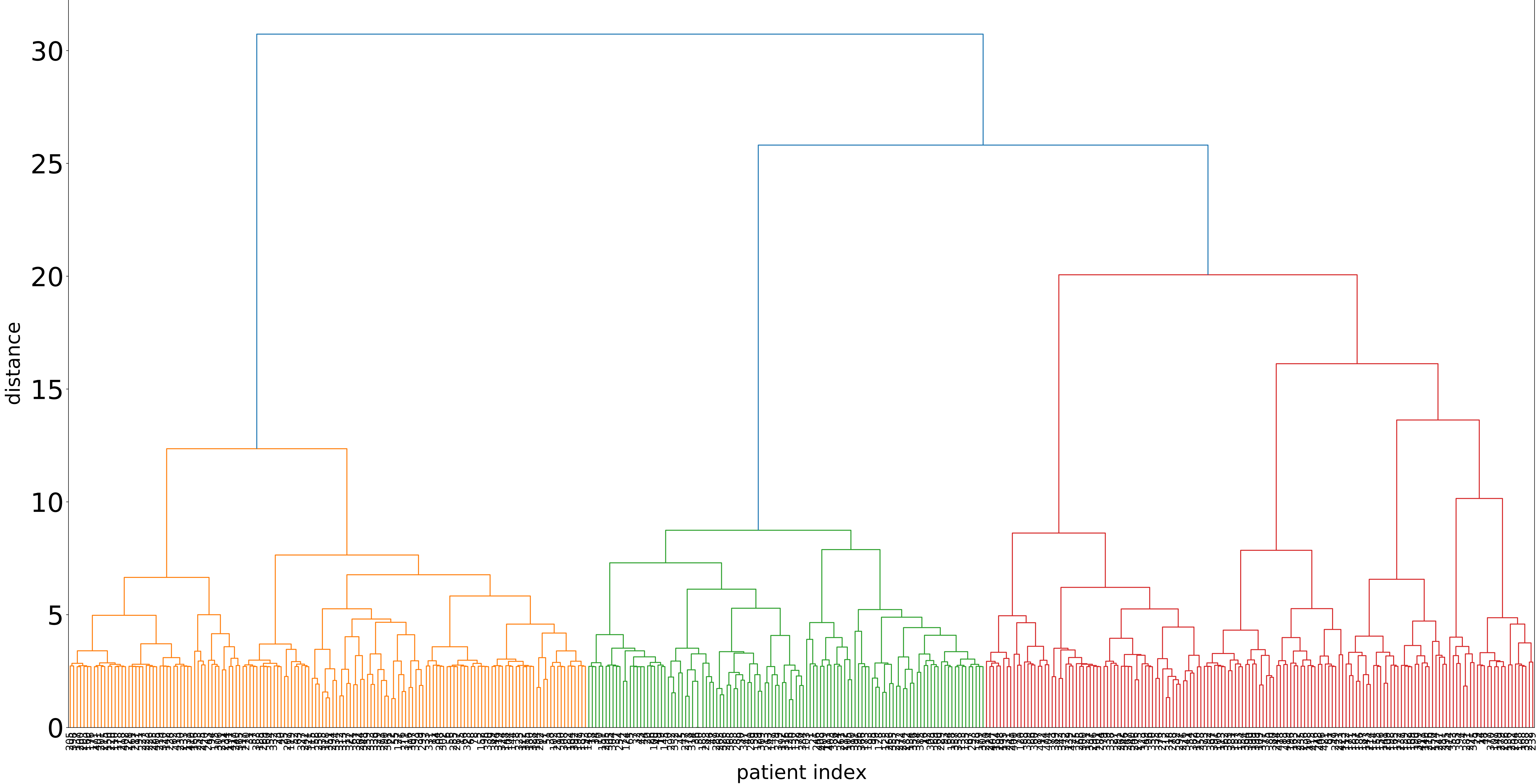


Hierarchical Clustering Dendrogram - gap: 0.00, Tp: 1.00, ward link

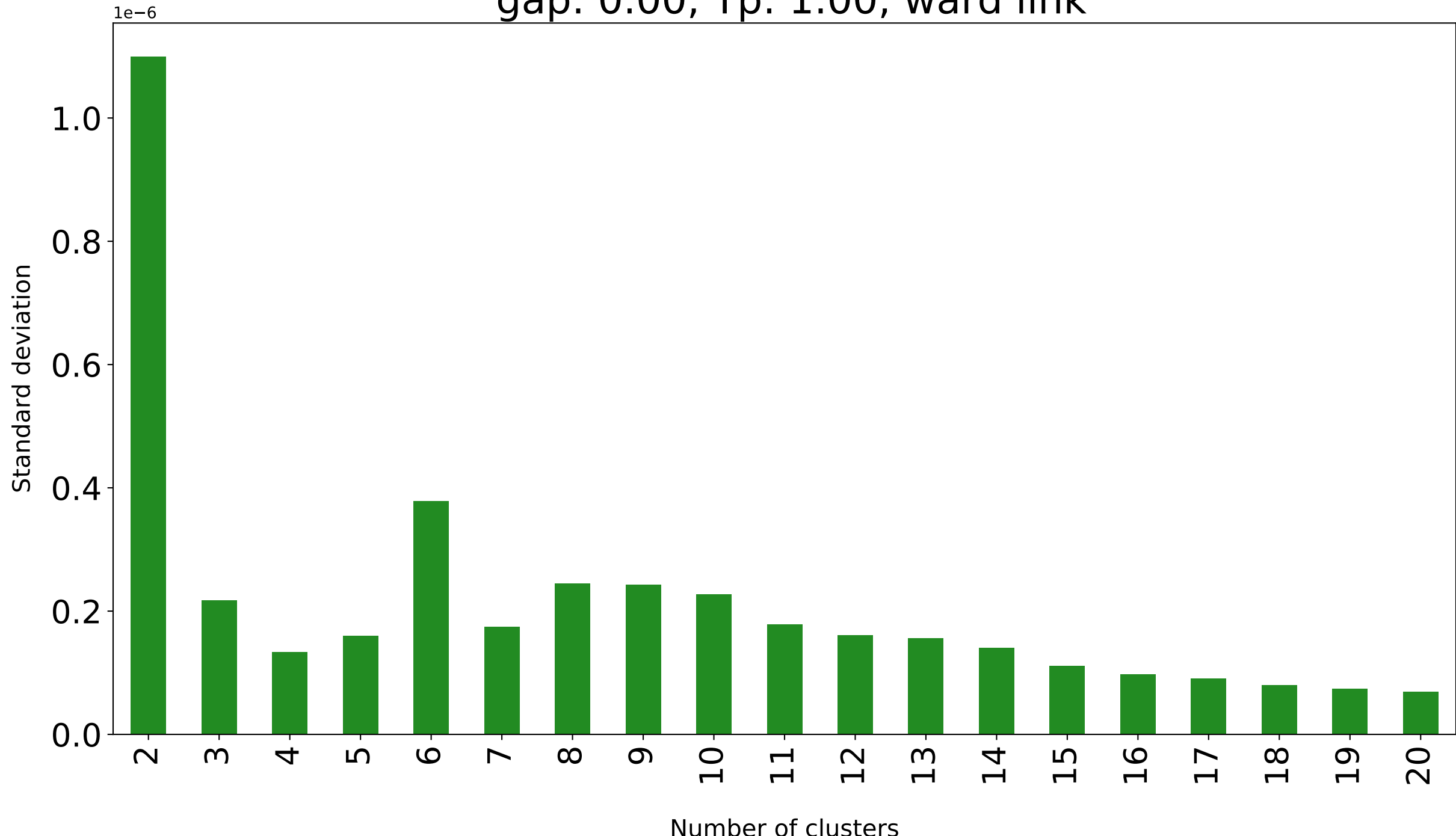


Cophenetic Correlation Coefficient: 0.7549195930431408

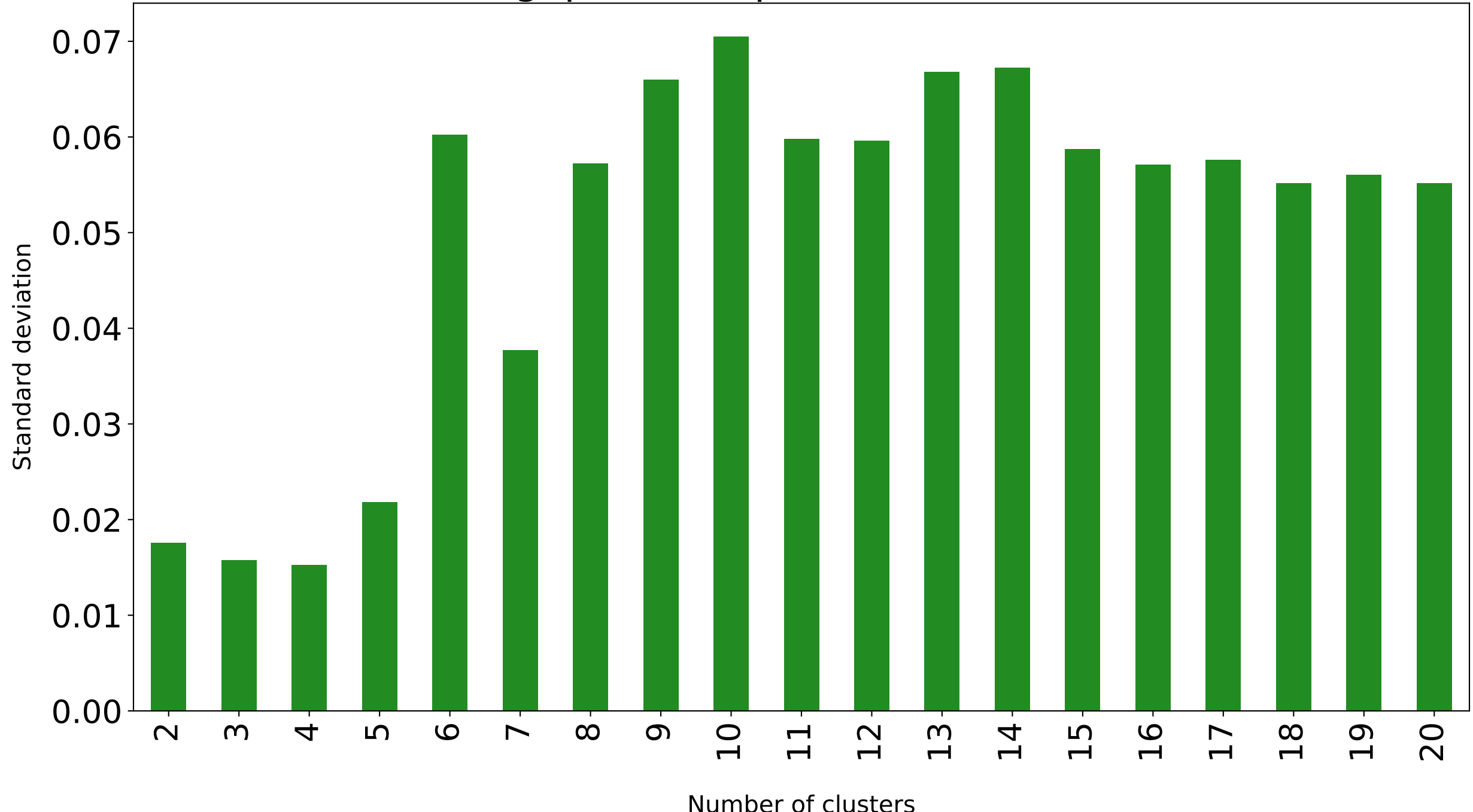
Average values of 20 clustering indices  
gap: 0.00, Tp: 1.00, ward link

