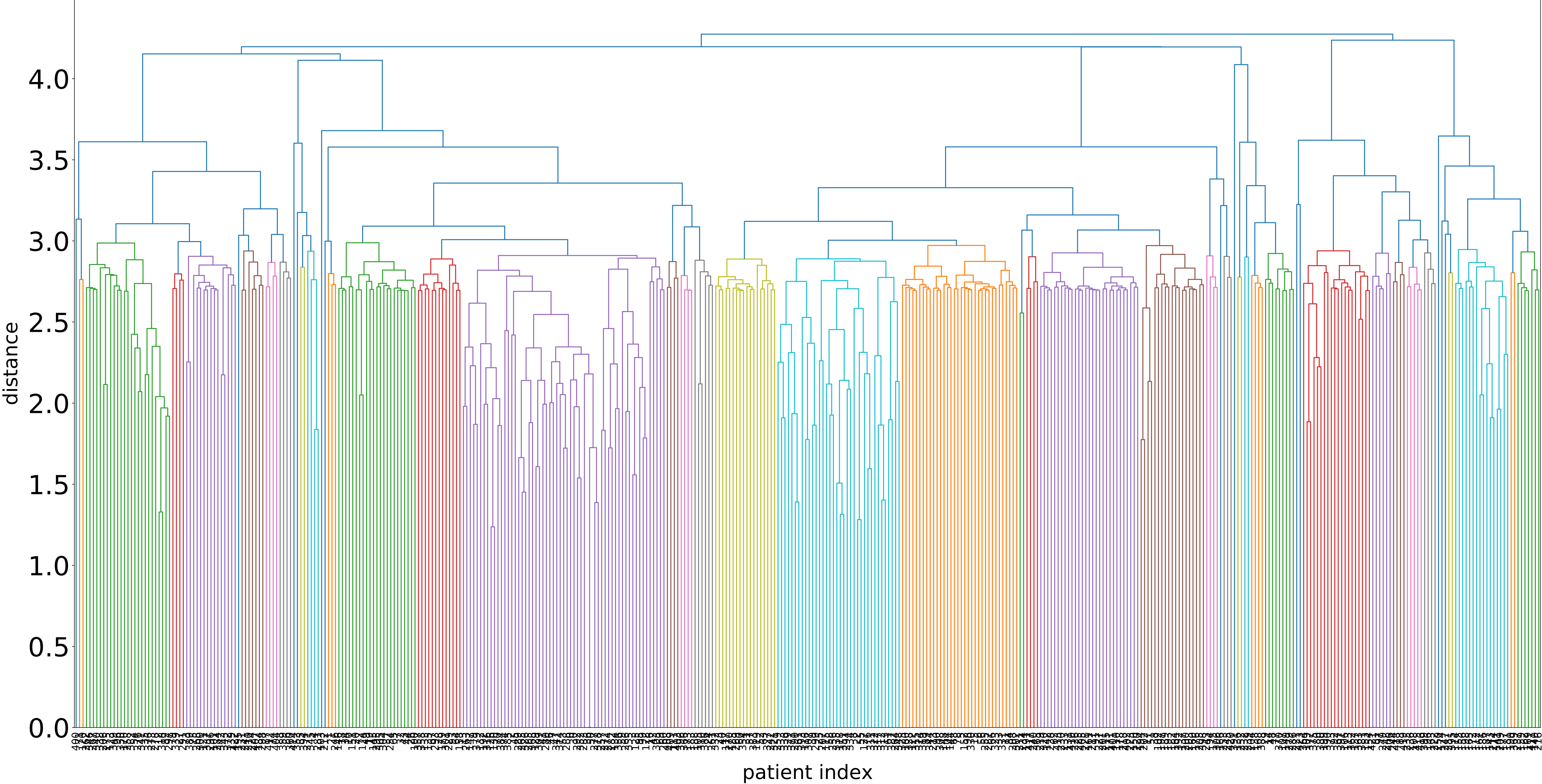


Hierarchical Clustering Dendrogram - gap: 0.00, Tp: 1.00, average link

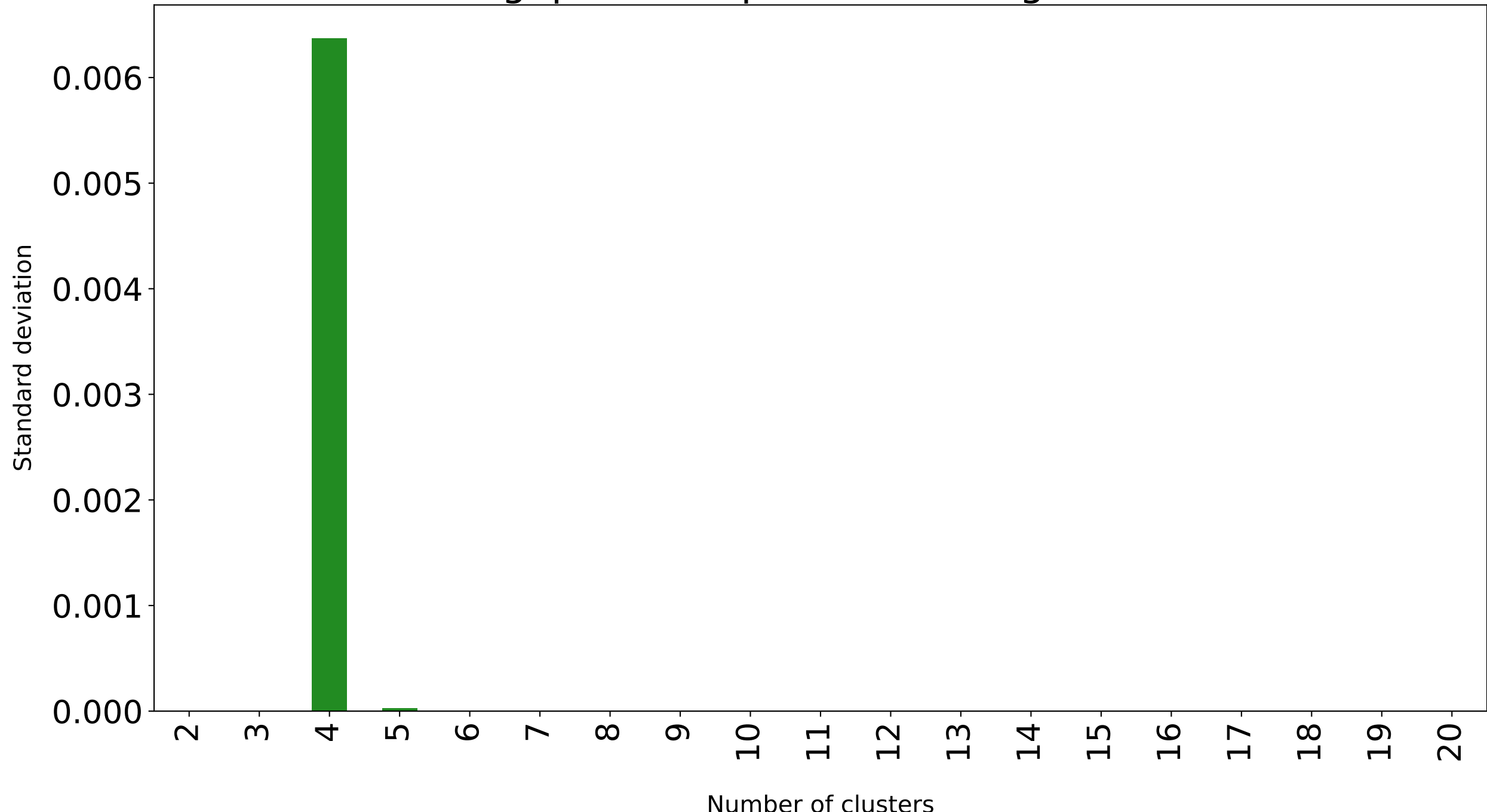


Cophenetic Correlation Coefficient: 0.8567694291987454

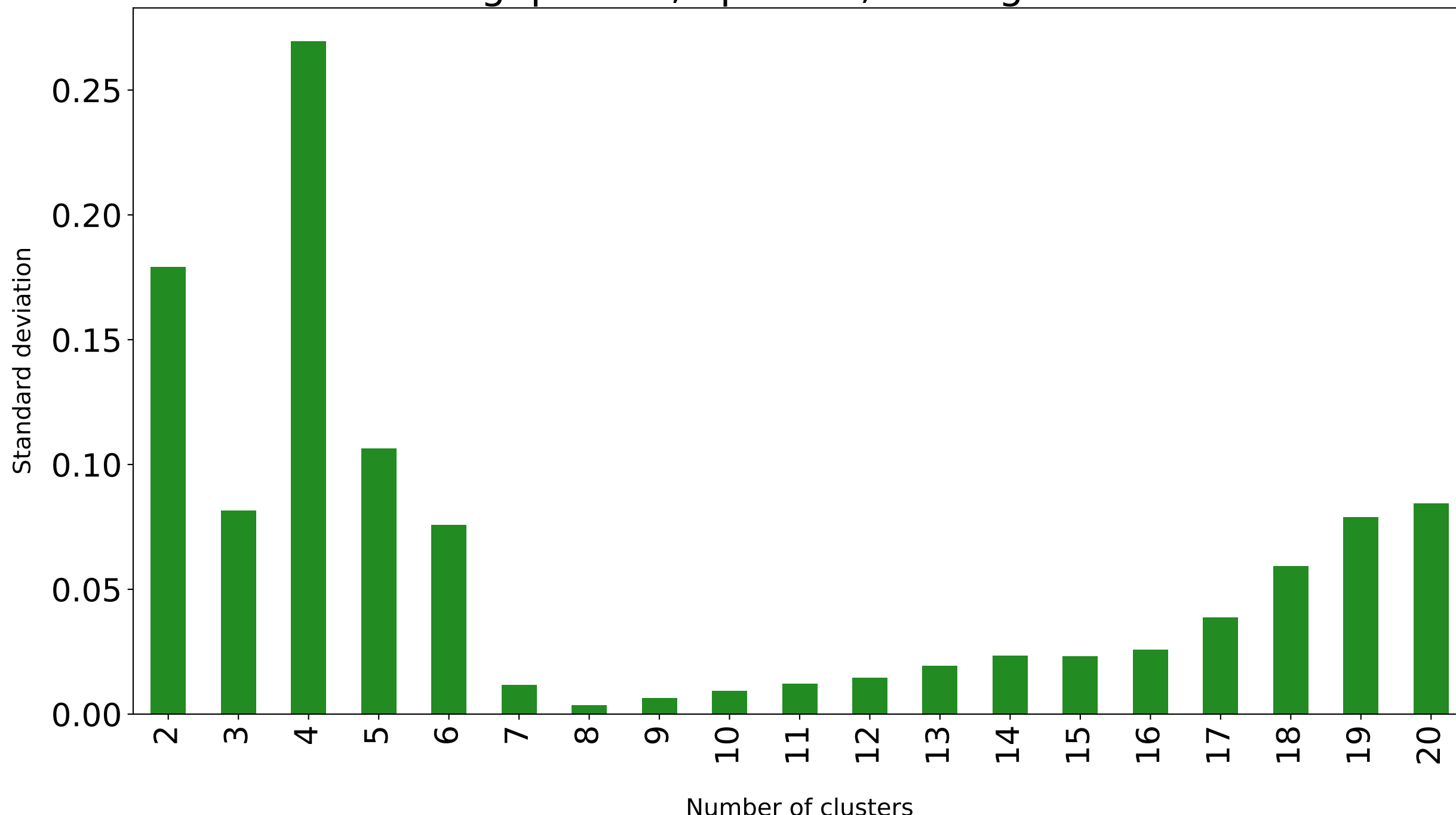
Average values of five clustering indices
gap: 0.00, Tp: 1.00, average link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0 | 1.0 | 0.98079 | 0.96385 | 0.93958 | 0.01421 | 0.91884 | 0.9802 | 0.08314 | 0.98139 | 0.00018 | 0.94713 | 0.93811 | 0.0 | 0.11278 | 0.52077 |
| 3.0 | 1.0 | 0.98508 | 0.97168 | 0.93249 | 0.01307 | 0.95551 | 0.98474 | 0.07307 | 0.98543 | 0.00018 | 0.96257 | 0.94968 | 0.0 | 0.18799 | 0.52077 |
| 4.0 | 1.00038 | 0.82412 | 0.71219 | 0.86001 | 0.11204 | 0.68407 | 0.80965 | 0.39994 | 0.8392 | 0.00012 | 0.71812 | 0.60994 | 0.01667 | 0.19462 | 0.40399 |
| 5.0 | 1.0 | 0.97461 | 0.95673 | 0.96308 | 0.01442 | 0.96177 | 0.97377 | 0.06435 | 0.97547 | 0.00017 | 0.9686 | 0.93462 | 0.15556 | 0.20416 | 0.40399 |
| 6.0 | 1.0 | 0.97232 | 0.94967 | 0.98869 | 0.01533 | 0.96239 | 0.9712 | 0.06939 | 0.97344 | 0.0002 | 0.97052 | 0.91927 | 0.15556 | 0.2213 | 0.40399 |
| 7.0 | 1.0 | 0.99474 | 0.98959 | 0.99897 | 0.00319 | 0.99312 | 0.99469 | 0.02391 | 0.99478 | 0.00022 | 0.995 | 0.97997 | 0.22222 | 0.22477 | 0.41159 |
| 8.0 | 1.0 | 0.99854 | 0.99709 | 0.99685 | 0.00101 | 0.99809 | 0.99854 | 0.00861 | 0.99854 | 0.00022 | 0.99863 | 0.99425 | 2.0 | 0.3139 | 0.51343 |
| 9.0 | 1.0 | 0.99638 | 0.9928 | 0.99304 | 0.00264 | 0.99528 | 0.99636 | 0.02197 | 0.99639 | 0.00022 | 0.99664 | 0.9859 | 2.0 | 0.38127 | 0.51395 |
| 10.0 | 1.0 | 0.99325 | 0.98661 | 0.98445 | 0.00452 | 0.99123 | 0.99321 | 0.03639 | 0.99328 | 0.00022 | 0.99377 | 0.97396 | 2.0 | 0.43466 | 0.51395 |
| 11.0 | 1.0 | 0.98902 | 0.97831 | 0.97504 | 0.00701 | 0.98579 | 0.98895 | 0.0554 | 0.98909 | 0.00022 | 0.98998 | 0.95818 | 2.0 | 0.39739 | 0.51395 |
| 12.0 | 1.0 | 0.9862 | 0.97283 | 0.9708 | 0.00864 | 0.98219 | 0.9861 | 0.06599 | 0.98629 | 0.00022 | 0.98754 | 0.94797 | 2.0 | 0.37044 | 0.51395 |
| 13.0 | 1.0 | 0.98137 | 0.96341 | 0.95646 | 0.0097 | 0.97605 | 0.98113 | 0.07344 | 0.9816 | 0.00022 | 0.98326 | 0.9309 | 2.0 | 0.35582 | 0.51395 |
| 14.0 | 1.0 | 0.97274 | 0.94663 | 0.93358 | 0.01294 | 0.96515 | 0.97224 | 0.09404 | 0.97324 | 0.00022 | 0.97578 | 0.90076 | 2.0 | 0.39774 | 0.51395 |
| 15.0 | 1.0 | 0.97425 | 0.94997 | 0.95453 | 0.01685 | 0.96735 | 0.97401 | 0.10355 | 0.97448 | 0.00023 | 0.97819 | 0.90678 | 2.0 | 0.37365 | 0.5165 |
| 16.0 | 1.0 | 0.96979 | 0.9415 | 0.94701 | 0.02543 | 0.96201 | 0.96944 | 0.13742 | 0.97014 | 0.00023 | 0.97514 | 0.89187 | 2.0 | 0.36116 | 0.51966 |
| 17.0 | 1.0 | 0.95689 | 0.91758 | 0.91643 | 0.03694 | 0.9463 | 0.95598 | 0.18206 | 0.9578 | 0.00023 | 0.96549 | 0.85249 | 2.0 | 0.34573 | 0.51966 |
| 18.0 | 1.0 | 0.94656 | 0.89974 | 0.90232 | 0.04208 | 0.93465 | 0.94471 | 0.20085 | 0.94844 | 0.00023 | 0.95978 | 0.82807 | 2.0 | 0.33041 | 0.51966 |
| 19.0 | 1.0 | 0.92184 | 0.85642 | 0.85064 | 0.05093 | 0.9059 | 0.9181 | 0.24068 | 0.92563 | 0.00023 | 0.94424 | 0.76633 | 2.0 | 0.31857 | 0.51966 |
| 20.0 | 1.0 | 0.88133 | 0.7848 | 0.76145 | 0.06503 | 0.8587 | 0.8739 | 0.29905 | 0.88888 | 0.00023 | 0.91781 | 0.6644 | 2.0 | 0.30961 | 0.51966 |

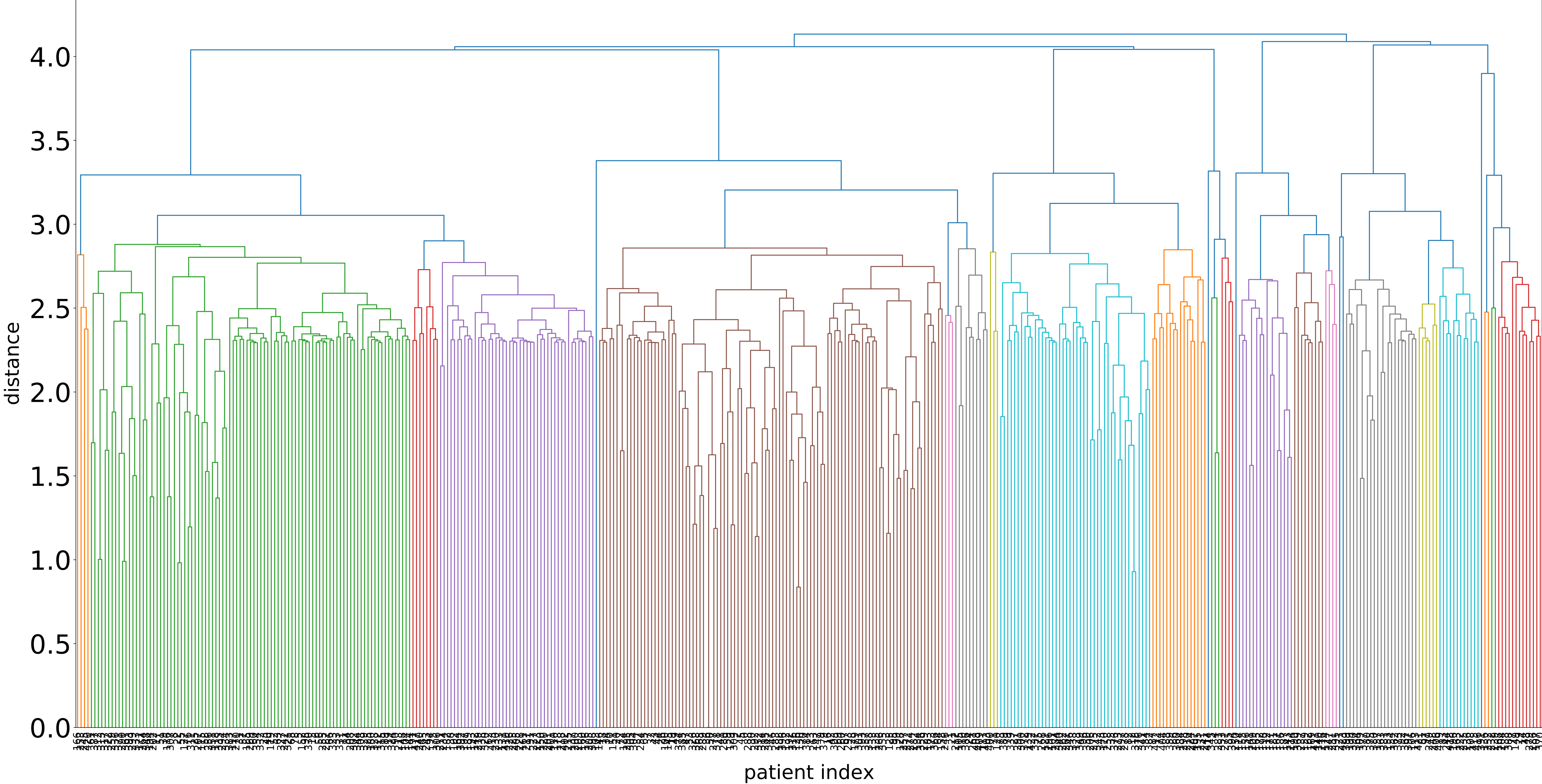
Standard deviation of Adjusted Rand versus number of clusters
gap: 0.00, Tp: 1.00, average link



Standard deviation of Huberts index versus number of clusters
gap: 0.00, Tp: 1.00, average link



