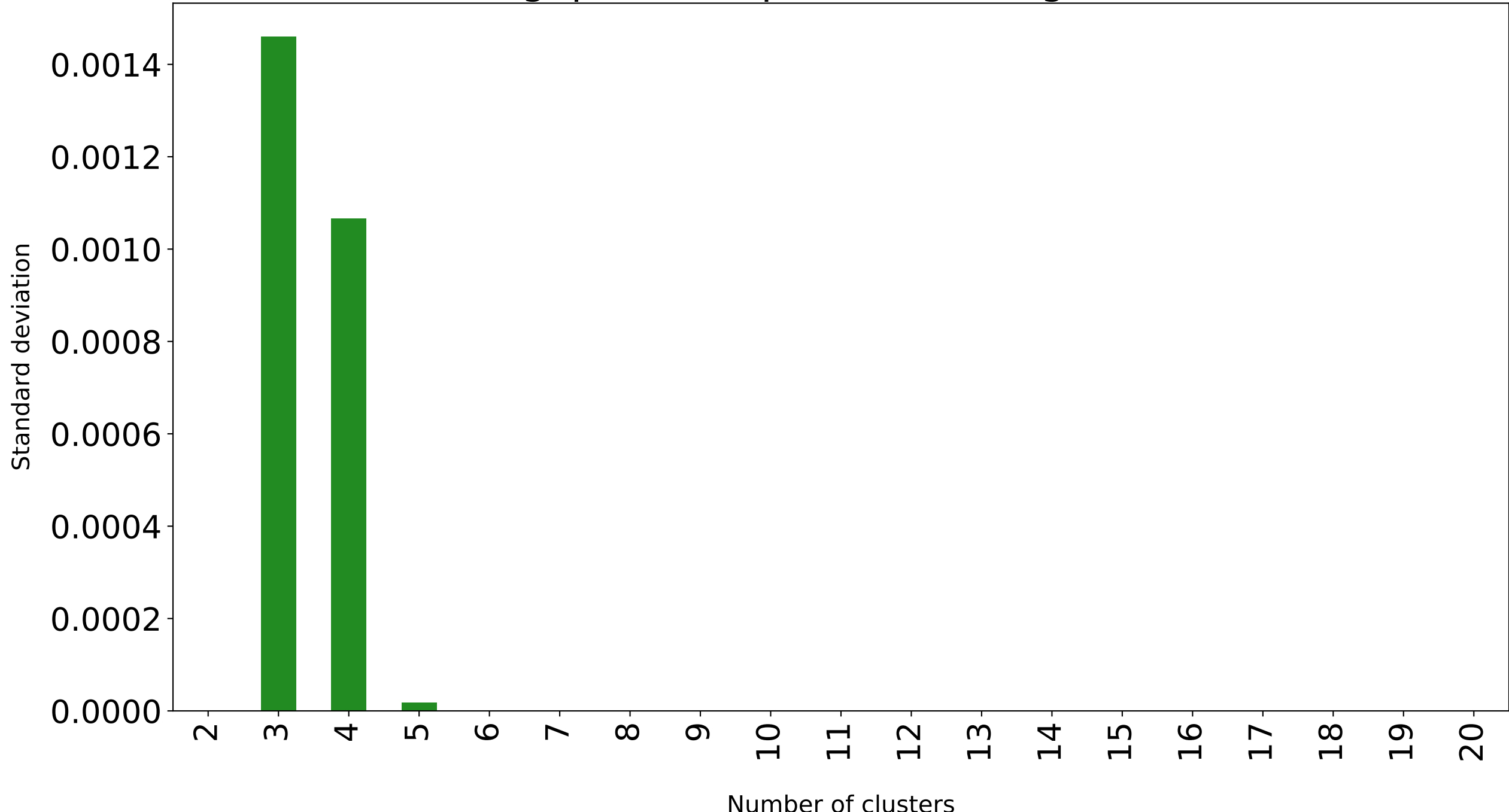




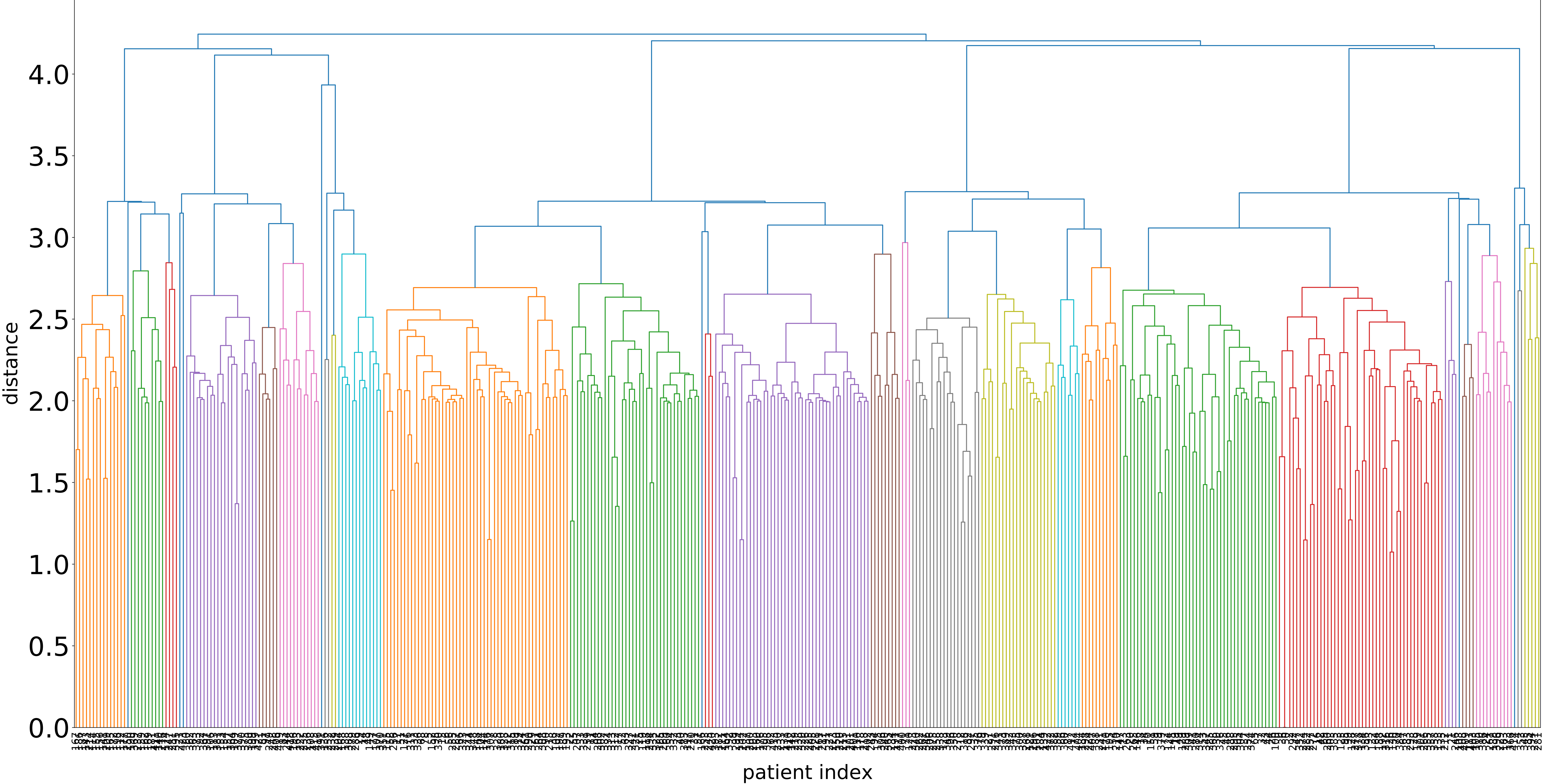
Average values of five clustering indices  
gap: 0.00, Tp: 2.00, average link

| k    | AR      | FM      | J       | AW      | VD      | H       | F       | VI      | K       | Phi     | RT      | SS      | CVNN    | S       | Dunn    |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0  | 1.0     | 0.98279 | 0.96731 | 0.97014 | 0.01229 | 0.9421  | 0.98248 | 0.0789  | 0.9831  | 0.00017 | 0.95526 | 0.94193 | 0.0     | 0.09817 | 0.59664 |
| 3.0  | 1.00005 | 0.81601 | 0.69778 | 0.88444 | 0.1307  | 0.66593 | 0.79816 | 0.44851 | 0.83472 | 0.00011 | 0.69588 | 0.59573 | 0.01081 | 0.14937 | 0.45118 |
| 4.0  | 1.00009 | 0.93393 | 0.88556 | 0.94516 | 0.05407 | 0.89278 | 0.92992 | 0.20802 | 0.93813 | 0.00016 | 0.90404 | 0.82579 | 0.01081 | 0.17743 | 0.45118 |
| 5.0  | 1.0     | 0.94618 | 0.90396 | 0.89025 | 0.03292 | 0.92371 | 0.94386 | 0.13503 | 0.94853 | 0.00017 | 0.93774 | 0.84991 | 0.01081 | 0.20591 | 0.45118 |
| 6.0  | 1.0     | 0.98559 | 0.97345 | 0.99066 | 0.00811 | 0.98059 | 0.98514 | 0.04167 | 0.98605 | 0.00021 | 0.98509 | 0.95567 | 0.01639 | 0.22314 | 0.44813 |
| 7.0  | 1.0     | 0.99868 | 0.99737 | 0.99928 | 0.00109 | 0.99827 | 0.99867 | 0.00874 | 0.99868 | 0.00022 | 0.99876 | 0.99484 | 0.35    | 0.22496 | 0.44813 |
| 8.0  | 1.0     | 0.99768 | 0.99541 | 0.99558 | 0.00138 | 0.99698 | 0.99767 | 0.01092 | 0.99769 | 0.00022 | 0.99786 | 0.99113 | 2.0     | 0.30844 | 0.58042 |
| 9.0  | 1.0     | 0.98866 | 0.97774 | 0.98194 | 0.00698 | 0.98531 | 0.98862 | 0.05559 | 0.9887  | 0.00022 | 0.98968 | 0.95729 | 2.0     | 0.26956 | 0.58042 |
| 10.0 | 1.0     | 0.98642 | 0.97334 | 0.97568 | 0.00907 | 0.9824  | 0.98636 | 0.07066 | 0.98647 | 0.00022 | 0.98765 | 0.94895 | 2.0     | 0.25591 | 0.58042 |
| 11.0 | 1.0     | 0.98652 | 0.97351 | 0.9898  | 0.00926 | 0.98259 | 0.98647 | 0.07158 | 0.98658 | 0.00022 | 0.98784 | 0.94912 | 2.0     | 0.23046 | 0.58042 |
| 12.0 | 1.0     | 0.98796 | 0.97634 | 0.98867 | 0.00852 | 0.98447 | 0.98791 | 0.0652  | 0.988   | 0.00022 | 0.98922 | 0.95456 | 2.0     | 0.28289 | 0.58042 |
| 13.0 | 1.0     | 0.9897  | 0.97975 | 0.98663 | 0.00742 | 0.98673 | 0.98966 | 0.05621 | 0.98973 | 0.00022 | 0.99083 | 0.96104 | 2.0     | 0.32987 | 0.58042 |
| 14.0 | 1.0     | 0.9909  | 0.98207 | 0.98576 | 0.00715 | 0.98832 | 0.99085 | 0.0507  | 0.99094 | 0.00022 | 0.99195 | 0.96547 | 2.0     | 0.36876 | 0.58042 |
| 15.0 | 1.0     | 0.98789 | 0.97615 | 0.97374 | 0.00836 | 0.98452 | 0.98777 | 0.05695 | 0.988   | 0.00022 | 0.98938 | 0.95447 | 2.0     | 0.40238 | 0.58042 |
| 16.0 | 1.0     | 0.97979 | 0.96063 | 0.95314 | 0.01379 | 0.97443 | 0.97936 | 0.08417 | 0.98023 | 0.00022 | 0.98266 | 0.92719 | 2.0     | 0.4399  | 0.58042 |
| 17.0 | 1.0     | 0.97317 | 0.94824 | 0.94556 | 0.02058 | 0.96627 | 0.97258 | 0.11219 | 0.97376 | 0.00023 | 0.97763 | 0.90576 | 2.0     | 0.42495 | 0.58042 |
| 18.0 | 1.0     | 0.96254 | 0.92845 | 0.92033 | 0.03058 | 0.95333 | 0.96137 | 0.15228 | 0.96373 | 0.00023 | 0.96951 | 0.87322 | 2.0     | 0.40771 | 0.58042 |
| 19.0 | 1.0     | 0.9454  | 0.89771 | 0.89674 | 0.0418  | 0.93287 | 0.94333 | 0.19557 | 0.9475  | 0.00023 | 0.95778 | 0.8256  | 2.0     | 0.39342 | 0.58042 |
| 20.0 | 1.0     | 0.92643 | 0.86381 | 0.84978 | 0.05128 | 0.91075 | 0.92236 | 0.22796 | 0.93058 | 0.00023 | 0.94485 | 0.77732 | 2.0     | 0.38363 | 0.58042 |

Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.00, Tp: 2.00, average link



Hierarchical Clustering Dendrogram - gap: 0.10, Tp: 2.00, average link

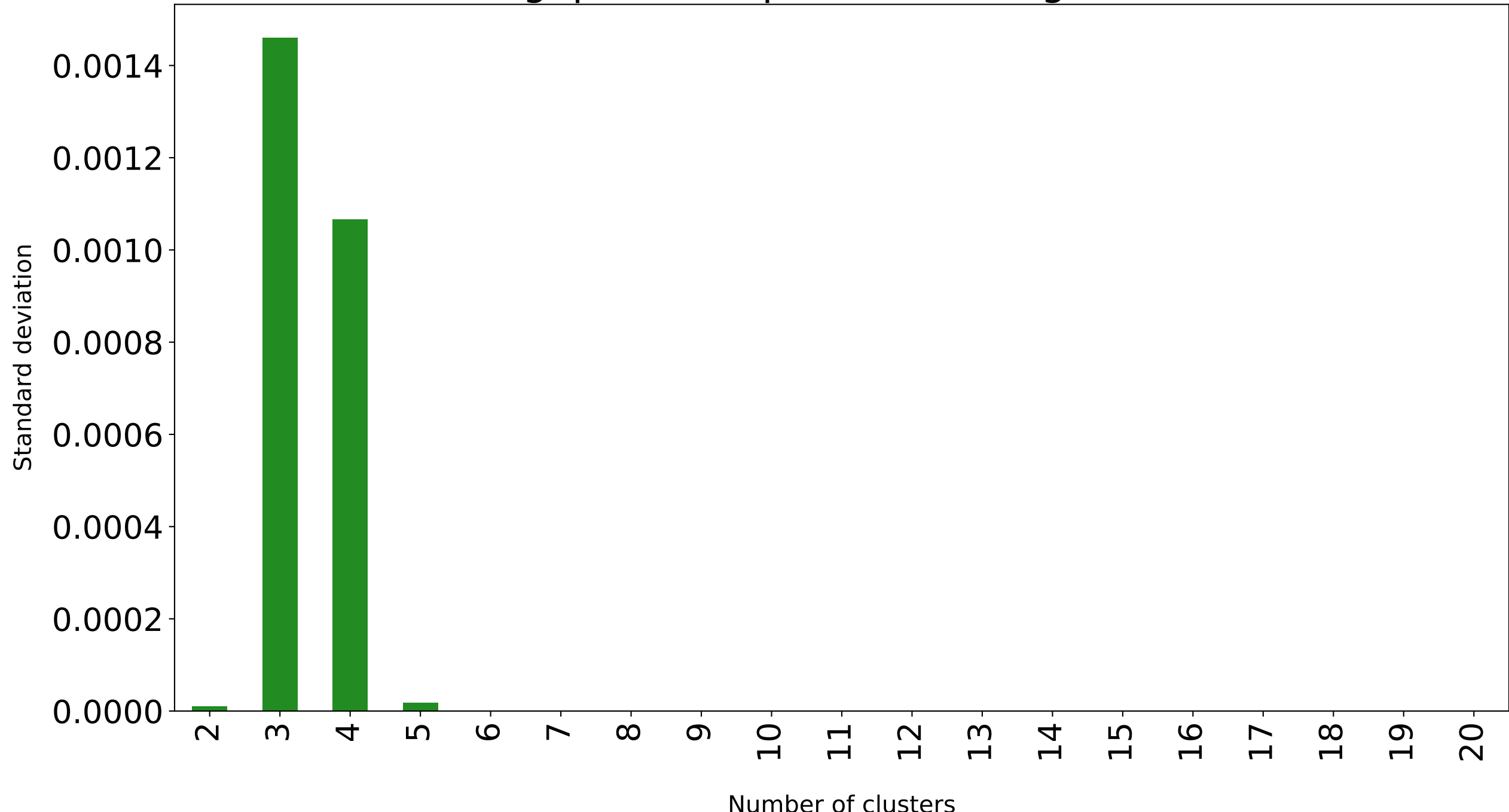


Cophenetic Correlation Coefficient: 0.8383404932948394

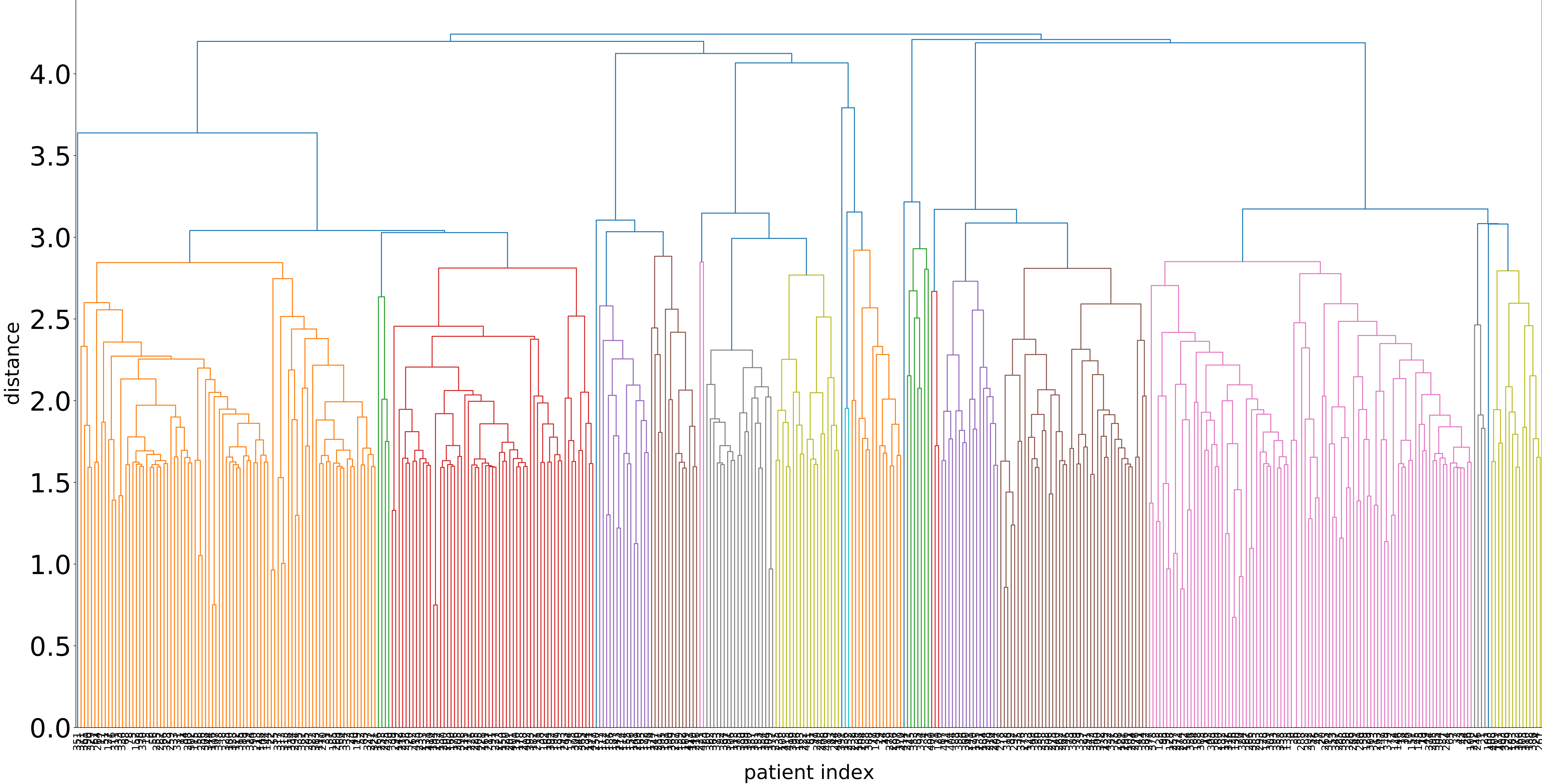
Average values of five clustering indices  
gap: 0.10, Tp: 2.00, average link

| k    | AR      | FM      | J       | AW      | VD      | H       | F       | VI      | K       | Phi     | RT      | SS      | CVNN    | S       | Dunn    |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0  | 0.99999 | 0.90322 | 0.84778 | 0.71312 | 0.06758 | 0.70456 | 0.90061 | 0.26535 | 0.90588 | 0.00013 | 0.81192 | 0.78788 | 0.0     | 0.11799 | 0.49368 |
| 3.0  | 1.00007 | 0.92022 | 0.86699 | 0.93657 | 0.05198 | 0.86166 | 0.91483 | 0.19883 | 0.92585 | 0.00015 | 0.87693 | 0.81169 | 0.01081 | 0.17805 | 0.3969  |
| 4.0  | 1.0     | 0.91905 | 0.85718 | 0.95384 | 0.0491  | 0.88444 | 0.91588 | 0.20808 | 0.92227 | 0.00017 | 0.90547 | 0.77874 | 0.01639 | 0.22725 | 0.35412 |
| 5.0  | 1.0     | 0.94503 | 0.89978 | 0.93375 | 0.03842 | 0.92471 | 0.94433 | 0.17094 | 0.94573 | 0.00019 | 0.94277 | 0.83117 | 0.25    | 0.23882 | 0.36136 |
| 6.0  | 1.0     | 0.97846 | 0.95892 | 0.97873 | 0.01981 | 0.97141 | 0.97831 | 0.08926 | 0.97861 | 0.00021 | 0.97904 | 0.92541 | 0.25    | 0.25231 | 0.37678 |
| 7.0  | 1.0     | 0.99898 | 0.99796 | 0.99884 | 0.00153 | 0.99867 | 0.99898 | 0.01227 | 0.99898 | 0.00022 | 0.99905 | 0.99595 | 0.25    | 0.26655 | 0.39357 |
| 8.0  | 1.0     | 0.99636 | 0.99283 | 0.9912  | 0.00233 | 0.99529 | 0.99631 | 0.01529 | 0.99641 | 0.00022 | 0.99665 | 0.98642 | 2.0     | 0.34224 | 0.43997 |
| 9.0  | 1.0     | 0.98602 | 0.97255 | 0.96526 | 0.00862 | 0.98203 | 0.98578 | 0.05227 | 0.98627 | 0.00022 | 0.98733 | 0.9486  | 2.0     | 0.38914 | 0.43997 |
| 10.0 | 1.0     | 0.971   | 0.94359 | 0.93531 | 0.01798 | 0.9628  | 0.97056 | 0.10894 | 0.97145 | 0.00022 | 0.97413 | 0.8958  | 2.0     | 0.35365 | 0.43997 |
| 11.0 | 1.0     | 0.97341 | 0.94848 | 0.98138 | 0.02167 | 0.96626 | 0.97314 | 0.12146 | 0.97368 | 0.00023 | 0.97739 | 0.90458 | 2.0     | 0.31907 | 0.43997 |
| 12.0 | 1.0     | 0.97098 | 0.94448 | 0.96253 | 0.02564 | 0.96352 | 0.9706  | 0.13326 | 0.97135 | 0.00023 | 0.97626 | 0.89911 | 2.0     | 0.31125 | 0.43997 |
| 13.0 | 1.0     | 0.96505 | 0.93409 | 0.94145 | 0.02979 | 0.95659 | 0.9643  | 0.1433  | 0.96582 | 0.00023 | 0.97246 | 0.88372 | 2.0     | 0.28165 | 0.43997 |
| 14.0 | 1.0     | 0.94659 | 0.90103 | 0.89928 | 0.04253 | 0.93458 | 0.94461 | 0.19124 | 0.9486  | 0.00023 | 0.95951 | 0.83342 | 2.0     | 0.27812 | 0.43997 |
| 15.0 | 1.0     | 0.92338 | 0.86174 | 0.86608 | 0.0524  | 0.90749 | 0.92018 | 0.22515 | 0.92663 | 0.00023 | 0.94554 | 0.77834 | 2.0     | 0.27046 | 0.43997 |
| 16.0 | 1.0     | 0.90001 | 0.81984 | 0.81117 | 0.06283 | 0.88028 | 0.89457 | 0.25641 | 0.90553 | 0.00023 | 0.93014 | 0.71762 | 2.0     | 0.31615 | 0.43997 |
| 17.0 | 1.0     | 0.89981 | 0.81968 | 0.93876 | 0.06245 | 0.88202 | 0.8959  | 0.2728  | 0.90377 | 0.00028 | 0.9372  | 0.71198 | 2.0     | 0.30216 | 0.45432 |
| 18.0 | 1.0     | 0.91598 | 0.84751 | 0.93558 | 0.05625 | 0.90168 | 0.91352 | 0.25363 | 0.91847 | 0.00029 | 0.94988 | 0.74979 | 2.0     | 0.29451 | 0.45432 |
| 19.0 | 1.0     | 0.92663 | 0.86563 | 0.92064 | 0.05281 | 0.91462 | 0.92541 | 0.24578 | 0.92787 | 0.0003  | 0.95851 | 0.77266 | 2.0     | 0.33141 | 0.45432 |
| 20.0 | 1.0     | 0.93912 | 0.88729 | 0.92612 | 0.04906 | 0.92953 | 0.9386  | 0.22183 | 0.93965 | 0.00031 | 0.96705 | 0.80412 | 2.0     | 0.32354 | 0.45432 |

Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.10, Tp: 2.00, average link



Hierarchical Clustering Dendrogram - gap: 0.20, Tp: 2.00, average link



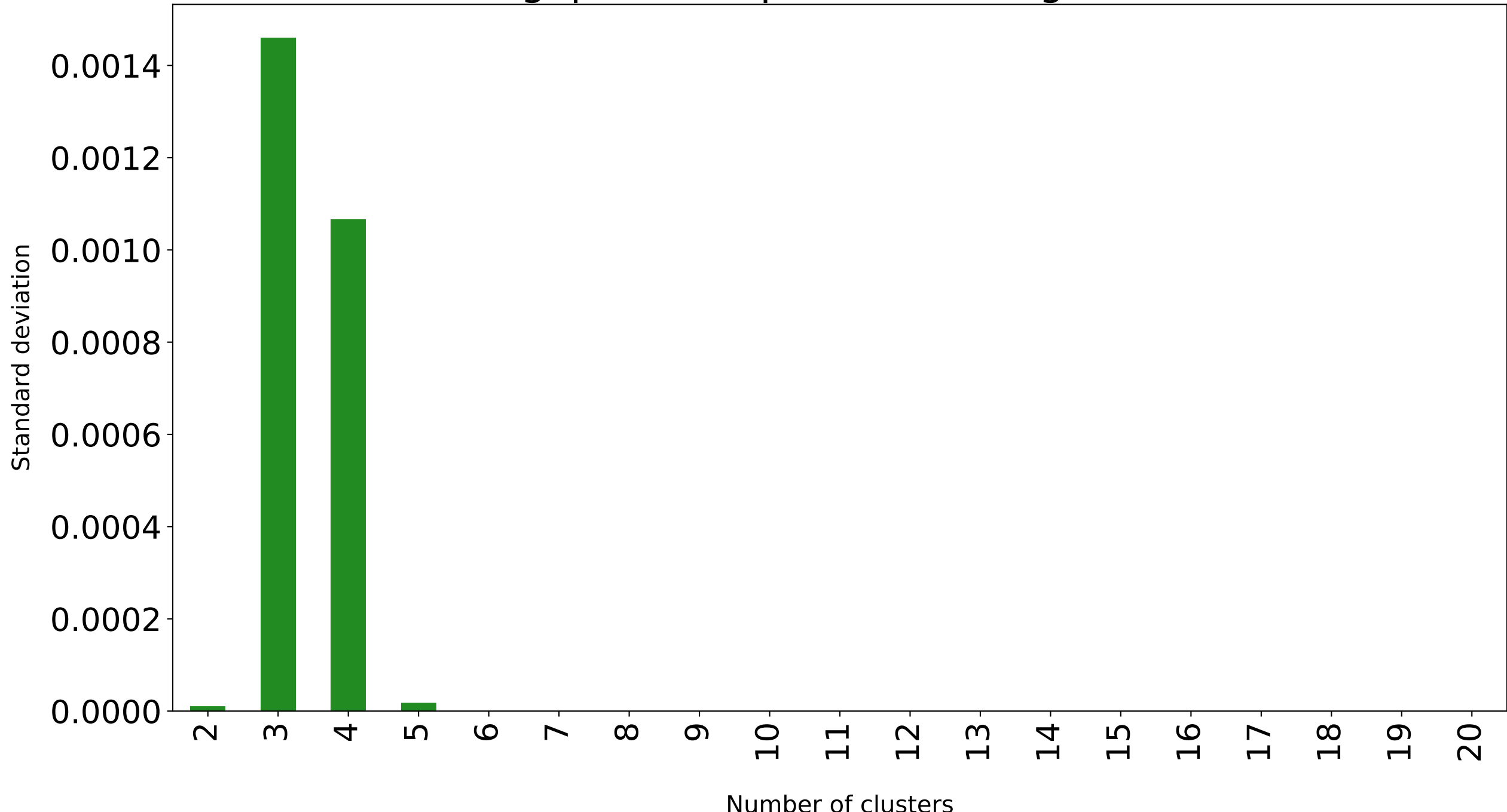
Cophenetic Correlation Coefficient: 0.8141287240603226