k	AR	FM	J	AW	VD	H	F	VI	K	Phi	RT	SS	CVNN	S	Dunn
2.0	1.0	0.99656	0.99325	0.99061	0.00187	0.99254	0.99655	0.01854	0.99656	0.00016	0.99275	0.98706	1.0	0.15499	0.45421
3.0	1.0	0.99199	0.98431	0.98843	0.00411	0.98791	0.99199	0.04137	0.99199	0.00017	0.98934	0.96984	0.95806	0.17868	0.4041
4.0	1.0	0.99078	0.98196	0.98807	0.00498	0.98735	0.99078	0.0454	0.99079	0.0002	0.99012	0.96539	0.91537	0.19152	0.4041
5.0	1.0	0.98523	0.97137	0.98237	0.0143	0.9804	0.98522	0.07542	0.98524	0.00021	0.98566	0.94607	0.89518	0.20109	0.4041
6.0	1.0	0.97623	0.95625	0.95899	0.01526	0.96975	0.97545	0.07591	0.97701	0.00021	0.97929	0.92687	0.936	0.20981	0.40501
7.0	1.0	0.95463	0.91469	0.93569	0.0259	0.94473	0.95456	0.15454	0.95471	0.00025	0.96814	0.84736	0.96466	0.16844	0.40501
8.0	1.0	0.94161	0.89229	0.90514	0.03214	0.92961	0.94094	0.1756	0.94229	0.00025	0.96055	0.81491	0.96197	0.19101	0.40501
9.0	1.0	0.8451	0.73459	0.84317	0.08439	0.8185	0.84421	0.37446	0.84599	0.00026	0.91262	0.58818	1.35239	0.15364	0.3812
10.0	1.0	0.81221	0.68706	0.78789	0.09816	0.78322	0.81136	0.44207	0.81307	0.00027	0.90393	0.53029	1.345	0.13914	0.3812
11.0	1.0	0.79858	0.66653	0.74832	0.10249	0.77008	0.79756	0.46048	0.7996	0.00028	0.90421	0.50475	1.53795	0.13137	0.38461
12.0	1.0	0.77905	0.63838	0.70168	0.11411	0.75041	0.77693	0.50185	0.78118	0.00029	0.90181	0.47315	1.53368	0.12195	0.38461
13.0	1.0	0.79293	0.66011	0.74419	0.11119	0.76948	0.79224	0.5104	0.79362	0.00033	0.91884	0.49867	1.52676	0.11423	0.38461
14.0	1.0	0.78116	0.64441	0.73798	0.11836	0.75888	0.78066	0.54188	0.78165	0.00036	0.92214	0.48129	1.70139	0.10729	0.38461
15.0	1.0	0.74568	0.59663	0.7485	0.14648	0.72352	0.74506	0.63661	0.7463	0.00039	0.92137	0.42855	1.72827	0.10014	0.38461
16.0	1.0	0.72771	0.57384	0.73091	0.15667	0.70584	0.72703	0.67371	0.72839	0.0004	0.92185	0.40544	1.72046	0.09656	0.38461
17.0	1.0	0.72551	0.5716	0.71224	0.15369	0.70477	0.72514	0.66926	0.72587	0.00043	0.92562	0.40331	1.71624	0.092	0.38461
18.0	1.0	0.73289	0.58061	0.72169	0.14681	0.71423	0.73256	0.66184	0.73321	0.00046	0.93252	0.41204	1.71223	0.08729	0.38461
19.0	1.0	0.73234	0.58013	0.71846	0.15171	0.715	0.73209	0.68505	0.73259	0.00049	0.93686	0.41169	1.71426	0.08739	0.35542
20.0	1.0	0.72752	0.5739	0.72742	0.15786	0.71141	0.72715	0.69939	0.72789	0.00053	0.94081	0.40529	1.76686	0.08401	0.35542

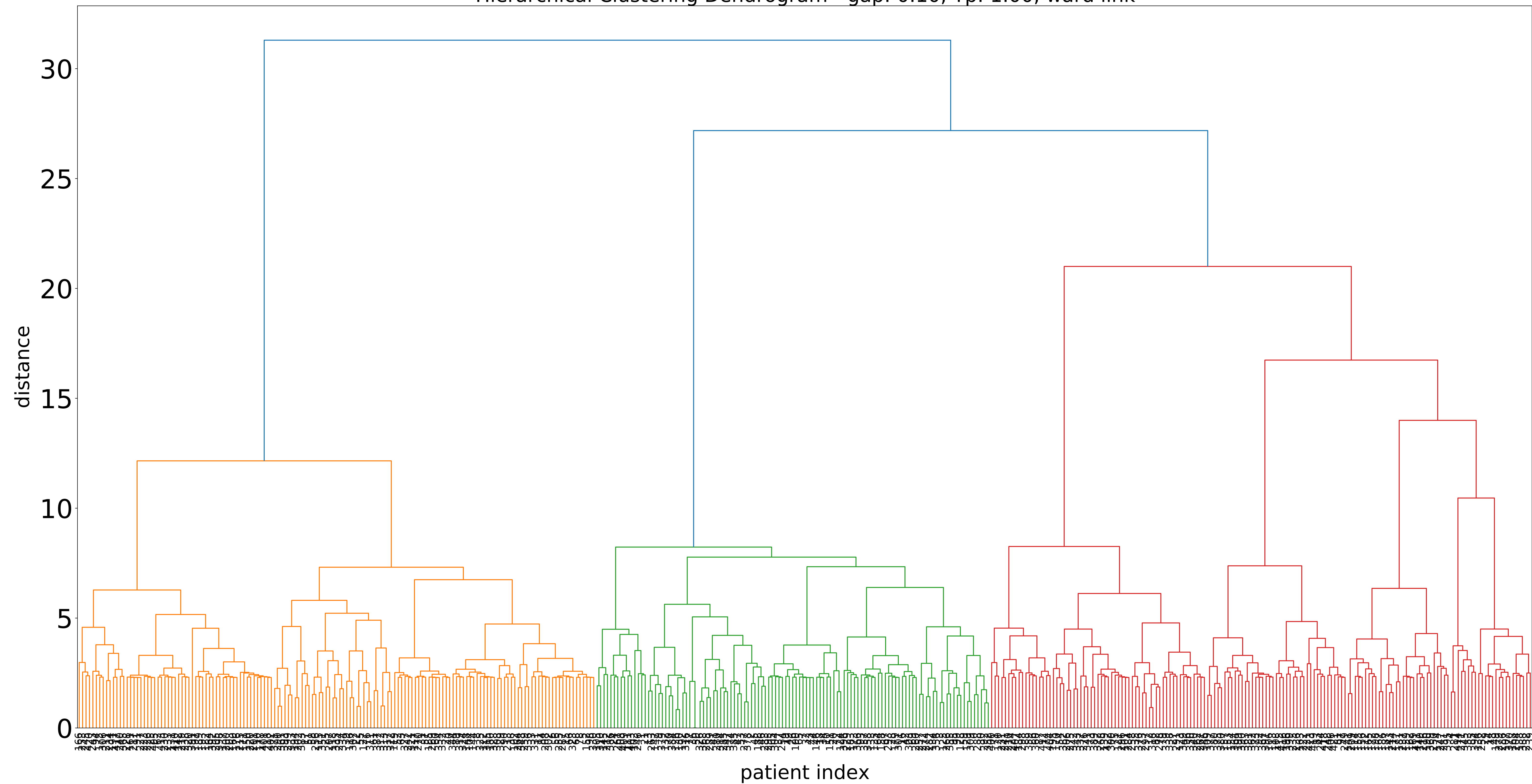
Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.00, Tp: 1.00, ward link



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



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

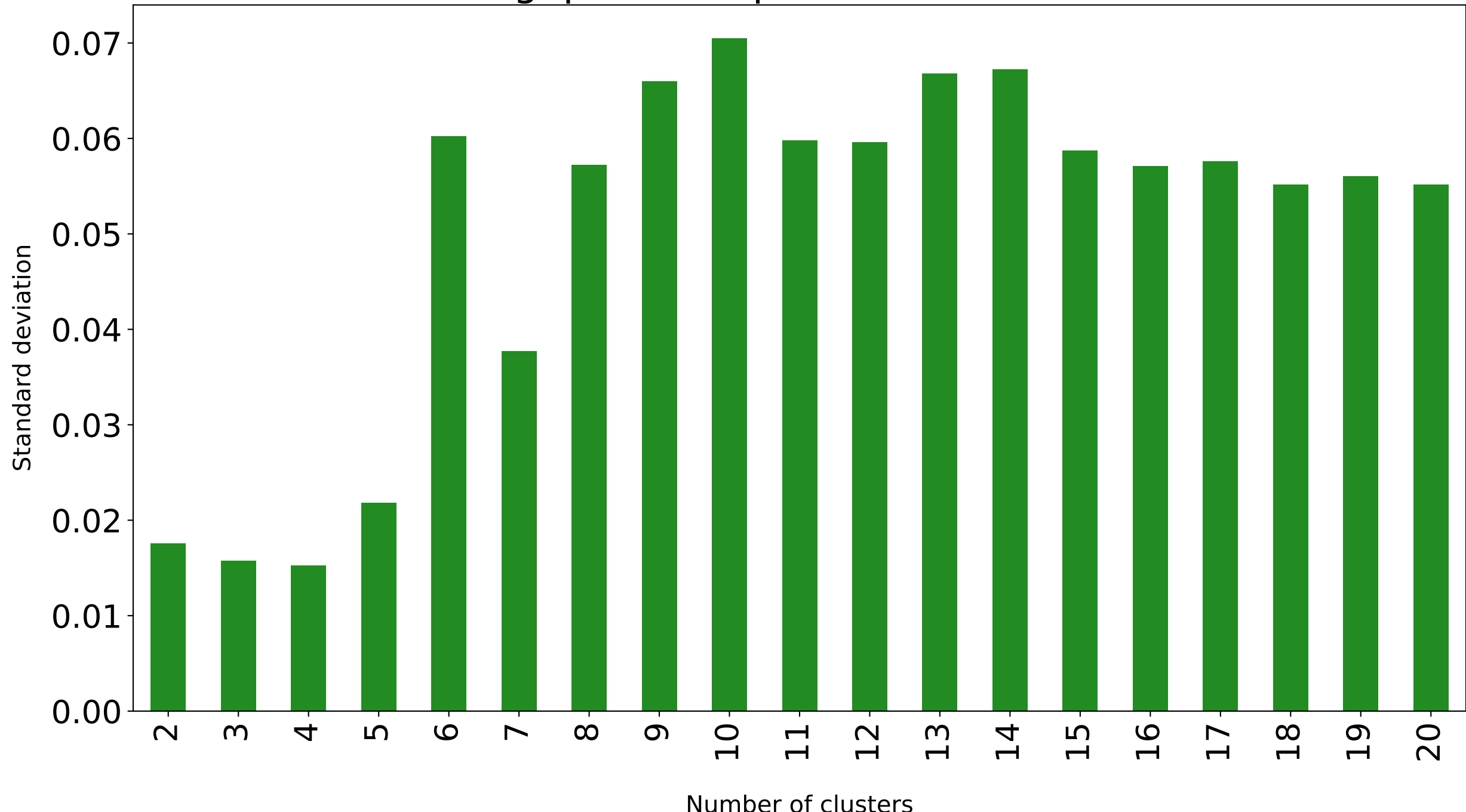


Cophenetic Correlation Coefficient: 0.7791449467669053

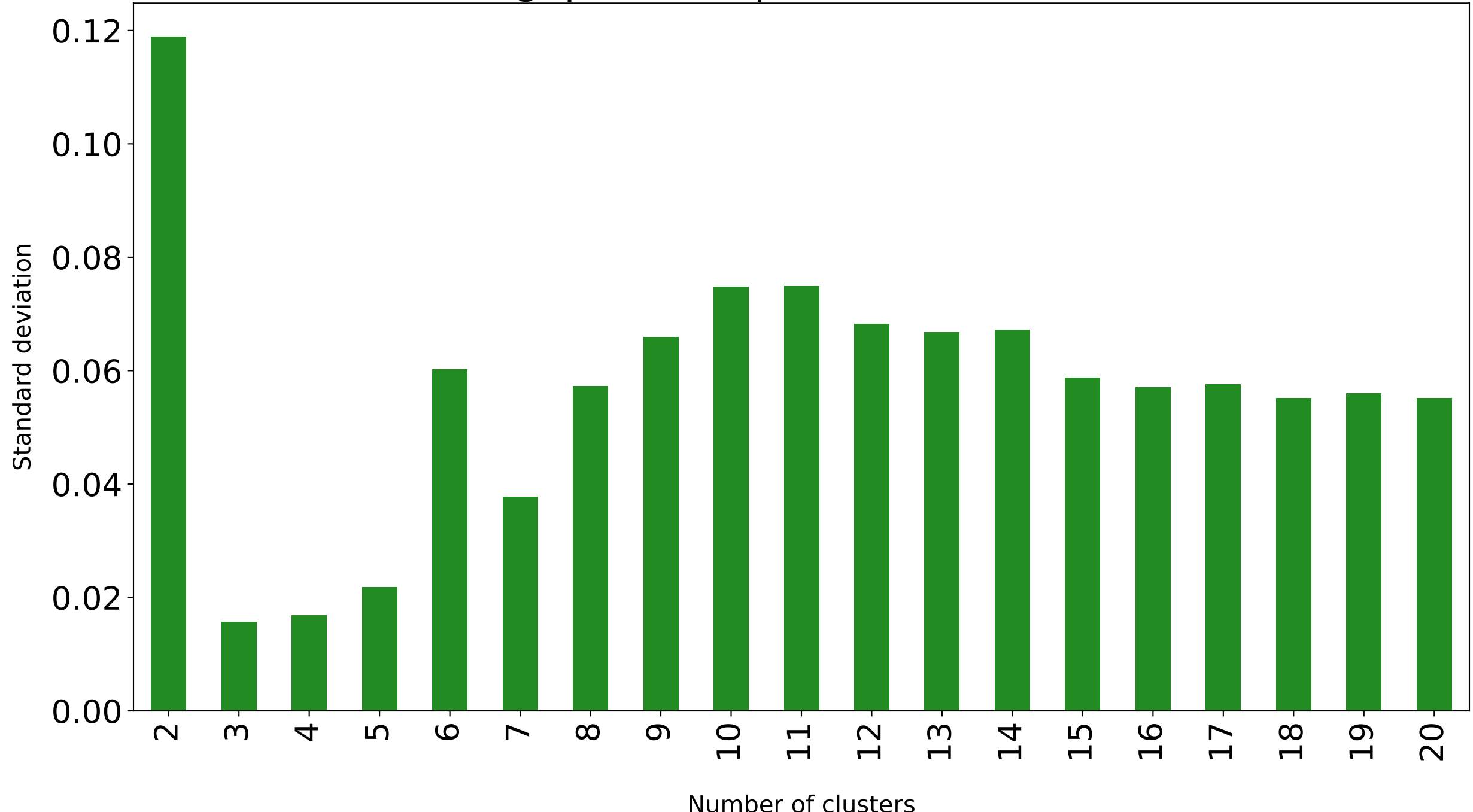
Average values of 20 clustering indices  
gap: 0.10, Tp: 1.00, ward link