Hierarchical Clustering Dendrogram - gap: 0.10, Tp: 1.00, average link

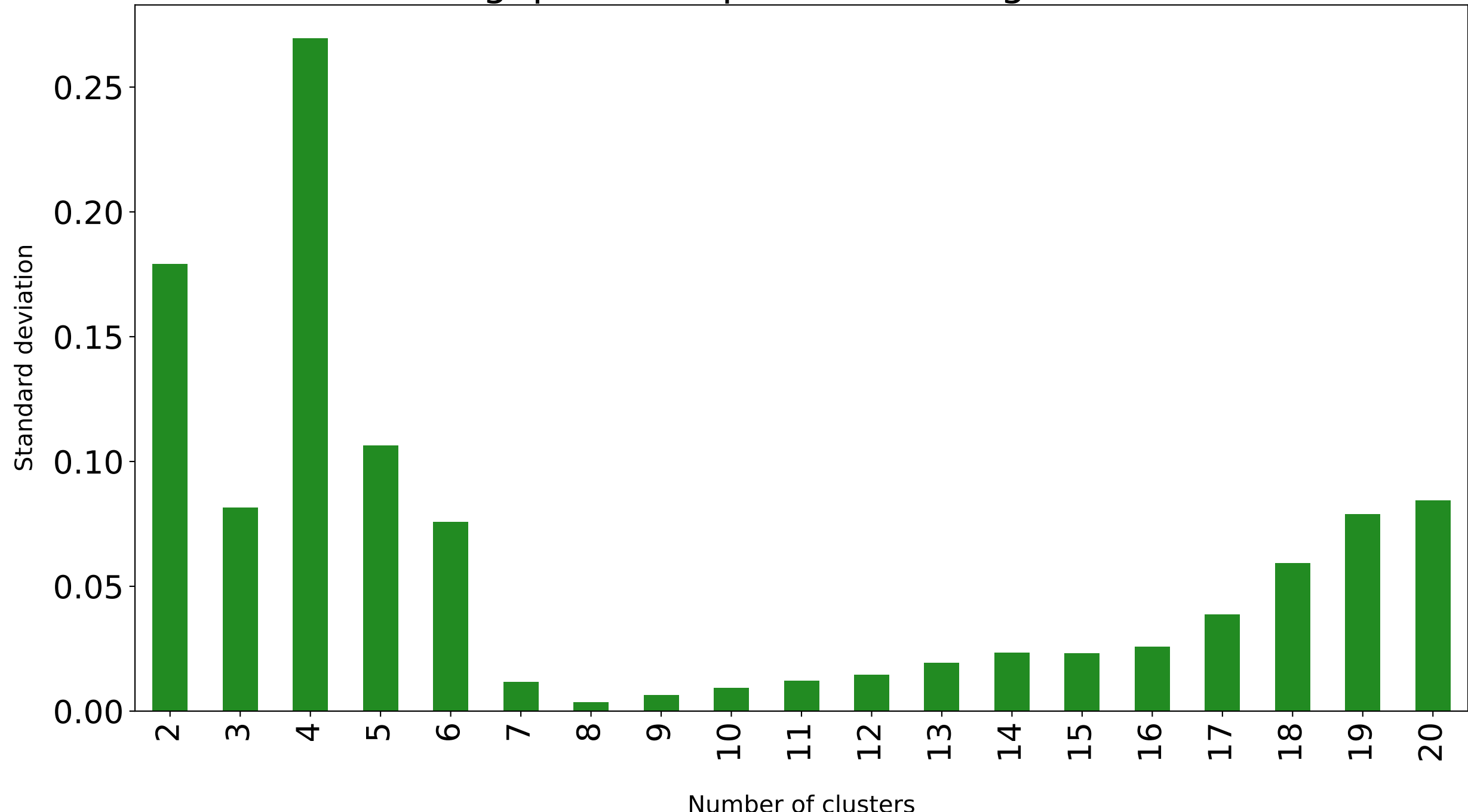


Cophenetic Correlation Coefficient: 0.8722710139664223

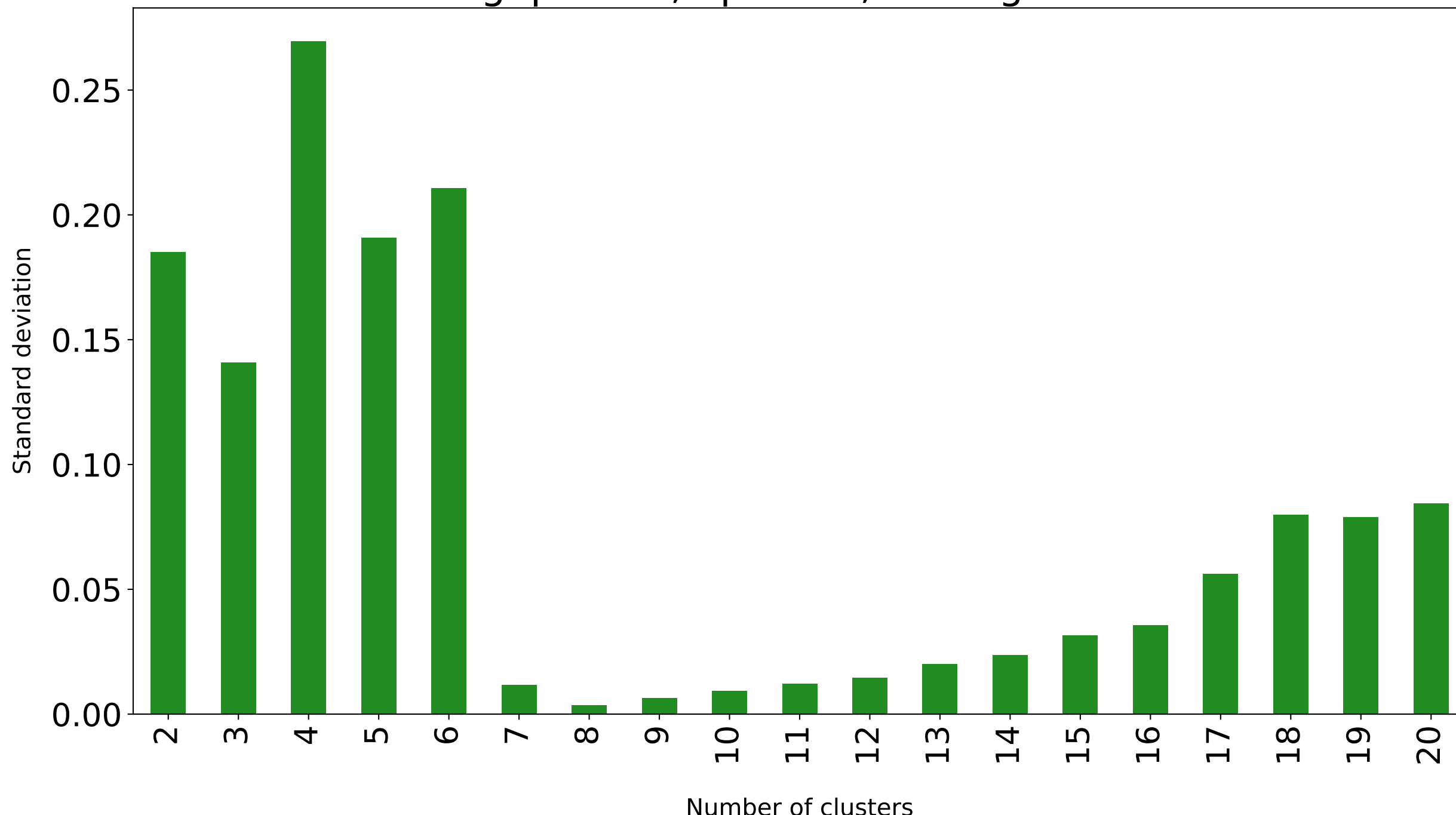
Average values of five clustering indices
gap: 0.10, Tp: 1.00, average link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0 | 1.0 | 0.9548 | 0.91498 | 0.92 | 0.03215 | 0.84287 | 0.95375 | 0.19682 | 0.95586 | 0.00015 | 0.88286 | 0.85247 | 0.02697 | 0.11681 | 0.36166 |
| 3.0 | 1.0 | 0.95254 | 0.9128 | 0.91186 | 0.0457 | 0.86725 | 0.95157 | 0.22717 | 0.95352 | 0.00015 | 0.88958 | 0.85199 | 0.03729 | 0.18645 | 0.36166 |
| 4.0 | 0.99999 | 0.90721 | 0.83819 | 0.73391 | 0.05152 | 0.79418 | 0.90322 | 0.27277 | 0.91127 | 0.00013 | 0.81957 | 0.75355 | 0.13333 | 0.23074 | 0.36166 |
| 5.0 | 0.99998 | 0.89978 | 0.82955 | 0.88818 | 0.05677 | 0.82845 | 0.89453 | 0.25499 | 0.90514 | 0.00013 | 0.84645 | 0.74833 | 0.13333 | 0.23471 | 0.36224 |
| 6.0 | 1.0 | 0.83952 | 0.73433 | 0.6618 | 0.08829 | 0.76851 | 0.82589 | 0.30288 | 0.85366 | 0.00013 | 0.8043 | 0.63894 | 0.22222 | 0.24906 | 0.36224 |
| 7.0 | 1.0 | 0.99892 | 0.99785 | 0.99921 | 0.00098 | 0.99859 | 0.99892 | 0.00813 | 0.99892 | 0.00022 | 0.99899 | 0.99577 | 0.22222 | 0.2723 | 0.39664 |
| 8.0 | 1.0 | 0.99854 | 0.99709 | 0.99719 | 0.00092 | 0.9981 | 0.99854 | 0.00825 | 0.99855 | 0.00022 | 0.99864 | 0.99425 | 2.0 | 0.3546 | 0.45974 |
| 9.0 | 1.0 | 0.99712 | 0.99427 | 0.99442 | 0.00242 | 0.99626 | 0.99711 | 0.01859 | 0.99713 | 0.00022 | 0.99734 | 0.98872 | 2.0 | 0.41249 | 0.45974 |
| 10.0 | 1.0 | 0.99435 | 0.98878 | 0.98658 | 0.00471 | 0.99268 | 0.99432 | 0.03549 | 0.99438 | 0.00022 | 0.99481 | 0.97808 | 2.0 | 0.4554 | 0.45974 |
| 11.0 | 1.0 | 0.99022 | 0.98064 | 0.97699 | 0.00753 | 0.98734 | 0.99017 | 0.0582 | 0.99028 | 0.00022 | 0.99105 | 0.96242 | 2.0 | 0.49437 | 0.45974 |
| 12.0 | 1.0 | 0.98466 | 0.96981 | 0.96747 | 0.01014 | 0.9802 | 0.98455 | 0.07796 | 0.98476 | 0.00022 | 0.98614 | 0.94222 | 2.0 | 0.45911 | 0.45974 |
| 13.0 | 1.0 | 0.97795 | 0.9568 | 0.9497 | 0.01235 | 0.9717 | 0.97767 | 0.09023 | 0.97823 | 0.00022 | 0.98033 | 0.91875 | 2.0 | 0.42505 | 0.45974 |
| 14.0 | 1.0 | 0.98006 | 0.96099 | 0.95693 | 0.01457 | 0.97467 | 0.97976 | 0.08849 | 0.98036 | 0.00022 | 0.98279 | 0.92716 | 2.0 | 0.40064 | 0.46718 |
| 15.0 | 1.0 | 0.96442 | 0.93085 | 0.9155 | 0.02255 | 0.95519 | 0.96352 | 0.12631 | 0.96533 | 0.00022 | 0.96986 | 0.8742 | 2.0 | 0.38531 | 0.46718 |
| 16.0 | 1.0 | 0.96478 | 0.93225 | 0.93427 | 0.02928 | 0.9562 | 0.96406 | 0.14557 | 0.96551 | 0.00023 | 0.97196 | 0.87735 | 2.0 | 0.36756 | 0.46718 |
| 17.0 | 1.0 | 0.95886 | 0.92233 | 0.92626 | 0.03251 | 0.9499 | 0.95733 | 0.15221 | 0.96042 | 0.00024 | 0.96939 | 0.86604 | 2.0 | 0.35047 | 0.46718 |
| 18.0 | 1.0 | 0.92547 | 0.86276 | 0.85869 | 0.04816 | 0.91076 | 0.9216 | 0.21015 | 0.92938 | 0.00024 | 0.94779 | 0.77756 | 2.0 | 0.33729 | 0.46718 |
| 19.0 | 1.0 | 0.899 | 0.81718 | 0.93619 | 0.05933 | 0.88121 | 0.89537 | 0.27719 | 0.90267 | 0.00028 | 0.93736 | 0.70496 | 2.0 | 0.32306 | 0.49123 |
| 20.0 | 1.0 | 0.92899 | 0.8692 | 0.9341 | 0.04544 | 0.91719 | 0.92761 | 0.24193 | 0.93038 | 0.0003 | 0.95904 | 0.77801 | 2.0 | 0.31279 | 0.49123 |

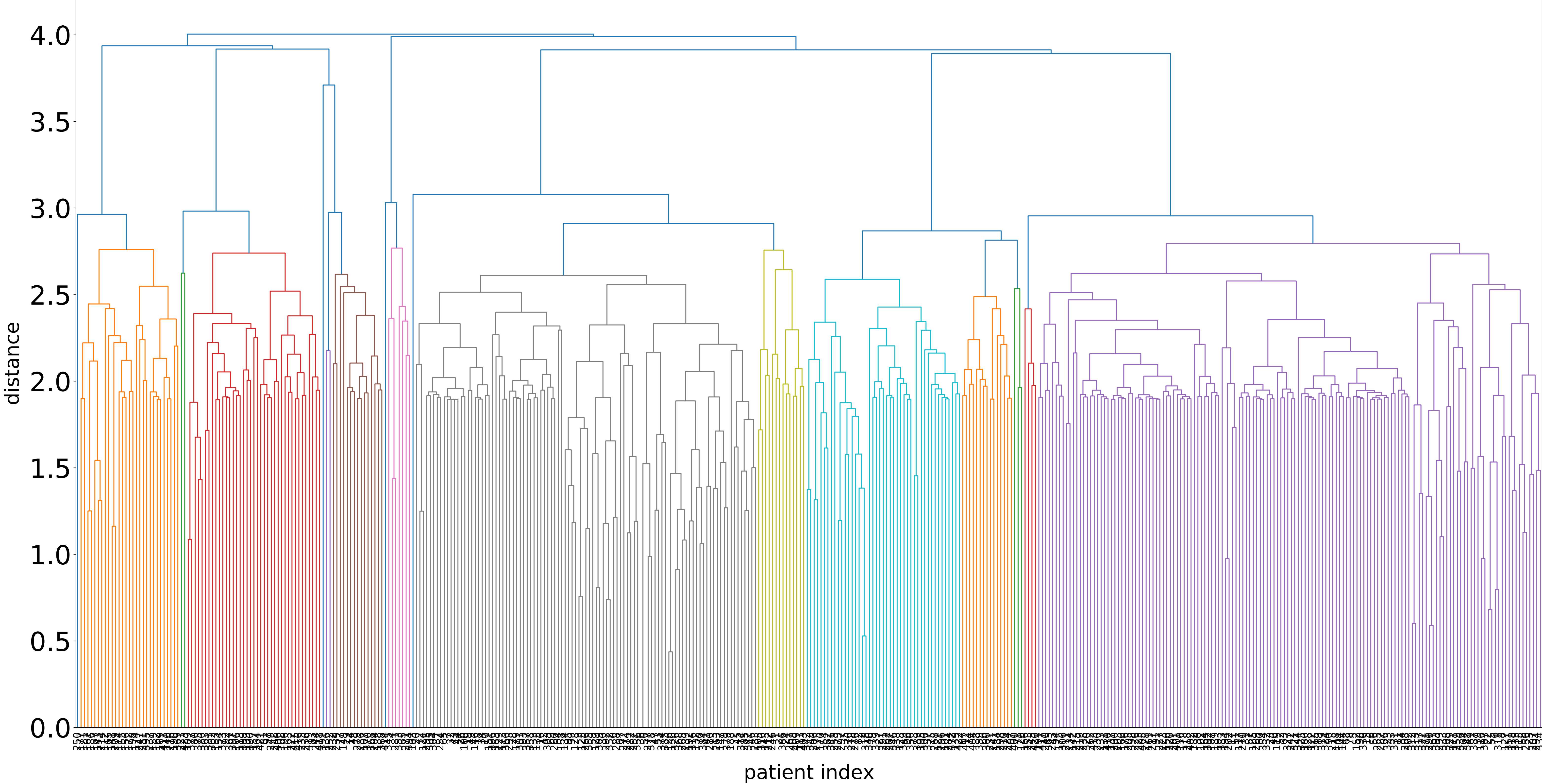
Standard deviation of Adjusted Rand versus number of clusters
gap: 0.10, Tp: 1.00, average link



Standard deviation of Huberts index versus number of clusters
gap: 0.10, Tp: 1.00, average link