Average values of five clustering indices  
gap: 0.20, Tp: 2.00, average link

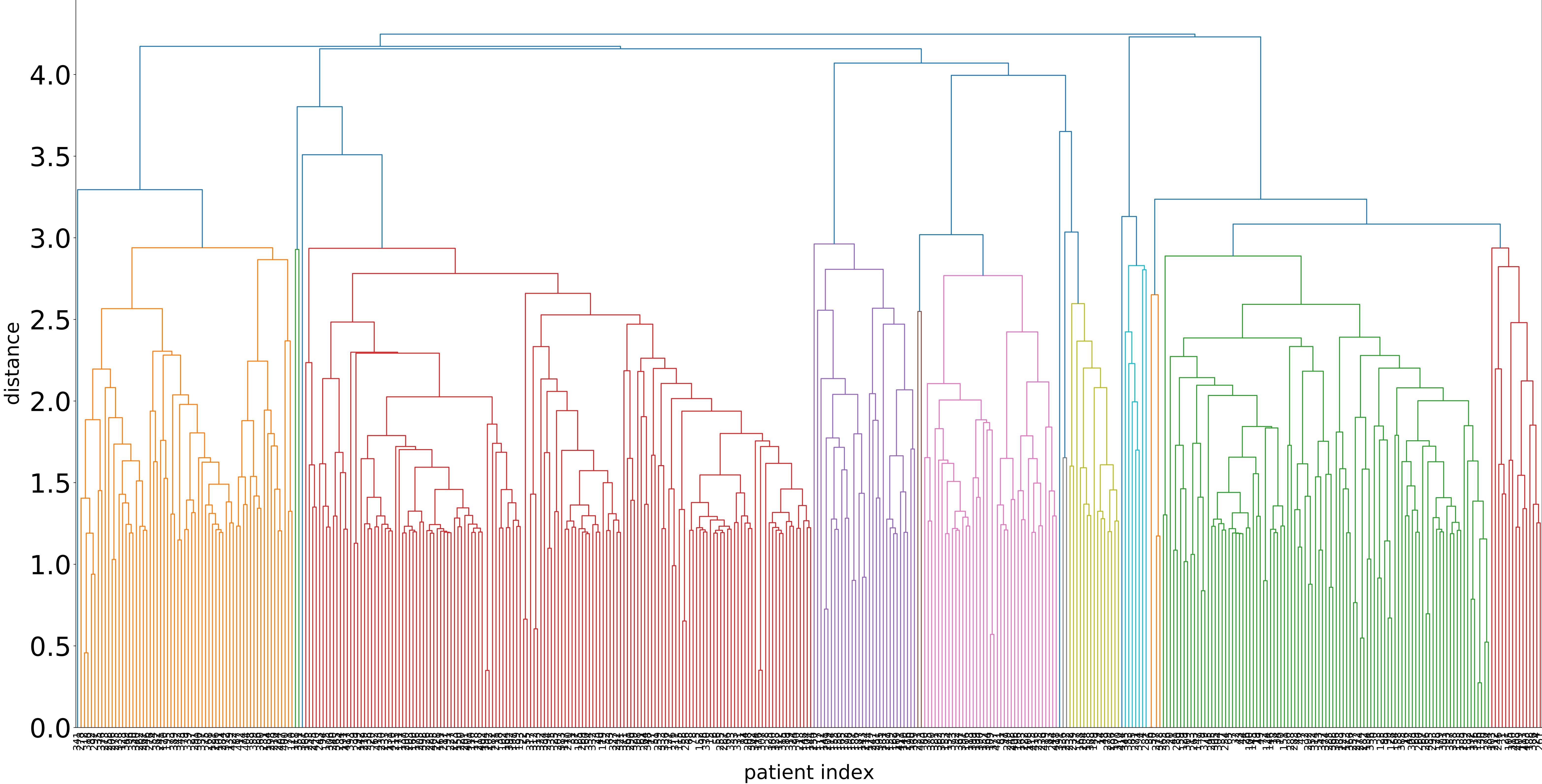
| k    | AR      | FM      | J       | AW      | VD      | H       | F       | VI      | K       | Phi     | RT      | SS      | CVNN    | S       | Dunn    |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0  | 0.99999 | 0.8024  | 0.68796 | 0.51864 | 0.14156 | 0.46912 | 0.79222 | 0.50103 | 0.81302 | 8e-05   | 0.62839 | 0.58139 | 0.00865 | 0.16902 | 0.33061 |
| 3.0  | 1.0     | 0.78458 | 0.66241 | 0.53487 | 0.14481 | 0.58208 | 0.77932 | 0.55468 | 0.78991 | 9e-05   | 0.67297 | 0.53434 | 0.25    | 0.21313 | 0.33061 |
| 4.0  | 1.0     | 0.8334  | 0.72826 | 0.73012 | 0.09911 | 0.74519 | 0.83066 | 0.39732 | 0.83615 | 0.00013 | 0.79935 | 0.60616 | 0.25    | 0.23218 | 0.35428 |
| 5.0  | 1.0     | 0.97035 | 0.94606 | 0.97094 | 0.01814 | 0.95913 | 0.96988 | 0.08657 | 0.97082 | 0.00019 | 0.9685  | 0.90994 | 0.25    | 0.27935 | 0.2907  |
| 6.0  | 1.0     | 0.98052 | 0.96297 | 0.9825  | 0.01746 | 0.97413 | 0.9804  | 0.07705 | 0.98065 | 0.00021 | 0.98105 | 0.9332  | 0.25    | 0.29526 | 0.31402 |
| 7.0  | 1.0     | 0.99906 | 0.99813 | 0.99898 | 0.00141 | 0.99878 | 0.99906 | 0.01136 | 0.99906 | 0.00022 | 0.99913 | 0.99629 | 0.25    | 0.31245 | 0.3414  |
| 8.0  | 1.0     | 0.99761 | 0.99527 | 0.99434 | 0.00157 | 0.9969  | 0.9976  | 0.01228 | 0.99763 | 0.00022 | 0.99779 | 0.9908  | 2.0     | 0.37898 | 0.35696 |
| 9.0  | 1.0     | 0.98929 | 0.97897 | 0.97684 | 0.00599 | 0.98619 | 0.98917 | 0.04163 | 0.98941 | 0.00022 | 0.9903  | 0.96016 | 2.0     | 0.43713 | 0.35696 |
| 10.0 | 1.0     | 0.97719 | 0.9554  | 0.94592 | 0.01314 | 0.97076 | 0.97679 | 0.08256 | 0.97759 | 0.00022 | 0.97959 | 0.91718 | 2.0     | 0.46725 | 0.35696 |
| 11.0 | 1.0     | 0.97453 | 0.95063 | 0.97946 | 0.01794 | 0.9676  | 0.97433 | 0.10832 | 0.97473 | 0.00023 | 0.97825 | 0.90811 | 2.0     | 0.42687 | 0.35696 |
| 12.0 | 1.0     | 0.97189 | 0.94576 | 0.96698 | 0.02304 | 0.96452 | 0.97169 | 0.13846 | 0.9721  | 0.00023 | 0.97674 | 0.89944 | 2.0     | 0.40071 | 0.35696 |
| 13.0 | 1.0     | 0.96661 | 0.93603 | 0.948   | 0.0283  | 0.95817 | 0.9662  | 0.15893 | 0.96702 | 0.00023 | 0.97302 | 0.88332 | 2.0     | 0.39393 | 0.35696 |
| 14.0 | 1.0     | 0.95703 | 0.91848 | 0.92304 | 0.03454 | 0.94671 | 0.95605 | 0.17935 | 0.95802 | 0.00023 | 0.96623 | 0.8556  | 2.0     | 0.3653  | 0.35696 |
| 15.0 | 1.0     | 0.93884 | 0.88627 | 0.88302 | 0.04473 | 0.92503 | 0.9366  | 0.21851 | 0.9411  | 0.00023 | 0.9535  | 0.80786 | 2.0     | 0.39995 | 0.35696 |
| 16.0 | 1.0     | 0.92775 | 0.86821 | 0.87162 | 0.04803 | 0.91254 | 0.92487 | 0.23316 | 0.93066 | 0.00023 | 0.94803 | 0.78469 | 2.0     | 0.38766 | 0.35696 |
| 17.0 | 1.0     | 0.89835 | 0.81693 | 0.80945 | 0.06156 | 0.87796 | 0.89334 | 0.27874 | 0.90343 | 0.00023 | 0.92869 | 0.71102 | 2.0     | 0.38183 | 0.35696 |
| 18.0 | 1.0     | 0.87491 | 0.77607 | 0.75886 | 0.07271 | 0.85076 | 0.86771 | 0.31434 | 0.88224 | 0.00023 | 0.9137  | 0.65402 | 2.0     | 0.41632 | 0.35696 |
| 19.0 | 1.0     | 0.88361 | 0.79493 | 0.90839 | 0.07434 | 0.86353 | 0.88044 | 0.32503 | 0.88682 | 0.00028 | 0.93074 | 0.67631 | 2.0     | 0.4031  | 0.37629 |
| 20.0 | 1.0     | 0.89721 | 0.81783 | 0.90613 | 0.06632 | 0.88019 | 0.89502 | 0.30386 | 0.89944 | 0.00029 | 0.9414  | 0.70716 | 2.0     | 0.3978  | 0.37629 |



Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.20, Tp: 2.00, average link



Hierarchical Clustering Dendrogram - gap: 0.30, Tp: 2.00, average link

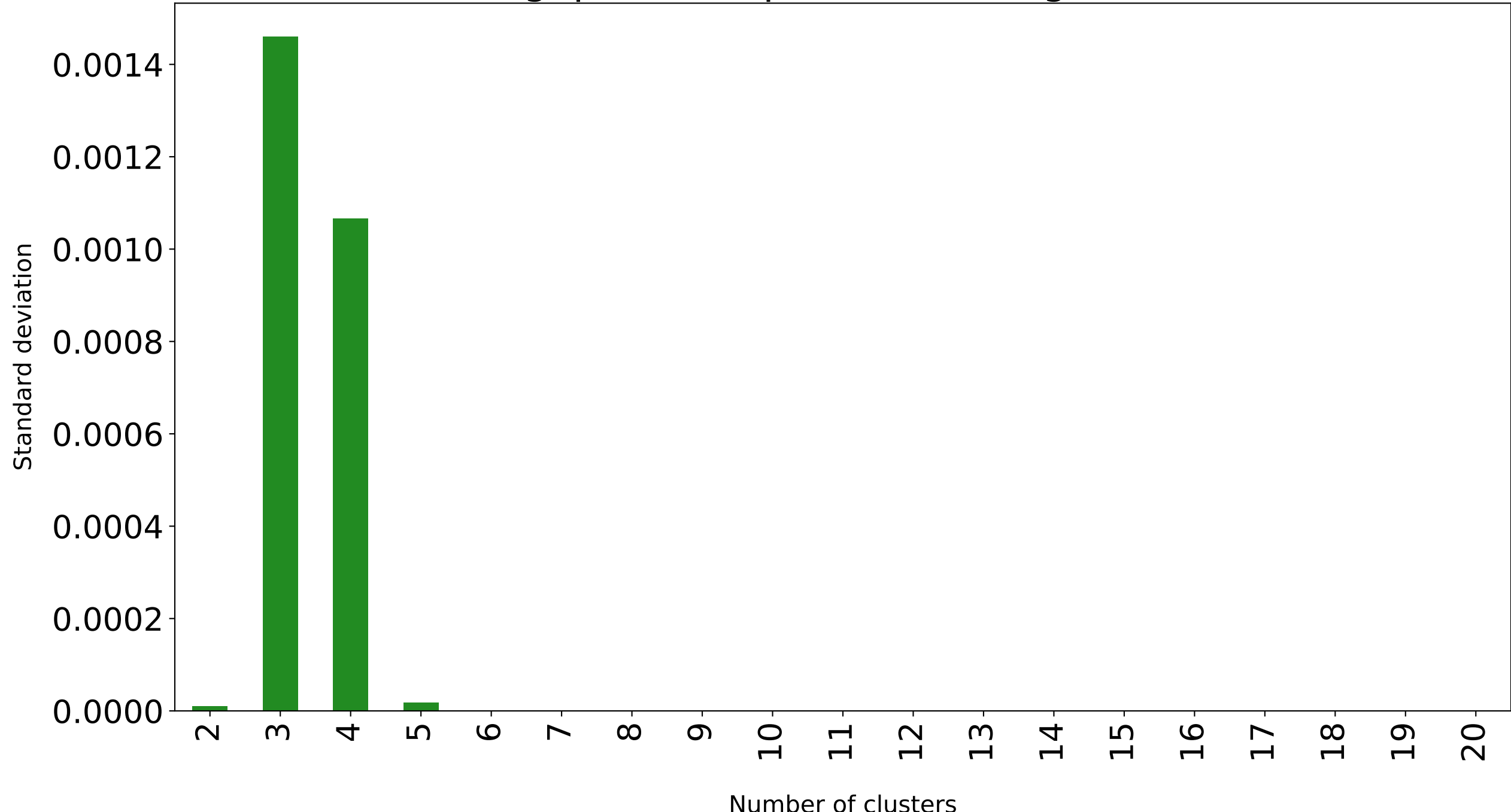


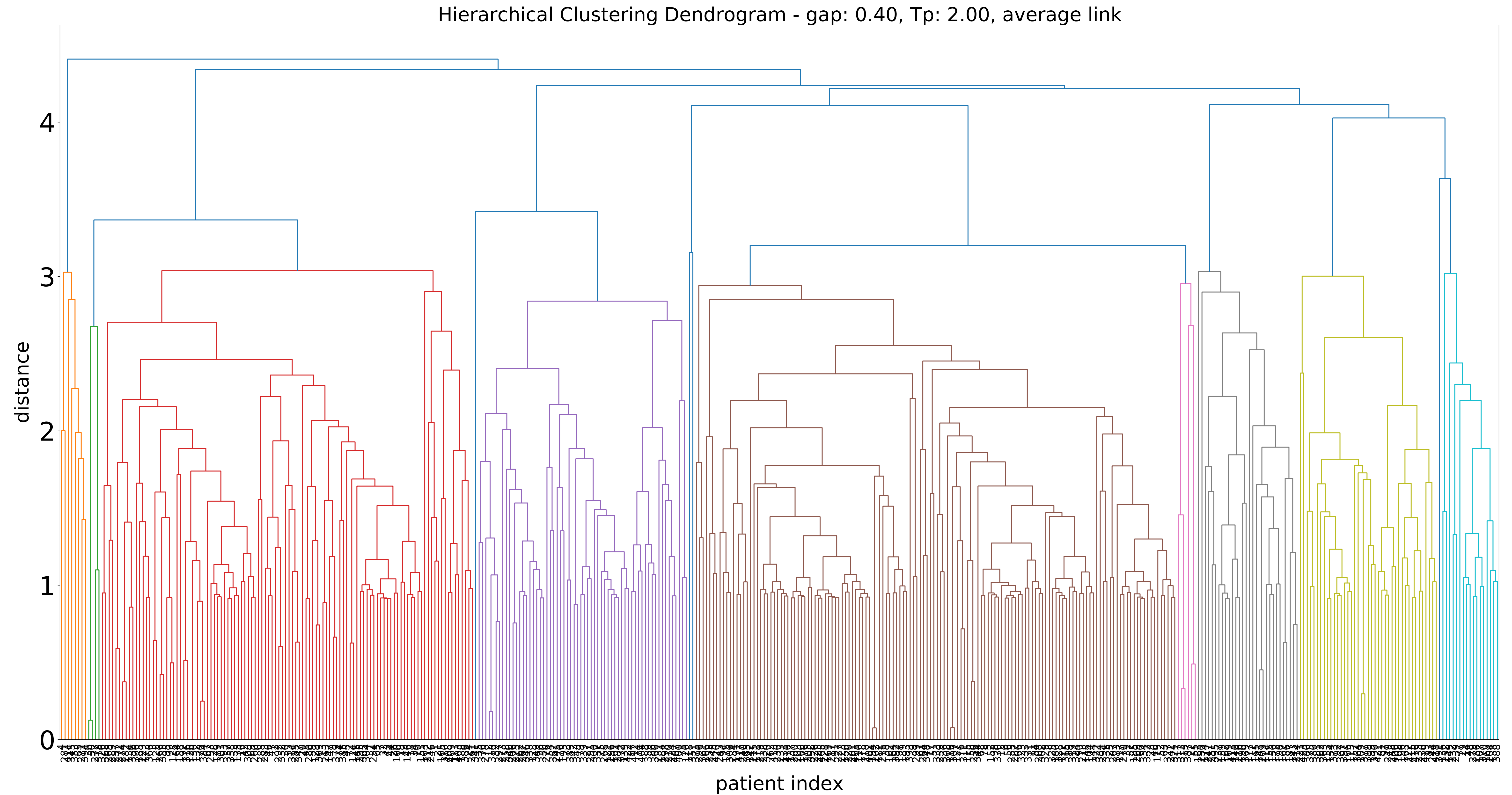
Cophenetic Correlation Coefficient: 0.7983532810466023

Average values of five clustering indices  
gap: 0.30, Tp: 2.00, average link

| k    | AR      | FM      | J       | AW      | VD      | H       | F       | VI      | K       | Phi     | RT      | SS      | CVNN    | S       | Dunn    |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0  | 0.99999 | 0.84742 | 0.74353 | 0.6366  | 0.09504 | 0.48845 | 0.8376  | 0.4234  | 0.85752 | 9e-05   | 0.66408 | 0.63713 | 0.01639 | 0.24352 | 0.20128 |
| 3.0  | 1.00002 | 0.8867  | 0.81534 | 0.70225 | 0.06538 | 0.75826 | 0.88189 | 0.29216 | 0.8916  | 0.00012 | 0.80689 | 0.73959 | 0.25    | 0.28985 | 0.20128 |
| 4.0  | 1.00001 | 0.80086 | 0.68636 | 0.63347 | 0.10758 | 0.67901 | 0.79716 | 0.42504 | 0.80462 | 0.00011 | 0.74591 | 0.56706 | 0.25    | 0.31772 | 0.20128 |
| 5.0  | 1.0     | 0.97066 | 0.94759 | 0.97542 | 0.01757 | 0.95937 | 0.97    | 0.0817  | 0.97134 | 0.00019 | 0.96848 | 0.9153  | 0.25    | 0.32229 | 0.23843 |
| 6.0  | 1.0     | 0.98398 | 0.96944 | 0.98602 | 0.01506 | 0.97875 | 0.98389 | 0.06532 | 0.98407 | 0.00021 | 0.98447 | 0.9445  | 0.25    | 0.34124 | 0.25838 |
| 7.0  | 1.0     | 0.99856 | 0.99714 | 0.99899 | 0.00162 | 0.99811 | 0.99855 | 0.01211 | 0.99856 | 0.00022 | 0.99864 | 0.99437 | 0.25    | 0.36216 | 0.27767 |
| 8.0  | 1.0     | 0.99631 | 0.99267 | 0.99673 | 0.00259 | 0.9952  | 0.9963  | 0.02125 | 0.99631 | 0.00022 | 0.99659 | 0.98563 | 1.9     | 0.33852 | 0.27767 |
| 9.0  | 1.0     | 0.9953  | 0.99067 | 0.99002 | 0.00303 | 0.99391 | 0.99529 | 0.02377 | 0.99532 | 0.00022 | 0.9957  | 0.98171 | 2.0     | 0.39266 | 0.27767 |
| 10.0 | 1.0     | 0.98994 | 0.98012 | 0.98023 | 0.00559 | 0.98699 | 0.98989 | 0.04544 | 0.98999 | 0.00022 | 0.99087 | 0.96148 | 2.0     | 0.44505 | 0.27767 |
| 11.0 | 1.0     | 0.984   | 0.96853 | 0.96475 | 0.00869 | 0.97944 | 0.98383 | 0.06512 | 0.98417 | 0.00022 | 0.9857  | 0.94022 | 2.0     | 0.48314 | 0.27767 |
| 12.0 | 1.0     | 0.97261 | 0.94694 | 0.94958 | 0.01536 | 0.96505 | 0.97236 | 0.10543 | 0.97286 | 0.00022 | 0.97629 | 0.90159 | 2.0     | 0.46358 | 0.25265 |
| 13.0 | 1.0     | 0.96389 | 0.93031 | 0.92635 | 0.02043 | 0.9541  | 0.96342 | 0.13486 | 0.96436 | 0.00022 | 0.96904 | 0.87249 | 2.0     | 0.48424 | 0.25265 |
| 14.0 | 1.0     | 0.97002 | 0.94201 | 0.96306 | 0.01942 | 0.96219 | 0.96985 | 0.13053 | 0.97019 | 0.00023 | 0.97529 | 0.89217 | 2.0     | 0.46184 | 0.25265 |
| 15.0 | 1.0     | 0.96998 | 0.94188 | 0.95218 | 0.02047 | 0.96227 | 0.9698  | 0.13663 | 0.97016 | 0.00023 | 0.97556 | 0.89176 | 2.0     | 0.45707 | 0.25265 |
| 16.0 | 1.0     | 0.96621 | 0.93464 | 0.93941 | 0.02294 | 0.95769 | 0.96594 | 0.14719 | 0.96648 | 0.00023 | 0.97281 | 0.87893 | 2.0     | 0.43239 | 0.25265 |
| 17.0 | 1.0     | 0.96069 | 0.92412 | 0.92247 | 0.02719 | 0.95098 | 0.96025 | 0.16871 | 0.96114 | 0.00023 | 0.96871 | 0.86074 | 2.0     | 0.45883 | 0.25265 |
| 18.0 | 1.0     | 0.95732 | 0.91833 | 0.93331 | 0.02994 | 0.94708 | 0.95703 | 0.18105 | 0.95761 | 0.00024 | 0.9672  | 0.85106 | 2.0     | 0.44613 | 0.25265 |
| 19.0 | 1.0     | 0.95501 | 0.91391 | 0.91962 | 0.02996 | 0.94447 | 0.95448 | 0.18402 | 0.95555 | 0.00024 | 0.9658  | 0.8441  | 2.0     | 0.47345 | 0.25265 |
| 20.0 | 1.0     | 0.95585 | 0.91607 | 0.92766 | 0.03241 | 0.94596 | 0.95528 | 0.18684 | 0.95643 | 0.00024 | 0.96762 | 0.84934 | 2.0     | 0.4636  | 0.25265 |

Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.30, Tp: 2.00, average link

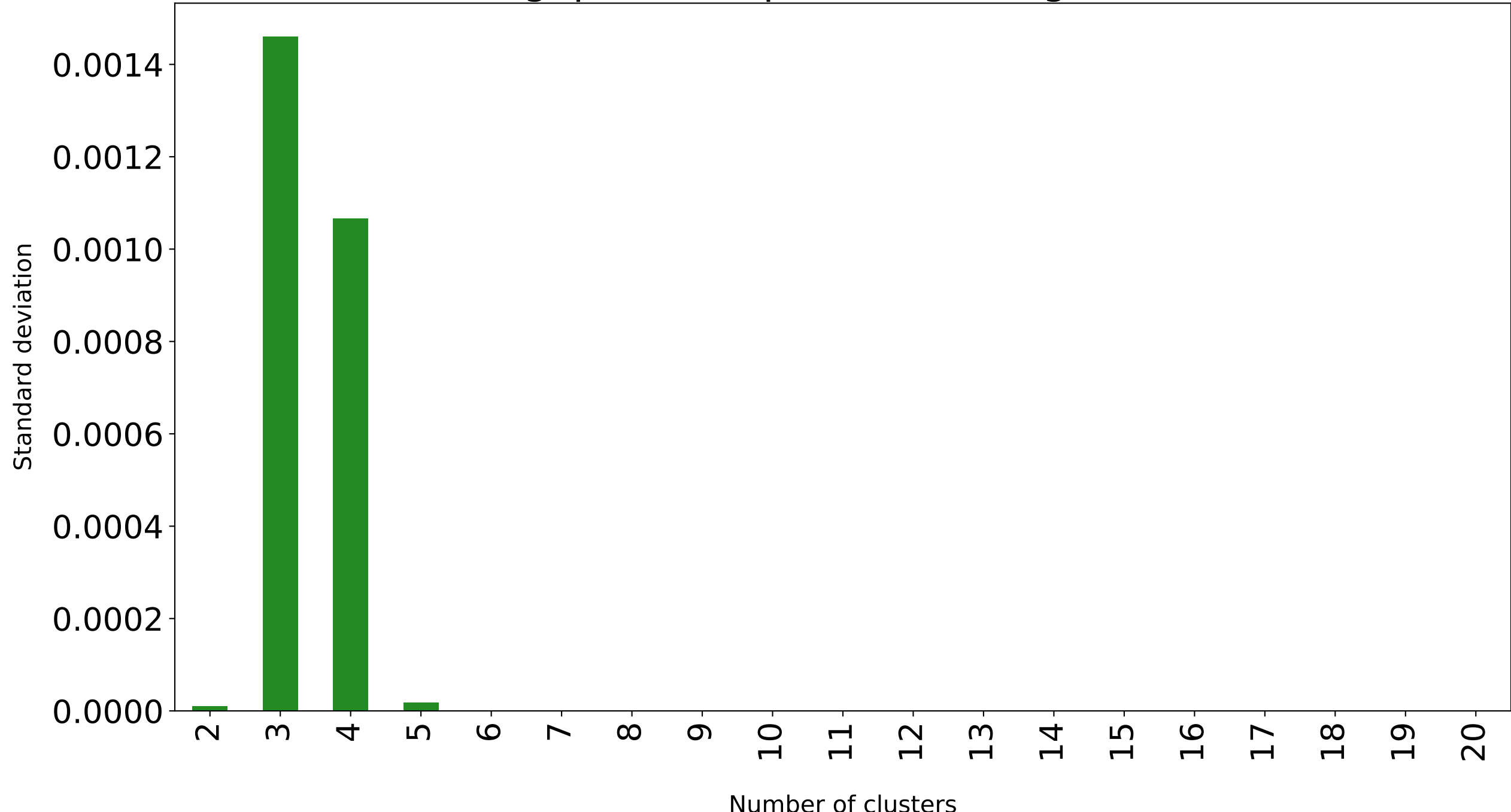


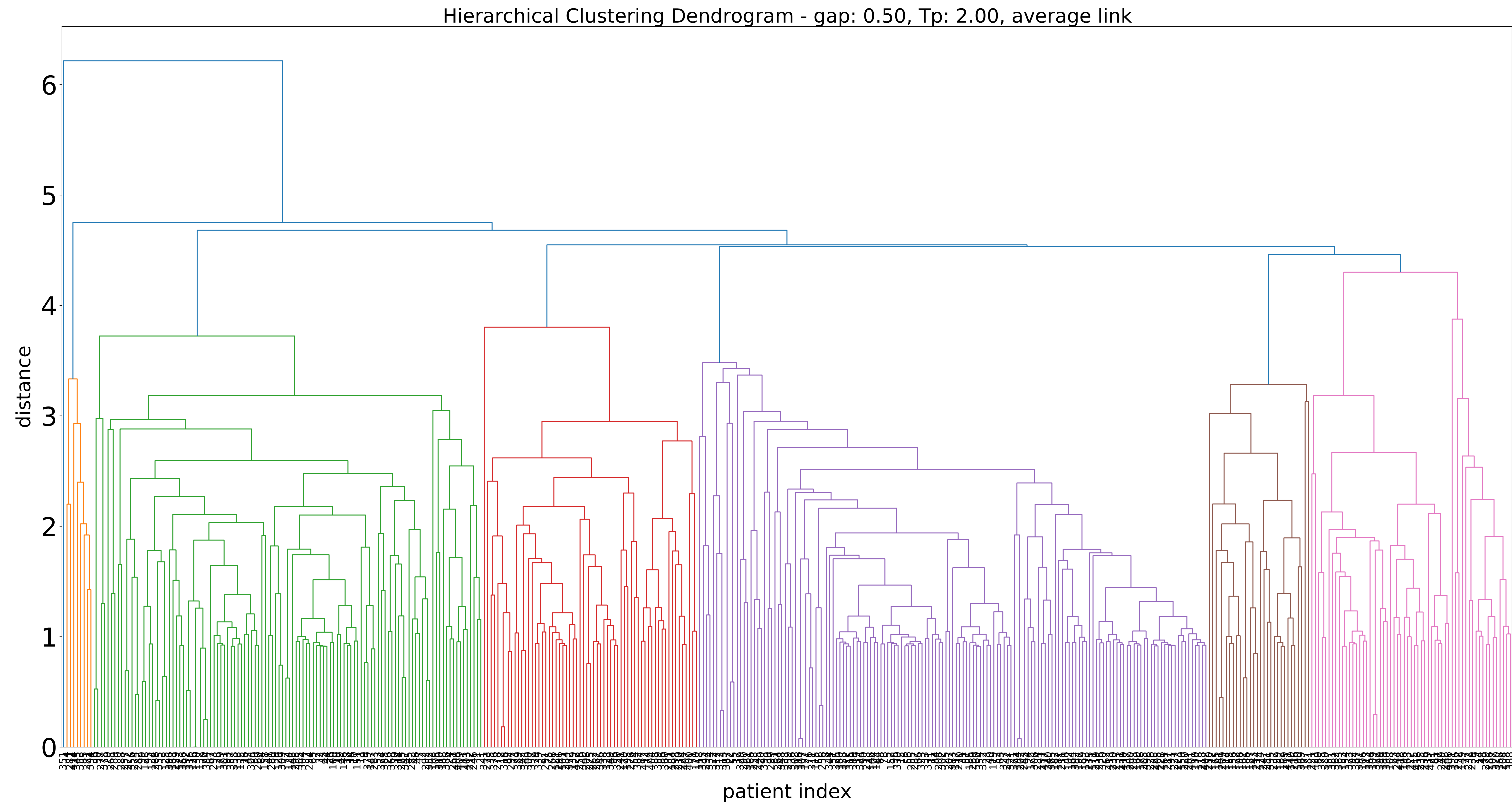


Average values of five clustering indices  
gap: 0.40, Tp: 2.00, average link

| k    | AR      | FM      | J       | AW      | VD      | H       | F       | VI      | K       | Phi     | RT      | SS      | CVNN   | S       | Dunn    |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|---------|---------|
| 2.0  | 1.0     | 0.92107 | 0.8617  | 0.40933 | 0.04782 | 0.42047 | 0.91446 | 0.23441 | 0.92788 | 0.00046 | 0.79965 | 0.79736 | 0.0    | 0.27026 | 0.27501 |
| 3.0  | 1.00001 | 0.90257 | 0.8348  | 0.79394 | 0.05673 | 0.73334 | 0.89593 | 0.25468 | 0.9094  | 0.00013 | 0.80215 | 0.76412 | 0.0    | 0.32195 | 0.16877 |
| 4.0  | 1.00002 | 0.82492 | 0.71904 | 0.72192 | 0.09398 | 0.70288 | 0.81974 | 0.39024 | 0.83021 | 0.00012 | 0.75719 | 0.60677 | 0.0    | 0.35268 | 0.16877 |
| 5.0  | 1.0     | 0.92644 | 0.87325 | 0.9654  | 0.03953 | 0.89461 | 0.92147 | 0.17716 | 0.93156 | 0.00018 | 0.91115 | 0.81456 | 0.0    | 0.35853 | 0.21135 |
| 6.0  | 1.0     | 0.95767 | 0.92099 | 0.97892 | 0.03024 | 0.94317 | 0.95654 | 0.1339  | 0.95881 | 0.0002  | 0.95664 | 0.86503 | 0.0339 | 0.38021 | 0.21995 |
| 7.0  | 1.0     | 0.97698 | 0.9558  | 0.9716  | 0.0206  | 0.9697  | 0.97684 | 0.09402 | 0.97712 | 0.00021 | 0.97811 | 0.9188  | 1.9    | 0.3537  | 0.22615 |
| 8.0  | 1.0     | 0.99776 | 0.99555 | 0.99702 | 0.00194 | 0.99709 | 0.99775 | 0.0153  | 0.99776 | 0.00022 | 0.99795 | 0.99123 | 1.9    | 0.37942 | 0.2463  |
| 9.0  | 1.0     | 0.99558 | 0.99122 | 0.98998 | 0.00302 | 0.99428 | 0.99556 | 0.02392 | 0.9956  | 0.00022 | 0.99596 | 0.98281 | 2.0    | 0.42759 | 0.2463  |
| 10.0 | 1.0     | 0.99023 | 0.98066 | 0.97744 | 0.00523 | 0.98739 | 0.99016 | 0.04309 | 0.9903  | 0.00022 | 0.99114 | 0.96256 | 2.0    | 0.47294 | 0.2463  |
| 11.0 | 1.0     | 0.98627 | 0.97306 | 0.97422 | 0.00686 | 0.98241 | 0.98617 | 0.05381 | 0.98638 | 0.00022 | 0.98789 | 0.9487  | 2.0    | 0.45631 | 0.2471  |
| 12.0 | 1.0     | 0.97947 | 0.95987 | 0.98155 | 0.01121 | 0.97384 | 0.97936 | 0.08236 | 0.97958 | 0.00023 | 0.98236 | 0.92395 | 2.0    | 0.43191 | 0.25416 |
| 13.0 | 1.0     | 0.97863 | 0.95839 | 0.97047 | 0.01311 | 0.97288 | 0.9785  | 0.09123 | 0.97876 | 0.00023 | 0.9819  | 0.92172 | 2.0    | 0.53422 | 0.25416 |
| 14.0 | 1.0     | 0.95492 | 0.91338 | 0.97736 | 0.02592 | 0.94342 | 0.9544  | 0.16436 | 0.95544 | 0.00023 | 0.96328 | 0.84245 | 2.0    | 0.50539 | 0.25416 |
| 15.0 | 1.0     | 0.95807 | 0.9195  | 0.97151 | 0.02581 | 0.94747 | 0.95769 | 0.16633 | 0.95846 | 0.00023 | 0.96622 | 0.85311 | 2.0    | 0.52898 | 0.25416 |
| 16.0 | 1.0     | 0.9618  | 0.9266  | 0.96555 | 0.02544 | 0.95221 | 0.96153 | 0.16386 | 0.96206 | 0.00023 | 0.96952 | 0.8654  | 2.0    | 0.51043 | 0.25416 |
| 17.0 | 1.0     | 0.96296 | 0.92879 | 0.95751 | 0.02519 | 0.95379 | 0.96273 | 0.16338 | 0.9632  | 0.00024 | 0.97076 | 0.8691  | 2.0    | 0.50687 | 0.25416 |
| 18.0 | 1.0     | 0.96515 | 0.93288 | 0.95062 | 0.02406 | 0.95667 | 0.96492 | 0.1536  | 0.96538 | 0.00024 | 0.97286 | 0.87624 | 2.0    | 0.48442 | 0.25416 |
| 19.0 | 1.0     | 0.96211 | 0.92709 | 0.9344  | 0.02525 | 0.95311 | 0.96172 | 0.1628  | 0.96249 | 0.00024 | 0.97089 | 0.86656 | 2.0    | 0.49297 | 0.25416 |
| 20.0 | 1.0     | 0.95631 | 0.91656 | 0.92932 | 0.02895 | 0.94623 | 0.95596 | 0.18418 | 0.95667 | 0.00024 | 0.96738 | 0.84859 | 2.0    | 0.4861  | 0.25416 |

Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.40, Tp: 2.00, average link



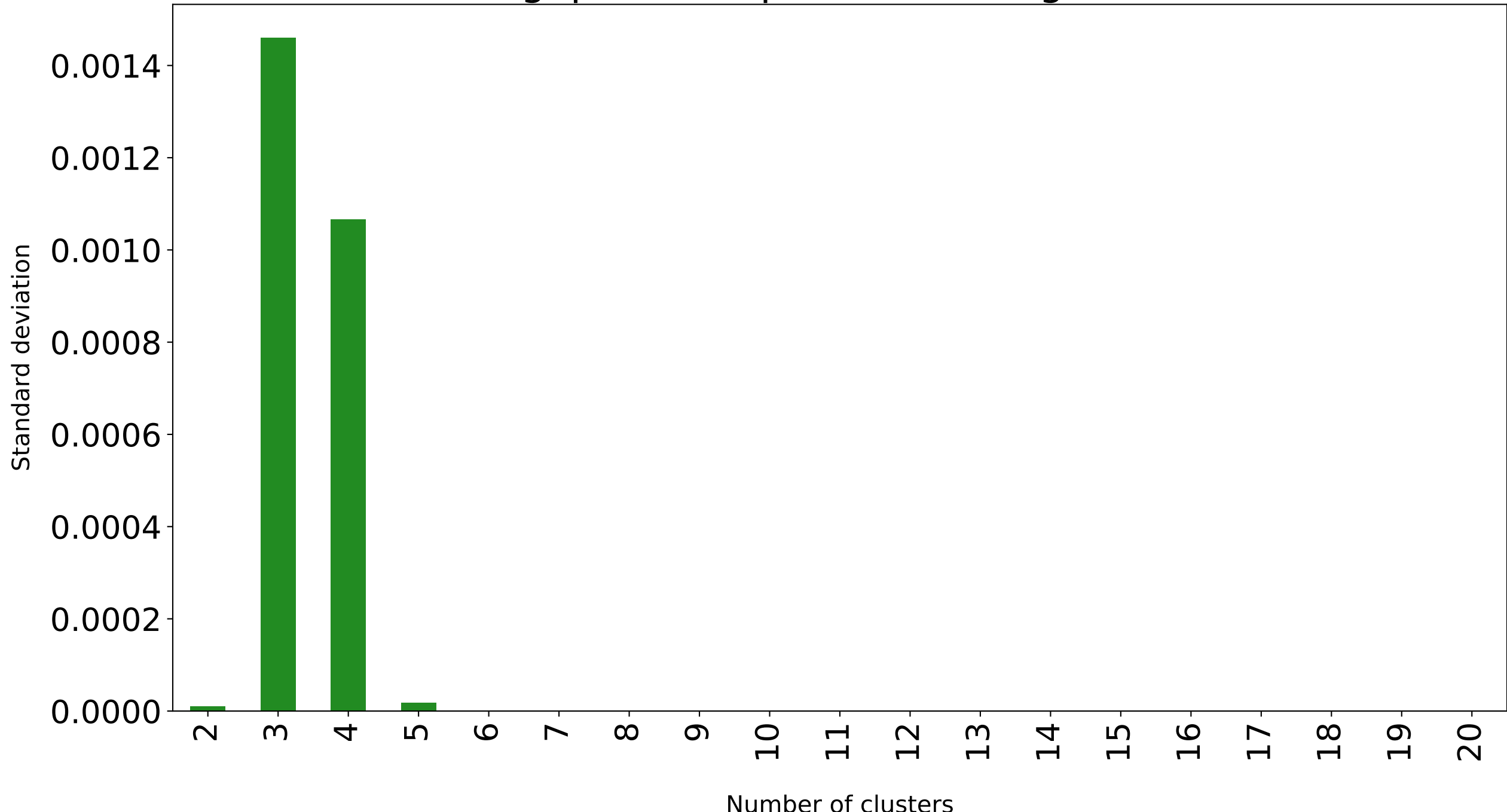


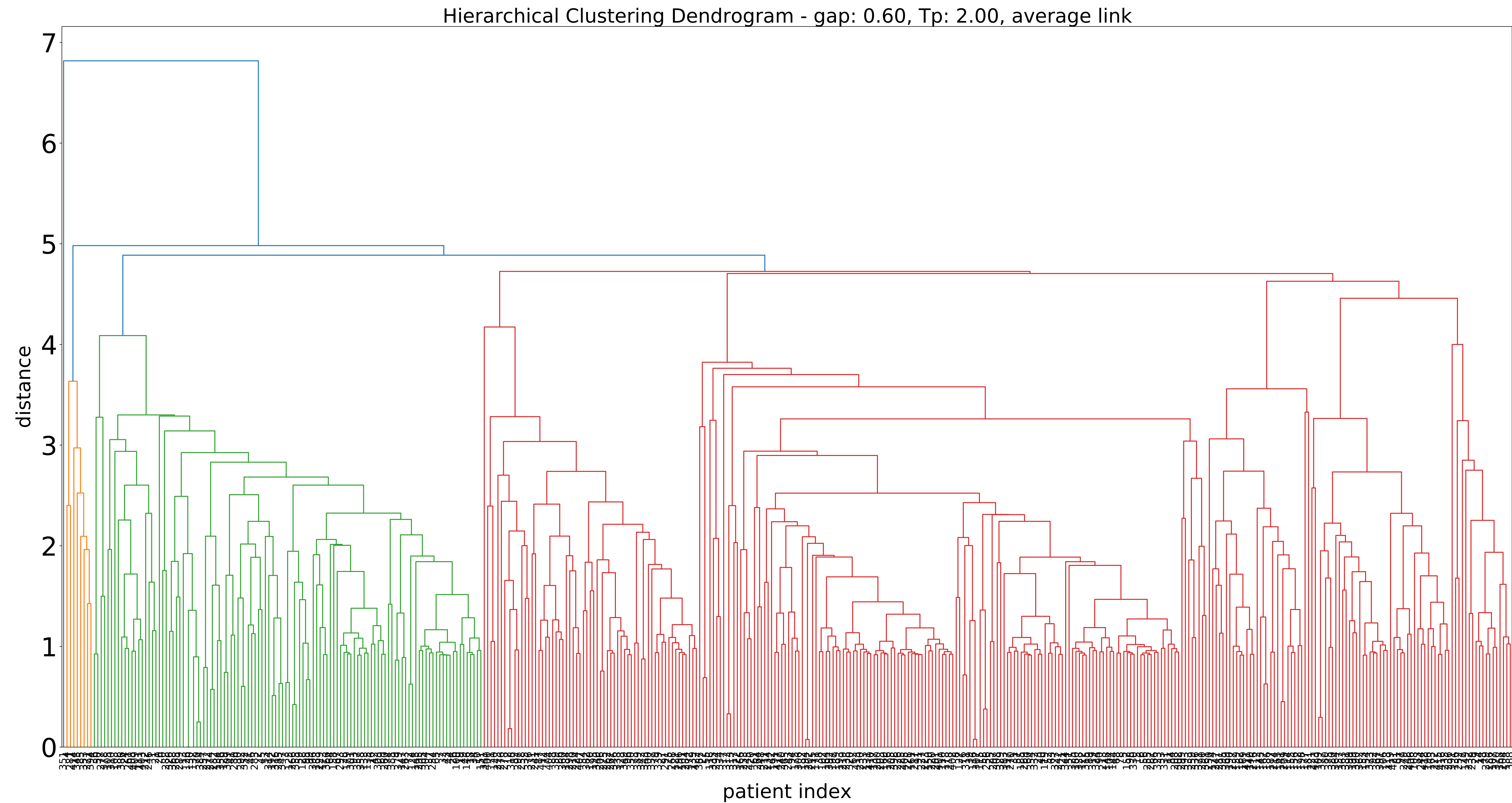


Average values of five clustering indices  
gap: 0.50, Tp: 2.00, average link

| k    | AR      | FM      | J       | AW      | VD      | H       | F       | VI      | K       | Phi     | RT      | SS      | CVNN | S       | Dunn    |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|---------|---------|
| 2.0  | 1.0     | 0.96712 | 0.94054 | 0.45753 | 0.02003 | 0.50794 | 0.96419 | 0.10335 | 0.97014 | 0.00289 | 0.9091  | 0.90905 | 2.0  | 0.65731 | 0.32651 |
| 3.0  | 1.0     | 0.87125 | 0.77708 | 0.40517 | 0.0771  | 0.46528 | 0.85833 | 0.36396 | 0.88476 | 0.0004  | 0.6895  | 0.6837  | 2.0  | 0.51167 | 0.32651 |
| 4.0  | 0.99997 | 0.8808  | 0.79614 | 0.65515 | 0.06452 | 0.73604 | 0.87268 | 0.3012  | 0.8892  | 0.00012 | 0.78384 | 0.70393 | 2.0  | 0.49311 | 0.17736 |
| 5.0  | 1.00001 | 0.81717 | 0.69309 | 0.65156 | 0.09102 | 0.70492 | 0.80998 | 0.40534 | 0.82451 | 0.00012 | 0.75101 | 0.55424 | 2.0  | 0.48519 | 0.17736 |
| 6.0  | 1.0     | 0.9149  | 0.84926 | 0.91769 | 0.05264 | 0.88186 | 0.91236 | 0.22041 | 0.91747 | 0.00018 | 0.90766 | 0.76151 | 2.0  | 0.47003 | 0.21714 |
| 7.0  | 1.0     | 0.98537 | 0.97171 | 0.97653 | 0.01343 | 0.9807  | 0.98529 | 0.06425 | 0.98546 | 0.00021 | 0.98595 | 0.94726 | 2.0  | 0.47745 | 0.23659 |
| 8.0  | 1.0     | 0.99601 | 0.99205 | 0.99049 | 0.00272 | 0.9948  | 0.996   | 0.02206 | 0.99602 | 0.00022 | 0.99629 | 0.98431 | 2.0  | 0.49085 | 0.24441 |
| 9.0  | 1.0     | 0.99233 | 0.98476 | 0.98105 | 0.00474 | 0.99004 | 0.99229 | 0.03943 | 0.99237 | 0.00022 | 0.99292 | 0.97017 | 2.0  | 0.52403 | 0.24441 |
| 10.0 | 1.0     | 0.98914 | 0.97847 | 0.97397 | 0.00576 | 0.98593 | 0.98907 | 0.04956 | 0.98921 | 0.00022 | 0.99003 | 0.95818 | 2.0  | 0.56275 | 0.24441 |
| 11.0 | 1.0     | 0.98802 | 0.97636 | 0.97712 | 0.00597 | 0.98454 | 0.98796 | 0.04942 | 0.98808 | 0.00022 | 0.98921 | 0.95439 | 2.0  | 0.53715 | 0.23818 |
| 12.0 | 1.0     | 0.97884 | 0.95867 | 0.97341 | 0.00991 | 0.97286 | 0.97876 | 0.07915 | 0.97892 | 0.00022 | 0.98146 | 0.92155 | 2.0  | 0.51    | 0.20817 |
| 13.0 | 1.0     | 0.97331 | 0.948   | 0.98715 | 0.01385 | 0.9661  | 0.97308 | 0.10258 | 0.97353 | 0.00023 | 0.97726 | 0.90255 | 2.0  | 0.48567 | 0.23725 |
| 14.0 | 1.0     | 0.97379 | 0.94902 | 0.98267 | 0.01528 | 0.9668  | 0.97361 | 0.11051 | 0.97396 | 0.00023 | 0.97796 | 0.90444 | 2.0  | 0.51776 | 0.23725 |
| 15.0 | 1.0     | 0.97318 | 0.94805 | 0.97238 | 0.01675 | 0.96612 | 0.97305 | 0.11802 | 0.97331 | 0.00023 | 0.97779 | 0.90297 | 2.0  | 0.50025 | 0.23725 |
| 16.0 | 1.0     | 0.97084 | 0.94366 | 0.9592  | 0.01765 | 0.96331 | 0.97068 | 0.12564 | 0.971   | 0.00023 | 0.9762  | 0.89537 | 2.0  | 0.49848 | 0.23725 |
| 17.0 | 1.0     | 0.96655 | 0.93556 | 0.94555 | 0.01973 | 0.95806 | 0.96631 | 0.13635 | 0.96679 | 0.00023 | 0.97304 | 0.88126 | 2.0  | 0.46585 | 0.23725 |
| 18.0 | 1.0     | 0.95895 | 0.92137 | 0.96981 | 0.02506 | 0.94902 | 0.95861 | 0.16539 | 0.95929 | 0.00024 | 0.96814 | 0.85683 | 2.0  | 0.44841 | 0.24832 |
| 19.0 | 1.0     | 0.96372 | 0.93036 | 0.96489 | 0.02305 | 0.95509 | 0.96349 | 0.15189 | 0.96395 | 0.00024 | 0.97226 | 0.87225 | 2.0  | 0.42974 | 0.24832 |
| 20.0 | 1.0     | 0.96406 | 0.93101 | 0.95599 | 0.02201 | 0.95562 | 0.96385 | 0.14777 | 0.96426 | 0.00024 | 0.97285 | 0.87331 | 2.0  | 0.43038 | 0.24832 |

Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.50, Tp: 2.00, average link

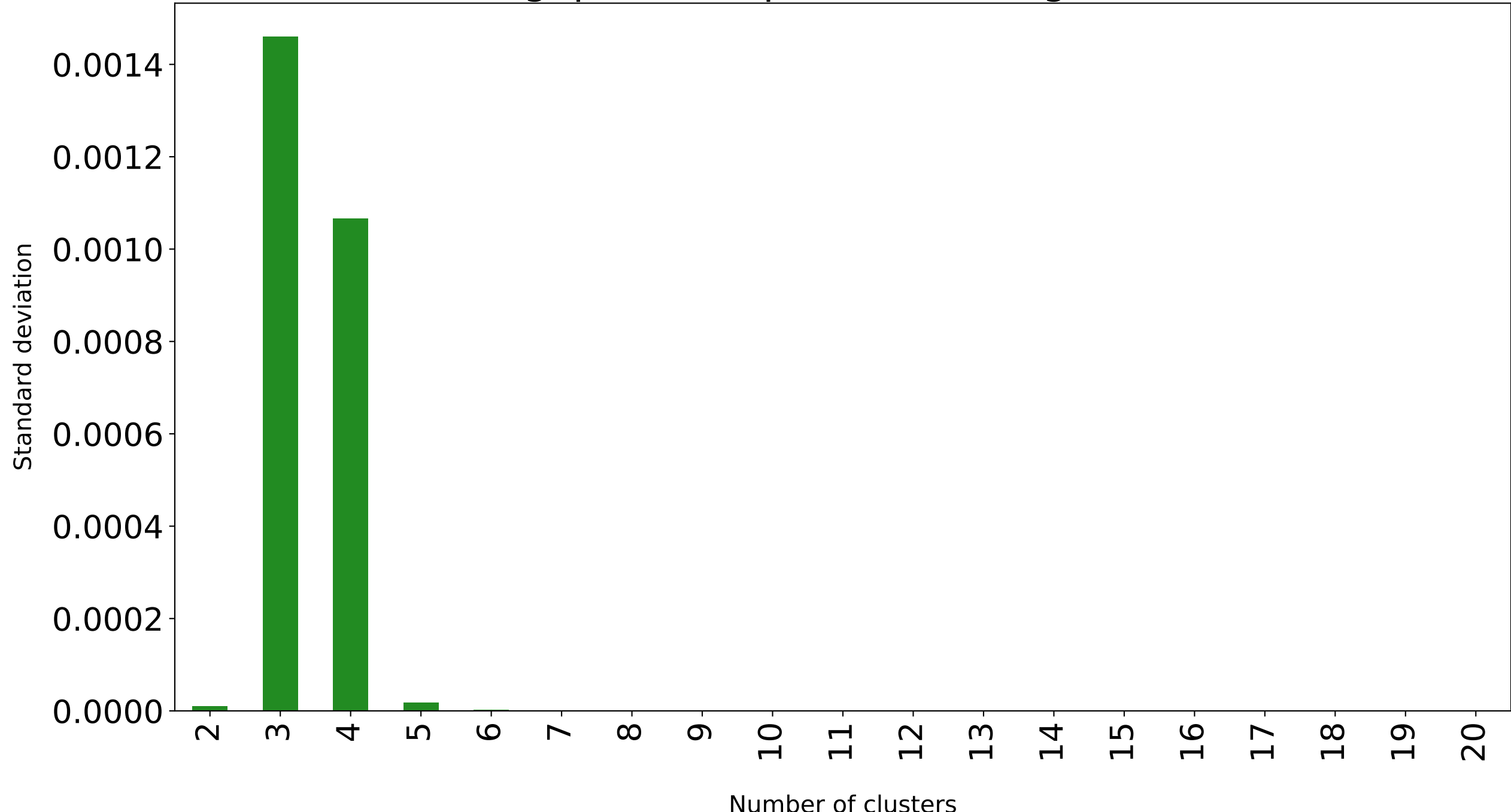




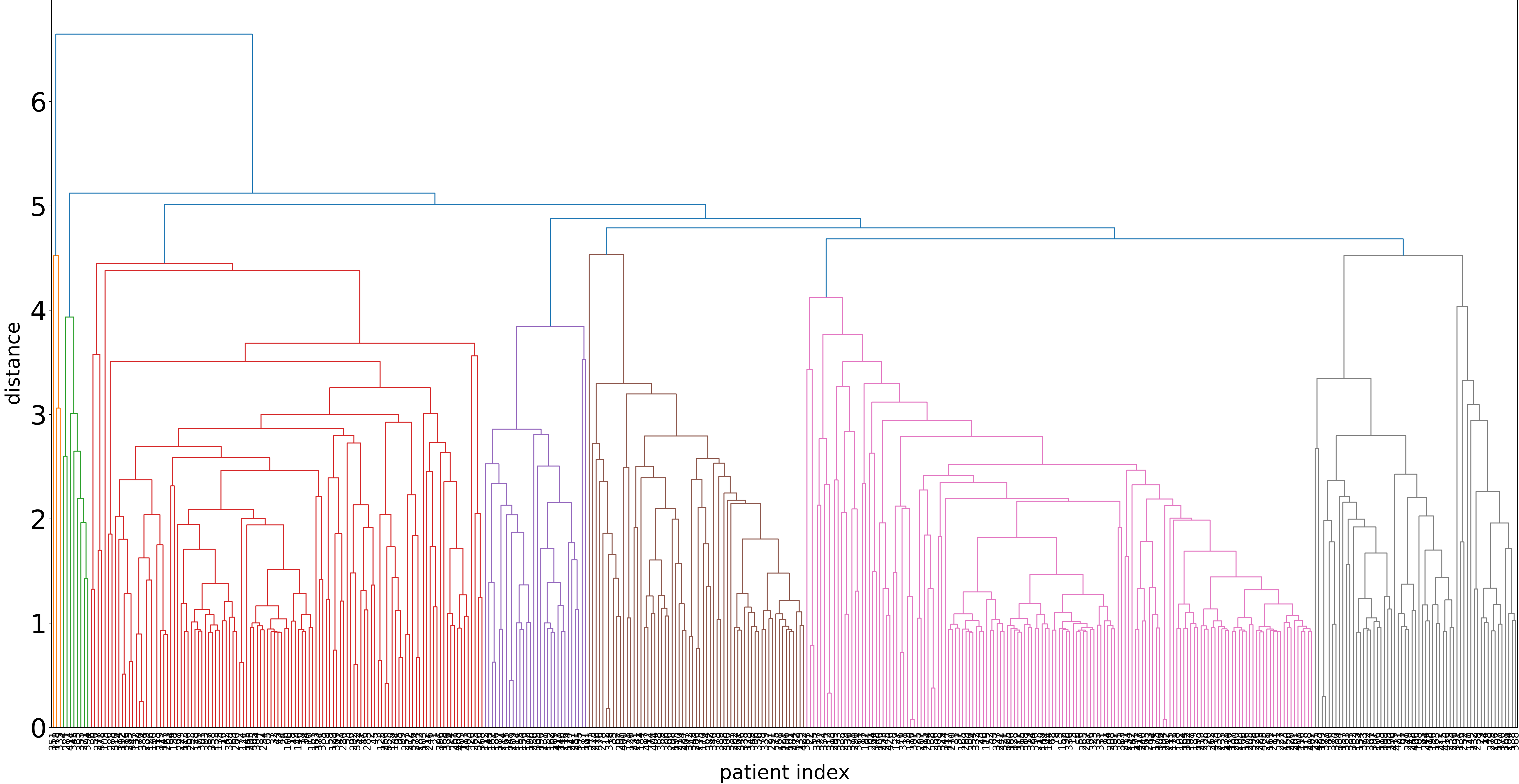
Average values of five clustering indices  
gap: 0.60, Tp: 2.00, average link