k	AR	FM	J	AW	VD	H	F	VI	K	Phi	RT	SS	CVNN	S	Dunn
2.0	1.0	0.98824	0.98048	0.97435	0.00787	0.9736	0.98824	0.04551	0.98825	0.00015	0.97885	0.96846	1.02623	0.17739	0.38741
3.0	1.0	0.99105	0.98245	0.98716	0.0044	0.98649	0.99105	0.04672	0.99105	0.00017	0.98808	0.96616	0.94021	0.21048	0.36524
4.0	1.0	0.98857	0.97767	0.98318	0.0064	0.98431	0.98856	0.05698	0.98857	0.0002	0.98775	0.95731	0.88043	0.22951	0.36524
5.0	1.0	0.98567	0.97211	0.98024	0.01247	0.98097	0.98566	0.07476	0.98568	0.00021	0.98603	0.94709	0.85084	0.24209	0.36633
6.0	1.0	0.98946	0.97957	0.98361	0.00715	0.98625	0.98935	0.05286	0.98957	0.00021	0.99016	0.96177	0.83928	0.25276	0.36633
7.0	1.0	0.96613	0.93523	0.96449	0.01962	0.95867	0.96587	0.1343	0.9664	0.00026	0.97561	0.88184	1.02317	0.19959	0.36633
8.0	1.0	0.96385	0.93153	0.94724	0.01999	0.95634	0.96355	0.13389	0.96416	0.00026	0.97526	0.87694	1.02006	0.22709	0.38073
9.0	1.0	0.85415	0.74524	0.76465	0.07616	0.82773	0.85167	0.34939	0.85664	0.00025	0.91174	0.60122	1.01482	0.19875	0.38073
10.0	1.0	0.83546	0.71946	0.74847	0.0871	0.80908	0.833	0.3944	0.83793	0.00026	0.91081	0.57197	1.06402	0.17613	0.39554
11.0	1.0	0.82382	0.70449	0.76883	0.09691	0.79978	0.8228	0.45449	0.82484	0.0003	0.91828	0.55291	1.1441	0.15752	0.25043
12.0	1.0	0.78778	0.65069	0.70154	0.11928	0.76139	0.78512	0.52837	0.79045	0.0003	0.90821	0.48873	1.14031	0.14268	0.25043
13.0	1.0	0.78944	0.65247	0.70543	0.10862	0.76577	0.78689	0.50358	0.79199	0.00033	0.91645	0.49005	1.16872	0.1379	0.25043
14.0	1.0	0.79296	0.65967	0.76949	0.11618	0.77318	0.79277	0.55643	0.79316	0.00038	0.93029	0.49654	1.1586	0.12818	0.25043
15.0	1.0	0.81516	0.69043	0.8015	0.10432	0.79911	0.81495	0.52196	0.81536	0.00043	0.94261	0.53139	1.2701	0.12433	0.25043
16.0	1.0	0.79503	0.66181	0.77946	0.12272	0.77853	0.79483	0.57517	0.79523	0.00044	0.94068	0.49771	1.74427	0.12098	0.25043
17.0	1.0	0.77633	0.63653	0.74823	0.12938	0.75927	0.77602	0.60131	0.77664	0.00045	0.93843	0.47015	1.74028	0.11406	0.25043
18.0	1.0	0.76565	0.62275	0.75226	0.13331	0.74924	0.7654	0.61758	0.7659	0.00048	0.94042	0.45578	1.73026	0.11083	0.25043
19.0	1.0	0.74672	0.59763	0.744	0.14507	0.73037	0.74639	0.66536	0.74705	0.0005	0.94029	0.4288	1.72467	0.10544	0.25043
20.0	1.0	0.75382	0.60686	0.74885	0.14614	0.73883	0.75352	0.67514	0.75412	0.00054	0.94491	0.43842	1.72115	0.10565	0.25043

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

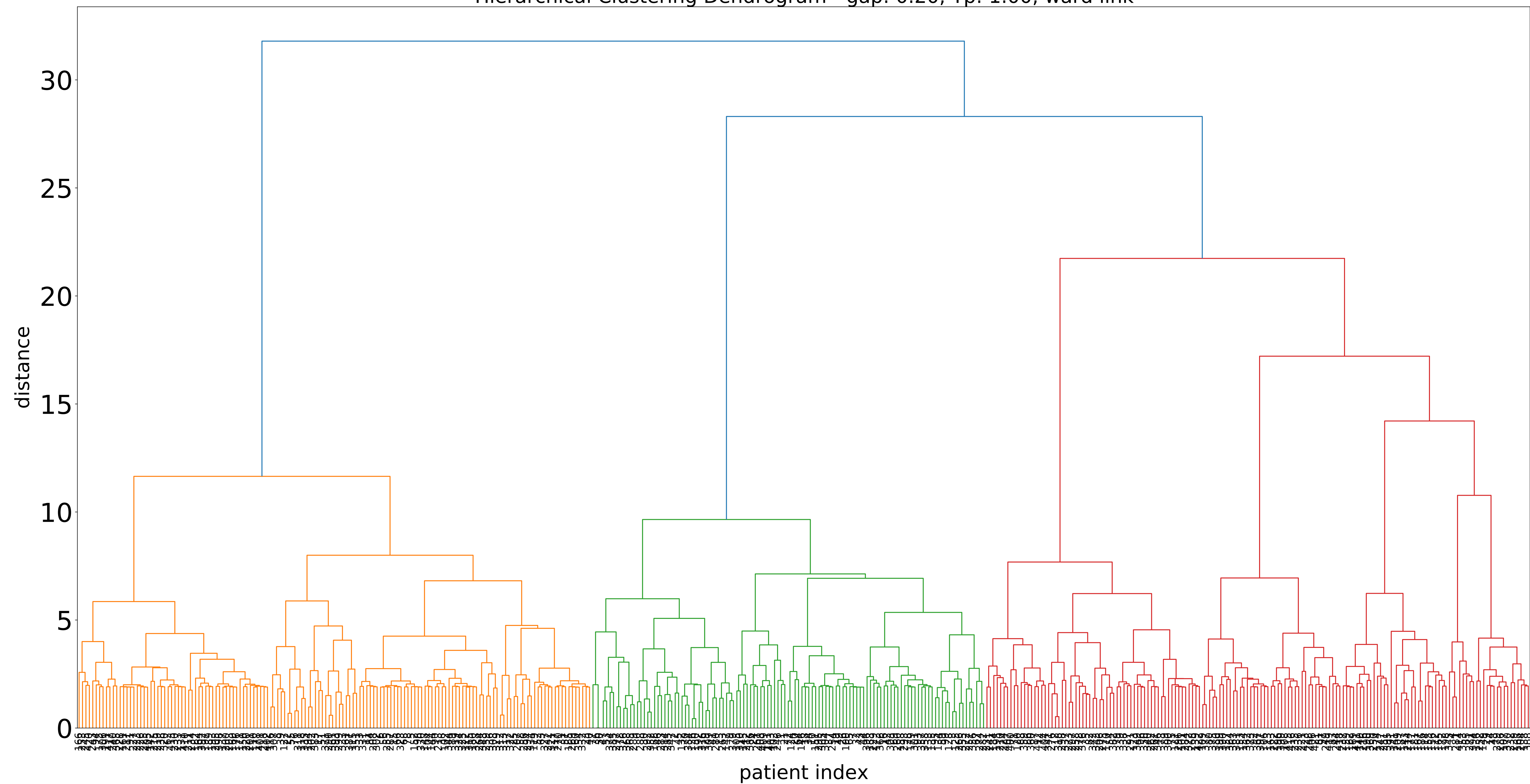


Standard deviation of Huberts index versus number of clusters  
gap: 0.10, Tp: 1.00, ward link