Hierarchical Clustering Dendrogram - gap: 0.20, Tp: 1.00, average link

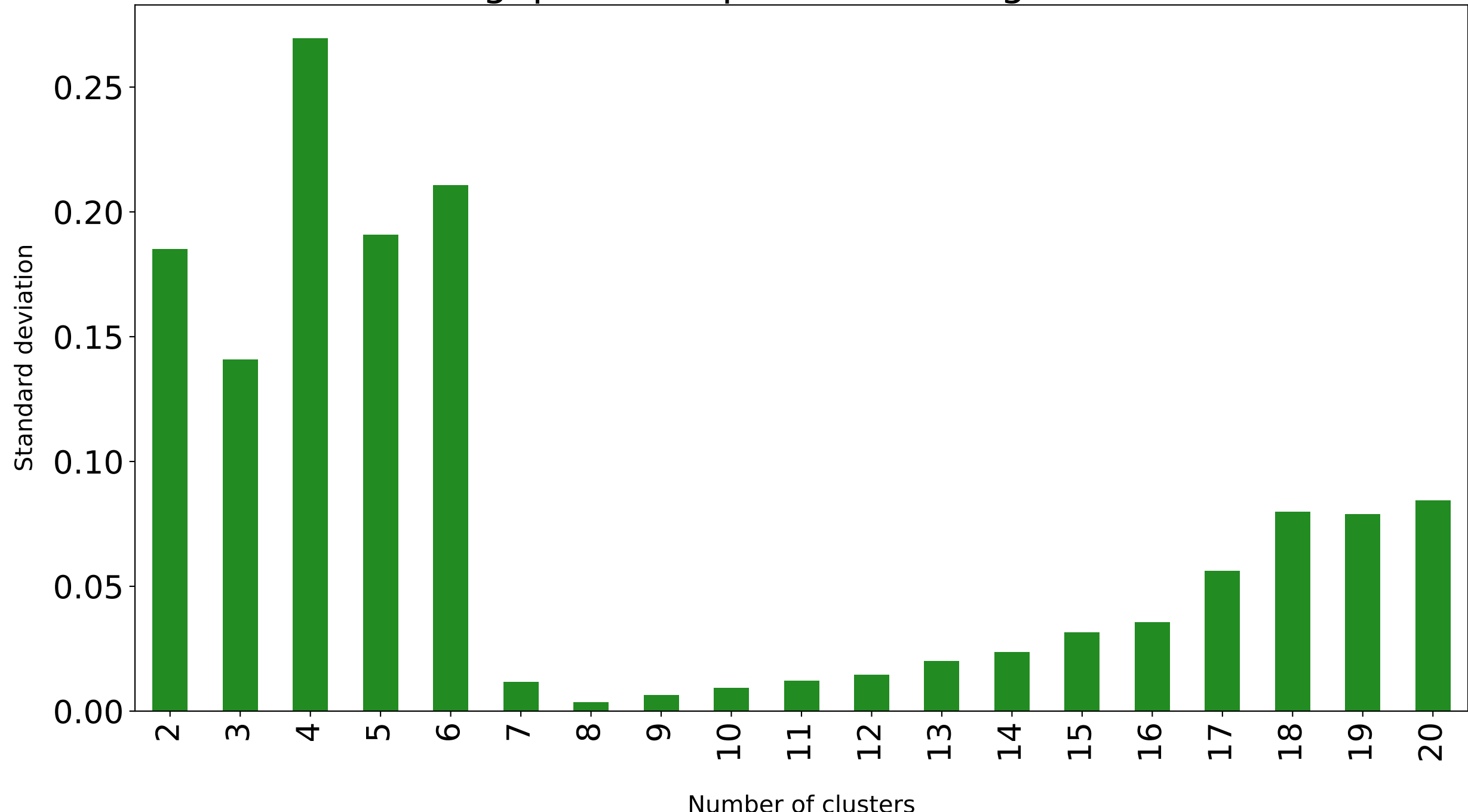


Cophenetic Correlation Coefficient: 0.8662562972887964

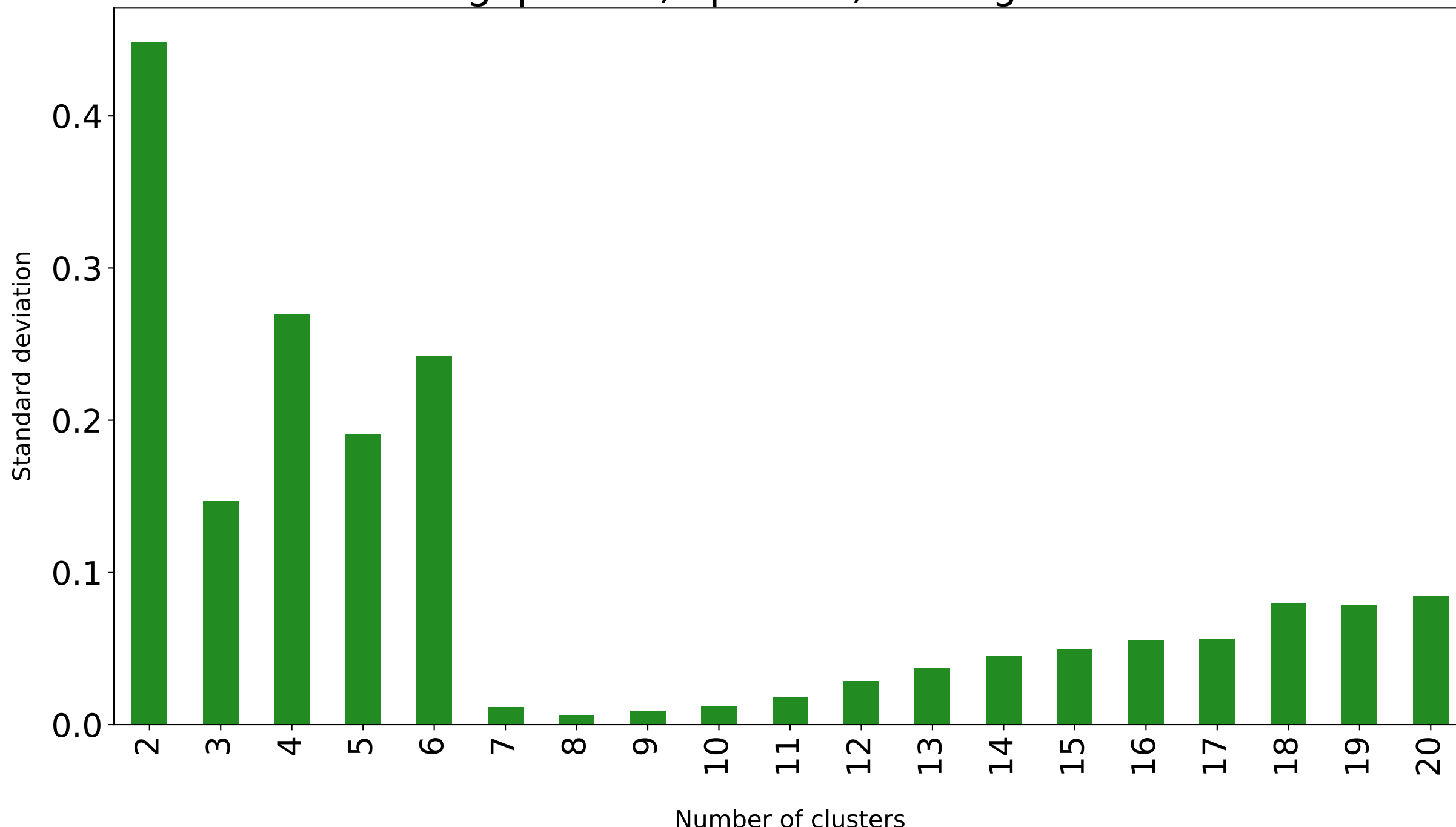
Average values of five clustering indices
gap: 0.20, Tp: 1.00, average link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0 | 1.0 | 0.91939 | 0.85596 | 0.62316 | 0.04853 | 0.62332 | 0.9151 | 0.27125 | 0.92374 | 0.00011 | 0.79273 | 0.77623 | 0.02472 | 0.13808 | 0.32204 |
| 3.0 | 1.0 | 0.94676 | 0.90273 | 0.87875 | 0.03649 | 0.86458 | 0.94505 | 0.21129 | 0.94849 | 0.00015 | 0.88286 | 0.83944 | 0.06742 | 0.19427 | 0.32204 |
| 4.0 | 1.00001 | 0.8951 | 0.8184 | 0.72354 | 0.07582 | 0.78528 | 0.88951 | 0.34876 | 0.90082 | 0.00013 | 0.80674 | 0.72809 | 0.0678 | 0.24114 | 0.32204 |
| 5.0 | 1.00042 | 0.81018 | 0.67572 | 0.49404 | 0.10659 | 0.65514 | 0.79401 | 0.46304 | 0.827 | 0.00011 | 0.67744 | 0.5409 | 0.22222 | 0.28064 | 0.32204 |
| 6.0 | 1.0 | 0.82142 | 0.71784 | 0.69357 | 0.0931 | 0.72937 | 0.81625 | 0.3629 | 0.82665 | 0.00013 | 0.79287 | 0.6098 | 0.22222 | 0.29746 | 0.30647 |
| 7.0 | 1.0 | 0.99746 | 0.99495 | 0.9977 | 0.00172 | 0.99668 | 0.99745 | 0.01588 | 0.99746 | 0.00022 | 0.99761 | 0.99005 | 0.22222 | 0.31766 | 0.36016 |
| 8.0 | 1.0 | 0.99658 | 0.99321 | 0.99414 | 0.00226 | 0.99555 | 0.99657 | 0.01927 | 0.99659 | 0.00022 | 0.99681 | 0.98667 | 2.0 | 0.39453 | 0.38455 |
| 9.0 | 1.0 | 0.99232 | 0.9848 | 0.98537 | 0.0053 | 0.99002 | 0.99229 | 0.04185 | 0.99235 | 0.00022 | 0.99292 | 0.97039 | 2.0 | 0.44357 | 0.38455 |
| 10.0 | 1.0 | 0.98938 | 0.97901 | 0.97628 | 0.00796 | 0.98625 | 0.98931 | 0.05887 | 0.98946 | 0.00022 | 0.99026 | 0.95948 | 2.0 | 0.4793 | 0.38455 |
| 11.0 | 1.0 | 0.98259 | 0.96579 | 0.96085 | 0.01208 | 0.97754 | 0.98239 | 0.08685 | 0.98279 | 0.00022 | 0.9842 | 0.93517 | 2.0 | 0.43354 | 0.38455 |
| 12.0 | 1.0 | 0.97259 | 0.9466 | 0.93588 | 0.01606 | 0.96492 | 0.97203 | 0.11246 | 0.97315 | 0.00022 | 0.97555 | 0.90156 | 2.0 | 0.40922 | 0.38455 |
| 13.0 | 1.0 | 0.96022 | 0.92303 | 0.90566 | 0.02216 | 0.94947 | 0.95907 | 0.145 | 0.96137 | 0.00022 | 0.96509 | 0.86163 | 2.0 | 0.44313 | 0.38455 |
| 14.0 | 1.0 | 0.94818 | 0.90129 | 0.88713 | 0.02868 | 0.93478 | 0.94671 | 0.17501 | 0.94966 | 0.00022 | 0.95634 | 0.82666 | 2.0 | 0.41685 | 0.38455 |
| 15.0 | 1.0 | 0.94628 | 0.89871 | 0.90115 | 0.03175 | 0.93329 | 0.94503 | 0.18269 | 0.94754 | 0.00023 | 0.9576 | 0.82362 | 2.0 | 0.39511 | 0.38455 |
| 16.0 | 1.0 | 0.93067 | 0.87088 | 0.87666 | 0.03775 | 0.91495 | 0.92892 | 0.21063 | 0.93243 | 0.00023 | 0.94805 | 0.78041 | 2.0 | 0.37079 | 0.38455 |
| 17.0 | 1.0 | 0.92034 | 0.85168 | 0.84251 | 0.0405 | 0.90302 | 0.91766 | 0.22339 | 0.92305 | 0.00023 | 0.94138 | 0.7511 | 2.0 | 0.35859 | 0.38455 |
| 18.0 | 1.0 | 0.89592 | 0.81137 | 0.93029 | 0.06133 | 0.87599 | 0.89386 | 0.29488 | 0.89799 | 0.00025 | 0.93294 | 0.68984 | 2.0 | 0.341 | 0.38027 |
| 19.0 | 1.0 | 0.89569 | 0.81269 | 0.90792 | 0.06804 | 0.8762 | 0.89434 | 0.31107 | 0.89704 | 0.00026 | 0.93511 | 0.6926 | 2.0 | 0.33553 | 0.38027 |
| 20.0 | 1.0 | 0.89039 | 0.80493 | 0.88857 | 0.07511 | 0.87071 | 0.88918 | 0.33036 | 0.8916 | 0.00026 | 0.93443 | 0.6825 | 2.0 | 0.32651 | 0.38027 |

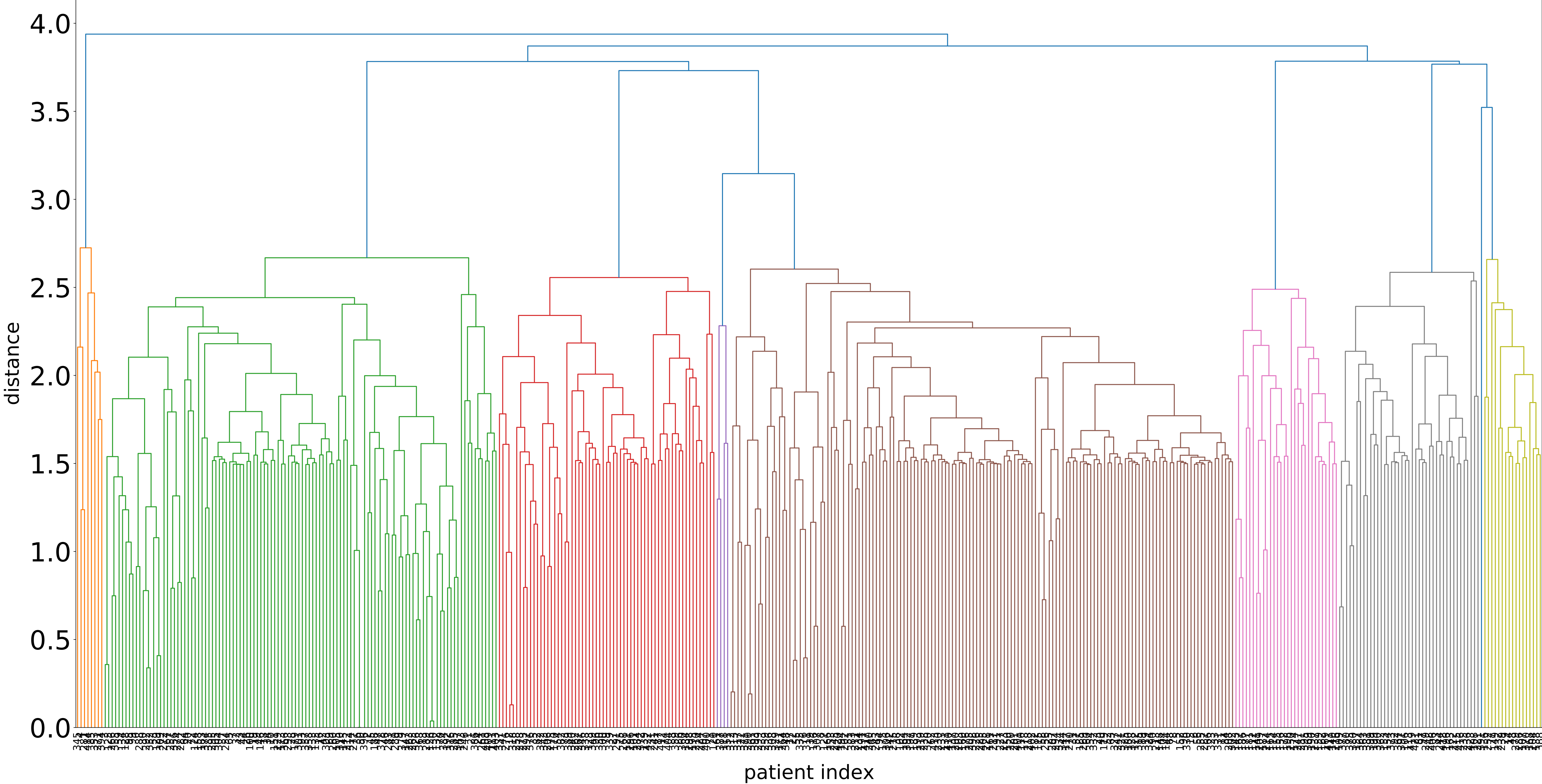
Standard deviation of Adjusted Rand versus number of clusters
gap: 0.20, Tp: 1.00, average link



Standard deviation of Huberts index versus number of clusters
gap: 0.20, Tp: 1.00, average link



Hierarchical Clustering Dendrogram - gap: 0.30, Tp: 1.00, average link

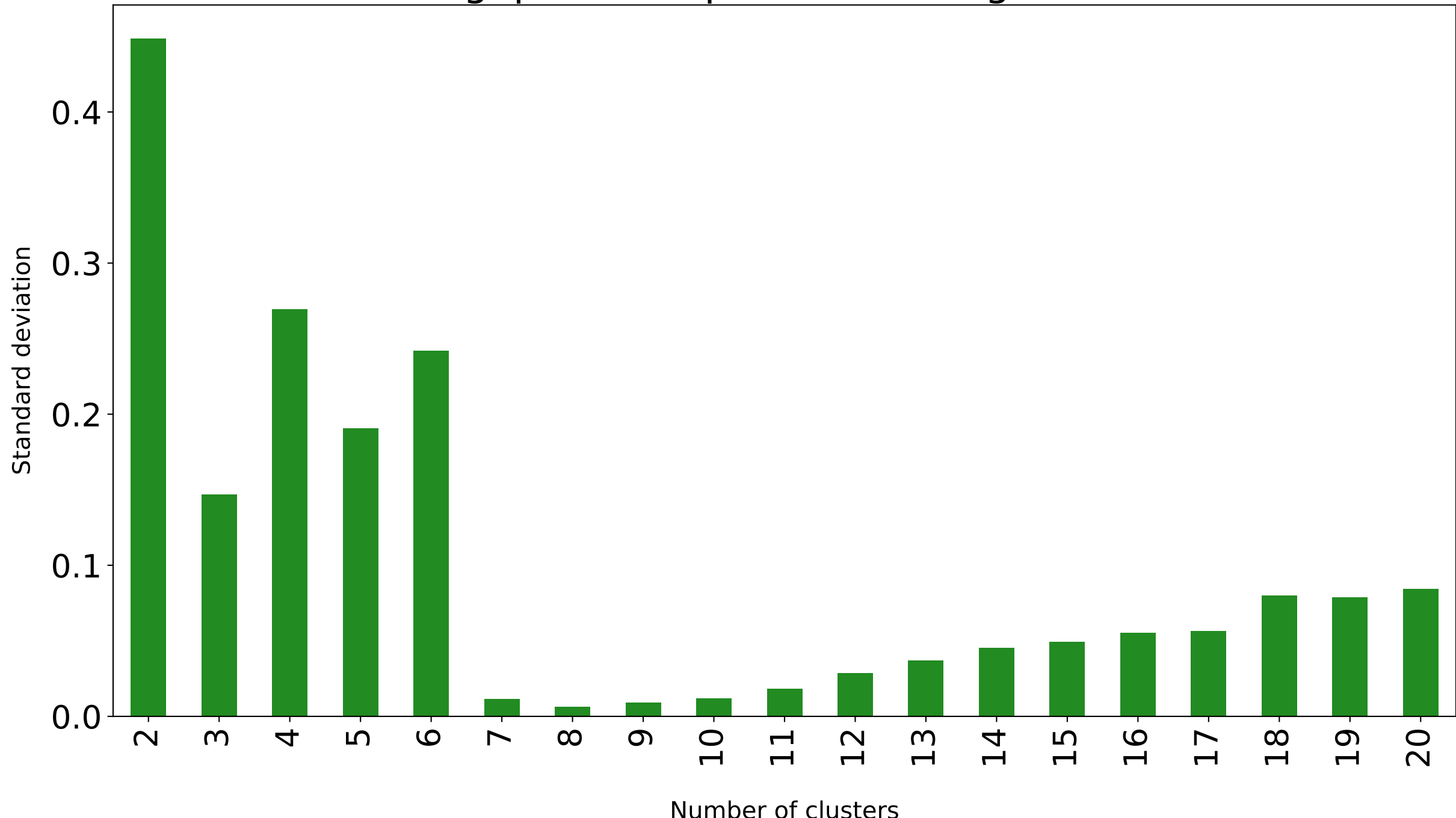


Cophenetic Correlation Coefficient: 0.8542263129033308

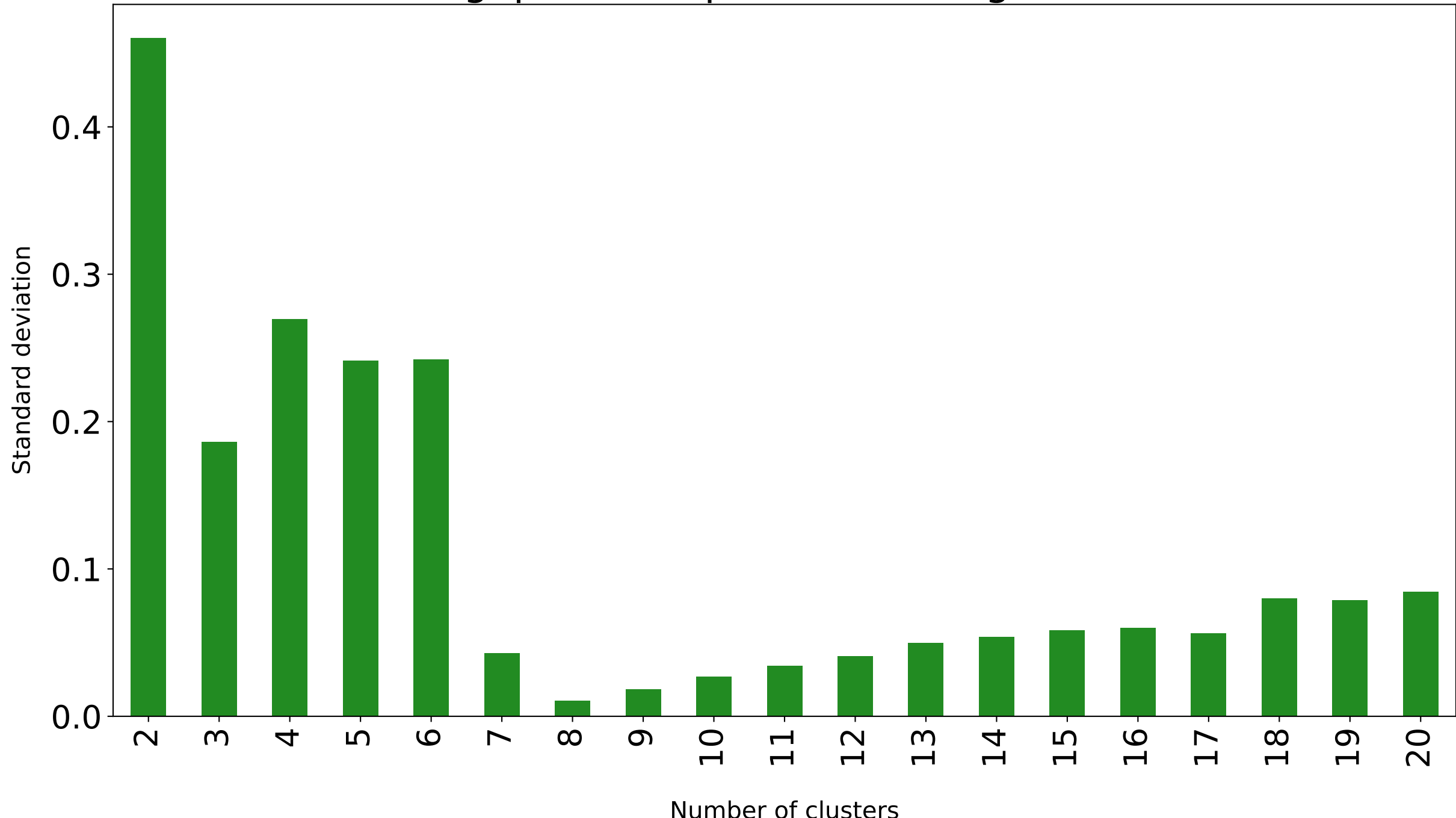
Average values of five clustering indices
gap: 0.30, Tp: 1.00, average link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0 | 1.0 | 0.95268 | 0.91607 | 0.72116 | 0.02635 | 0.71337 | 0.94983 | 0.14579 | 0.95556 | 0.0008 | 0.87391 | 0.87314 | 0.0 | 0.25192 | 0.26008 |
| 3.0 | 0.99999 | 0.95697 | 0.92331 | 0.90687 | 0.02714 | 0.88882 | 0.95494 | 0.14891 | 0.95904 | 0.00015 | 0.90807 | 0.87935 | 0.04494 | 0.22429 | 0.27511 |
| 4.0 | 0.99997 | 0.86188 | 0.76748 | 0.65435 | 0.10049 | 0.73613 | 0.8522 | 0.40128 | 0.87186 | 0.00012 | 0.76292 | 0.6701 | 0.0678 | 0.27787 | 0.27511 |
| 5.0 | 1.00001 | 0.89138 | 0.82691 | 0.87622 | 0.07833 | 0.82292 | 0.88753 | 0.30086 | 0.89536 | 0.00014 | 0.85469 | 0.75555 | 0.0678 | 0.30883 | 0.25305 |
| 6.0 | 1.0 | 0.89551 | 0.83284 | 0.81714 | 0.05599 | 0.84327 | 0.89226 | 0.22099 | 0.89879 | 0.00015 | 0.87949 | 0.76574 | 0.22222 | 0.34211 | 0.25305 |
| 7.0 | 1.0 | 0.99266 | 0.98651 | 0.99676 | 0.00389 | 0.99014 | 0.9923 | 0.02468 | 0.99304 | 0.00022 | 0.99227 | 0.97756 | 0.22222 | 0.3643 | 0.31315 |
| 8.0 | 1.0 | 0.99443 | 0.98897 | 0.98912 | 0.00328 | 0.99277 | 0.99439 | 0.02628 | 0.99447 | 0.00022 | 0.99485 | 0.97866 | 2.0 | 0.43536 | 0.31315 |
| 9.0 | 1.0 | 0.98366 | 0.96799 | 0.97761 | 0.00898 | 0.97897 | 0.98354 | 0.06516 | 0.98379 | 0.00022 | 0.98538 | 0.93926 | 2.0 | 0.41479 | 0.3432 |
| 10.0 | 1.0 | 0.97495 | 0.95127 | 0.9508 | 0.01487 | 0.96802 | 0.97457 | 0.09766 | 0.97533 | 0.00022 | 0.97805 | 0.90977 | 2.0 | 0.38939 | 0.3432 |
| 11.0 | 1.0 | 0.94824 | 0.90207 | 0.933 | 0.02789 | 0.93448 | 0.94781 | 0.1803 | 0.94867 | 0.00022 | 0.957 | 0.82512 | 2.0 | 0.35322 | 0.35199 |
| 12.0 | 1.0 | 0.94504 | 0.89638 | 0.91032 | 0.03025 | 0.9309 | 0.94431 | 0.19362 | 0.94578 | 0.00022 | 0.95518 | 0.81735 | 2.0 | 0.33582 | 0.35199 |
| 13.0 | 1.0 | 0.91532 | 0.84489 | 0.91899 | 0.04205 | 0.89516 | 0.91442 | 0.26095 | 0.91622 | 0.00023 | 0.93601 | 0.73774 | 2.0 | 0.30893 | 0.33058 |
| 14.0 | 1.0 | 0.91678 | 0.84793 | 0.90385 | 0.04365 | 0.89751 | 0.91594 | 0.26882 | 0.91761 | 0.00023 | 0.93861 | 0.74333 | 2.0 | 0.27919 | 0.33058 |
| 15.0 | 1.0 | 0.90593 | 0.8302 | 0.89259 | 0.05855 | 0.8855 | 0.90512 | 0.32016 | 0.90674 | 0.00024 | 0.93447 | 0.71759 | 2.0 | 0.25986 | 0.33058 |
| 16.0 | 1.0 | 0.90458 | 0.82807 | 0.87109 | 0.05999 | 0.88447 | 0.90366 | 0.32503 | 0.90551 | 0.00024 | 0.93505 | 0.71502 | 2.0 | 0.31072 | 0.33058 |
| 17.0 | 1.0 | 0.8983 | 0.81657 | 0.89 | 0.06953 | 0.87828 | 0.89747 | 0.36594 | 0.89913 | 0.00025 | 0.93452 | 0.69526 | 2.0 | 0.30212 | 0.31107 |
| 18.0 | 1.0 | 0.89081 | 0.80502 | 0.86756 | 0.07916 | 0.87018 | 0.88981 | 0.39324 | 0.89182 | 0.00025 | 0.93212 | 0.68061 | 2.0 | 0.2871 | 0.31107 |
| 19.0 | 1.0 | 0.88529 | 0.79608 | 0.84285 | 0.08226 | 0.86435 | 0.88388 | 0.40313 | 0.8867 | 0.00026 | 0.93041 | 0.66931 | 2.0 | 0.28127 | 0.31107 |
| 20.0 | 1.0 | 0.86957 | 0.77191 | 0.82334 | 0.08843 | 0.84678 | 0.86817 | 0.43559 | 0.87098 | 0.00026 | 0.92419 | 0.63749 | 2.0 | 0.27784 | 0.31107 |