| k    | AR      | FM      | J       | AW      | VD      | H       | F       | VI      | K       | Phi     | RT      | SS      | CVNN | S       | Dunn    |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|---------|---------|
| 2.0  | 1.0     | 0.98584 | 0.97385 | 0.46536 | 0.00886 | 0.56656 | 0.98479 | 0.05355 | 0.98692 | 0.00294 | 0.95772 | 0.95768 | 2.0  | 0.67565 | 0.34532 |
| 3.0  | 1.0     | 0.90382 | 0.83173 | 0.51245 | 0.05778 | 0.57016 | 0.89496 | 0.27708 | 0.91298 | 0.0005  | 0.76175 | 0.75741 | 2.0  | 0.51274 | 0.31778 |
| 4.0  | 1.00003 | 0.93578 | 0.88666 | 0.80487 | 0.03361 | 0.85818 | 0.93209 | 0.17531 | 0.93955 | 0.00014 | 0.87867 | 0.82662 | 2.0  | 0.49382 | 0.17471 |
| 5.0  | 1.00001 | 0.82091 | 0.7061  | 0.69117 | 0.08748 | 0.69906 | 0.81674 | 0.4117  | 0.82516 | 0.00012 | 0.75056 | 0.57636 | 2.0  | 0.48478 | 0.17471 |
| 6.0  | 1.0     | 0.89613 | 0.81923 | 0.91416 | 0.06165 | 0.855   | 0.89282 | 0.26184 | 0.89948 | 0.00017 | 0.88657 | 0.72203 | 2.0  | 0.47024 | 0.21843 |
| 7.0  | 1.0     | 0.98235 | 0.96642 | 0.97838 | 0.01269 | 0.97653 | 0.98208 | 0.06658 | 0.98261 | 0.00021 | 0.98258 | 0.93973 | 2.0  | 0.47774 | 0.24099 |
| 8.0  | 1.0     | 0.9897  | 0.97985 | 0.98532 | 0.00772 | 0.98657 | 0.98965 | 0.04783 | 0.98974 | 0.00022 | 0.99044 | 0.96163 | 2.0  | 0.49151 | 0.24476 |
| 9.0  | 1.0     | 0.99005 | 0.98032 | 0.97837 | 0.00591 | 0.98711 | 0.99002 | 0.04912 | 0.99009 | 0.00022 | 0.9909  | 0.96173 | 2.0  | 0.53865 | 0.24476 |
| 10.0 | 1.0     | 0.98821 | 0.97679 | 0.98399 | 0.00636 | 0.98477 | 0.9882  | 0.0538  | 0.98823 | 0.00022 | 0.98939 | 0.95507 | 2.0  | 0.51189 | 0.23515 |
| 11.0 | 1.0     | 0.98855 | 0.9774  | 0.97882 | 0.00604 | 0.98524 | 0.98851 | 0.05145 | 0.98858 | 0.00022 | 0.98976 | 0.95625 | 2.0  | 0.53977 | 0.23515 |
| 12.0 | 1.0     | 0.98044 | 0.96167 | 0.9747  | 0.00919 | 0.97487 | 0.9804  | 0.07778 | 0.98047 | 0.00022 | 0.98278 | 0.9266  | 2.0  | 0.52129 | 0.23515 |
| 13.0 | 1.0     | 0.97483 | 0.95095 | 0.97661 | 0.013   | 0.96788 | 0.97474 | 0.10149 | 0.97491 | 0.00022 | 0.97837 | 0.90723 | 2.0  | 0.49964 | 0.19471 |
| 14.0 | 1.0     | 0.97162 | 0.94494 | 0.96833 | 0.01524 | 0.9639  | 0.97153 | 0.11724 | 0.9717  | 0.00023 | 0.97594 | 0.8966  | 2.0  | 0.52898 | 0.21597 |
| 15.0 | 1.0     | 0.96724 | 0.93675 | 0.95327 | 0.01673 | 0.95844 | 0.96713 | 0.13008 | 0.96734 | 0.00023 | 0.97255 | 0.88227 | 2.0  | 0.5133  | 0.21597 |
| 16.0 | 1.0     | 0.96967 | 0.94145 | 0.96479 | 0.01652 | 0.96175 | 0.96956 | 0.12556 | 0.96978 | 0.00023 | 0.97511 | 0.89107 | 2.0  | 0.50064 | 0.21597 |
| 17.0 | 1.0     | 0.96653 | 0.93559 | 0.9512  | 0.01743 | 0.95794 | 0.96637 | 0.12989 | 0.96669 | 0.00023 | 0.97288 | 0.88102 | 2.0  | 0.47053 | 0.21597 |
| 18.0 | 1.0     | 0.96081 | 0.92475 | 0.93364 | 0.02042 | 0.95091 | 0.96053 | 0.1489  | 0.9611  | 0.00023 | 0.96855 | 0.86213 | 2.0  | 0.54764 | 0.21597 |
| 19.0 | 1.0     | 0.93926 | 0.88562 | 0.94305 | 0.0314  | 0.92469 | 0.9389  | 0.21244 | 0.93962 | 0.00023 | 0.95366 | 0.79686 | 2.0  | 0.5257  | 0.22524 |
| 20.0 | 1.0     | 0.93901 | 0.88538 | 0.93472 | 0.03208 | 0.92458 | 0.93871 | 0.21828 | 0.93932 | 0.00023 | 0.95409 | 0.79675 | 2.0  | 0.54291 | 0.22524 |

Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.60, Tp: 2.00, average link



Hierarchical Clustering Dendrogram - gap: 0.70, Tp: 2.00, average link

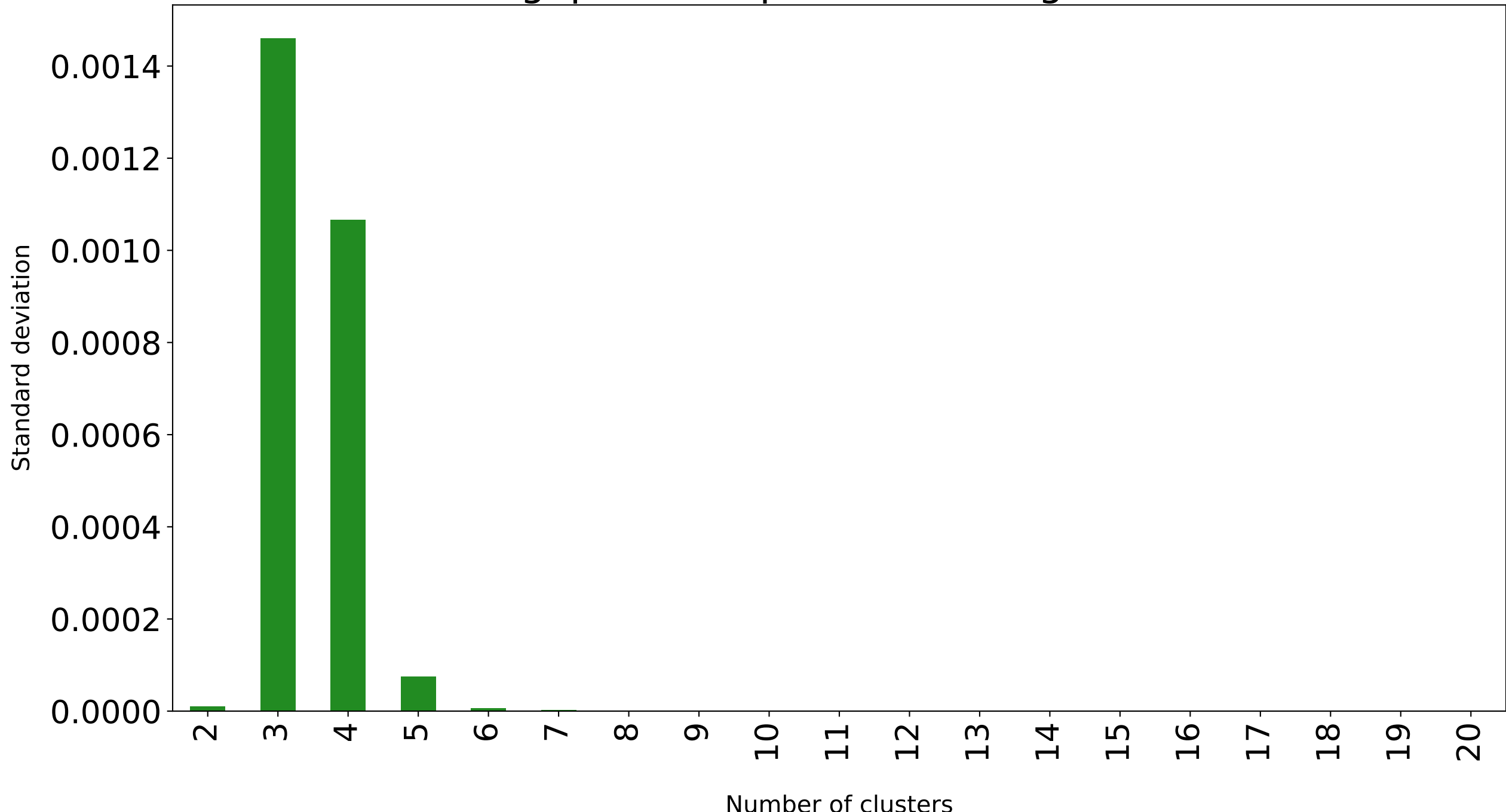


Cophenetic Correlation Coefficient: 0.7636776006646383

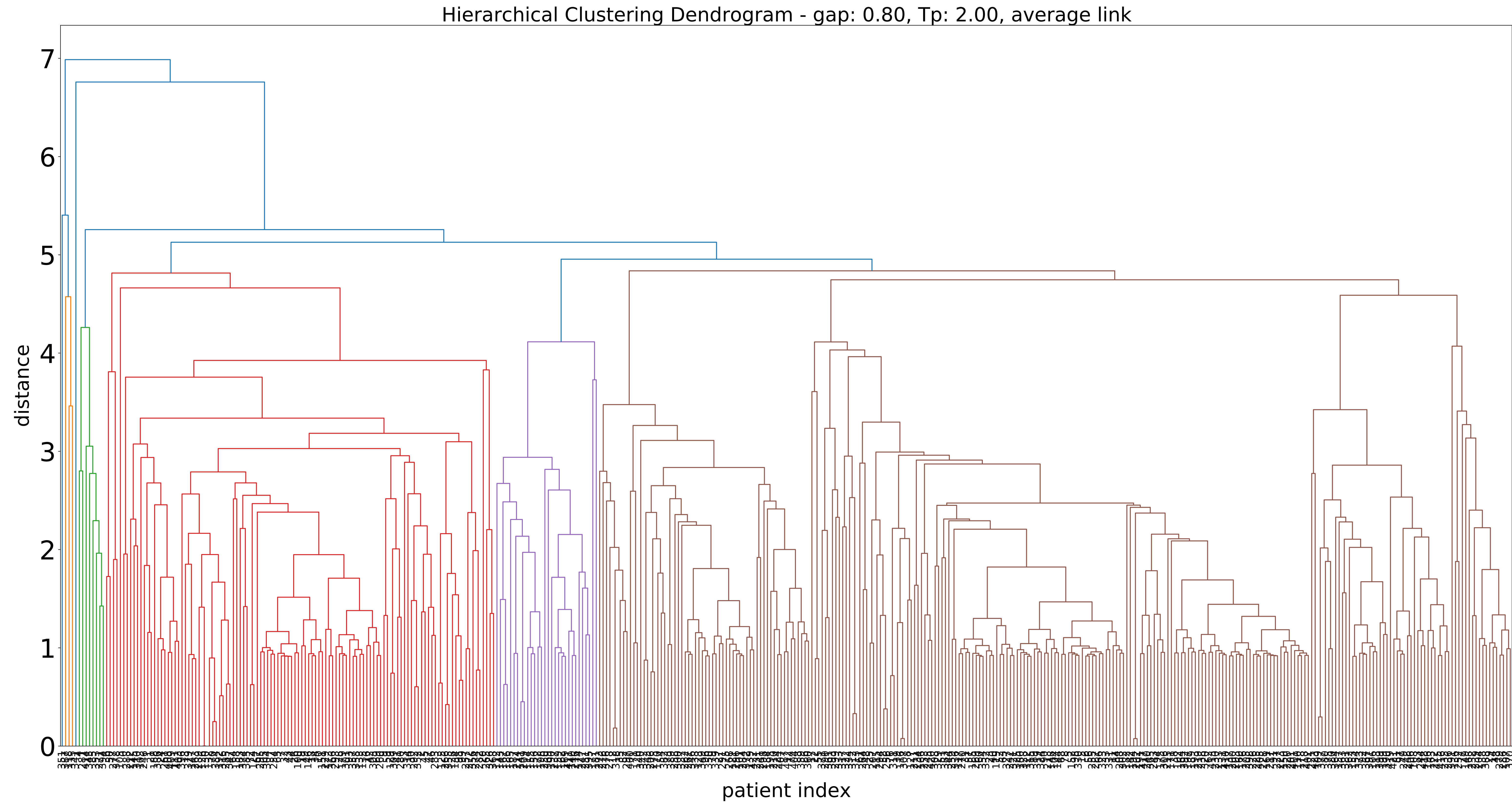
Average values of five clustering indices  
gap: 0.70, Tp: 2.00, average link

| k    | AR      | FM      | J       | AW      | VD      | H       | F       | VI      | K       | Phi     | RT      | SS      | CVNN    | S       | Dunn    |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0  | 1.0     | 0.99302 | 0.98699 | 0.86228 | 0.00501 | 0.74773 | 0.99262 | 0.03418 | 0.99344 | 0.00252 | 0.9781  | 0.978   | 1.33333 | 0.35482 | 0.17705 |
| 3.0  | 1.0     | 0.91884 | 0.85862 | 0.58816 | 0.04896 | 0.54355 | 0.91234 | 0.24641 | 0.92554 | 0.00048 | 0.79715 | 0.79353 | 1.33333 | 0.30429 | 0.17705 |
| 4.0  | 1.0     | 0.92638 | 0.87137 | 0.86377 | 0.04187 | 0.78624 | 0.92139 | 0.21588 | 0.93152 | 0.00013 | 0.83947 | 0.80809 | 1.33333 | 0.32891 | 0.18829 |
| 5.0  | 0.99999 | 0.89415 | 0.81758 | 0.83843 | 0.05345 | 0.80338 | 0.88969 | 0.28394 | 0.89872 | 0.00013 | 0.82497 | 0.7248  | 1.33333 | 0.34555 | 0.18957 |
| 6.0  | 1.0     | 0.87437 | 0.77872 | 0.86835 | 0.0635  | 0.81095 | 0.86788 | 0.30118 | 0.88096 | 0.00014 | 0.83542 | 0.66408 | 1.33333 | 0.36043 | 0.1911  |
| 7.0  | 1.0     | 0.92316 | 0.85987 | 0.98411 | 0.0422  | 0.89592 | 0.91827 | 0.19376 | 0.92816 | 0.00019 | 0.91575 | 0.77864 | 1.33333 | 0.3576  | 0.23045 |
| 8.0  | 1.0     | 0.96813 | 0.94006 | 0.97554 | 0.02162 | 0.95761 | 0.96722 | 0.1153  | 0.96905 | 0.00021 | 0.96798 | 0.89594 | 2.0     | 0.42931 | 0.23045 |
| 9.0  | 1.0     | 0.97767 | 0.95673 | 0.98337 | 0.01874 | 0.9709  | 0.97744 | 0.10318 | 0.9779  | 0.00021 | 0.97921 | 0.91943 | 2.0     | 0.44658 | 0.23045 |
| 10.0 | 1.0     | 0.9835  | 0.96766 | 0.97637 | 0.01094 | 0.97861 | 0.98345 | 0.07469 | 0.98354 | 0.00022 | 0.985   | 0.9381  | 2.0     | 0.50792 | 0.23045 |
| 11.0 | 1.0     | 0.98636 | 0.97317 | 0.98283 | 0.00825 | 0.98243 | 0.98632 | 0.06264 | 0.9864  | 0.00022 | 0.98784 | 0.94831 | 2.0     | 0.48634 | 0.23962 |
| 12.0 | 1.0     | 0.98406 | 0.9687  | 0.97574 | 0.0088  | 0.97952 | 0.98402 | 0.07059 | 0.9841  | 0.00022 | 0.98595 | 0.93989 | 2.0     | 0.52518 | 0.23962 |
| 13.0 | 1.0     | 0.9819  | 0.96457 | 0.98039 | 0.0114  | 0.97686 | 0.98186 | 0.08618 | 0.98195 | 0.00023 | 0.9843  | 0.93227 | 2.0     | 0.50913 | 0.23962 |
| 14.0 | 1.0     | 0.97874 | 0.95857 | 0.96912 | 0.0129  | 0.97287 | 0.97868 | 0.0964  | 0.97879 | 0.00023 | 0.98175 | 0.92151 | 2.0     | 0.52994 | 0.23962 |
| 15.0 | 1.0     | 0.97418 | 0.94984 | 0.95592 | 0.01373 | 0.96714 | 0.97406 | 0.10764 | 0.9743  | 0.00023 | 0.978   | 0.9058  | 2.0     | 0.51672 | 0.23962 |
| 16.0 | 1.0     | 0.96881 | 0.93955 | 0.94158 | 0.01484 | 0.96044 | 0.96858 | 0.11753 | 0.96904 | 0.00022 | 0.97365 | 0.88753 | 2.0     | 0.48716 | 0.23962 |
| 17.0 | 1.0     | 0.96656 | 0.93547 | 0.94892 | 0.01643 | 0.95785 | 0.96641 | 0.12756 | 0.96671 | 0.00023 | 0.97257 | 0.88022 | 2.0     | 0.47756 | 0.23895 |
| 18.0 | 1.0     | 0.95973 | 0.92278 | 0.94224 | 0.0205  | 0.94952 | 0.95955 | 0.15237 | 0.95991 | 0.00023 | 0.96776 | 0.85827 | 2.0     | 0.46001 | 0.1741  |
| 19.0 | 1.0     | 0.95568 | 0.91523 | 0.92703 | 0.02287 | 0.9446  | 0.95538 | 0.16732 | 0.95597 | 0.00023 | 0.96483 | 0.84561 | 2.0     | 0.47727 | 0.1741  |
| 20.0 | 1.0     | 0.95082 | 0.90619 | 0.91121 | 0.02503 | 0.93873 | 0.95033 | 0.18289 | 0.9513  | 0.00023 | 0.96134 | 0.83076 | 2.0     | 0.50402 | 0.1741  |

Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.70, Tp: 2.00, average link





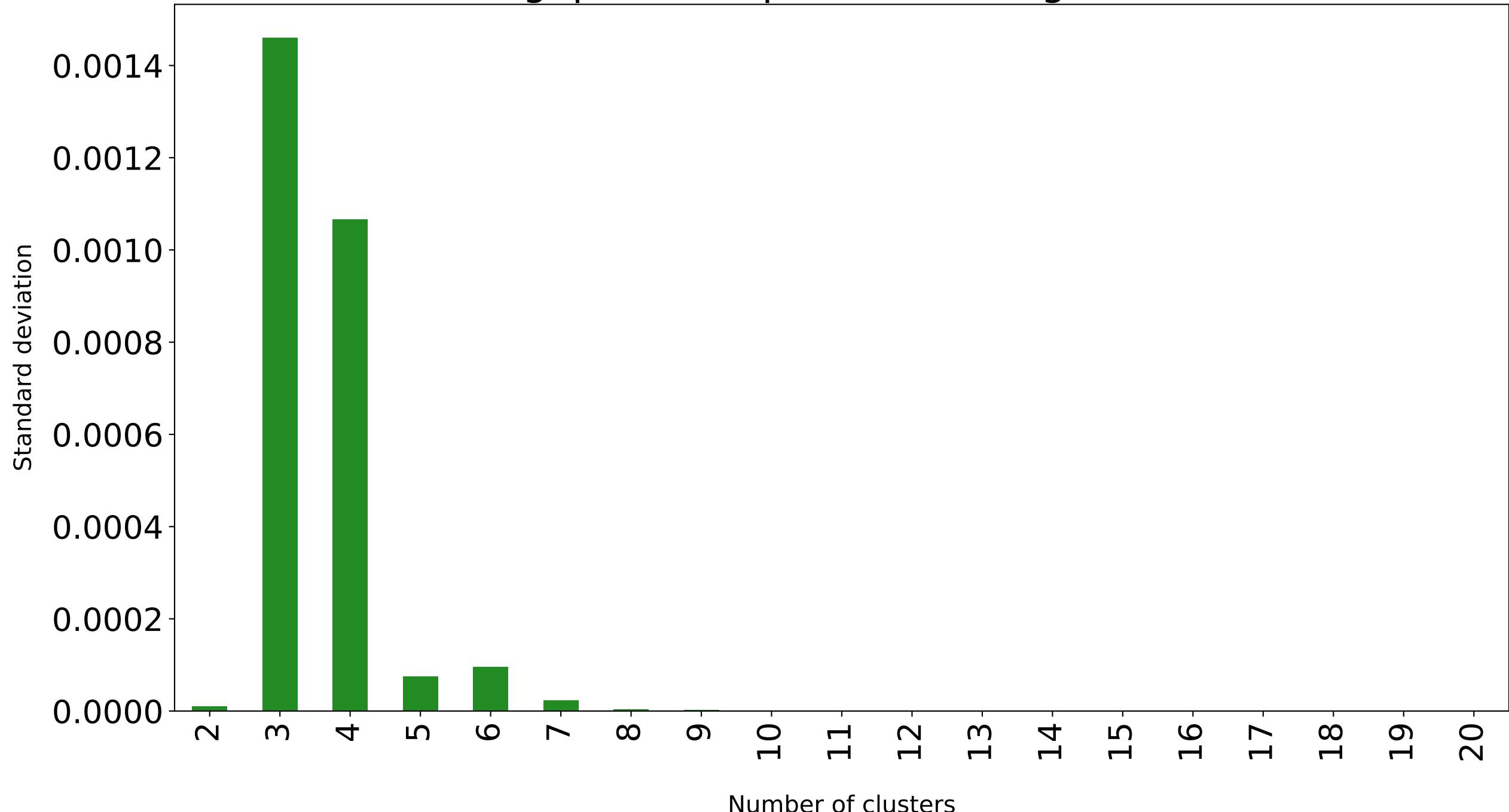


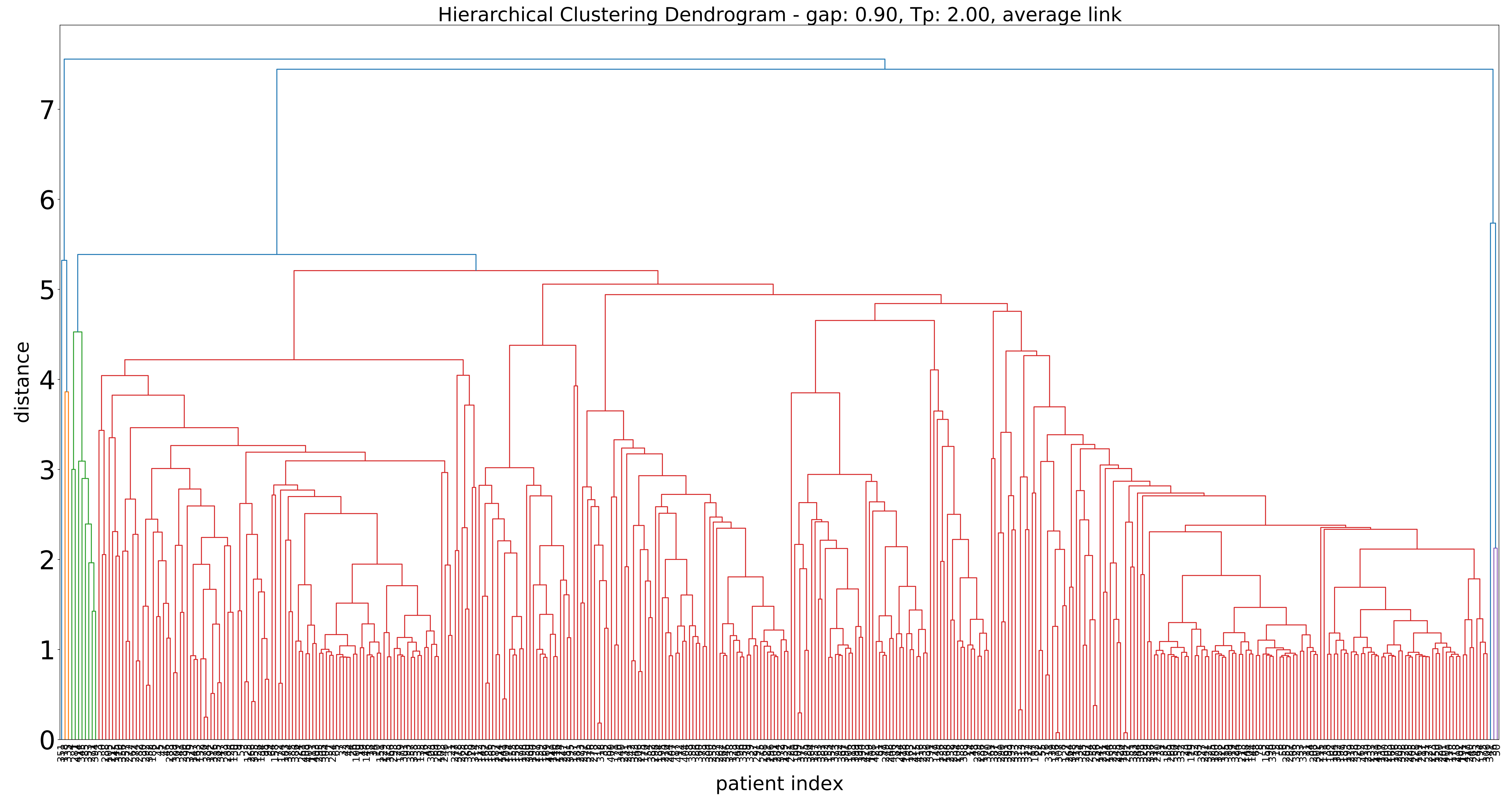
Cophenetic Correlation Coefficient: 0.7557382310845117

Average values of five clustering indices  
gap: 0.80, Tp: 2.00, average link

| k    | AR      | FM      | J       | AW      | VD      | H       | F       | VI      | K       | Phi     | RT      | SS      | CVNN | S       | Dunn    |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|---------|---------|
| 2.0  | 1.0     | 0.99494 | 0.99017 | 0.86116 | 0.00365 | 0.7289  | 0.99483 | 0.0316  | 0.99504 | 0.00196 | 0.98173 | 0.98161 | 1.5  | 0.32455 | 0.1724  |
| 3.0  | 1.0     | 0.98297 | 0.96842 | 0.69142 | 0.01104 | 0.69069 | 0.98198 | 0.0757  | 0.98399 | 0.00122 | 0.94785 | 0.94722 | 2.0  | 0.51957 | 0.1724  |
| 4.0  | 1.0     | 0.9378  | 0.88883 | 0.39621 | 0.0375  | 0.49359 | 0.93223 | 0.21077 | 0.9436  | 0.00068 | 0.83372 | 0.83163 | 2.0  | 0.61026 | 0.1724  |
| 5.0  | 0.99999 | 0.8489  | 0.73828 | 0.35257 | 0.09028 | 0.40948 | 0.83315 | 0.43535 | 0.86541 | 0.00026 | 0.64218 | 0.62972 | 2.0  | 0.53906 | 0.1724  |
| 6.0  | 1.0     | 0.8968  | 0.81545 | 0.75602 | 0.05406 | 0.7707  | 0.88916 | 0.29595 | 0.90469 | 0.00013 | 0.80058 | 0.7182  | 2.0  | 0.51598 | 0.17979 |
| 7.0  | 1.0     | 0.85752 | 0.7566  | 0.71889 | 0.07234 | 0.75961 | 0.8499  | 0.37344 | 0.86537 | 0.00012 | 0.78627 | 0.64142 | 2.0  | 0.50023 | 0.1806  |
| 8.0  | 1.0     | 0.86704 | 0.76902 | 0.82431 | 0.06831 | 0.80406 | 0.86119 | 0.32937 | 0.87297 | 0.00014 | 0.83575 | 0.65143 | 2.0  | 0.49084 | 0.18446 |
| 9.0  | 1.0     | 0.86233 | 0.75624 | 0.74257 | 0.06768 | 0.80779 | 0.85505 | 0.318   | 0.86972 | 0.00015 | 0.84386 | 0.62858 | 2.0  | 0.46748 | 0.18446 |
| 10.0 | 1.0     | 0.95181 | 0.9105  | 0.97441 | 0.02981 | 0.93607 | 0.94961 | 0.15185 | 0.95406 | 0.0002  | 0.95091 | 0.85074 | 2.0  | 0.45865 | 0.22092 |
| 11.0 | 1.0     | 0.97068 | 0.9437  | 0.96121 | 0.0244  | 0.96186 | 0.97028 | 0.12739 | 0.97108 | 0.00021 | 0.97285 | 0.89713 | 2.0  | 0.50389 | 0.22092 |
| 12.0 | 1.0     | 0.98341 | 0.9676  | 0.98365 | 0.01277 | 0.97867 | 0.9833  | 0.0815  | 0.98352 | 0.00022 | 0.98527 | 0.93863 | 2.0  | 0.50944 | 0.22795 |
| 13.0 | 1.0     | 0.98417 | 0.96891 | 0.97468 | 0.01039 | 0.97974 | 0.98412 | 0.07731 | 0.98422 | 0.00022 | 0.98619 | 0.94032 | 2.0  | 0.55276 | 0.22795 |
| 14.0 | 1.0     | 0.97972 | 0.96028 | 0.9617  | 0.01129 | 0.9741  | 0.97961 | 0.08993 | 0.97982 | 0.00022 | 0.98242 | 0.92443 | 2.0  | 0.53833 | 0.22795 |
| 15.0 | 1.0     | 0.97305 | 0.94742 | 0.94566 | 0.01321 | 0.9657  | 0.97283 | 0.10701 | 0.97326 | 0.00022 | 0.97688 | 0.90115 | 2.0  | 0.50483 | 0.22795 |
| 16.0 | 1.0     | 0.96332 | 0.92935 | 0.93676 | 0.01648 | 0.95353 | 0.96312 | 0.13458 | 0.96353 | 0.00022 | 0.96932 | 0.86957 | 2.0  | 0.48871 | 0.23406 |
| 17.0 | 1.0     | 0.95654 | 0.91644 | 0.91757 | 0.0185  | 0.94513 | 0.95614 | 0.1506  | 0.95693 | 0.00022 | 0.96396 | 0.84718 | 2.0  | 0.50949 | 0.23406 |
| 18.0 | 1.0     | 0.96125 | 0.92548 | 0.93755 | 0.01863 | 0.95142 | 0.96106 | 0.14411 | 0.96144 | 0.00023 | 0.9689  | 0.86262 | 2.0  | 0.49813 | 0.23406 |
| 19.0 | 1.0     | 0.96716 | 0.9366  | 0.95685 | 0.01845 | 0.95908 | 0.96706 | 0.13617 | 0.96727 | 0.00024 | 0.9743  | 0.88199 | 2.0  | 0.48987 | 0.22006 |
| 20.0 | 1.0     | 0.96663 | 0.93564 | 0.96086 | 0.02157 | 0.95862 | 0.96651 | 0.14917 | 0.96675 | 0.00024 | 0.97439 | 0.8805  | 2.0  | 0.4737  | 0.1798  |

Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.80, Tp: 2.00, average link

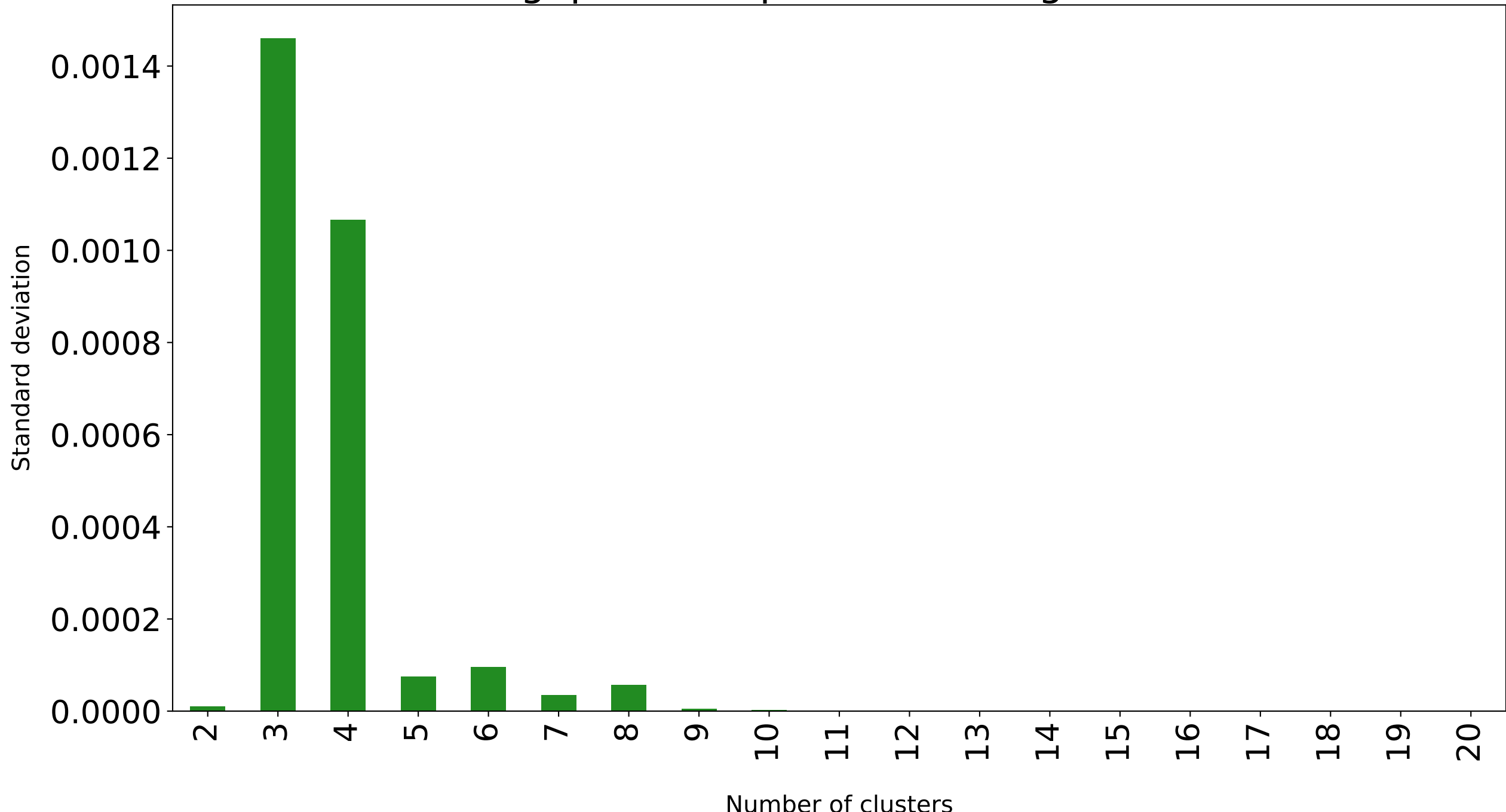


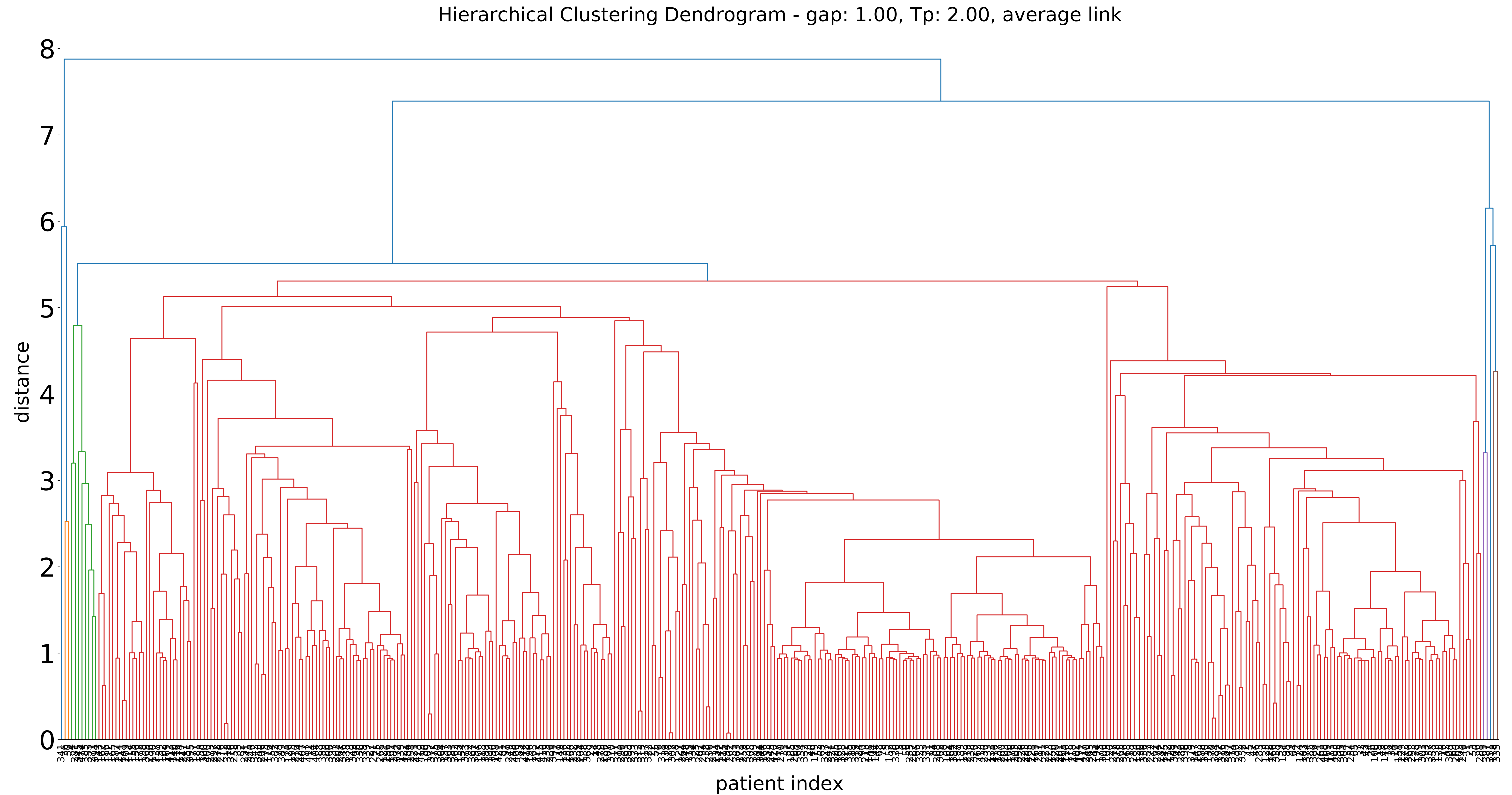


Average values of five clustering indices  
gap: 0.90, Tp: 2.00, average link

| k    | AR      | FM      | J       | AW      | VD      | H       | F       | VI      | K       | Phi     | RT      | SS      | CVNN    | S       | Dunn    |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0  | 1.0     | 0.99398 | 0.98829 | 0.69923 | 0.0042  | 0.65295 | 0.99387 | 0.03744 | 0.99409 | 0.00209 | 0.97806 | 0.97795 | 1.33333 | 0.36484 | 0.17583 |
| 3.0  | 1.0     | 0.99105 | 0.9827  | 0.77759 | 0.00705 | 0.78305 | 0.99082 | 0.05597 | 0.99128 | 0.00116 | 0.9687  | 0.96808 | 1.33333 | 0.34596 | 0.18986 |
| 4.0  | 1.0     | 0.97347 | 0.95121 | 0.59582 | 0.01749 | 0.6762  | 0.97163 | 0.11607 | 0.97538 | 0.00085 | 0.92169 | 0.9203  | 2.0     | 0.54961 | 0.18986 |
| 5.0  | 1.0     | 0.91912 | 0.85685 | 0.5673  | 0.04989 | 0.54456 | 0.91245 | 0.27104 | 0.92604 | 0.00037 | 0.7921  | 0.78498 | 2.0     | 0.48497 | 0.18986 |
| 6.0  | 0.99999 | 0.83447 | 0.7152  | 0.32669 | 0.10012 | 0.41373 | 0.81619 | 0.48412 | 0.85383 | 0.00022 | 0.61675 | 0.60186 | 2.0     | 0.55814 | 0.18986 |
| 7.0  | 1.0     | 0.89314 | 0.81009 | 0.73998 | 0.05738 | 0.76538 | 0.88486 | 0.31638 | 0.90174 | 0.00013 | 0.79613 | 0.71264 | 2.0     | 0.52828 | 0.17009 |
| 8.0  | 1.0     | 0.85375 | 0.74986 | 0.71891 | 0.07608 | 0.75253 | 0.8447  | 0.39557 | 0.86311 | 0.00012 | 0.77928 | 0.6336  | 2.0     | 0.51273 | 0.17009 |
| 9.0  | 1.0     | 0.84393 | 0.72711 | 0.78918 | 0.07971 | 0.77006 | 0.83571 | 0.38974 | 0.85231 | 0.00014 | 0.80542 | 0.58958 | 2.0     | 0.50419 | 0.17204 |
| 10.0 | 1.0     | 0.90126 | 0.82489 | 0.9571  | 0.05479 | 0.86573 | 0.89455 | 0.27196 | 0.90823 | 0.00018 | 0.89177 | 0.73166 | 2.0     | 0.49284 | 0.21209 |
| 11.0 | 1.0     | 0.94661 | 0.90124 | 0.95649 | 0.03353 | 0.92932 | 0.94463 | 0.18198 | 0.94863 | 0.0002  | 0.9469  | 0.83398 | 2.0     | 0.47186 | 0.21209 |
| 12.0 | 1.0     | 0.96753 | 0.93846 | 0.96954 | 0.02186 | 0.95783 | 0.96691 | 0.13587 | 0.96817 | 0.00022 | 0.97003 | 0.8898  | 2.0     | 0.47891 | 0.21561 |
| 13.0 | 1.0     | 0.97436 | 0.95051 | 0.96118 | 0.01587 | 0.96702 | 0.97415 | 0.11456 | 0.97457 | 0.00022 | 0.97728 | 0.9081  | 2.0     | 0.47024 | 0.21561 |
| 14.0 | 1.0     | 0.97137 | 0.94445 | 0.94752 | 0.01541 | 0.96339 | 0.97115 | 0.12321 | 0.97158 | 0.00022 | 0.97509 | 0.89632 | 2.0     | 0.44135 | 0.21561 |
| 15.0 | 1.0     | 0.96153 | 0.9262  | 0.94834 | 0.01858 | 0.95119 | 0.96137 | 0.14942 | 0.96169 | 0.00022 | 0.96777 | 0.86426 | 2.0     | 0.43205 | 0.21561 |
| 16.0 | 1.0     | 0.96178 | 0.92663 | 0.95354 | 0.01819 | 0.95182 | 0.96165 | 0.14866 | 0.96192 | 0.00023 | 0.96876 | 0.86482 | 2.0     | 0.42992 | 0.22418 |
| 17.0 | 1.0     | 0.96239 | 0.92755 | 0.96788 | 0.02135 | 0.953   | 0.96219 | 0.15763 | 0.96259 | 0.00023 | 0.97014 | 0.86613 | 2.0     | 0.40735 | 0.18416 |
| 18.0 | 1.0     | 0.96496 | 0.93245 | 0.9605  | 0.02086 | 0.95632 | 0.96485 | 0.1523  | 0.96508 | 0.00024 | 0.97252 | 0.87461 | 2.0     | 0.4303  | 0.18416 |
| 19.0 | 1.0     | 0.96527 | 0.93303 | 0.95321 | 0.01996 | 0.95677 | 0.96516 | 0.14913 | 0.96538 | 0.00024 | 0.97295 | 0.87556 | 2.0     | 0.42656 | 0.18416 |
| 20.0 | 1.0     | 0.9591  | 0.92151 | 0.94802 | 0.02371 | 0.94928 | 0.95897 | 0.17616 | 0.95922 | 0.00024 | 0.96871 | 0.85546 | 2.0     | 0.41495 | 0.18994 |

Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.90, Tp: 2.00, average link





Average values of five clustering indices  
gap: 1.00, Tp: 2.00, average link

| k    | AR      | FM      | J       | AW      | VD      | H       | F       | VI      | K       | Phi     | RT      | SS      | CVNN    | S       | Dunn    |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0  | 1.0     | 0.99006 | 0.98039 | 0.30111 | 0.00526 | 0.31684 | 0.99005 | 0.0592  | 0.99006 | 0.001   | 0.96193 | 0.96188 | 0.66667 | 0.3847  | 0.25205 |
| 3.0  | 1.0     | 0.98984 | 0.9803  | 0.80728 | 0.00799 | 0.76198 | 0.98965 | 0.06474 | 0.99005 | 0.00091 | 0.96402 | 0.96318 | 1.6     | 0.30275 | 0.18996 |
| 4.0  | 1.0     | 0.98466 | 0.97051 | 0.68324 | 0.01158 | 0.72855 | 0.98422 | 0.09209 | 0.98511 | 0.00076 | 0.94762 | 0.94626 | 1.8     | 0.28831 | 0.18996 |
| 5.0  | 1.0     | 0.96839 | 0.94119 | 0.5529  | 0.02145 | 0.65841 | 0.96658 | 0.14878 | 0.97025 | 0.00062 | 0.90397 | 0.90153 | 2.0     | 0.46333 | 0.18996 |
| 6.0  | 1.0     | 0.93336 | 0.88037 | 0.41211 | 0.04113 | 0.55563 | 0.9275  | 0.25004 | 0.9395  | 0.00046 | 0.82071 | 0.81637 | 2.0     | 0.56144 | 0.18996 |
| 7.0  | 1.0     | 0.86308 | 0.76373 | 0.36771 | 0.08298 | 0.43571 | 0.84959 | 0.44031 | 0.87738 | 0.00022 | 0.67516 | 0.66138 | 2.0     | 0.51704 | 0.19236 |
| 8.0  | 1.0     | 0.86334 | 0.76218 | 0.70524 | 0.07736 | 0.65346 | 0.85247 | 0.42893 | 0.87464 | 0.00011 | 0.72537 | 0.65084 | 2.0     | 0.49429 | 0.16163 |
| 9.0  | 1.00002 | 0.83501 | 0.7163  | 0.61006 | 0.08825 | 0.67266 | 0.81963 | 0.48476 | 0.85125 | 0.00011 | 0.71426 | 0.5936  | 2.0     | 0.54582 | 0.16163 |
| 10.0 | 1.00011 | 0.7976  | 0.65876 | 0.59222 | 0.1025  | 0.67519 | 0.78151 | 0.54812 | 0.81449 | 0.00011 | 0.71282 | 0.51781 | 2.0     | 0.53001 | 0.16237 |
| 11.0 | 1.0     | 0.8323  | 0.70684 | 0.72782 | 0.08209 | 0.75841 | 0.82262 | 0.43965 | 0.84221 | 0.00014 | 0.80063 | 0.56152 | 2.0     | 0.51729 | 0.1705  |
| 12.0 | 1.0     | 0.9009  | 0.82601 | 0.9265  | 0.05711 | 0.867   | 0.89601 | 0.31453 | 0.90599 | 0.00019 | 0.89867 | 0.72982 | 2.0     | 0.50166 | 0.20394 |
| 13.0 | 1.0     | 0.92658 | 0.86672 | 0.91807 | 0.0475  | 0.90374 | 0.92487 | 0.27182 | 0.92834 | 0.0002  | 0.93132 | 0.77803 | 2.0     | 0.53682 | 0.20394 |
| 14.0 | 1.0     | 0.93546 | 0.87993 | 0.90078 | 0.04352 | 0.91667 | 0.93474 | 0.25959 | 0.93618 | 0.00021 | 0.94285 | 0.79136 | 2.0     | 0.52504 | 0.20394 |
| 15.0 | 1.0     | 0.94896 | 0.90384 | 0.92154 | 0.02635 | 0.93481 | 0.94848 | 0.19971 | 0.94945 | 0.00022 | 0.95626 | 0.82916 | 2.0     | 0.5271  | 0.20718 |
| 16.0 | 1.0     | 0.94768 | 0.90056 | 0.9039  | 0.02464 | 0.93372 | 0.94716 | 0.1969  | 0.9482  | 0.00022 | 0.95622 | 0.82166 | 2.0     | 0.49966 | 0.20718 |
| 17.0 | 1.0     | 0.95485 | 0.91368 | 0.92345 | 0.02208 | 0.94327 | 0.95455 | 0.17922 | 0.95515 | 0.00023 | 0.96346 | 0.84291 | 2.0     | 0.48966 | 0.20718 |
| 18.0 | 1.0     | 0.96063 | 0.92436 | 0.93632 | 0.0206  | 0.95082 | 0.96046 | 0.16545 | 0.96081 | 0.00023 | 0.96887 | 0.86072 | 2.0     | 0.48448 | 0.20718 |
| 19.0 | 1.0     | 0.9595  | 0.92218 | 0.93087 | 0.02219 | 0.94957 | 0.95928 | 0.17243 | 0.95972 | 0.00024 | 0.96835 | 0.85689 | 2.0     | 0.46353 | 0.20718 |
| 20.0 | 1.0     | 0.95707 | 0.91758 | 0.92359 | 0.0243  | 0.9467  | 0.95676 | 0.18339 | 0.95737 | 0.00024 | 0.96677 | 0.84912 | 2.0     | 0.47993 | 0.20718 |



Standard deviation of Adjusted Rand versus number of clusters  
gap: 1.00, Tp: 2.00, average link