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

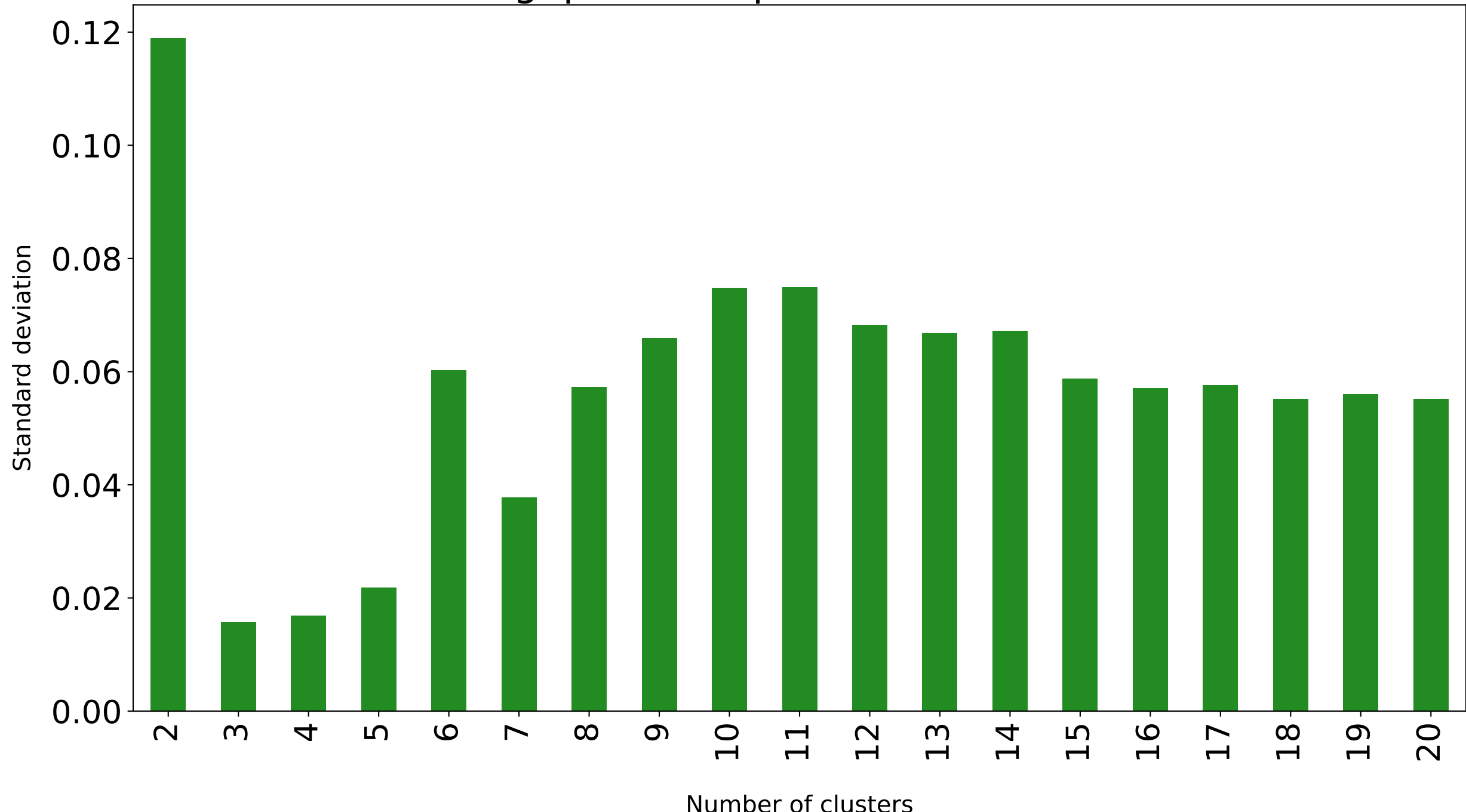


Cophenetic Correlation Coefficient: 0.7798381707648713

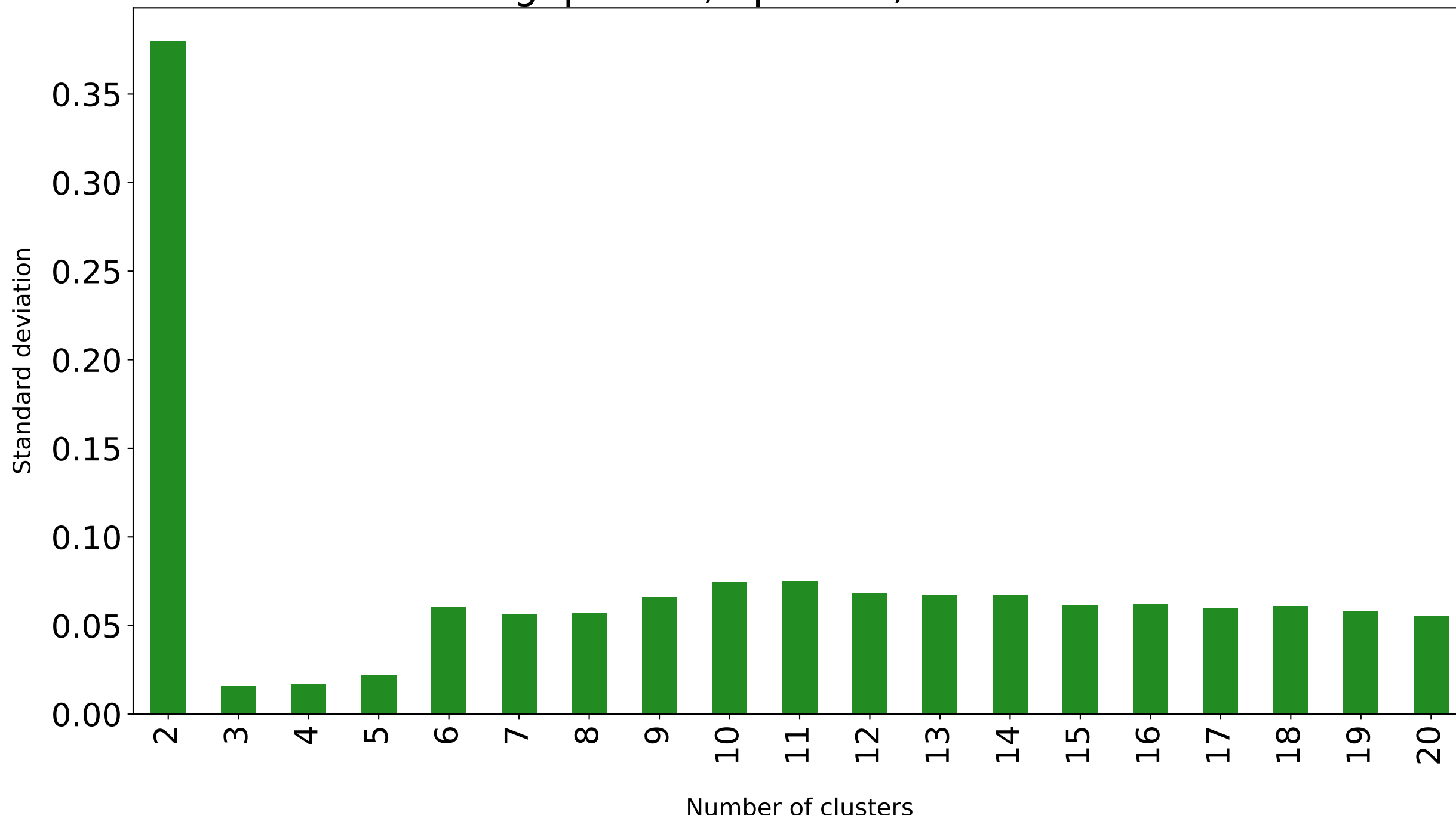
Average values of 20 clustering indices  
gap: 0.20, Tp: 1.00, ward link

k	AR	FM	J	AW	VD	H	F	VI	K	Phi	RT	SS	CVNN	S	Dunn
2.0	0.99999	0.91703	0.88105	0.80673	0.06215	0.80682	0.91694	0.19976	0.91711	0.00013	0.86955	0.84655	1.0146	0.20482	0.32755
3.0	1.0	0.99343	0.98706	0.99051	0.00321	0.99009	0.99343	0.03403	0.99343	0.00017	0.99122	0.97487	0.95384	0.24425	0.31151
4.0	1.0	0.99176	0.98382	0.98903	0.00455	0.98871	0.99176	0.04184	0.99177	0.0002	0.99118	0.96872	0.92358	0.2676	0.31151
5.0	1.0	0.98788	0.97645	0.98541	0.01164	0.98393	0.98788	0.06307	0.98789	0.00021	0.98824	0.95539	0.96579	0.28228	0.3124
6.0	1.0	0.99348	0.98711	0.99324	0.00496	0.99146	0.99347	0.03947	0.9935	0.00022	0.99383	0.97488	1.09237	0.29221	0.3124
7.0	1.0	0.95413	0.91369	0.9709	0.02623	0.94372	0.95282	0.14537	0.95545	0.00025	0.96515	0.85082	1.07639	0.22993	0.3124
8.0	1.0	0.95911	0.92367	0.93822	0.02209	0.95089	0.95848	0.133	0.95975	0.00026	0.97256	0.86685	1.0727	0.26201	0.33173
9.0	1.0	0.9283	0.86909	0.91522	0.03848	0.91638	0.92821	0.22982	0.92839	0.0003	0.96015	0.7757	1.21609	0.22418	0.29774
10.0	1.0	0.85186	0.74389	0.84051	0.08142	0.83082	0.85152	0.41595	0.85219	0.0003	0.92883	0.59666	1.20648	0.20672	0.29542
11.0	1.0	0.83376	0.71744	0.80737	0.09462	0.81259	0.83354	0.47994	0.83399	0.00032	0.9276	0.56415	1.19754	0.18547	0.29542
12.0	1.0	0.80773	0.67997	0.77985	0.1137	0.78563	0.80752	0.55829	0.80794	0.00033	0.92374	0.51948	1.37324	0.17643	0.29542
13.0	1.0	0.78311	0.6459	0.74074	0.13195	0.75991	0.78267	0.61714	0.78356	0.00034	0.91936	0.48112	1.36814	0.16002	0.29542
14.0	1.0	0.78366	0.64731	0.75371	0.13184	0.76243	0.78341	0.61773	0.78391	0.00037	0.92554	0.48325	1.3626	0.15448	0.29542
15.0	1.0	0.78058	0.64303	0.785	0.13945	0.76142	0.78008	0.65177	0.78108	0.00041	0.93174	0.47882	1.35694	0.1446	0.29542
16.0	1.0	0.77125	0.63084	0.76367	0.14477	0.75232	0.77096	0.67089	0.77154	0.00042	0.93237	0.46552	1.35167	0.13585	0.29542
17.0	1.0	0.77054	0.62955	0.76944	0.14095	0.75296	0.77014	0.66482	0.77094	0.00045	0.93663	0.46384	1.34555	0.13152	0.29542
18.0	1.0	0.76268	0.61936	0.7593	0.14538	0.74576	0.76232	0.68306	0.76305	0.00047	0.93863	0.45298	1.34302	0.12831	0.24642
19.0	1.0	0.76411	0.62105	0.74441	0.14489	0.74817	0.76382	0.68674	0.76439	0.0005	0.94194	0.45438	1.67335	0.13074	0.24642
20.0	1.0	0.76594	0.62304	0.76029	0.14189	0.7514	0.76569	0.67718	0.76619	0.00054	0.94663	0.45596	1.66346	0.12796	0.24642

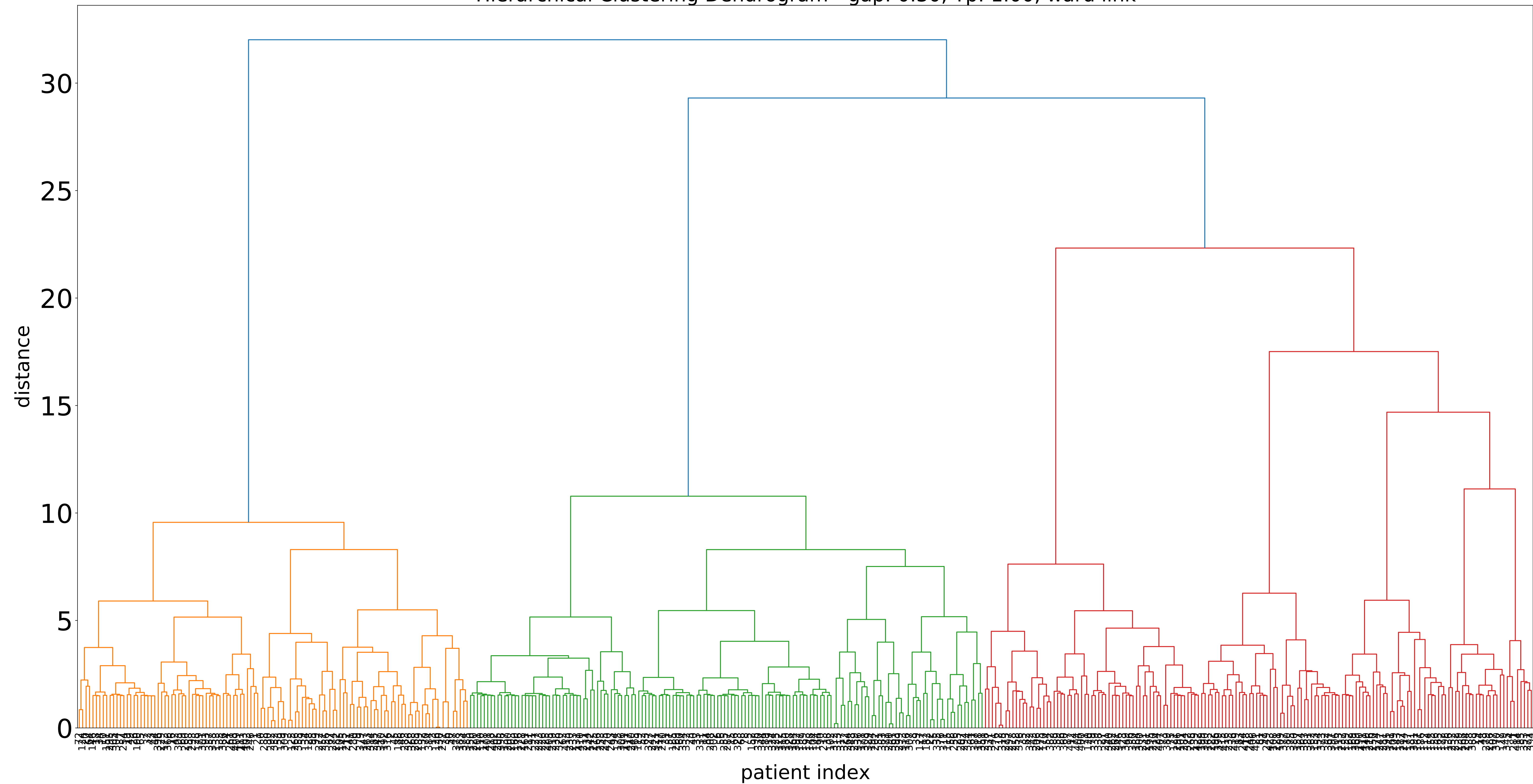
Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.20, Tp: 1.00, ward link