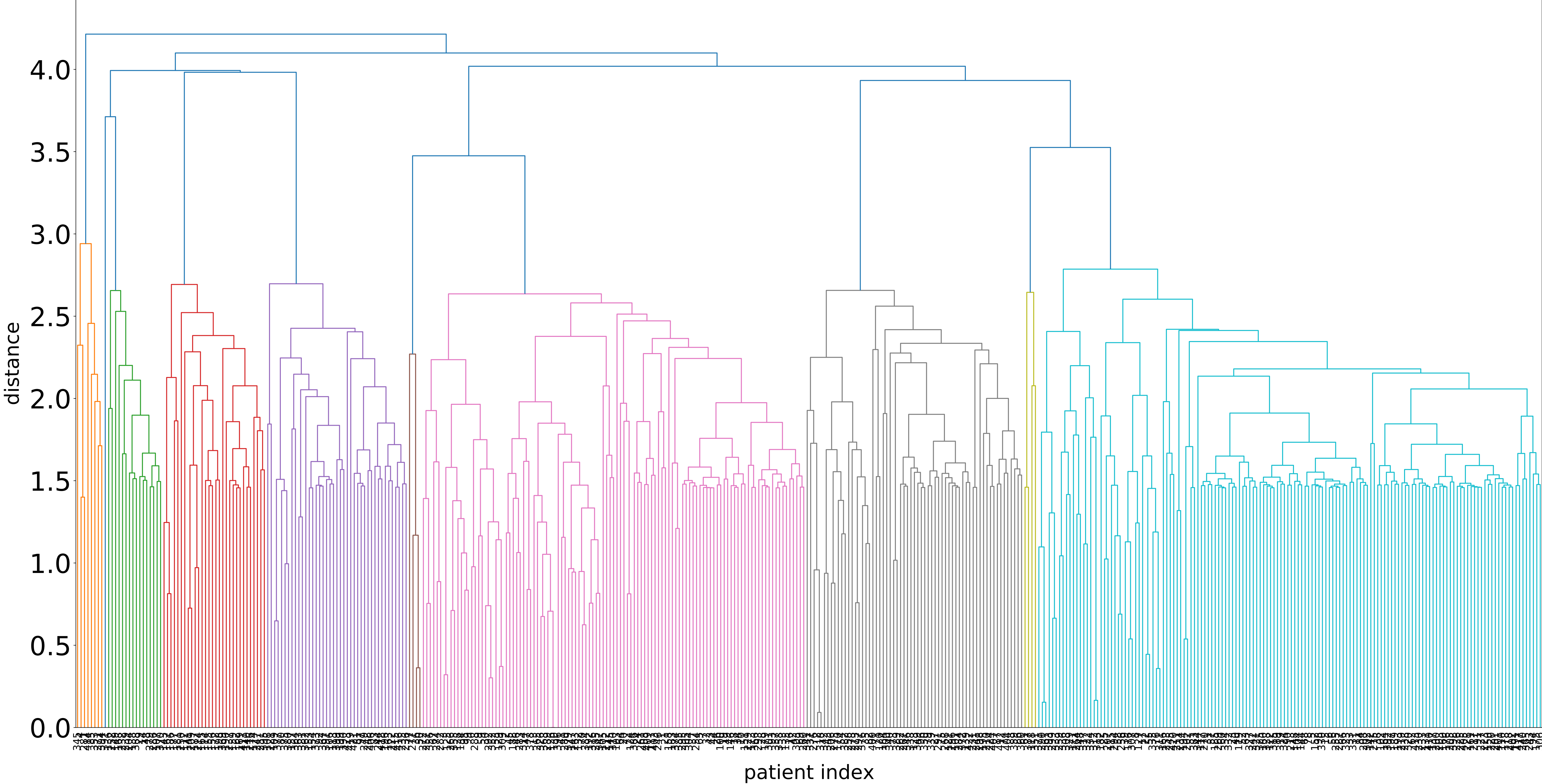
Standard deviation of Adjusted Rand versus number of clusters
gap: 0.30, Tp: 1.00, average link



Standard deviation of Huberts index versus number of clusters
gap: 0.30, Tp: 1.00, average link



Hierarchical Clustering Dendrogram - gap: 0.40, Tp: 1.00, average link

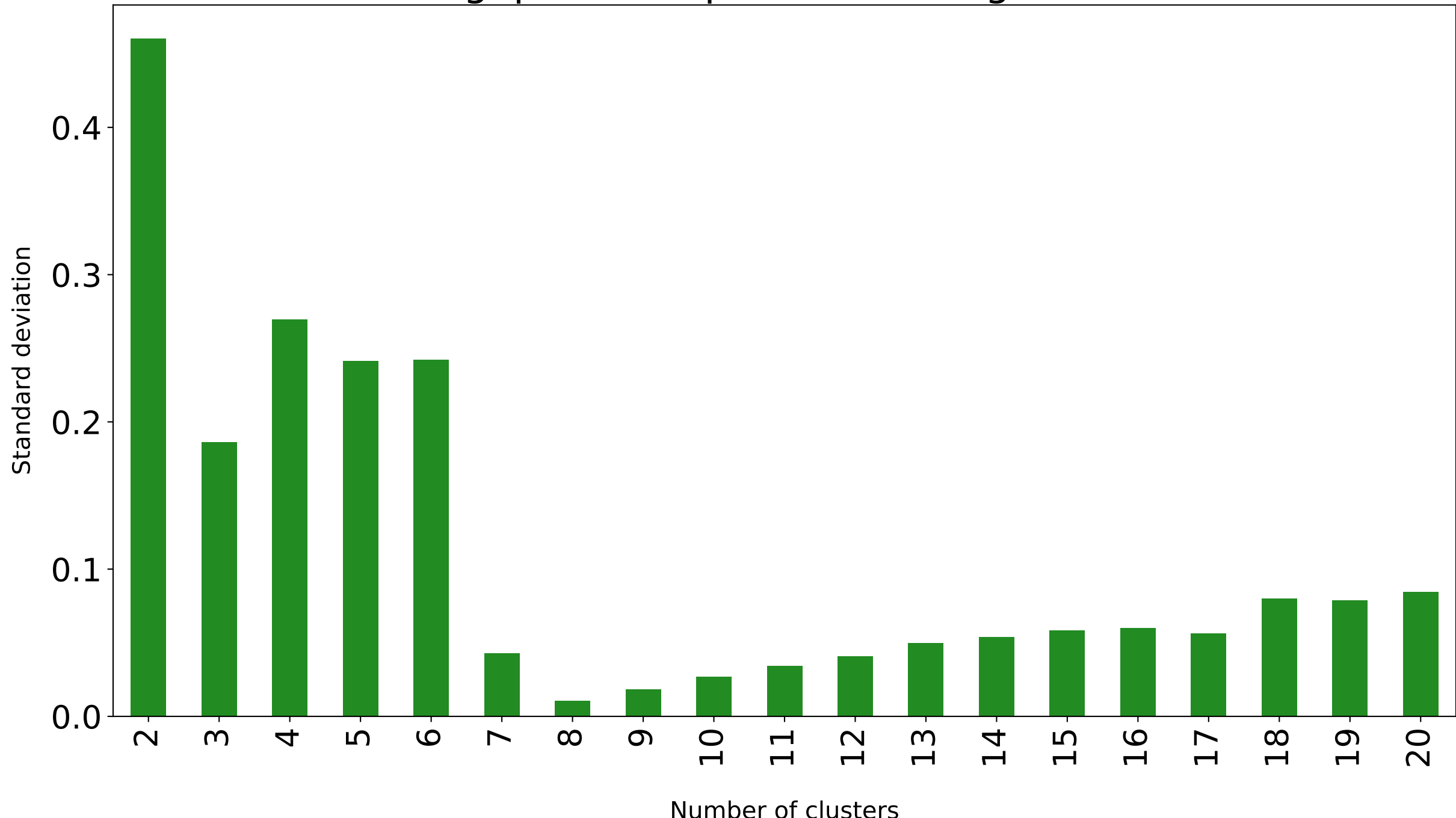


Cophenetic Correlation Coefficient: 0.8382065842508118

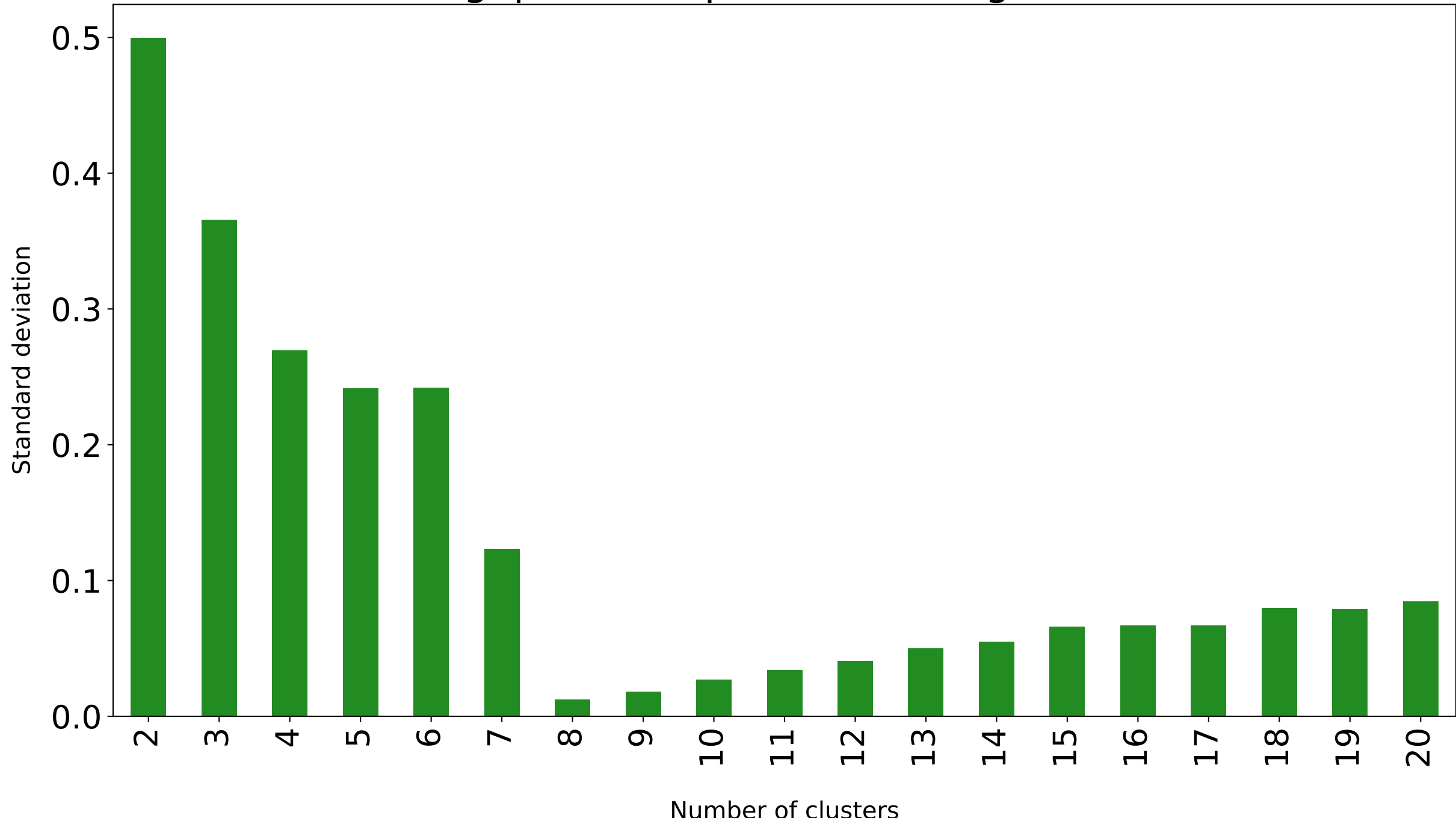
Average values of five clustering indices
gap: 0.40, Tp: 1.00, average link

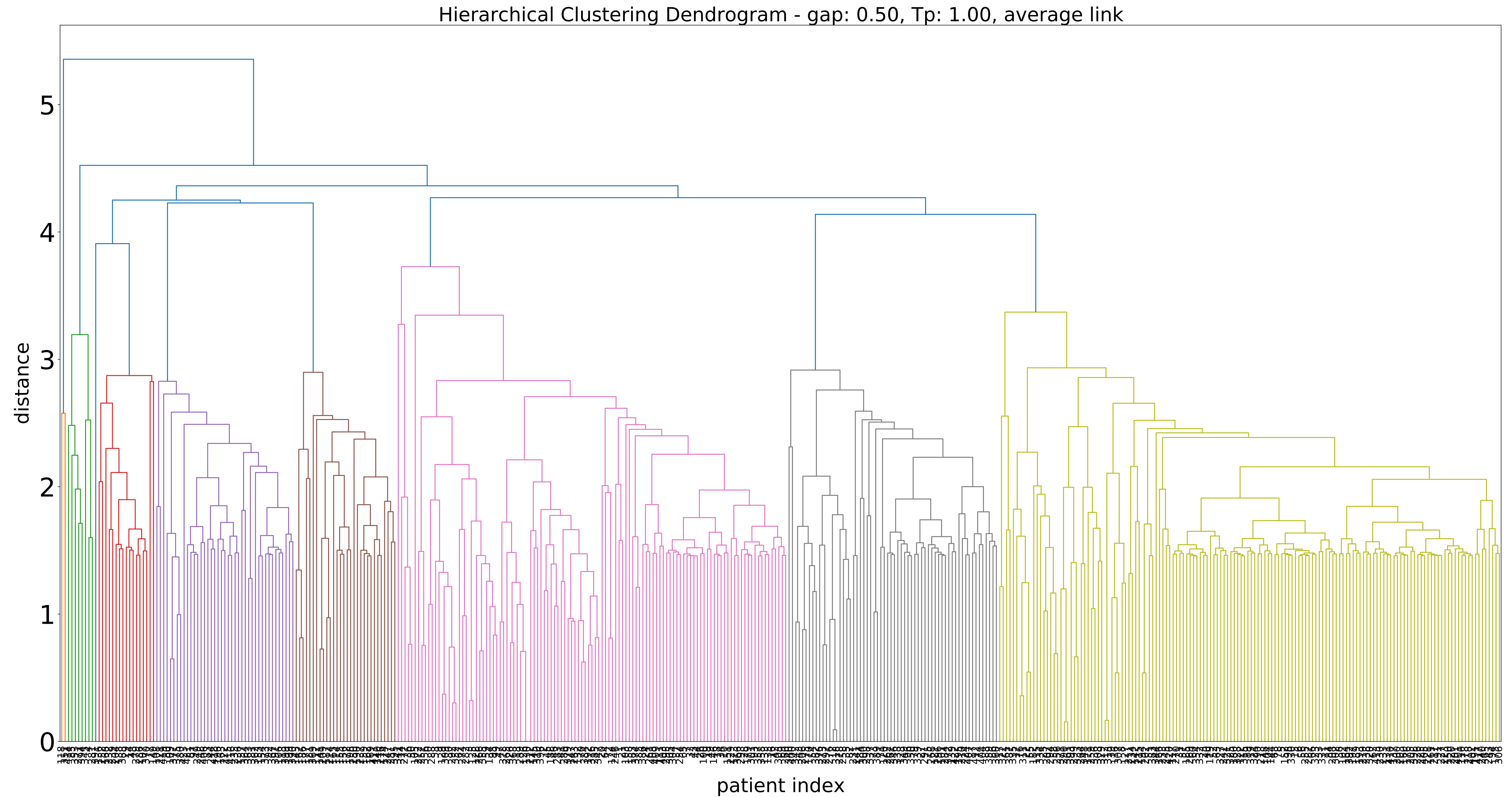
| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0 | 1.0 | 0.97639 | 0.95597 | 0.54466 | 0.01263 | 0.54171 | 0.97561 | 0.09638 | 0.97718 | 0.0006 | 0.92509 | 0.9248 | 0.0 | 0.26227 | 0.25475 |
| 3.0 | 1.0 | 0.90507 | 0.83328 | 0.81386 | 0.05659 | 0.65204 | 0.8996 | 0.29747 | 0.91064 | 0.00013 | 0.77045 | 0.74798 | 0.02273 | 0.23303 | 0.2579 |
| 4.0 | 0.99993 | 0.81837 | 0.69574 | 0.89414 | 0.10838 | 0.67555 | 0.80325 | 0.44988 | 0.83408 | 0.00011 | 0.70273 | 0.57819 | 0.02273 | 0.28153 | 0.25227 |
| 5.0 | 1.00002 | 0.88889 | 0.81546 | 0.88938 | 0.07885 | 0.81415 | 0.88295 | 0.3227 | 0.89503 | 0.00014 | 0.83853 | 0.73294 | 0.11765 | 0.30672 | 0.25227 |
| 6.0 | 1.0 | 0.91958 | 0.86695 | 0.8728 | 0.04899 | 0.87795 | 0.91667 | 0.20892 | 0.92255 | 0.00016 | 0.90181 | 0.80473 | 0.11765 | 0.3525 | 0.25227 |
| 7.0 | 1.0 | 0.93276 | 0.8803 | 0.97927 | 0.03201 | 0.90885 | 0.92821 | 0.1473 | 0.93741 | 0.00019 | 0.92655 | 0.81866 | 0.11765 | 0.3747 | 0.2826 |
| 8.0 | 1.0 | 0.98815 | 0.97659 | 0.97287 | 0.00668 | 0.98462 | 0.98807 | 0.05513 | 0.98823 | 0.00022 | 0.98906 | 0.95487 | 2.0 | 0.44509 | 0.2826 |
| 9.0 | 1.0 | 0.98745 | 0.97529 | 0.98049 | 0.00745 | 0.98377 | 0.98741 | 0.05749 | 0.9875 | 0.00022 | 0.98864 | 0.95238 | 2.0 | 0.42421 | 0.28177 |
| 10.0 | 1.0 | 0.98552 | 0.97161 | 0.98359 | 0.00982 | 0.98138 | 0.98544 | 0.06964 | 0.9856 | 0.00022 | 0.98715 | 0.94585 | 2.0 | 0.41946 | 0.21343 |
| 11.0 | 1.0 | 0.97804 | 0.95744 | 0.96242 | 0.01377 | 0.97197 | 0.9778 | 0.0933 | 0.97827 | 0.00022 | 0.98093 | 0.92112 | 2.0 | 0.40098 | 0.21343 |
| 12.0 | 1.0 | 0.9322 | 0.87301 | 0.95353 | 0.03275 | 0.91505 | 0.93124 | 0.20717 | 0.93315 | 0.00022 | 0.94547 | 0.77909 | 2.0 | 0.37032 | 0.22148 |
| 13.0 | 1.0 | 0.92869 | 0.86783 | 0.92594 | 0.03826 | 0.91123 | 0.92785 | 0.23806 | 0.92953 | 0.00023 | 0.94456 | 0.77267 | 2.0 | 0.34733 | 0.22148 |
| 14.0 | 1.0 | 0.92317 | 0.85873 | 0.89607 | 0.04682 | 0.90524 | 0.92207 | 0.27361 | 0.92428 | 0.00023 | 0.94245 | 0.76045 | 2.0 | 0.33427 | 0.22148 |
| 15.0 | 1.0 | 0.89603 | 0.81389 | 0.86118 | 0.06577 | 0.87341 | 0.89459 | 0.35075 | 0.89747 | 0.00023 | 0.92711 | 0.69612 | 2.0 | 0.31689 | 0.22148 |
| 16.0 | 1.0 | 0.88785 | 0.79938 | 0.8248 | 0.06872 | 0.86459 | 0.88554 | 0.3633 | 0.89018 | 0.00023 | 0.92344 | 0.67586 | 2.0 | 0.30257 | 0.22148 |
| 17.0 | 1.0 | 0.87448 | 0.77584 | 0.78304 | 0.07401 | 0.84968 | 0.87061 | 0.38637 | 0.8784 | 0.00023 | 0.91612 | 0.64366 | 2.0 | 0.3037 | 0.22148 |
| 18.0 | 1.0 | 0.84293 | 0.72864 | 0.78247 | 0.09235 | 0.81426 | 0.84072 | 0.47094 | 0.84516 | 0.00024 | 0.90538 | 0.57936 | 2.0 | 0.29101 | 0.22148 |
| 19.0 | 1.0 | 0.86335 | 0.76094 | 0.84512 | 0.08682 | 0.84103 | 0.86184 | 0.43164 | 0.86487 | 0.00027 | 0.92481 | 0.62137 | 2.0 | 0.28354 | 0.22148 |
| 20.0 | 1.0 | 0.89735 | 0.815 | 0.93486 | 0.07365 | 0.88237 | 0.89525 | 0.37739 | 0.89947 | 0.00031 | 0.94715 | 0.69738 | 2.0 | 0.27824 | 0.24866 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 0.40, Tp: 1.00, average link



Standard deviation of Huberts index versus number of clusters
gap: 0.40, Tp: 1.00, average link

