cfi.corr.obs" of the first model can be greater than 1… But none of the estimated CFIs are greater than 1..

> ch <-rep(NA, 1000)

> ch[i] <- fitMCAR\_MinPat\_50PerMiss\_6VarMiss\_WM\_n200[[i]]["cfi.corr.obs",1]

> for(i in 1:1000){

+ ch[i] <- fitMCAR\_MinPat\_50PerMiss\_6VarMiss\_WM\_n200[[i]]["cfi.corr.obs",1]

+ }

> ch

[1] 0.9890215 0.9937565 1.0000000 1.0000000 0.9767047 0.9988519 0.9424820 1.0000000 1.0000000 0.9989577 1.0000000 0.9891099 0.9962131

[14] 0.9958283 0.9759080 0.9845657 0.9856165 0.9925455 0.9941273 1.0000000 1.0000000 1.0000000 1.0000000 1.0000000 1.0000000 0.9724092

[27] 0.9883913 1.0000000 0.9573287 0.9644579 0.9741597 1.0000000 1.0000000 1.0000000 0.9755898 0.9796415 0.9596972 0.9964241 0.9919390

[40] 0.9690026 0.9794715 1.0000000 0.9884827 1.0000000 1.0000000 0.9553122 1.0000000 0.9907755 0.9786316 1.0000000 1.0000000 1.0000000

[53] 0.9944310 0.9859382 0.9870077 1.0000000 0.9746538 0.9712982 1.0000000 0.9481237 0.9918181 0.9892986 1.0000000 0.9798562 0.9875081

[66] 0.9896274 0.9809015 0.9869003 0.9798550 1.0000000 0.9984441 0.9659909 0.9727595 0.9820130 0.9966068 1.0000000 0.9796930 0.9526689

[79] 0.9815749 0.9744705 1.0000000 0.9639163 0.9965940 1.0000000 0.9877392 0.9983622 1.0000000 1.0000000 0.9720182 1.0000000 1.0000000

[92] 1.0000000 0.9972243 0.9709766 0.9884312 1.0000000 1.0000000 1.0000000 0.9865092 0.9968865 1.0000000 0.9640642 0.9755133 0.9701180

[105] 1.0000000 1.0000000 0.9988776 0.9761409 0.9931319 0.9992720 0.9879303 1.0000000 0.9839141 0.9923103 0.9968455 0.9994643 1.0000000

[118] 0.9975365 1.0000000 0.9858237 1.0000000 1.0000000 1.0000000 0.9843803 1.0000000 0.9743262 0.9930477 1.0000000 1.0000000 1.0000000

[131] 0.9927818 0.9954989 1.0000000 1.0000000 1.0000000 0.9799694 1.0000000 0.9794722 1.0000000 0.9718138 1.0000000 0.9948683 0.9744754

[144] 0.9720037 0.9820869 0.9677432 1.0000000 0.9928367 1.0000000 0.9970381 0.9525986 1.0000000 0.9823823 0.9974781 0.9882538 0.9966477

[157] 1.0000000 1.0000000 0.9958193 0.9917172 0.9921131 0.9717671 0.9840875 1.0000000 1.0000000 0.9883610 1.0000000 1.0000000 0.9509605

[170] 1.0000000 0.9981653 1.0000000 0.9706229 1.0000000 1.0000000 1.0000000 1.0000000 1.0000000 1.0000000 1.0000000 0.9996019 0.9780889

[183] 0.9999913 0.9927001 1.0000000 0.9984562 1.0000000 0.9991154 1.0000000 1.0000000 0.9930833 0.9832216 0.9737717 1.0000000 1.0000000

[196] 1.0000000 0.9598564 0.9918575 0.9857928 0.9902534 1.0000000 1.0000000 1.0000000 0.9677022 0.9928356 1.0000000 1.0000000 0.9925211

[209] 1.0000000 0.9638935 0.9724520 0.9994534 0.9957504 0.9948126 0.9841956 1.0000000 0.9825215 1.0000000 0.9840220 1.0000000 1.0000000

[222] 0.9919436 1.0000000 0.9872685 0.9895479 0.9886214 0.9787128 0.9973206 0.9829700 1.0000000 1.0000000 0.9991569 0.9946576 0.9990498

[235] 0.9902092 0.9995839 1.0000000 1.0000000 1.0000000 0.9871127 1.0000000 0.9954151 0.9768240 0.9922044 0.9907577 0.9698193 0.9747996

[248] 1.0000000 1.0000000 1.0000000 1.0000000 1.0000000 0.9931568 0.9892062 1.0000000 0.9802566 1.0000000 0.9968506 1.0000000 0.9786759

[261] 0.9881348 0.9824532 1.0000000 0.9677325 0.9840118 1.0000000 0.9870865 1.0000000 1.0000000 1.0000000 0.9737663 0.9628980 0.9940421

[274] 1.0000000 1.0000000 1.0000000 0.9814707 0.9897662 1.0000000 0.9845040 0.9899416 0.9960610 0.9754786 0.9830144 1.0000000 0.9938558

[287] 0.9878985 0.9592863 1.0000000 1.0000000 0.9995539 0.9969256 0.9986534 0.9895630 0.9793727 1.0000000 0.9834366 0.9945438 0.9803173

[300] 1.0000000 1.0000000 1.0000000 0.9922221 0.9717929 1.0000000 0.9940038 0.9932355 0.9900942 1.0000000 0.9843256 1.0000000 0.9734375

[313] 0.9928463 0.9927794 0.9925752 0.9908470 0.9891847 1.0000000 0.9899965 1.0000000 0.9686851 1.0000000 1.0000000 0.9575885 0.9741008

[326] 0.9930277 0.9835614 1.0000000 0.9975630 0.9829561 1.0000000 0.9918547 0.9918688 0.9999353 0.9879326 1.0000000 1.0000000 0.9825180

[339] 1.0000000 0.9964705 1.0000000 1.0000000 0.9946890 1.0000000 0.9733636 1.0000000 1.0000000 1.0000000 0.9864966 0.9782936 1.0000000

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