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



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

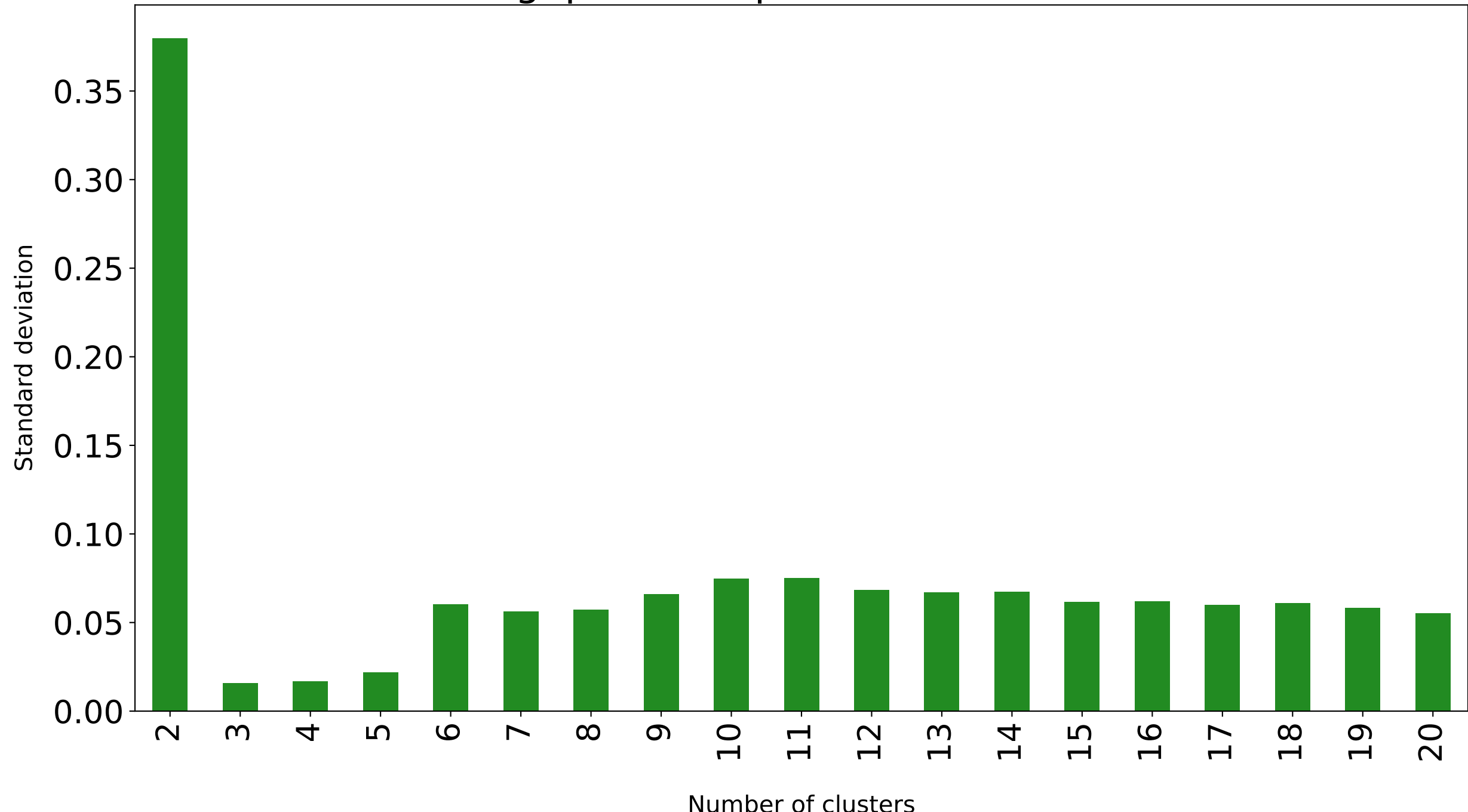


Cophenetic Correlation Coefficient: 0.7823976270407127

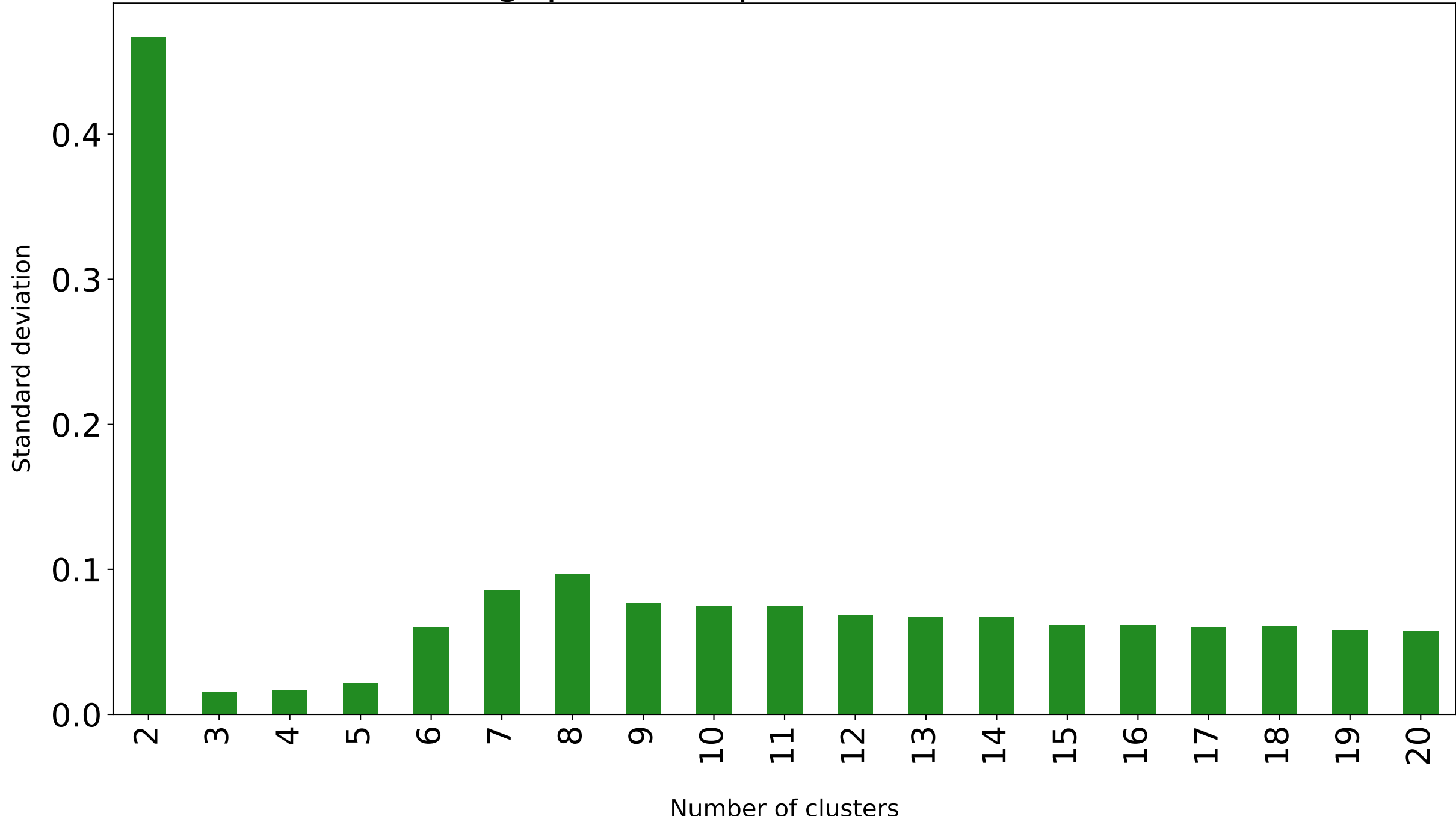
Average values of 20 clustering indices  
gap: 0.30, Tp: 1.00, ward link

k	AR	FM	J	AW	VD	H	F	VI	K	Phi	RT	SS	CVNN	S	Dunn
2.0	0.99999	0.84041	0.77227	0.62156	0.12044	0.62464	0.83989	0.37406	0.84094	0.0001	0.74855	0.71047	1.03226	0.25932	0.23506
3.0	1.0	0.99292	0.98608	0.98882	0.00345	0.98931	0.99292	0.03572	0.99292	0.00017	0.99054	0.97304	0.98853	0.2803	0.26185
4.0	1.0	0.98864	0.97782	0.98485	0.00682	0.98444	0.98864	0.05547	0.98865	0.0002	0.98788	0.95761	0.9853	0.30801	0.26185
5.0	1.0	0.98668	0.97406	0.98604	0.01211	0.98234	0.98667	0.06901	0.9867	0.00021	0.98706	0.95074	1.09445	0.32458	0.26257
6.0	1.0	0.99178	0.98375	0.99466	0.00693	0.98922	0.99175	0.05157	0.9918	0.00022	0.99221	0.96843	1.11991	0.33693	0.26257
7.0	1.0	0.92565	0.86355	0.84379	0.04085	0.90735	0.92191	0.16938	0.92943	0.00021	0.93832	0.78155	1.30474	0.36656	0.31315
8.0	1.0	0.91917	0.85817	0.88061	0.04526	0.90246	0.91806	0.20432	0.92029	0.00025	0.94608	0.77229	1.29005	0.30126	0.33937
9.0	1.0	0.89556	0.81661	0.87567	0.05735	0.87816	0.89533	0.28987	0.8958	0.00028	0.94245	0.70213	1.43858	0.25807	0.33937
10.0	1.0	0.84449	0.73346	0.79005	0.08088	0.82182	0.84363	0.40448	0.84535	0.00029	0.92333	0.58646	1.5482	0.25189	0.22793
11.0	1.0	0.83804	0.72427	0.84562	0.09204	0.81828	0.83748	0.45313	0.8386	0.00033	0.93171	0.57443	1.52797	0.22686	0.22793
12.0	1.0	0.84673	0.73552	0.86334	0.08737	0.82984	0.84602	0.44328	0.84744	0.00037	0.94052	0.58601	1.51592	0.20926	0.22793
13.0	1.0	0.86876	0.77035	0.88081	0.07793	0.85531	0.86831	0.42529	0.8692	0.0004	0.95218	0.63227	1.50541	0.20538	0.22793
14.0	1.0	0.84795	0.73836	0.85622	0.09329	0.8333	0.84754	0.47854	0.84836	0.00041	0.94776	0.59032	1.49936	0.18683	0.22793
15.0	1.0	0.82483	0.70447	0.8174	0.1106	0.8088	0.8246	0.53435	0.82507	0.00041	0.94289	0.54838	1.49412	0.17493	0.22793
16.0	1.0	0.80172	0.6712	0.80741	0.12458	0.78514	0.80121	0.57503	0.80224	0.00043	0.94039	0.50934	1.48674	0.16729	0.22793
17.0	1.0	0.79277	0.65944	0.79603	0.13142	0.77648	0.79231	0.59901	0.79324	0.00045	0.94118	0.49681	1.61402	0.16293	0.22793
18.0	1.0	0.76035	0.61494	0.7775	0.14369	0.74327	0.75942	0.64506	0.76129	0.00047	0.93775	0.44754	1.6135	0.1546	0.22793
19.0	1.0	0.76616	0.62262	0.78478	0.13958	0.7506	0.76525	0.64252	0.76708	0.00051	0.94288	0.4556	1.60507	0.15214	0.22793
20.0	1.0	0.76531	0.6223	0.76724	0.14243	0.75041	0.76486	0.64936	0.76577	0.00053	0.94533	0.45555	1.60169	0.1521	0.22793