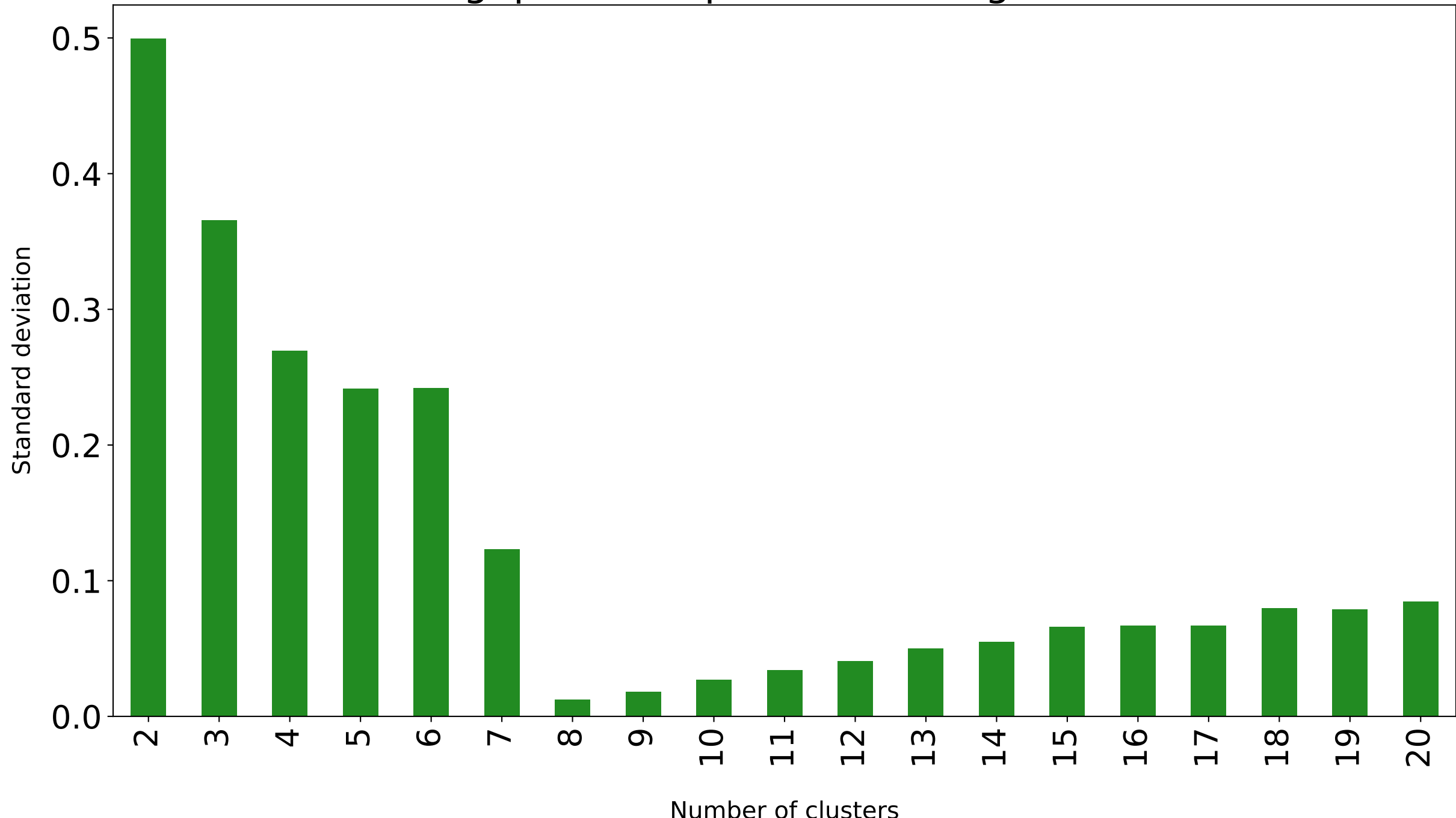




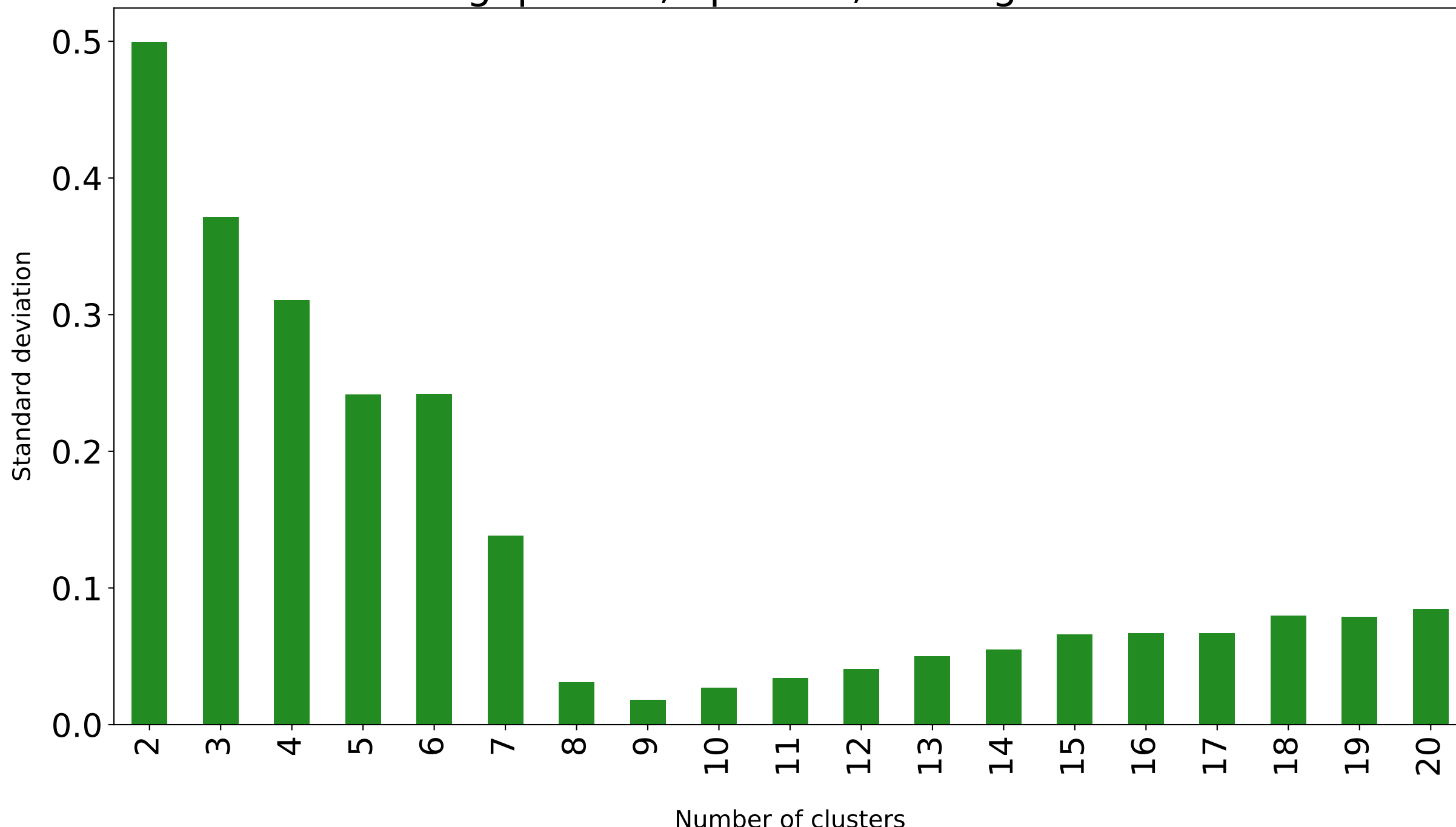
Average values of five clustering indices
gap: 0.50, Tp: 1.00, average link

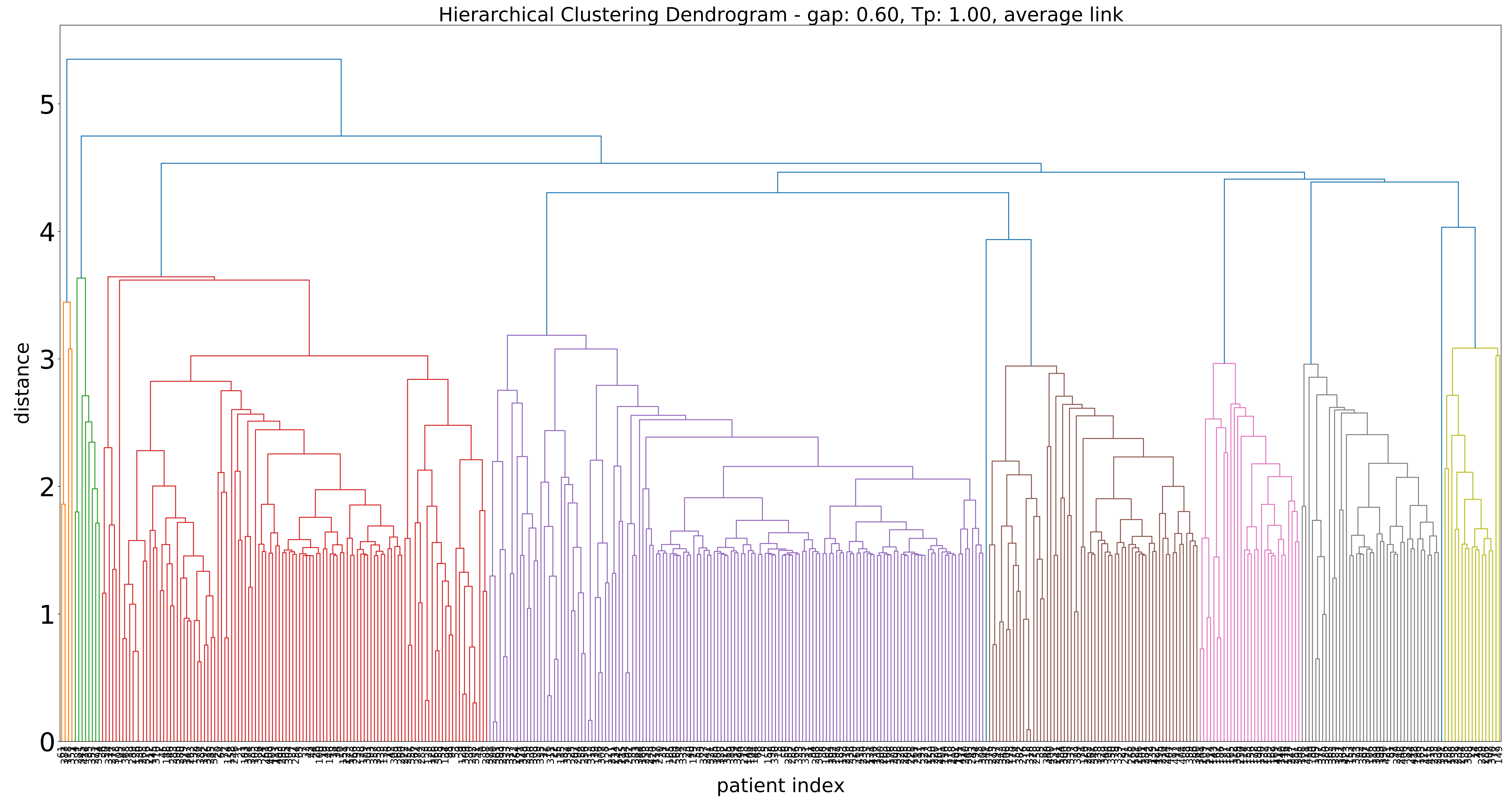
| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.97899 | 0.96053 | 0.45177 | 0.01197 | 0.5032 | 0.97801 | 0.08686 | 0.97999 | 0.00192 | 0.93272 | 0.93254 | 1.8 | 0.38854 | 0.30014 |
| 3.0 | 1.0 | 0.91633 | 0.852 | 0.53074 | 0.04825 | 0.61556 | 0.90905 | 0.25413 | 0.92391 | 0.00048 | 0.78659 | 0.78072 | 1.8 | 0.34113 | 0.27259 |
| 4.0 | 0.99999 | 0.87117 | 0.788 | 0.68289 | 0.08025 | 0.70966 | 0.86447 | 0.3609 | 0.8781 | 0.00012 | 0.7659 | 0.69821 | 1.8 | 0.29534 | 0.24628 |
| 5.0 | 1.00001 | 0.89141 | 0.81493 | 0.89387 | 0.07165 | 0.81609 | 0.88586 | 0.32953 | 0.89712 | 0.00014 | 0.83692 | 0.72402 | 1.8 | 0.3146 | 0.25091 |
| 6.0 | 1.0 | 0.92335 | 0.86743 | 0.87773 | 0.06185 | 0.88209 | 0.92087 | 0.26742 | 0.92588 | 0.00015 | 0.90131 | 0.79193 | 1.8 | 0.3323 | 0.25091 |
| 7.0 | 1.0 | 0.90245 | 0.82829 | 0.79393 | 0.04718 | 0.86458 | 0.89699 | 0.22906 | 0.908 | 0.00016 | 0.89119 | 0.7395 | 1.8 | 0.37005 | 0.25091 |
| 8.0 | 1.0 | 0.98426 | 0.96951 | 0.97716 | 0.00974 | 0.97947 | 0.98401 | 0.07363 | 0.98451 | 0.00022 | 0.9852 | 0.94334 | 1.8 | 0.38151 | 0.26455 |
| 9.0 | 1.0 | 0.98601 | 0.97238 | 0.97116 | 0.00918 | 0.98188 | 0.98595 | 0.07292 | 0.98607 | 0.00022 | 0.98726 | 0.94661 | 2.0 | 0.44187 | 0.26455 |
| 10.0 | 1.0 | 0.98368 | 0.96803 | 0.97788 | 0.01199 | 0.97898 | 0.98363 | 0.08458 | 0.98373 | 0.00022 | 0.98548 | 0.93884 | 2.0 | 0.42327 | 0.22767 |
| 11.0 | 1.0 | 0.97791 | 0.957 | 0.97926 | 0.01667 | 0.97181 | 0.97774 | 0.10974 | 0.97807 | 0.00022 | 0.98089 | 0.91923 | 2.0 | 0.38965 | 0.22767 |
| 12.0 | 1.0 | 0.97055 | 0.94333 | 0.9582 | 0.02077 | 0.96271 | 0.97023 | 0.13056 | 0.97088 | 0.00022 | 0.97521 | 0.8962 | 2.0 | 0.43263 | 0.22767 |
| 13.0 | 1.0 | 0.95735 | 0.91884 | 0.92217 | 0.02676 | 0.9465 | 0.95653 | 0.16321 | 0.95818 | 0.00022 | 0.96505 | 0.85592 | 2.0 | 0.47683 | 0.22767 |
| 14.0 | 1.0 | 0.93866 | 0.8842 | 0.87609 | 0.03457 | 0.92357 | 0.93703 | 0.20955 | 0.94031 | 0.00022 | 0.95058 | 0.79936 | 2.0 | 0.4621 | 0.22767 |
| 15.0 | 1.0 | 0.90308 | 0.82469 | 0.86088 | 0.05154 | 0.88062 | 0.90191 | 0.30195 | 0.90426 | 0.00022 | 0.92853 | 0.70907 | 2.0 | 0.44295 | 0.24602 |
| 16.0 | 1.0 | 0.8882 | 0.79964 | 0.821 | 0.06137 | 0.86353 | 0.88608 | 0.34898 | 0.89035 | 0.00022 | 0.92005 | 0.67472 | 2.0 | 0.41784 | 0.24602 |
| 17.0 | 1.0 | 0.87197 | 0.772 | 0.77918 | 0.07315 | 0.84508 | 0.86854 | 0.4008 | 0.87543 | 0.00023 | 0.91094 | 0.63714 | 2.0 | 0.40294 | 0.24602 |
| 18.0 | 1.0 | 0.85461 | 0.7417 | 0.73344 | 0.08344 | 0.82573 | 0.84888 | 0.43876 | 0.86041 | 0.00023 | 0.90111 | 0.59735 | 2.0 | 0.37313 | 0.24602 |
| 19.0 | 1.0 | 0.85608 | 0.74512 | 0.75433 | 0.08989 | 0.82937 | 0.85188 | 0.45544 | 0.86032 | 0.00024 | 0.90904 | 0.59966 | 2.0 | 0.35968 | 0.24602 |
| 20.0 | 1.0 | 0.8553 | 0.74757 | 0.7946 | 0.09945 | 0.83063 | 0.8534 | 0.49432 | 0.85721 | 0.00026 | 0.91738 | 0.60303 | 2.0 | 0.35054 | 0.26533 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 0.50, Tp: 1.00, average link



Standard deviation of Huberts index versus number of clusters
gap: 0.50, Tp: 1.00, average link

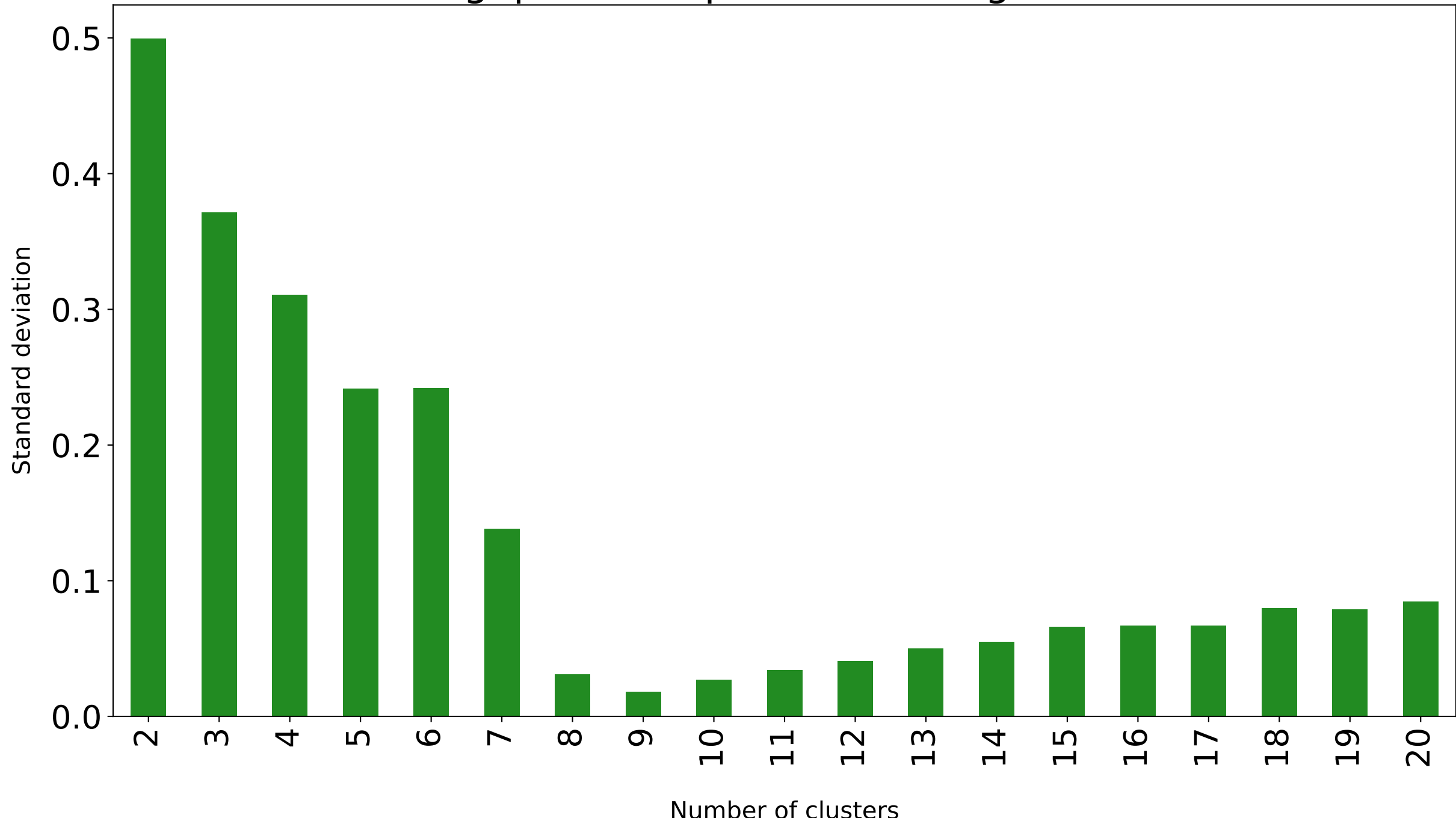




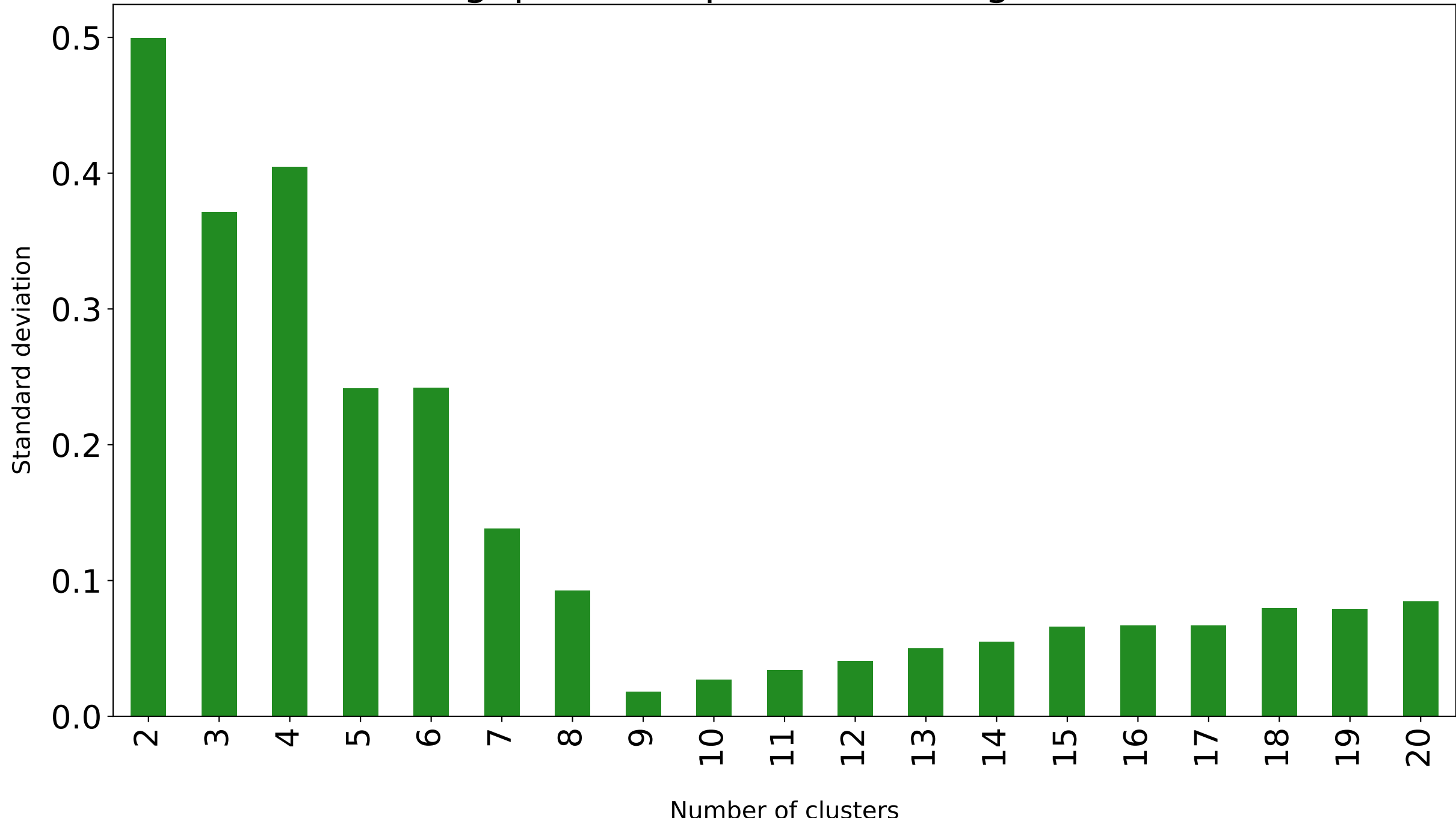
Average values of five clustering indices
gap: 0.60, Tp: 1.00, average link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.98794 | 0.97659 | 0.57344 | 0.0084 | 0.57452 | 0.98777 | 0.0693 | 0.98811 | 0.00131 | 0.95651 | 0.95616 | 1.0 | 0.31873 | 0.25206 |
| 3.0 | 1.0 | 0.94518 | 0.90249 | 0.62485 | 0.03323 | 0.64956 | 0.94103 | 0.18495 | 0.94947 | 0.00048 | 0.85534 | 0.85137 | 1.0 | 0.30445 | 0.25731 |
| 4.0 | 0.99999 | 0.75889 | 0.62877 | 0.42275 | 0.14241 | 0.37708 | 0.75151 | 0.61931 | 0.76646 | 7e-05 | 0.56919 | 0.50261 | 1.0 | 0.31964 | 0.26321 |
| 5.0 | 1.0 | 0.87022 | 0.77982 | 0.90309 | 0.08132 | 0.77239 | 0.86061 | 0.36869 | 0.88027 | 0.00013 | 0.79448 | 0.68266 | 1.0 | 0.28902 | 0.26094 |
| 6.0 | 1.0 | 0.92379 | 0.86605 | 0.92472 | 0.06216 | 0.88032 | 0.92093 | 0.27856 | 0.92675 | 0.00015 | 0.8961 | 0.78722 | 1.0 | 0.31853 | 0.26094 |
| 7.0 | 1.0 | 0.93352 | 0.88352 | 0.87941 | 0.0381 | 0.9058 | 0.93072 | 0.1797 | 0.93637 | 0.00016 | 0.92434 | 0.8196 | 1.0 | 0.35216 | 0.26094 |
| 8.0 | 1.0 | 0.95774 | 0.92274 | 0.98712 | 0.02255 | 0.94357 | 0.95512 | 0.11563 | 0.9604 | 0.00021 | 0.95542 | 0.87698 | 1.0 | 0.36126 | 0.30961 |
| 9.0 | 1.0 | 0.98955 | 0.97936 | 0.9835 | 0.00804 | 0.98649 | 0.98953 | 0.05953 | 0.98957 | 0.00022 | 0.99055 | 0.9599 | 2.0 | 0.42266 | 0.30961 |
| 10.0 | 1.0 | 0.98813 | 0.97657 | 0.97929 | 0.0087 | 0.98468 | 0.9881 | 0.0631 | 0.98817 | 0.00022 | 0.98932 | 0.95455 | 2.0 | 0.46643 | 0.30961 |
| 11.0 | 1.0 | 0.98295 | 0.96662 | 0.98165 | 0.01323 | 0.97815 | 0.98287 | 0.08757 | 0.98303 | 0.00022 | 0.98505 | 0.93637 | 2.0 | 0.45208 | 0.17813 |
| 12.0 | 1.0 | 0.97546 | 0.95242 | 0.96074 | 0.01516 | 0.96873 | 0.97524 | 0.10368 | 0.97568 | 0.00022 | 0.97888 | 0.91149 | 2.0 | 0.45519 | 0.17813 |
| 13.0 | 1.0 | 0.96078 | 0.92482 | 0.92422 | 0.02139 | 0.95045 | 0.96018 | 0.13778 | 0.96139 | 0.00022 | 0.96708 | 0.86444 | 2.0 | 0.49301 | 0.17813 |
| 14.0 | 1.0 | 0.94214 | 0.89005 | 0.87969 | 0.0286 | 0.92746 | 0.94075 | 0.1835 | 0.94353 | 0.00022 | 0.95237 | 0.8071 | 2.0 | 0.4754 | 0.17813 |
| 15.0 | 1.0 | 0.93035 | 0.87115 | 0.90131 | 0.04011 | 0.9138 | 0.92965 | 0.23775 | 0.93105 | 0.00023 | 0.94731 | 0.77827 | 2.0 | 0.45017 | 0.20082 |
| 16.0 | 1.0 | 0.91332 | 0.84157 | 0.85664 | 0.05018 | 0.89362 | 0.91187 | 0.28205 | 0.91477 | 0.00023 | 0.93629 | 0.73487 | 2.0 | 0.41628 | 0.20082 |
| 17.0 | 1.0 | 0.89338 | 0.80911 | 0.85681 | 0.06269 | 0.87111 | 0.89222 | 0.33479 | 0.89454 | 0.00024 | 0.92793 | 0.68737 | 2.0 | 0.40681 | 0.20082 |
| 18.0 | 1.0 | 0.87811 | 0.78327 | 0.81332 | 0.07187 | 0.85355 | 0.87622 | 0.37285 | 0.88002 | 0.00024 | 0.91949 | 0.65114 | 2.0 | 0.48474 | 0.20082 |
| 19.0 | 1.0 | 0.85921 | 0.75119 | 0.76467 | 0.0833 | 0.83204 | 0.85587 | 0.42211 | 0.86257 | 0.00024 | 0.90911 | 0.60749 | 2.0 | 0.55959 | 0.20082 |
| 20.0 | 1.0 | 0.85614 | 0.751 | 0.80273 | 0.09792 | 0.83083 | 0.85496 | 0.48315 | 0.85732 | 0.00026 | 0.91665 | 0.60943 | 2.0 | 0.53973 | 0.21828 |