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

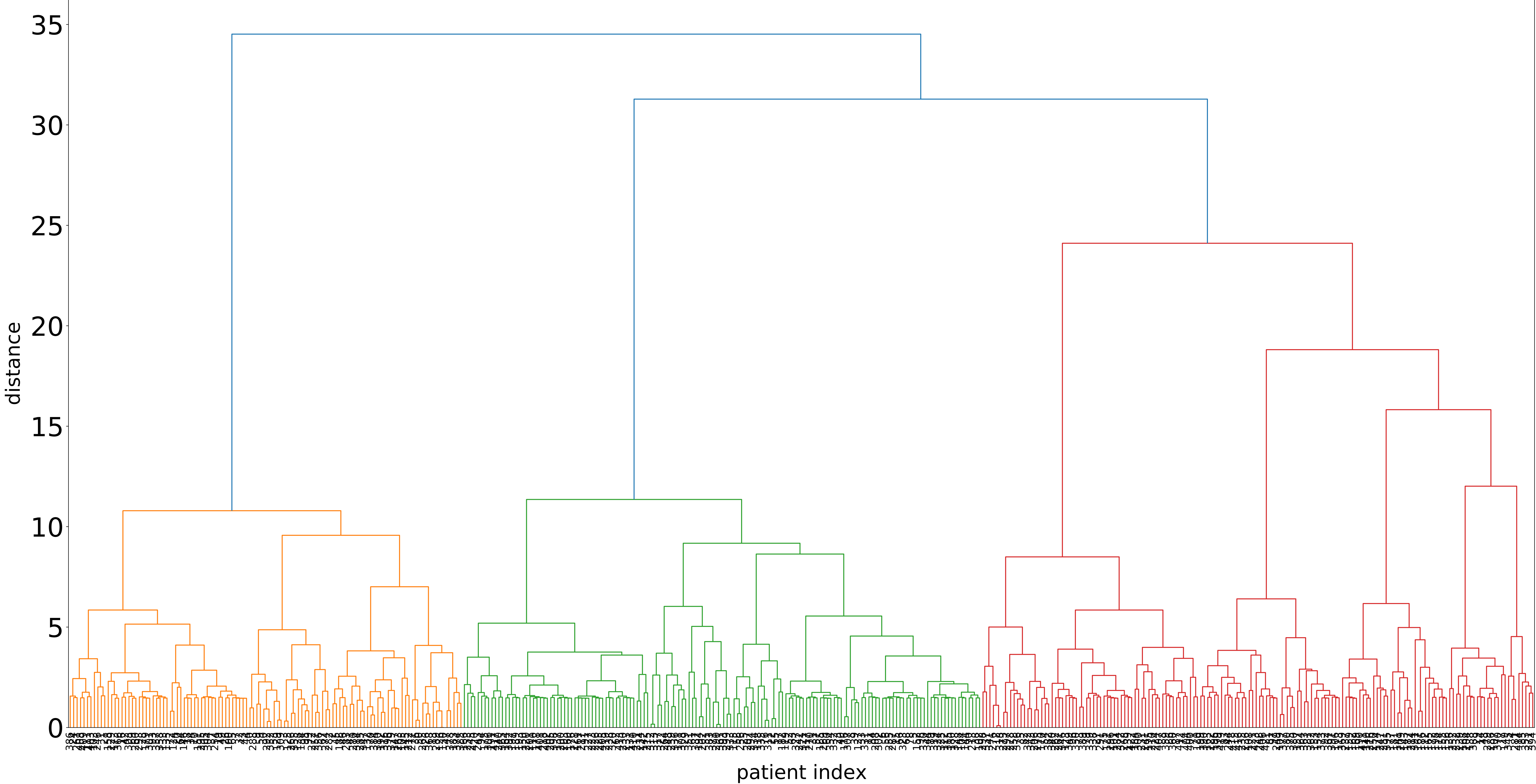


Standard deviation of Huberts index versus number of clusters  
gap: 0.30, Tp: 1.00, ward link





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

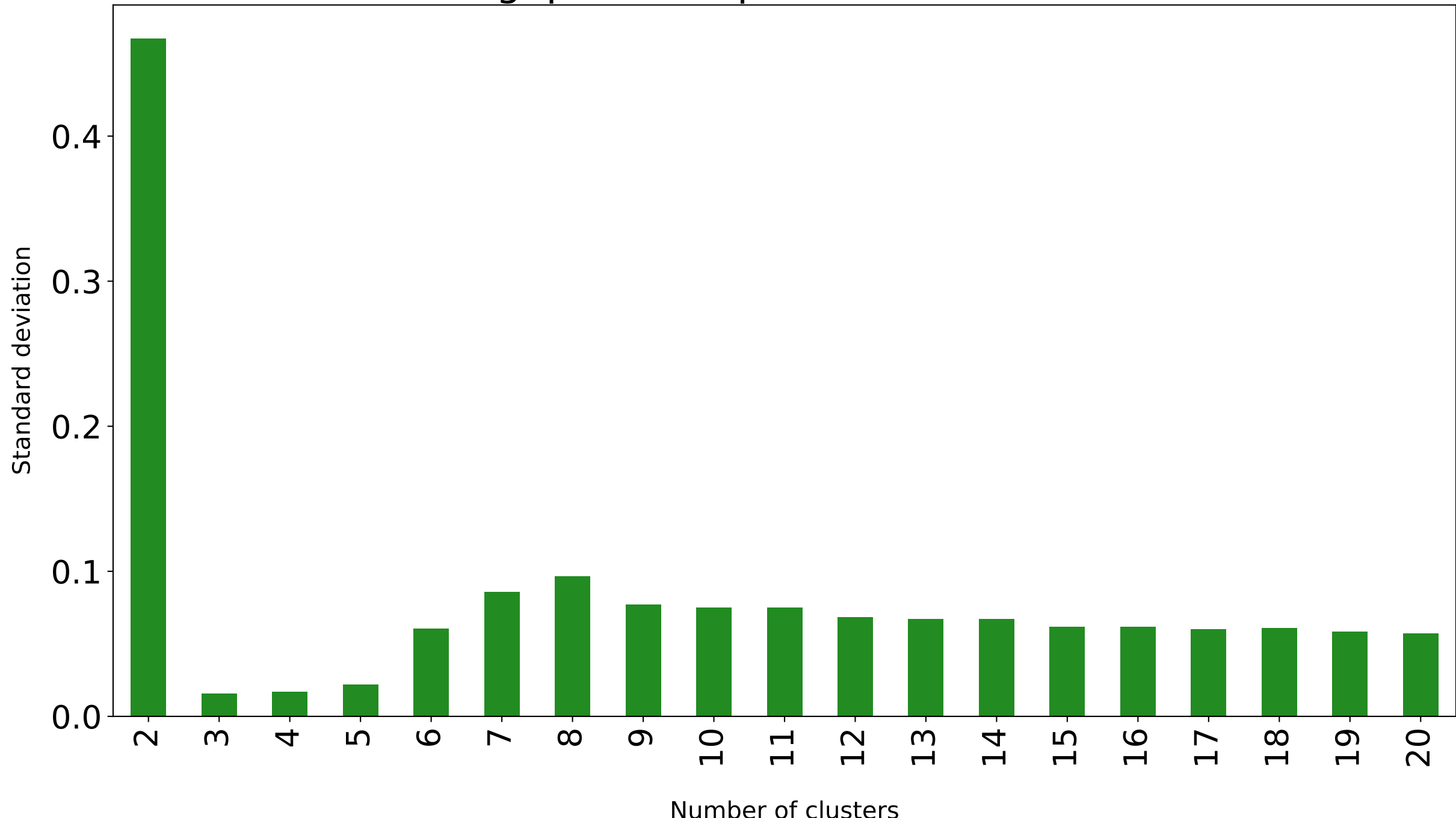


Cophenetic Correlation Coefficient: 0.765622741701294

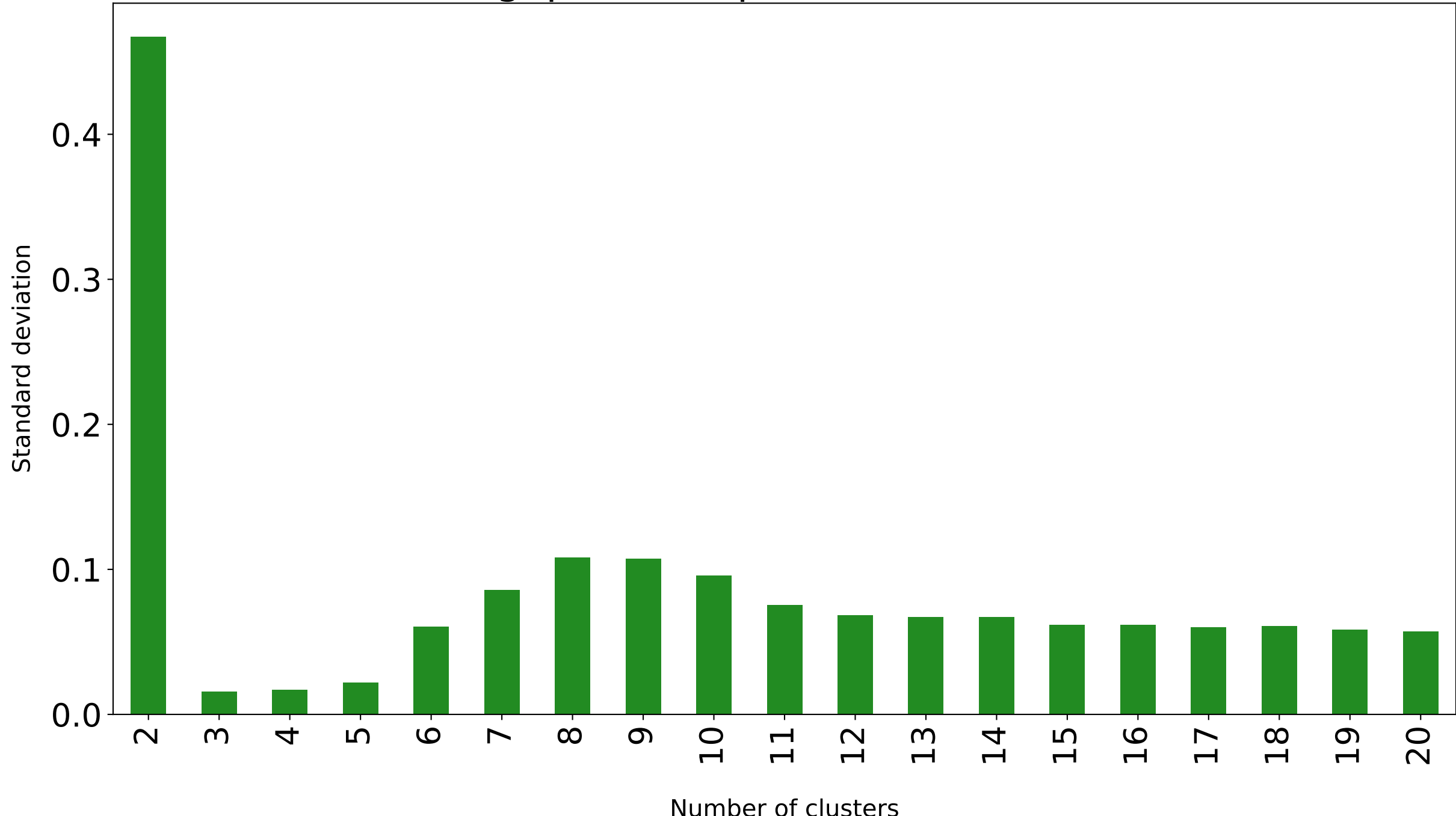
Average values of 20 clustering indices  
gap: 0.40, Tp: 1.00, ward link

k	AR	FM	J	AW	VD	H	F	VI	K	Phi	RT	SS	CVNN	S	Dunn
2.0	0.99999	0.91684	0.88054	0.80126	0.06242	0.80317	0.91649	0.20035	0.9172	0.00013	0.86745	0.84652	1.03065	0.26851	0.2326
3.0	1.0	0.9931	0.98645	0.98916	0.00337	0.98957	0.9931	0.03502	0.9931	0.00017	0.99077	0.97382	0.97781	0.2876	0.26451
4.0	1.0	0.98909	0.97869	0.98524	0.00645	0.98506	0.98908	0.05397	0.98909	0.0002	0.98837	0.9593	0.96663	0.31716	0.26451
5.0	1.0	0.98727	0.97529	0.98624	0.01117	0.98314	0.98726	0.06598	0.98728	0.00021	0.98769	0.9533	1.06665	0.3347	0.26517
6.0	1.0	0.99145	0.98314	0.99346	0.00758	0.9888	0.99143	0.05601	0.99147	0.00022	0.99194	0.96735	1.08915	0.34748	0.26517
7.0	1.0	0.93601	0.88104	0.86351	0.03642	0.91968	0.93328	0.16338	0.93876	0.00021	0.94588	0.80377	1.26438	0.37777	0.30436
8.0	1.0	0.81715	0.69903	0.7858	0.10573	0.77806	0.81575	0.37524	0.81856	0.00021	0.8788	0.55599	1.25157	0.30892	0.33246
9.0	1.0	0.82514	0.71184	0.82428	0.0966	0.79523	0.82426	0.37209	0.82604	0.00025	0.90303	0.57212	1.22972	0.269	0.33246
10.0	1.0	0.8207	0.70339	0.79815	0.09449	0.79328	0.82	0.40229	0.8214	0.00027	0.90941	0.55695	1.22106	0.26604	0.21811
11.0	1.0	0.83055	0.71422	0.83239	0.09232	0.80851	0.82952	0.43907	0.83158	0.00032	0.92439	0.5646	1.19629	0.24786	0.22176
12.0	1.0	0.85971	0.75714	0.85462	0.07887	0.84352	0.85919	0.40754	0.86023	0.00036	0.94338	0.61682	1.185	0.24055	0.22176
13.0	1.0	0.90301	0.8247	0.90698	0.05813	0.89299	0.9028	0.33943	0.90322	0.00042	0.96426	0.70594	1.16909	0.22594	0.22176
14.0	1.0	0.89973	0.81914	0.90083	0.06498	0.88991	0.89958	0.35779	0.89988	0.00043	0.9648	0.69736	1.16487	0.22145	0.22176
15.0	1.0	0.88138	0.78926	0.88445	0.07715	0.87038	0.88116	0.40385	0.8816	0.00044	0.96044	0.6553	1.15841	0.20195	0.22176
16.0	1.0	0.86801	0.76874	0.86221	0.08854	0.85633	0.8678	0.44074	0.86821	0.00045	0.95793	0.62854	1.15257	0.18979	0.22176
17.0	1.0	0.85618	0.75054	0.83494	0.09751	0.84398	0.85586	0.46688	0.8565	0.00046	0.95587	0.60512	1.32043	0.18401	0.22176
18.0	1.0	0.84308	0.73119	0.82663	0.10287	0.83059	0.84278	0.48841	0.84338	0.00048	0.95469	0.58138	1.31238	0.18092	0.22176
19.0	1.0	0.83702	0.72233	0.82699	0.10328	0.82492	0.83668	0.4919	0.83735	0.0005	0.95584	0.57062	1.57311	0.17369	0.22176
20.0	1.0	0.81394	0.68799	0.82533	0.11258	0.8014	0.81328	0.52584	0.8146	0.00053	0.95378	0.5285	1.57115	0.1667	0.22176