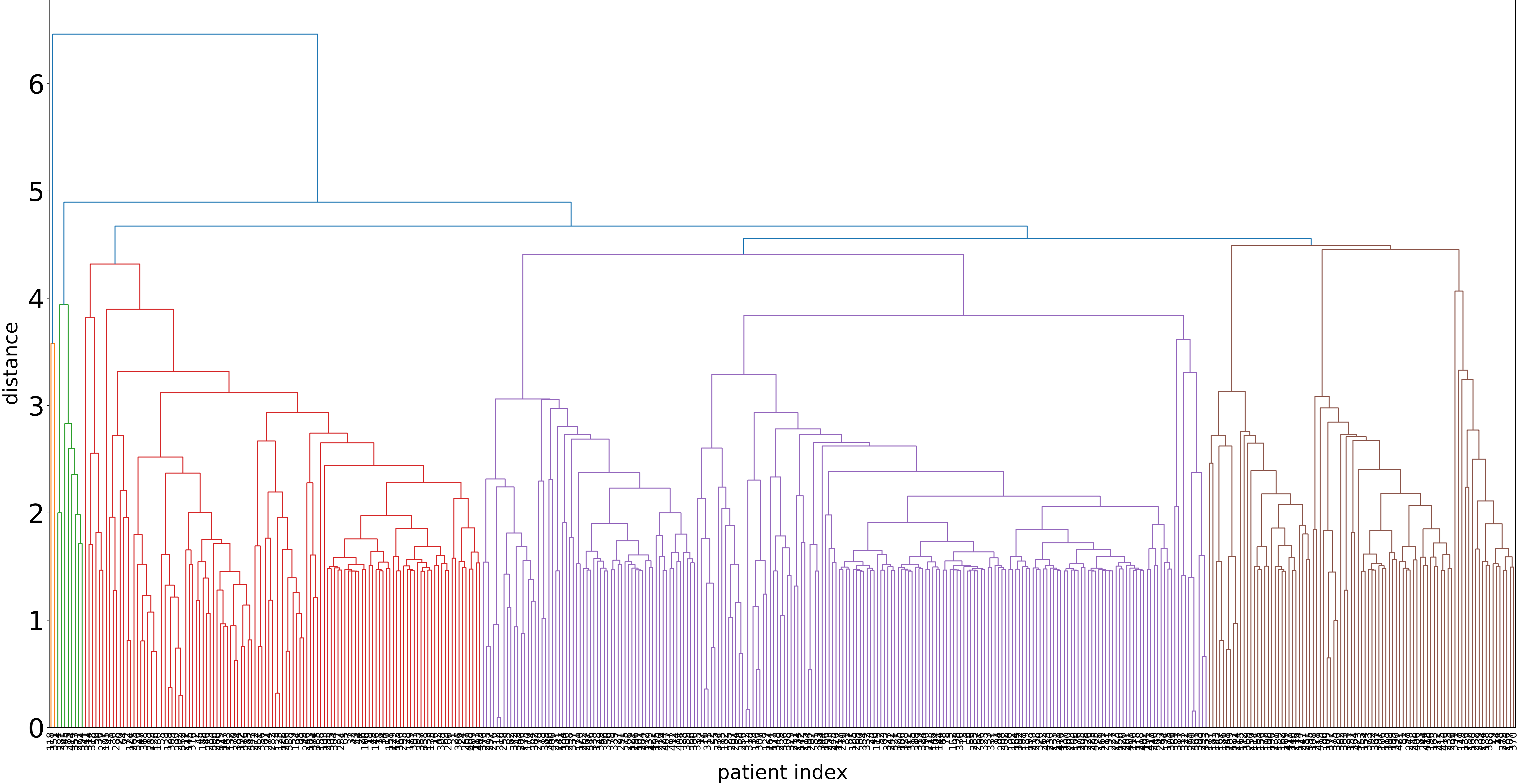
Standard deviation of Adjusted Rand versus number of clusters
gap: 0.60, Tp: 1.00, average link



Standard deviation of Huberts index versus number of clusters
gap: 0.60, Tp: 1.00, average link



Hierarchical Clustering Dendrogram - gap: 0.70, Tp: 1.00, average link

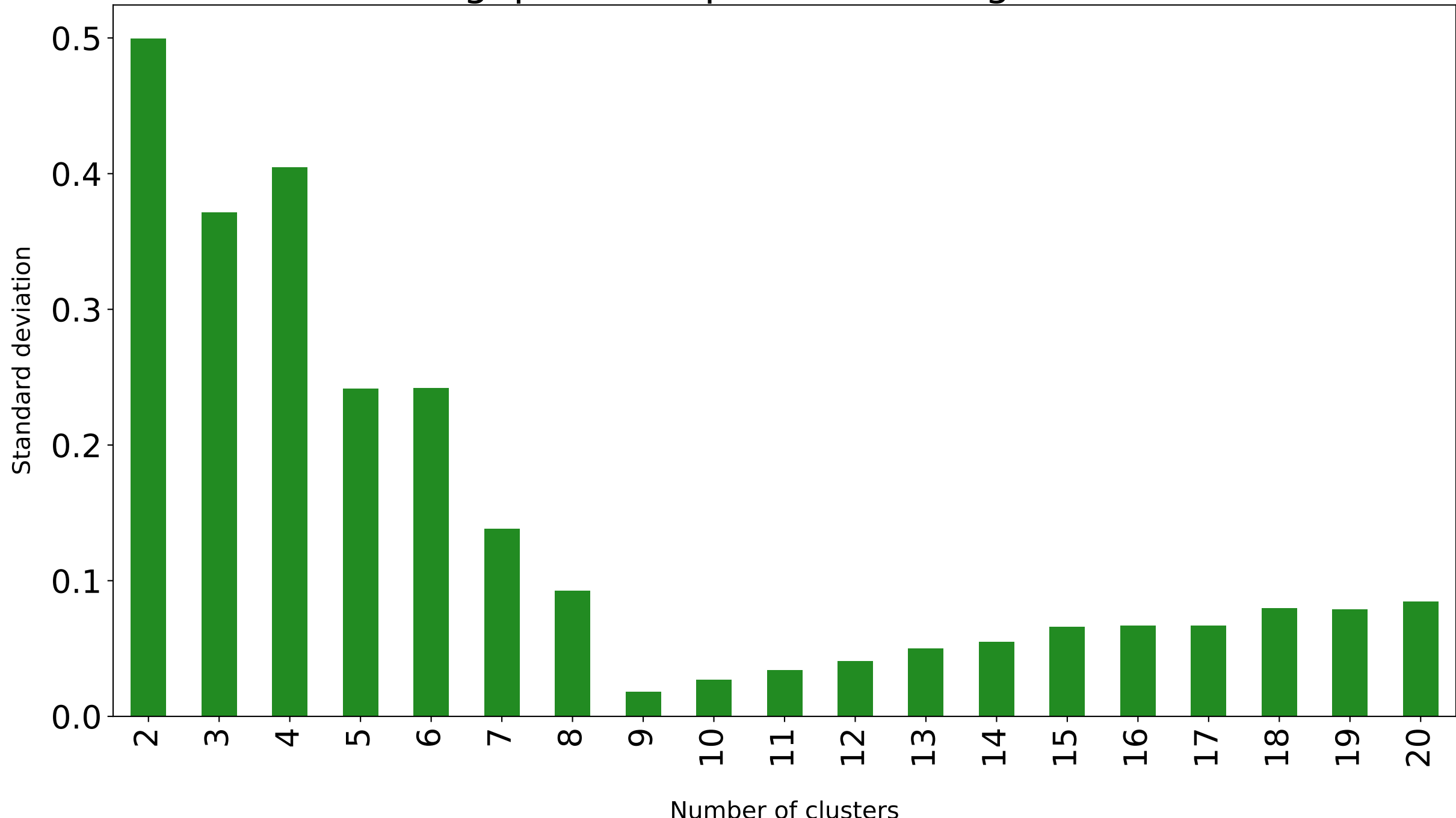


Cophenetic Correlation Coefficient: 0.7958302996377316

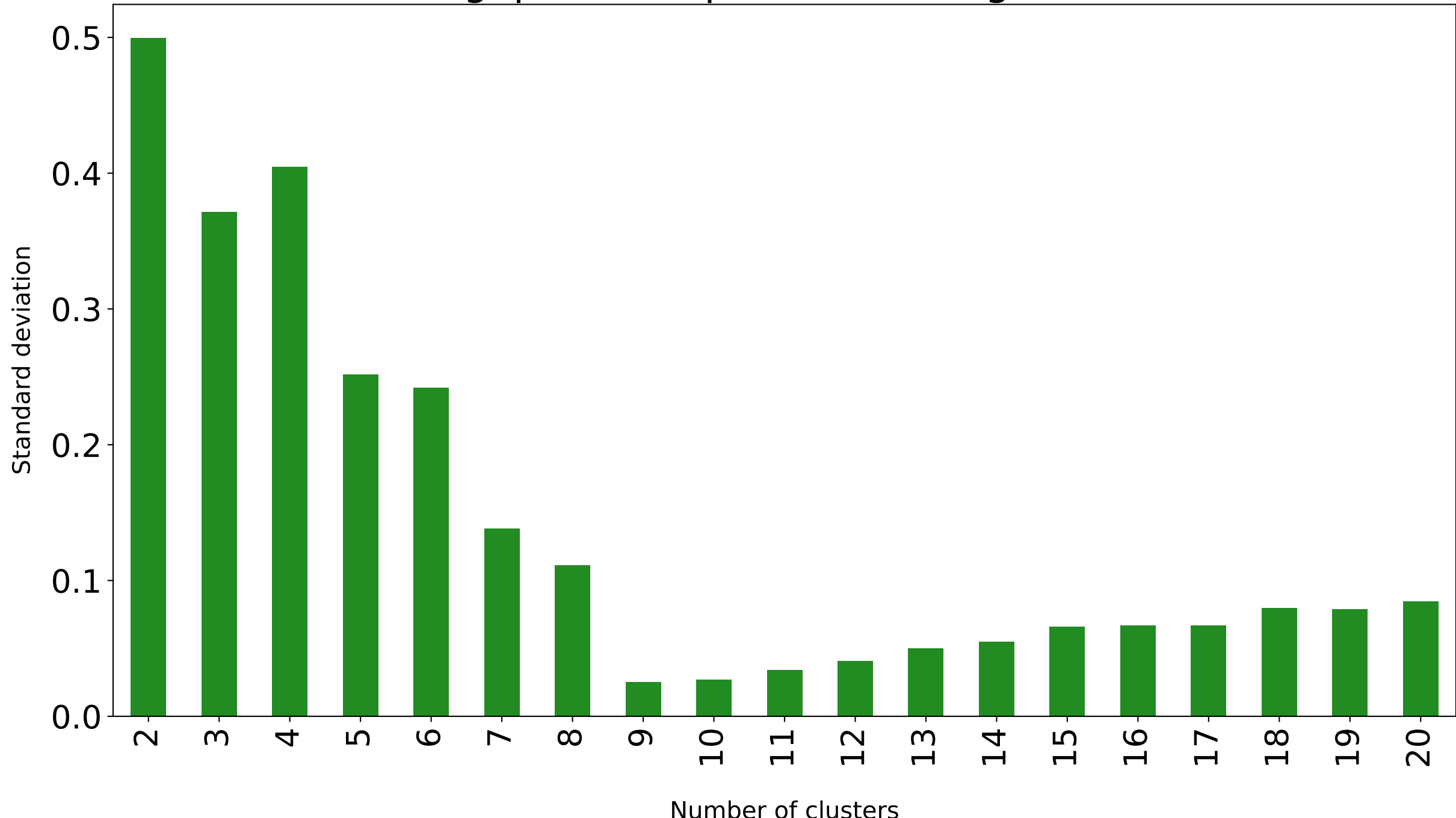
Average values of five clustering indices
gap: 0.70, Tp: 1.00, average link

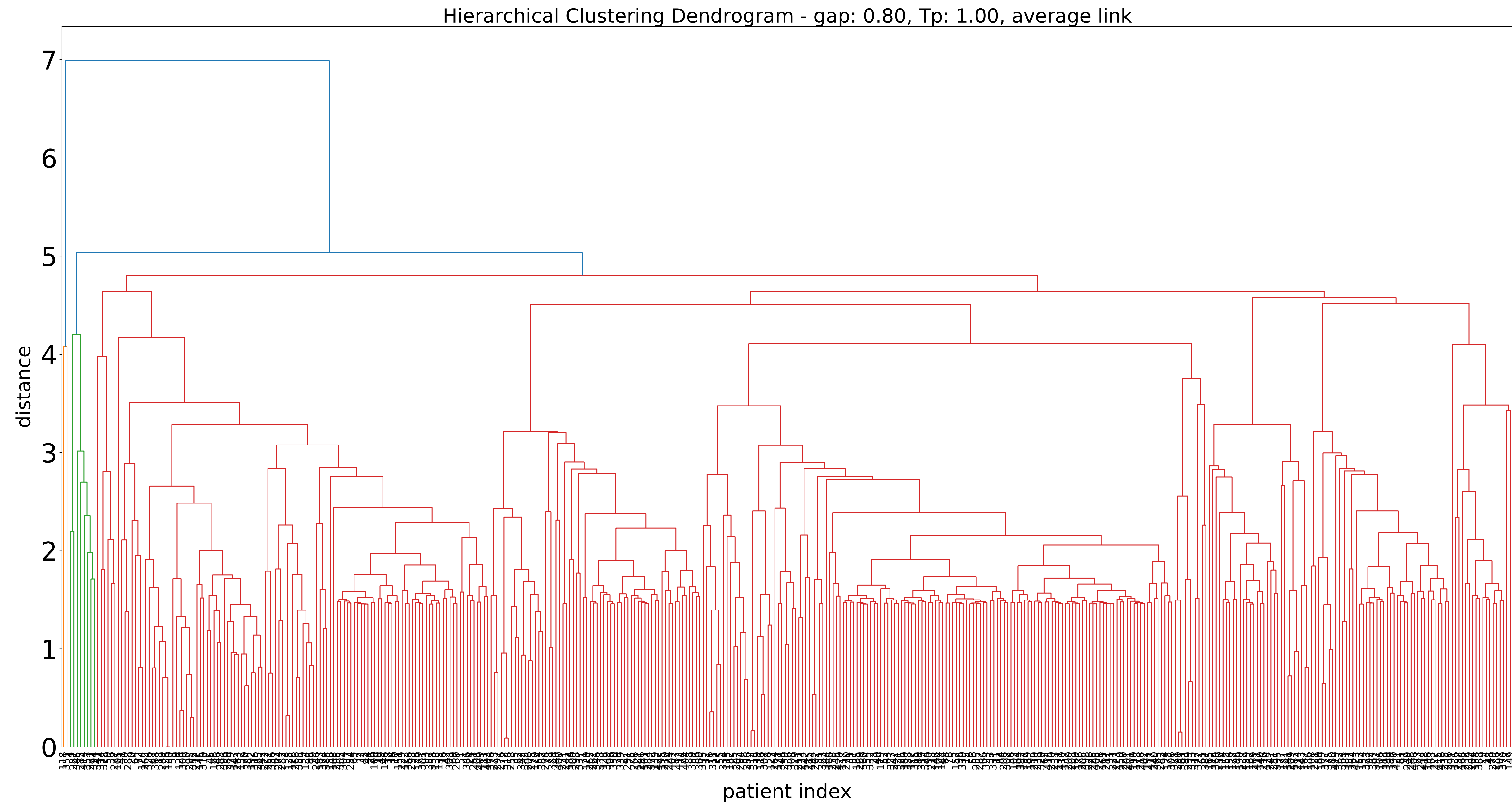
| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.98846 | 0.97745 | 0.44605 | 0.00774 | 0.60841 | 0.9882 | 0.06323 | 0.98872 | 0.00187 | 0.95812 | 0.95777 | 1.8 | 0.39306 | 0.32382 |
| 3.0 | 1.0 | 0.9561 | 0.9201 | 0.46542 | 0.02506 | 0.49321 | 0.95387 | 0.17043 | 0.95839 | 0.00042 | 0.87151 | 0.86947 | 1.8 | 0.31495 | 0.28504 |
| 4.0 | 0.99999 | 0.84013 | 0.73193 | 0.69502 | 0.09572 | 0.50884 | 0.82947 | 0.45248 | 0.85109 | 0.0001 | 0.65424 | 0.62094 | 1.8 | 0.32537 | 0.23375 |
| 5.0 | 1.00007 | 0.82037 | 0.69644 | 0.87904 | 0.10765 | 0.6736 | 0.80446 | 0.49076 | 0.8371 | 0.00011 | 0.70376 | 0.57369 | 1.8 | 0.29435 | 0.23375 |
| 6.0 | 1.0 | 0.92023 | 0.85495 | 0.93482 | 0.05727 | 0.87537 | 0.91705 | 0.28138 | 0.92346 | 0.00015 | 0.88795 | 0.7644 | 1.8 | 0.32136 | 0.23375 |
| 7.0 | 1.0 | 0.93077 | 0.87634 | 0.88144 | 0.04567 | 0.90067 | 0.92814 | 0.22472 | 0.93342 | 0.00016 | 0.91796 | 0.8027 | 1.8 | 0.35308 | 0.23375 |
| 8.0 | 1.0 | 0.91734 | 0.85091 | 0.96535 | 0.04187 | 0.88919 | 0.9126 | 0.20571 | 0.92217 | 0.00019 | 0.91311 | 0.76671 | 1.8 | 0.36614 | 0.24541 |
| 9.0 | 1.0 | 0.98318 | 0.9673 | 0.98367 | 0.01231 | 0.97824 | 0.98303 | 0.08339 | 0.98334 | 0.00022 | 0.98472 | 0.93847 | 1.8 | 0.35403 | 0.18385 |
| 10.0 | 1.0 | 0.9841 | 0.9688 | 0.97819 | 0.0124 | 0.97952 | 0.98406 | 0.0854 | 0.98414 | 0.00022 | 0.98586 | 0.94012 | 2.0 | 0.40855 | 0.18385 |
| 11.0 | 1.0 | 0.98178 | 0.96433 | 0.9702 | 0.01271 | 0.9766 | 0.9817 | 0.08948 | 0.98186 | 0.00022 | 0.98392 | 0.93205 | 2.0 | 0.4167 | 0.18385 |
| 12.0 | 1.0 | 0.97531 | 0.95203 | 0.95522 | 0.01453 | 0.96844 | 0.97512 | 0.10285 | 0.9755 | 0.00022 | 0.97852 | 0.91035 | 2.0 | 0.46015 | 0.18385 |
| 13.0 | 1.0 | 0.96543 | 0.93331 | 0.97189 | 0.02228 | 0.95638 | 0.96508 | 0.14192 | 0.96578 | 0.00023 | 0.97128 | 0.87732 | 2.0 | 0.43003 | 0.19464 |
| 14.0 | 1.0 | 0.95694 | 0.91818 | 0.9414 | 0.02749 | 0.94607 | 0.95638 | 0.16642 | 0.9575 | 0.00023 | 0.96531 | 0.85353 | 2.0 | 0.4678 | 0.19464 |
| 15.0 | 1.0 | 0.94496 | 0.89642 | 0.90663 | 0.03289 | 0.93164 | 0.94389 | 0.19613 | 0.94604 | 0.00023 | 0.95678 | 0.81915 | 2.0 | 0.45438 | 0.19464 |
| 16.0 | 1.0 | 0.92484 | 0.85989 | 0.85558 | 0.04334 | 0.90753 | 0.92256 | 0.24862 | 0.92714 | 0.00023 | 0.94242 | 0.76288 | 2.0 | 0.54229 | 0.19464 |
| 17.0 | 1.0 | 0.90197 | 0.81864 | 0.80168 | 0.05452 | 0.88039 | 0.89798 | 0.303 | 0.906 | 0.00022 | 0.92643 | 0.7012 | 2.0 | 0.56041 | 0.19464 |
| 18.0 | 1.0 | 0.87668 | 0.77663 | 0.76619 | 0.07022 | 0.85082 | 0.87204 | 0.38341 | 0.88136 | 0.00022 | 0.91208 | 0.64179 | 2.0 | 0.54101 | 0.19464 |
| 19.0 | 1.0 | 0.85756 | 0.74348 | 0.7226 | 0.08211 | 0.82897 | 0.85071 | 0.43811 | 0.86449 | 0.00022 | 0.90019 | 0.59776 | 2.0 | 0.53391 | 0.19464 |
| 20.0 | 1.0 | 0.8598 | 0.75112 | 0.75215 | 0.08792 | 0.83347 | 0.85544 | 0.44871 | 0.86421 | 0.00024 | 0.91003 | 0.60867 | 2.0 | 0.51844 | 0.19464 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 0.70, Tp: 1.00, average link



Standard deviation of Huberts index versus number of clusters
gap: 0.70, Tp: 1.00, average link

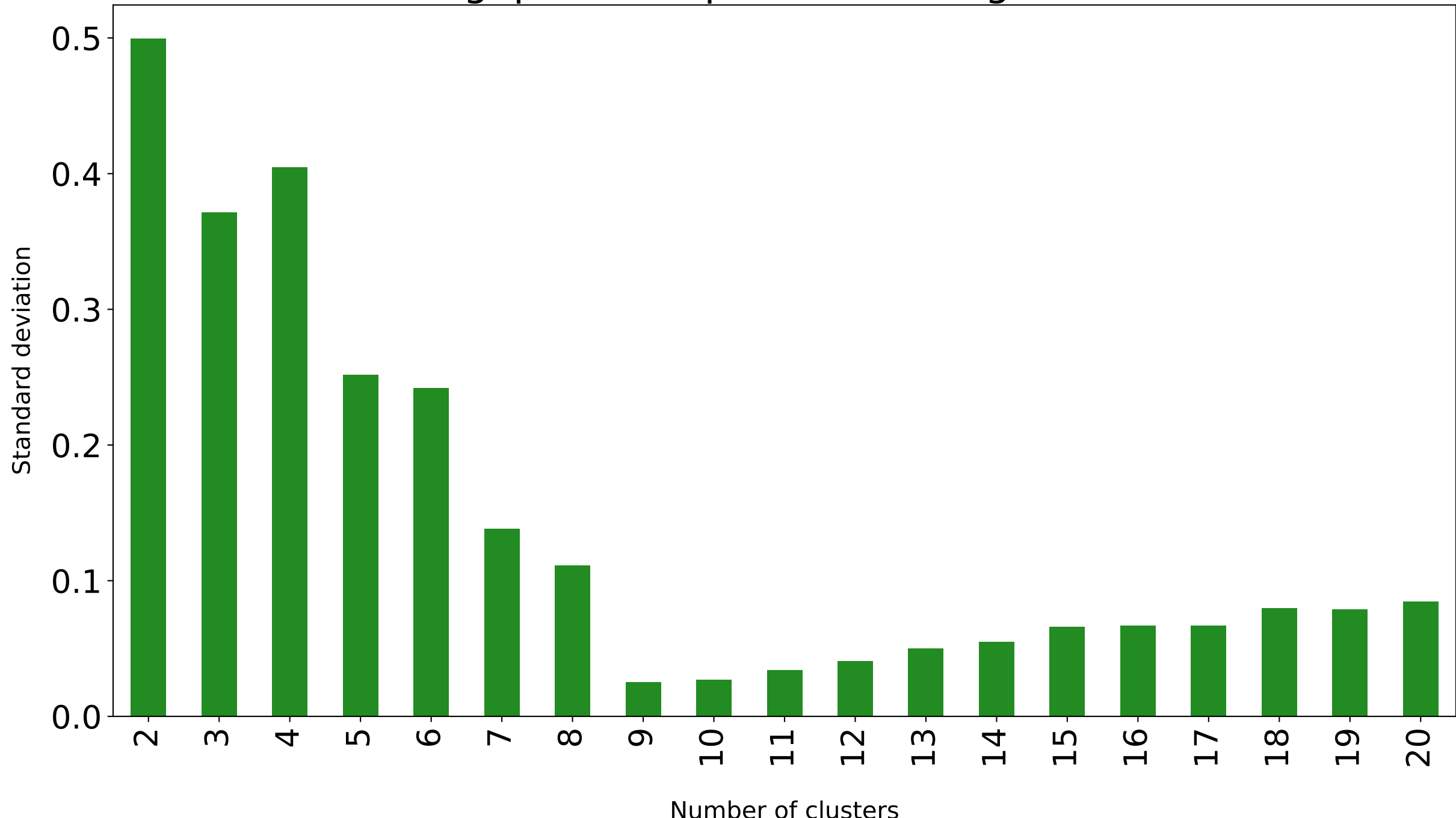




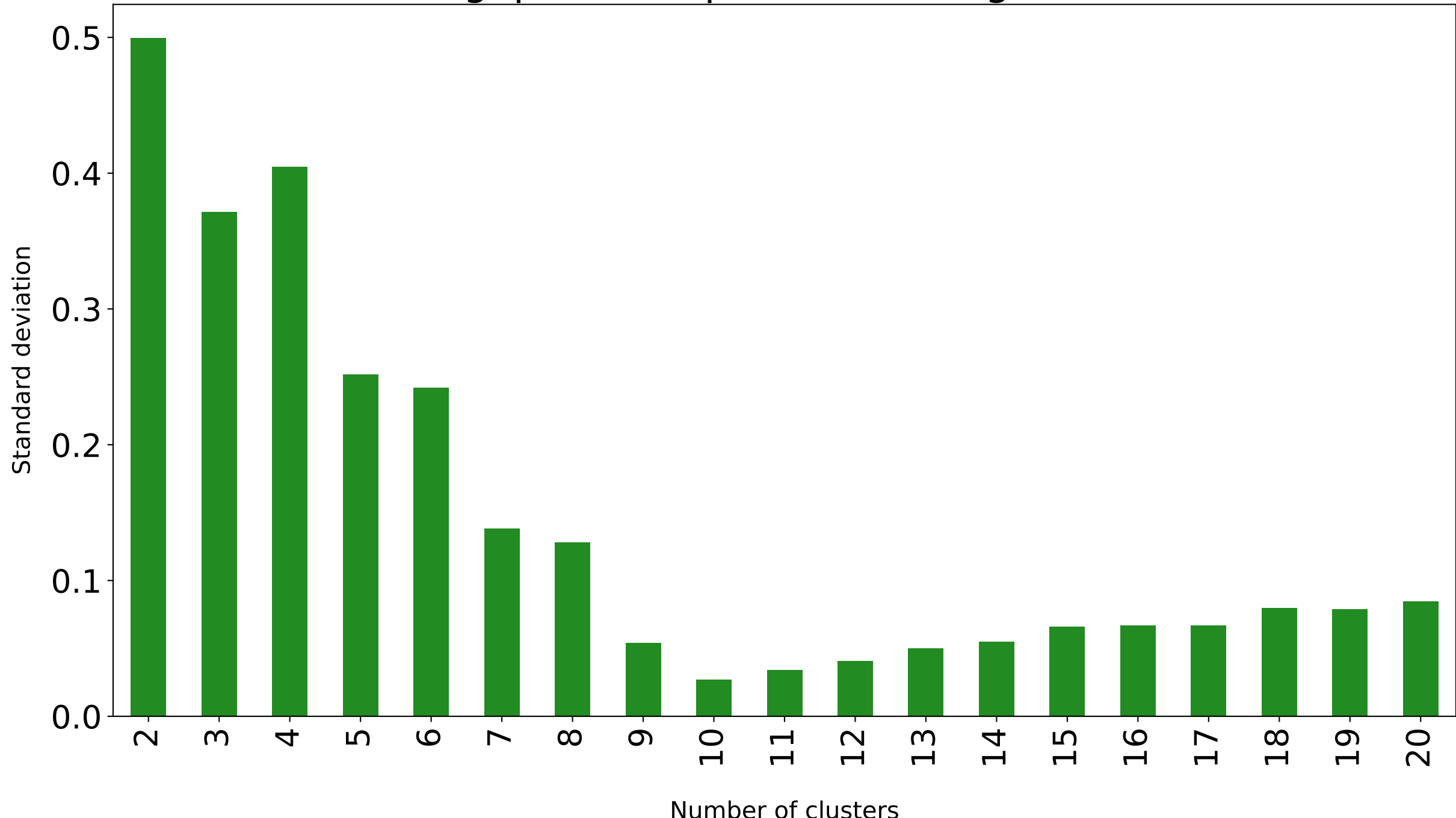
Average values of five clustering indices
gap: 0.80, Tp: 1.00, average link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.98938 | 0.97894 | 0.42298 | 0.00695 | 0.58663 | 0.9893 | 0.06209 | 0.98946 | 0.0019 | 0.95952 | 0.95918 | 1.8 | 0.39486 | 0.34331 |
| 3.0 | 1.0 | 0.96719 | 0.93752 | 0.39282 | 0.0181 | 0.3834 | 0.96653 | 0.15614 | 0.96786 | 0.00035 | 0.88905 | 0.88744 | 1.8 | 0.30126 | 0.29176 |
| 4.0 | 0.99999 | 0.81463 | 0.67934 | 0.70651 | 0.1121 | 0.39081 | 0.79826 | 0.52939 | 0.83151 | 9e-05 | 0.56981 | 0.54367 | 1.8 | 0.31238 | 0.21983 |
| 5.0 | 1.00002 | 0.78079 | 0.6261 | 0.88275 | 0.12474 | 0.60546 | 0.76078 | 0.56431 | 0.80175 | 0.0001 | 0.63656 | 0.4741 | 1.8 | 0.28307 | 0.21983 |
| 6.0 | 1.0 | 0.89904 | 0.82357 | 0.90998 | 0.06564 | 0.83426 | 0.89465 | 0.32208 | 0.90354 | 0.00014 | 0.85248 | 0.72943 | 1.8 | 0.2774 | 0.14752 |
| 7.0 | 1.0 | 0.9023 | 0.83056 | 0.85299 | 0.06487 | 0.85695 | 0.89956 | 0.30533 | 0.90507 | 0.00015 | 0.88335 | 0.73703 | 1.8 | 0.30177 | 0.14752 |
| 8.0 | 1.0 | 0.87914 | 0.78876 | 0.75441 | 0.06463 | 0.83437 | 0.87312 | 0.29916 | 0.88524 | 0.00016 | 0.86978 | 0.68144 | 1.8 | 0.33126 | 0.14752 |
| 9.0 | 1.0 | 0.97599 | 0.95474 | 0.98318 | 0.01645 | 0.96858 | 0.97528 | 0.09786 | 0.97672 | 0.00022 | 0.97698 | 0.92064 | 1.8 | 0.34573 | 0.19033 |
| 10.0 | 1.0 | 0.98339 | 0.96755 | 0.97556 | 0.01279 | 0.97862 | 0.9833 | 0.08634 | 0.98349 | 0.00022 | 0.9852 | 0.93827 | 1.8 | 0.35942 | 0.19033 |
| 11.0 | 1.0 | 0.9798 | 0.96061 | 0.96713 | 0.01369 | 0.97413 | 0.97971 | 0.09567 | 0.97989 | 0.00022 | 0.98237 | 0.92548 | 2.0 | 0.41246 | 0.19033 |
| 12.0 | 1.0 | 0.96841 | 0.93833 | 0.98964 | 0.02071 | 0.96003 | 0.96799 | 0.13542 | 0.96884 | 0.00023 | 0.97322 | 0.88498 | 2.0 | 0.38547 | 0.19689 |
| 13.0 | 1.0 | 0.96975 | 0.94114 | 0.9822 | 0.02084 | 0.96183 | 0.96938 | 0.13245 | 0.97012 | 0.00023 | 0.97471 | 0.89048 | 2.0 | 0.42567 | 0.19689 |
| 14.0 | 1.0 | 0.96527 | 0.93313 | 0.96328 | 0.02323 | 0.95636 | 0.96491 | 0.14721 | 0.96564 | 0.00023 | 0.97161 | 0.87734 | 2.0 | 0.52519 | 0.19689 |
| 15.0 | 1.0 | 0.95296 | 0.91063 | 0.92371 | 0.02962 | 0.94141 | 0.95224 | 0.18036 | 0.95369 | 0.00023 | 0.96275 | 0.84083 | 2.0 | 0.55243 | 0.19689 |
| 16.0 | 1.0 | 0.93521 | 0.87834 | 0.87774 | 0.03848 | 0.91998 | 0.93369 | 0.22709 | 0.93673 | 0.00023 | 0.95004 | 0.78992 | 2.0 | 0.54023 | 0.19689 |
| 17.0 | 1.0 | 0.9067 | 0.82892 | 0.83698 | 0.05387 | 0.88598 | 0.90461 | 0.31035 | 0.9088 | 0.00023 | 0.93192 | 0.7147 | 2.0 | 0.52165 | 0.19689 |
| 18.0 | 1.0 | 0.88662 | 0.79354 | 0.78713 | 0.06436 | 0.86263 | 0.88283 | 0.36013 | 0.89045 | 0.00023 | 0.91898 | 0.66461 | 2.0 | 0.51216 | 0.19689 |
| 19.0 | 1.0 | 0.86789 | 0.76076 | 0.74237 | 0.07511 | 0.84112 | 0.86214 | 0.40176 | 0.87371 | 0.00023 | 0.9073 | 0.61975 | 2.0 | 0.48466 | 0.19689 |
| 20.0 | 1.0 | 0.87106 | 0.76975 | 0.77267 | 0.08086 | 0.84669 | 0.86749 | 0.41024 | 0.87466 | 0.00024 | 0.9172 | 0.63314 | 2.0 | 0.47219 | 0.19689 |

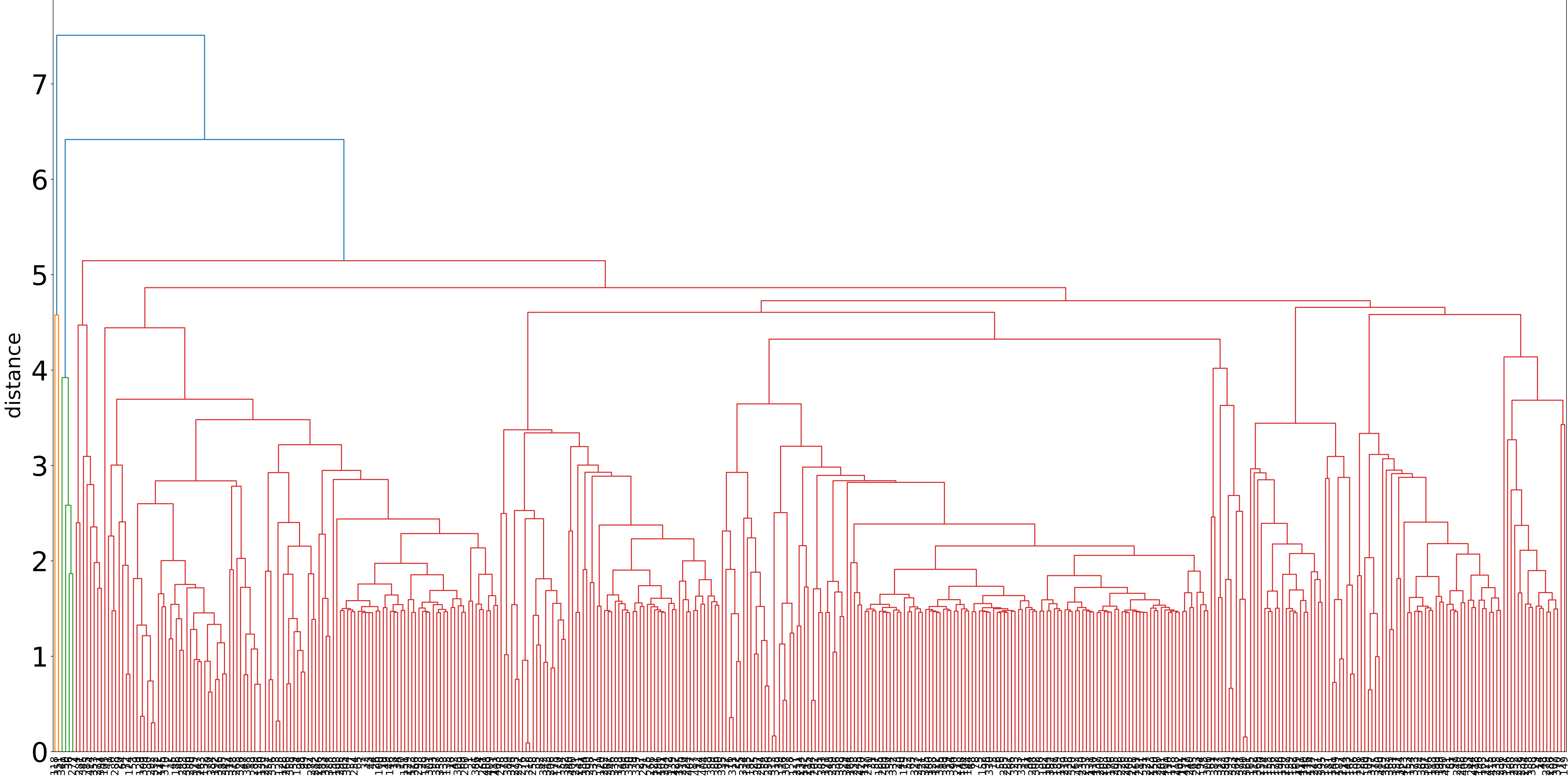
Standard deviation of Adjusted Rand versus number of clusters
gap: 0.80, Tp: 1.00, average link



Standard deviation of Huberts index versus number of clusters
gap: 0.80, Tp: 1.00, average link