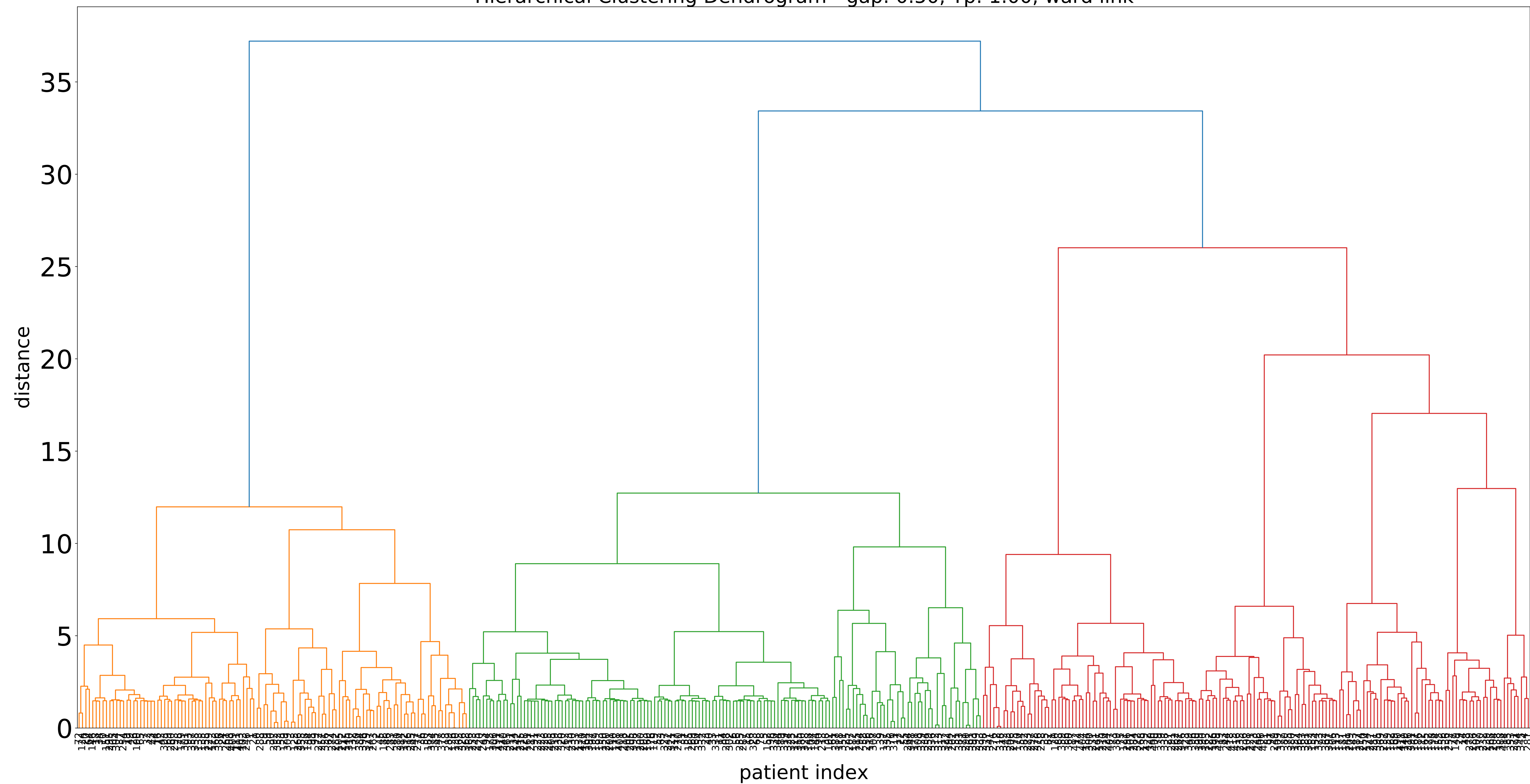
Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.40, Tp: 1.00, ward link



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



Hierarchical Clustering Dendrogram - gap: 0.50, Tp: 1.00, ward link

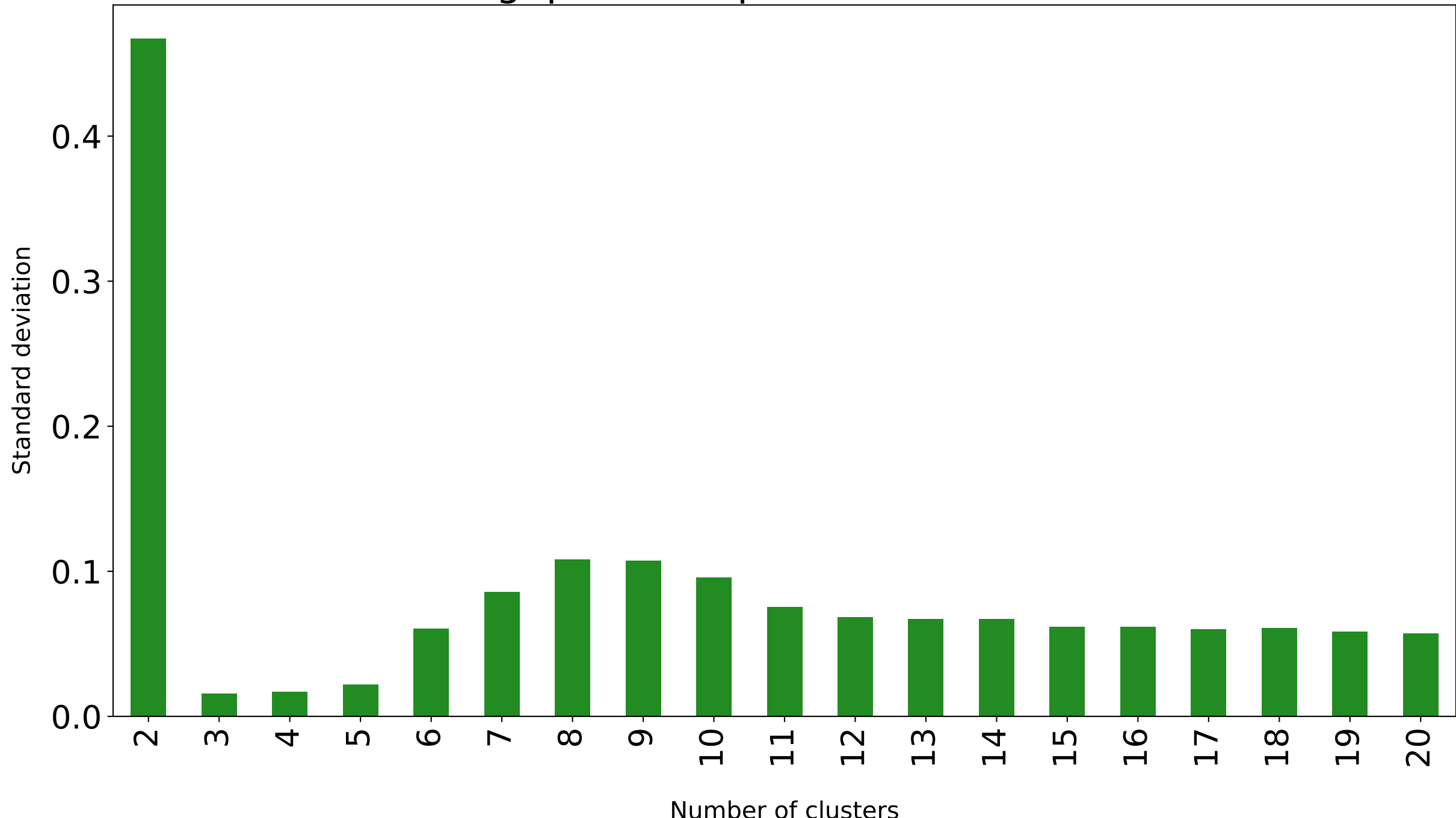


Cophenetic Correlation Coefficient: 0.7520153864248132

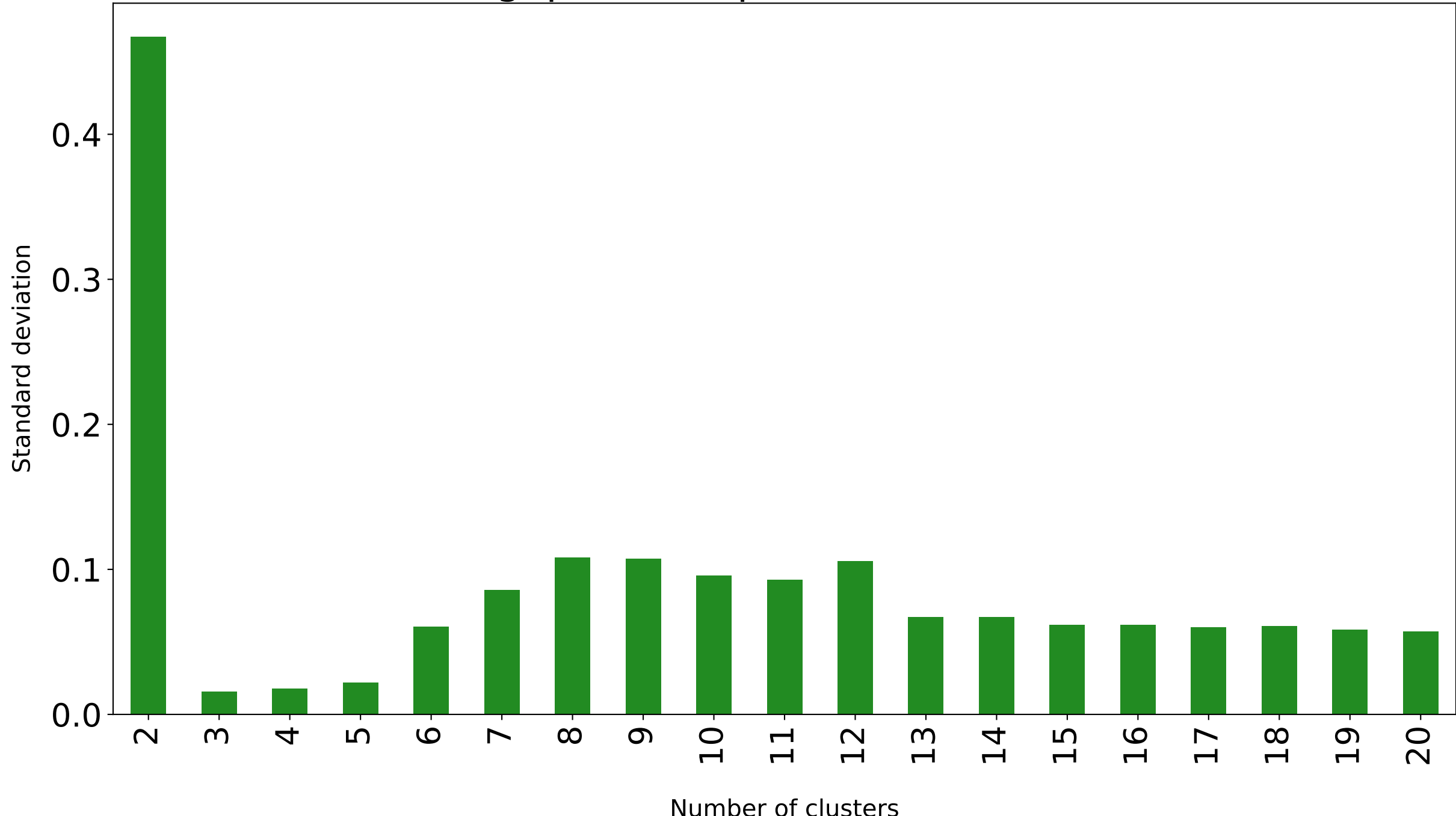
Average values of 20 clustering indices  
gap: 0.50, Tp: 1.00, ward link