Hierarchical Clustering Dendrogram - gap: 0.90, Tp: 1.00, average link



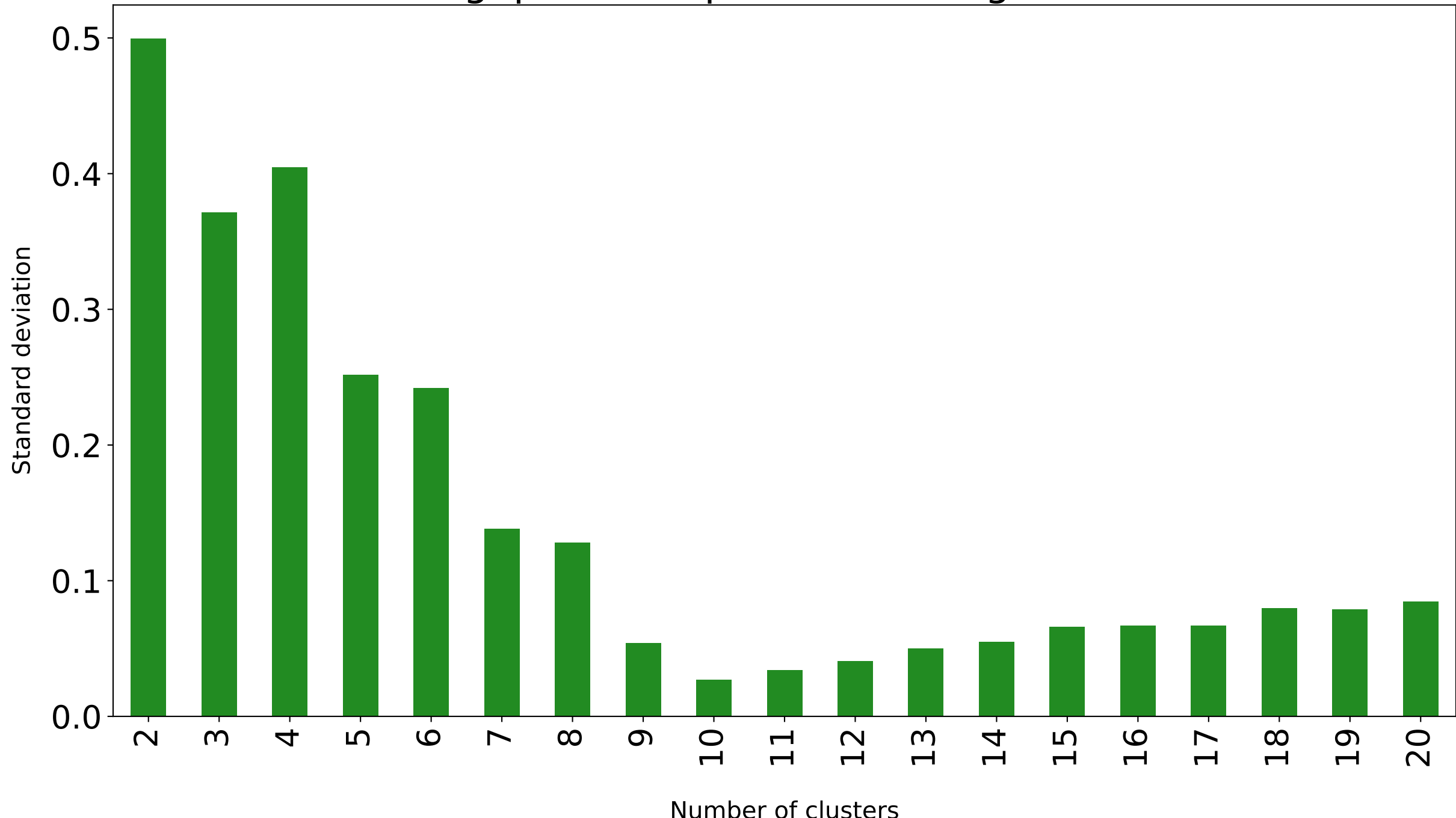
patient index

Cophenetic Correlation Coefficient: 0.7774028282491705

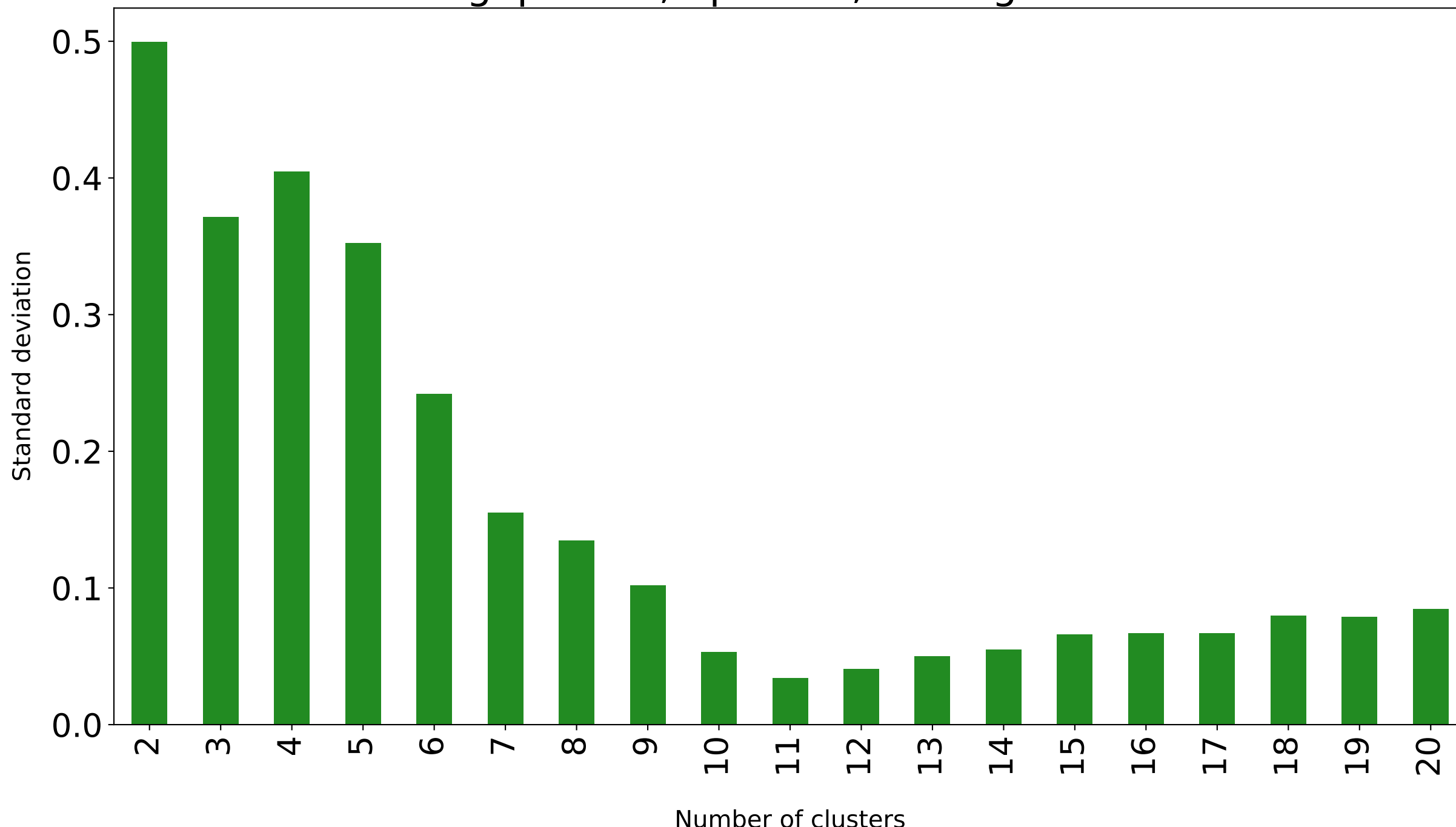
Average values of five clustering indices
gap: 0.90, Tp: 1.00, average link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.98808 | 0.9764 | 0.39483 | 0.00757 | 0.55579 | 0.98797 | 0.06752 | 0.98819 | 0.00176 | 0.95485 | 0.95448 | 1.8 | 0.39602 | 0.36111 |
| 3.0 | 1.0 | 0.98587 | 0.973 | 0.64445 | 0.01036 | 0.75049 | 0.98532 | 0.07658 | 0.98645 | 0.00095 | 0.95287 | 0.95187 | 1.8 | 0.35764 | 0.20153 |
| 4.0 | 1.0 | 0.95777 | 0.92407 | 0.69577 | 0.02692 | 0.70429 | 0.95471 | 0.16186 | 0.96095 | 0.00046 | 0.88522 | 0.88107 | 1.8 | 0.31123 | 0.20153 |
| 5.0 | 1.0 | 0.9062 | 0.84076 | 0.77951 | 0.05414 | 0.73948 | 0.90053 | 0.27699 | 0.91202 | 0.00012 | 0.8074 | 0.76784 | 1.8 | 0.29917 | 0.20153 |
| 6.0 | 1.00001 | 0.86413 | 0.76401 | 0.90619 | 0.07975 | 0.7724 | 0.85626 | 0.37414 | 0.87219 | 0.00013 | 0.79314 | 0.64966 | 1.8 | 0.27978 | 0.20153 |
| 7.0 | 1.0 | 0.8917 | 0.81406 | 0.86913 | 0.06555 | 0.83628 | 0.88806 | 0.30852 | 0.8954 | 0.00015 | 0.86306 | 0.71742 | 1.8 | 0.30213 | 0.20153 |
| 8.0 | 1.0 | 0.86863 | 0.76977 | 0.94997 | 0.07369 | 0.82127 | 0.86013 | 0.33093 | 0.87733 | 0.00017 | 0.85729 | 0.65633 | 1.8 | 0.32064 | 0.23708 |
| 9.0 | 1.0 | 0.93634 | 0.88428 | 0.97512 | 0.03836 | 0.91553 | 0.93287 | 0.18303 | 0.93987 | 0.0002 | 0.935 | 0.81547 | 1.8 | 0.34297 | 0.25187 |
| 10.0 | 1.0 | 0.97465 | 0.95221 | 0.97138 | 0.01718 | 0.96692 | 0.97404 | 0.09843 | 0.97526 | 0.00022 | 0.97616 | 0.91572 | 2.0 | 0.48098 | 0.25187 |
| 11.0 | 1.0 | 0.97971 | 0.96077 | 0.96157 | 0.01219 | 0.97388 | 0.97944 | 0.08197 | 0.97998 | 0.00022 | 0.98182 | 0.92743 | 2.0 | 0.48543 | 0.25187 |
| 12.0 | 1.0 | 0.97486 | 0.95105 | 0.94511 | 0.01294 | 0.96789 | 0.9745 | 0.09312 | 0.97521 | 0.00022 | 0.97799 | 0.90899 | 2.0 | 0.52373 | 0.25187 |
| 13.0 | 1.0 | 0.97621 | 0.9537 | 0.98183 | 0.01641 | 0.96992 | 0.97599 | 0.10486 | 0.97642 | 0.00023 | 0.98006 | 0.91342 | 2.0 | 0.50146 | 0.25636 |
| 14.0 | 1.0 | 0.9726 | 0.94713 | 0.96648 | 0.0188 | 0.96554 | 0.97231 | 0.11588 | 0.97288 | 0.00023 | 0.97753 | 0.90265 | 2.0 | 0.528 | 0.25636 |
| 15.0 | 1.0 | 0.96498 | 0.93292 | 0.94182 | 0.02183 | 0.95628 | 0.96446 | 0.13356 | 0.96551 | 0.00023 | 0.97193 | 0.87889 | 2.0 | 0.50594 | 0.25636 |
| 16.0 | 1.0 | 0.94555 | 0.89694 | 0.8916 | 0.03059 | 0.93269 | 0.94414 | 0.18073 | 0.94697 | 0.00023 | 0.95753 | 0.82045 | 2.0 | 0.53757 | 0.25636 |
| 17.0 | 1.0 | 0.91305 | 0.83988 | 0.84488 | 0.04778 | 0.89378 | 0.9108 | 0.27384 | 0.91532 | 0.00023 | 0.93614 | 0.7324 | 2.0 | 0.52032 | 0.25636 |
| 18.0 | 1.0 | 0.89322 | 0.80469 | 0.79451 | 0.05921 | 0.87075 | 0.88917 | 0.31819 | 0.8973 | 0.00023 | 0.92336 | 0.68248 | 2.0 | 0.49428 | 0.25636 |
| 19.0 | 1.0 | 0.89021 | 0.80157 | 0.81333 | 0.06699 | 0.86864 | 0.8876 | 0.33677 | 0.89284 | 0.00024 | 0.92748 | 0.67667 | 2.0 | 0.48187 | 0.25636 |
| 20.0 | 1.0 | 0.87736 | 0.77922 | 0.77939 | 0.07591 | 0.85393 | 0.87379 | 0.37394 | 0.88096 | 0.00024 | 0.92016 | 0.64521 | 2.0 | 0.47429 | 0.25636 |

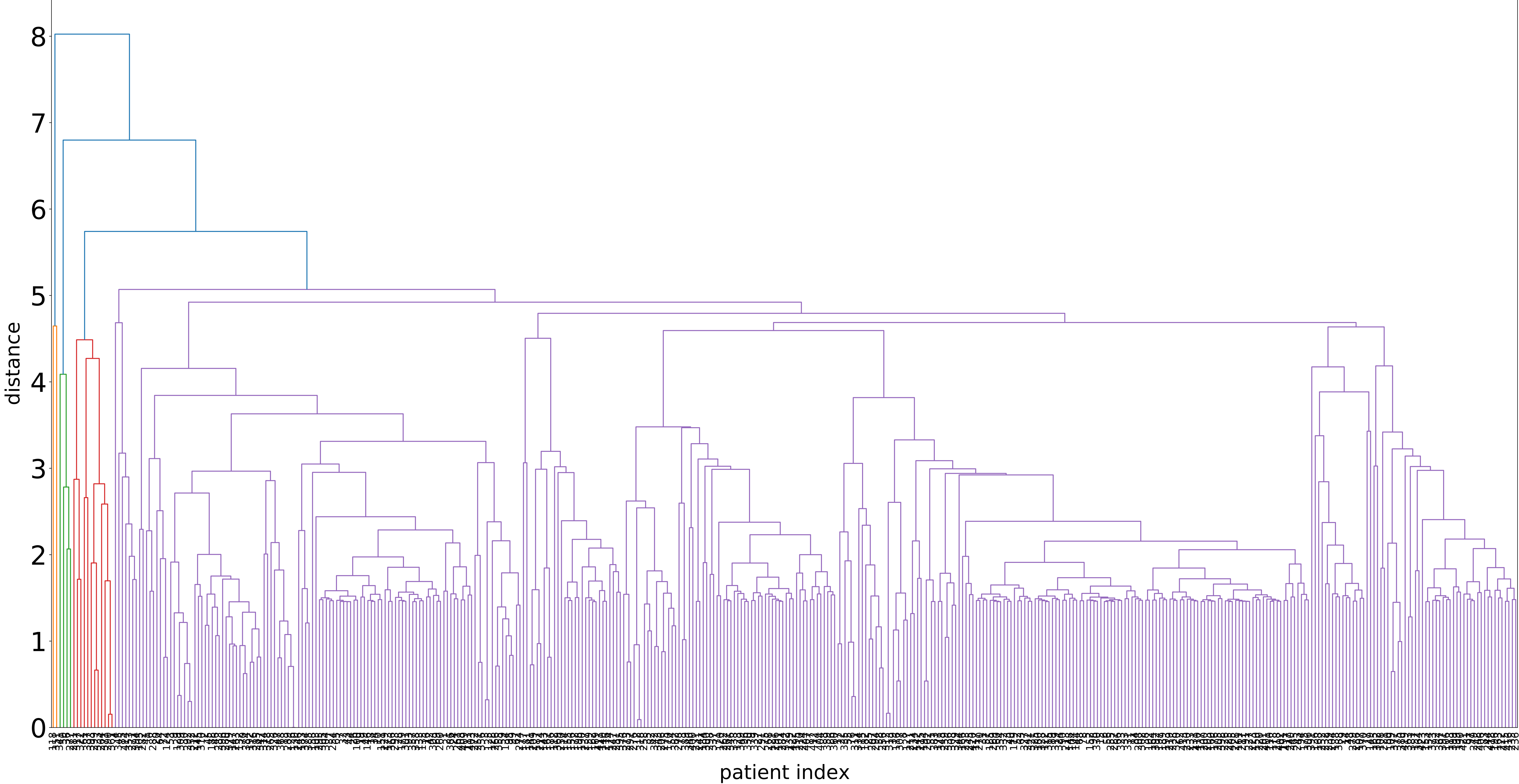
Standard deviation of Adjusted Rand versus number of clusters
gap: 0.90, Tp: 1.00, average link



Standard deviation of Huberts index versus number of clusters
gap: 0.90, Tp: 1.00, average link



Hierarchical Clustering Dendrogram - gap: 1.00, Tp: 1.00, average link

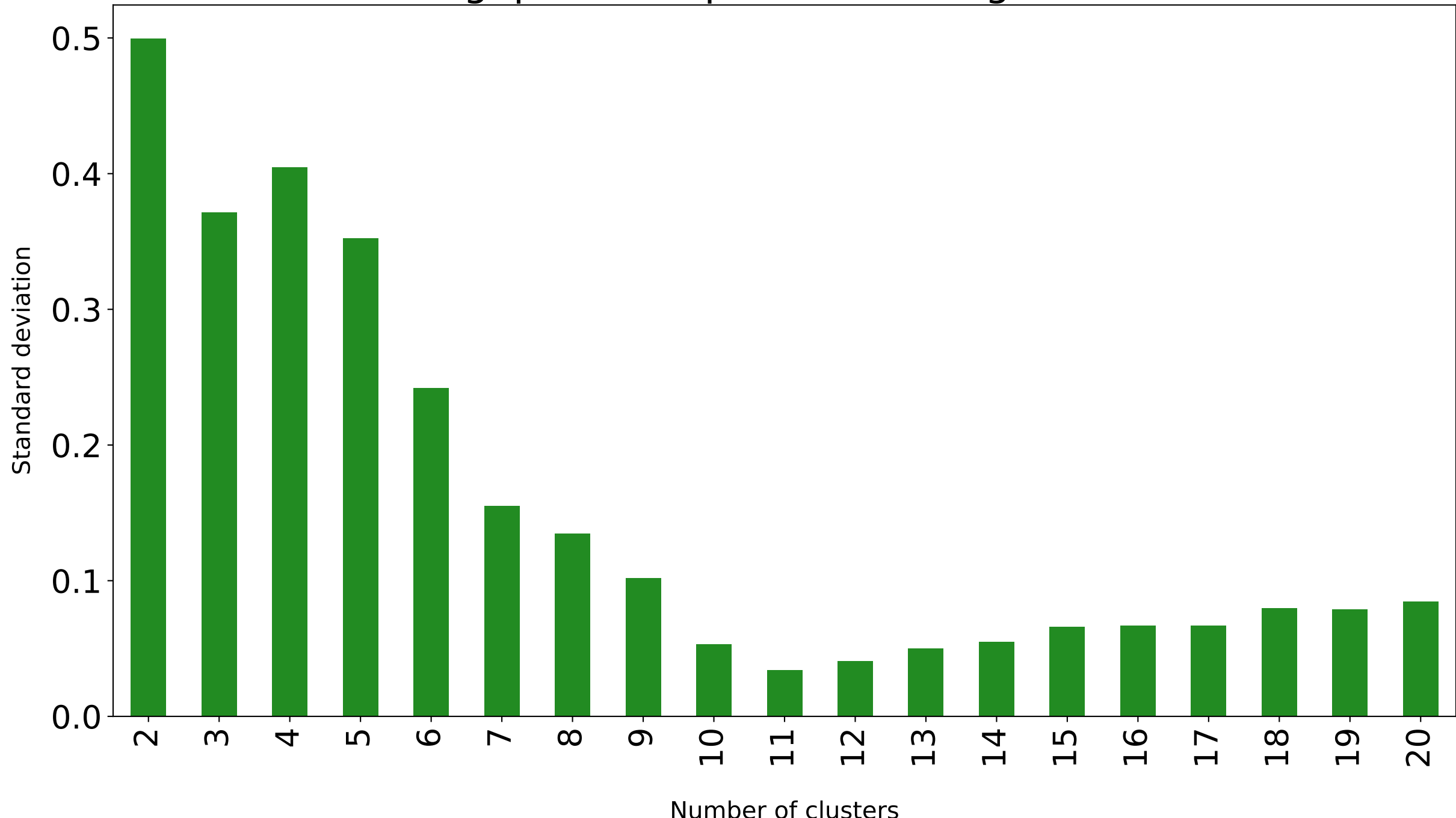


Cophenetic Correlation Coefficient: 0.7803981454503026

Average values of five clustering indices
gap: 1.00, Tp: 1.00, average link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.9883 | 0.97688 | 0.4183 | 0.00723 | 0.54921 | 0.98819 | 0.06506 | 0.98842 | 0.00168 | 0.95597 | 0.95563 | 1.8 | 0.42365 | 0.37732 |
| 3.0 | 1.0 | 0.98648 | 0.97353 | 0.62032 | 0.00986 | 0.73055 | 0.98627 | 0.08034 | 0.9867 | 0.0009 | 0.95128 | 0.95009 | 1.8 | 0.38236 | 0.20437 |
| 4.0 | 1.0 | 0.96462 | 0.93466 | 0.75216 | 0.02492 | 0.66419 | 0.9633 | 0.17321 | 0.966 | 0.00038 | 0.89283 | 0.8884 | 1.8 | 0.28072 | 0.19002 |
| 5.0 | 1.0 | 0.87297 | 0.78336 | 0.52664 | 0.07813 | 0.49628 | 0.86426 | 0.41149 | 0.88198 | 0.0002 | 0.70267 | 0.68547 | 1.8 | 0.27026 | 0.19002 |
| 6.0 | 0.99999 | 0.88384 | 0.799 | 0.78813 | 0.06482 | 0.7378 | 0.87742 | 0.3554 | 0.89044 | 0.00012 | 0.7805 | 0.69811 | 1.8 | 0.27071 | 0.19002 |
| 7.0 | 1.0 | 0.86647 | 0.76977 | 0.77766 | 0.0725 | 0.77383 | 0.86139 | 0.40187 | 0.87166 | 0.00013 | 0.79992 | 0.65001 | 1.8 | 0.28539 | 0.20531 |
| 8.0 | 1.0 | 0.84134 | 0.7298 | 0.85378 | 0.08884 | 0.76526 | 0.83476 | 0.44414 | 0.84804 | 0.00014 | 0.80495 | 0.59776 | 1.8 | 0.27769 | 0.2061 |
| 9.0 | 1.0 | 0.83635 | 0.72703 | 0.75921 | 0.09408 | 0.76751 | 0.83204 | 0.44496 | 0.84072 | 0.00014 | 0.82138 | 0.59717 | 2.0 | 0.35539 | 0.2061 |
| 10.0 | 1.0 | 0.81732 | 0.6927 | 0.67474 | 0.10382 | 0.74807 | 0.81096 | 0.47473 | 0.82377 | 0.00015 | 0.81011 | 0.54924 | 2.0 | 0.4977 | 0.2061 |
| 11.0 | 1.0 | 0.80945 | 0.67385 | 0.63007 | 0.09647 | 0.74389 | 0.80114 | 0.43971 | 0.81788 | 0.00015 | 0.80909 | 0.51861 | 2.0 | 0.49968 | 0.2061 |
| 12.0 | 1.0 | 0.96408 | 0.93196 | 0.98302 | 0.02547 | 0.95404 | 0.96299 | 0.14824 | 0.96519 | 0.00022 | 0.96783 | 0.8807 | 2.0 | 0.49664 | 0.21804 |
| 13.0 | 1.0 | 0.97548 | 0.95266 | 0.97634 | 0.02018 | 0.96893 | 0.97517 | 0.12771 | 0.97579 | 0.00023 | 0.97925 | 0.91263 | 2.0 | 0.47882 | 0.21804 |
| 14.0 | 1.0 | 0.97466 | 0.95122 | 0.96804 | 0.02042 | 0.96802 | 0.97433 | 0.12986 | 0.975 | 0.00023 | 0.97887 | 0.91048 | 2.0 | 0.46881 | 0.24251 |
| 15.0 | 1.0 | 0.97001 | 0.94233 | 0.94831 | 0.02177 | 0.9625 | 0.9696 | 0.14137 | 0.97042 | 0.00023 | 0.97585 | 0.8949 | 2.0 | 0.45753 | 0.24251 |
| 16.0 | 1.0 | 0.95843 | 0.92092 | 0.92136 | 0.02719 | 0.9484 | 0.95756 | 0.16938 | 0.95929 | 0.00023 | 0.96725 | 0.85986 | 2.0 | 0.42685 | 0.24251 |
| 17.0 | 1.0 | 0.94133 | 0.88932 | 0.88094 | 0.0342 | 0.92776 | 0.93953 | 0.20548 | 0.94314 | 0.00023 | 0.95467 | 0.80927 | 2.0 | 0.45753 | 0.24251 |
| 18.0 | 1.0 | 0.92092 | 0.85246 | 0.83735 | 0.04456 | 0.90354 | 0.91782 | 0.25221 | 0.92404 | 0.00023 | 0.94071 | 0.75332 | 2.0 | 0.45303 | 0.22539 |
| 19.0 | 1.0 | 0.89474 | 0.80553 | 0.77986 | 0.05723 | 0.87268 | 0.88944 | 0.31191 | 0.9001 | 0.00023 | 0.92271 | 0.6845 | 2.0 | 0.47869 | 0.22539 |
| 20.0 | 1.0 | 0.87089 | 0.76304 | 0.72918 | 0.06879 | 0.8449 | 0.86318 | 0.36144 | 0.8787 | 0.00023 | 0.90681 | 0.62421 | 2.0 | 0.46221 | 0.22539 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 1.00, Tp: 1.00, average link



Standard deviation of Huberts index versus number of clusters
gap: 1.00, Tp: 1.00, average link