k	AR	FM	J	AW	VD	H	F	VI	K	Phi	RT	SS	CVNN	S	Dunn
2.0	1.0	0.96982	0.95556	0.92687	0.0224	0.92844	0.9697	0.0817	0.96995	0.00015	0.95038	0.94025	1.00645	0.27436	0.23447
3.0	1.0	0.99281	0.98588	0.98867	0.00356	0.98914	0.99281	0.03724	0.99281	0.00017	0.9904	0.97271	0.88149	0.29154	0.26465
4.0	1.0	0.98897	0.97848	0.98548	0.00645	0.9849	0.98897	0.05442	0.98898	0.0002	0.98825	0.95895	0.80685	0.32224	0.26465
5.0	1.0	0.98675	0.97423	0.9861	0.01161	0.98243	0.98674	0.06889	0.98676	0.00021	0.98715	0.9512	0.79267	0.34054	0.26524
6.0	1.0	0.99093	0.98213	0.99334	0.00789	0.98812	0.99091	0.06041	0.99095	0.00021	0.99144	0.96542	0.78249	0.35354	0.26524
7.0	1.0	0.92393	0.85781	0.83528	0.04372	0.90425	0.92089	0.20046	0.92699	0.00021	0.93513	0.76304	0.81641	0.38401	0.29511
8.0	1.0	0.8795	0.79126	0.83932	0.06706	0.85334	0.87786	0.28534	0.88116	0.00023	0.91694	0.67326	0.7824	0.31908	0.32846
9.0	1.0	0.89765	0.81842	0.90674	0.06307	0.87947	0.89683	0.29221	0.89848	0.00027	0.93974	0.70393	0.75301	0.28207	0.32011
10.0	1.0	0.89506	0.81604	0.89794	0.06845	0.87833	0.89435	0.32393	0.89577	0.00029	0.94379	0.70324	0.74027	0.27941	0.21217
11.0	1.0	0.87782	0.78996	0.85472	0.07752	0.86007	0.87693	0.36958	0.87872	0.0003	0.9397	0.66999	0.72891	0.27072	0.2196
12.0	1.0	0.85298	0.75311	0.81057	0.0841	0.83414	0.85127	0.38819	0.85469	0.00032	0.93459	0.62647	0.71547	0.25376	0.2196
13.0	1.0	0.89425	0.8097	0.92142	0.06225	0.8833	0.89285	0.34255	0.89567	0.00041	0.96006	0.68683	0.70847	0.2256	0.2196
14.0	1.0	0.9108	0.83699	0.92505	0.05953	0.90217	0.91046	0.33575	0.91113	0.00044	0.96883	0.72276	0.75884	0.22208	0.2196
15.0	1.0	0.89942	0.81837	0.90619	0.06972	0.88998	0.89919	0.37493	0.89965	0.00045	0.96597	0.69592	0.86576	0.21852	0.22908
16.0	1.0	0.88696	0.79779	0.90109	0.07833	0.8769	0.88656	0.40683	0.88736	0.00046	0.9635	0.66677	0.85863	0.20006	0.22908
17.0	1.0	0.88707	0.79859	0.89081	0.08042	0.87732	0.88681	0.41318	0.88733	0.00047	0.96462	0.6687	0.85513	0.19969	0.22908
18.0	1.0	0.88377	0.79362	0.87378	0.0823	0.87402	0.88353	0.41711	0.88401	0.00048	0.96457	0.66243	1.56571	0.19822	0.24836
19.0	1.0	0.85277	0.74488	0.86411	0.10191	0.84141	0.85223	0.47521	0.85331	0.0005	0.95844	0.59776	1.55906	0.18848	0.24836
20.0	1.0	0.83274	0.71456	0.85356	0.11243	0.8207	0.83182	0.51522	0.83367	0.00051	0.9556	0.56	1.55085	0.1793	0.24836

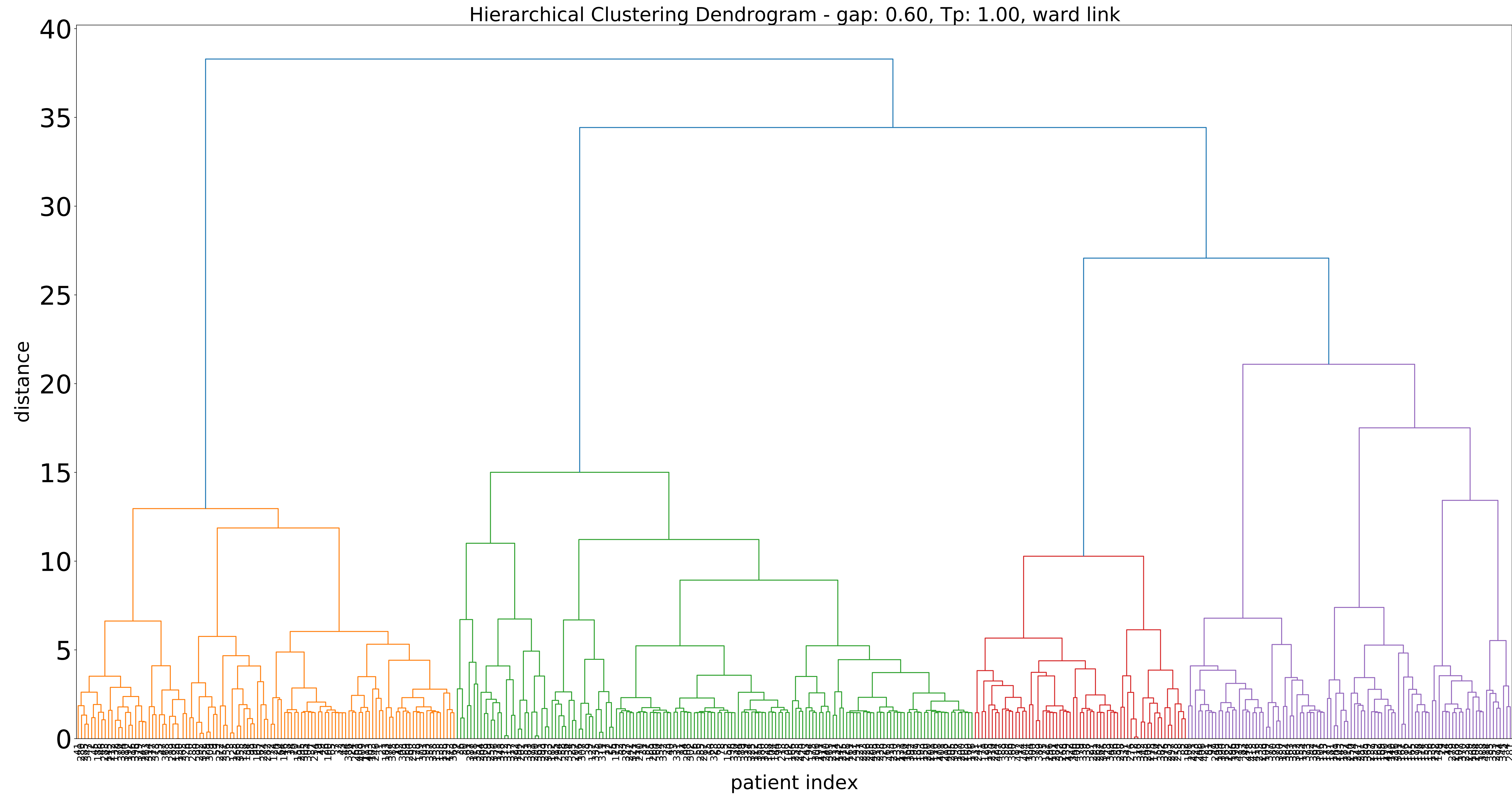
Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.50, Tp: 1.00, ward link



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



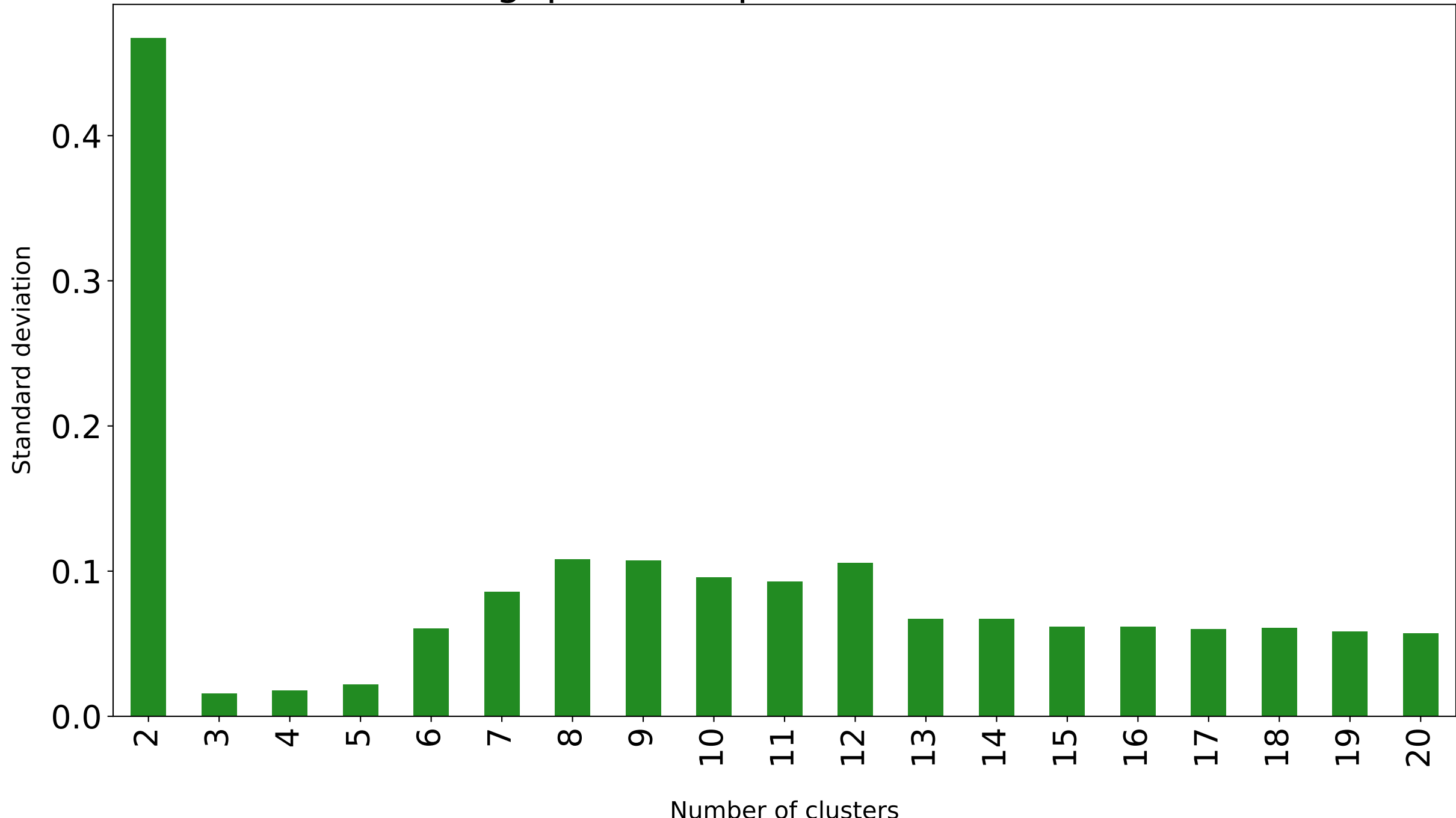




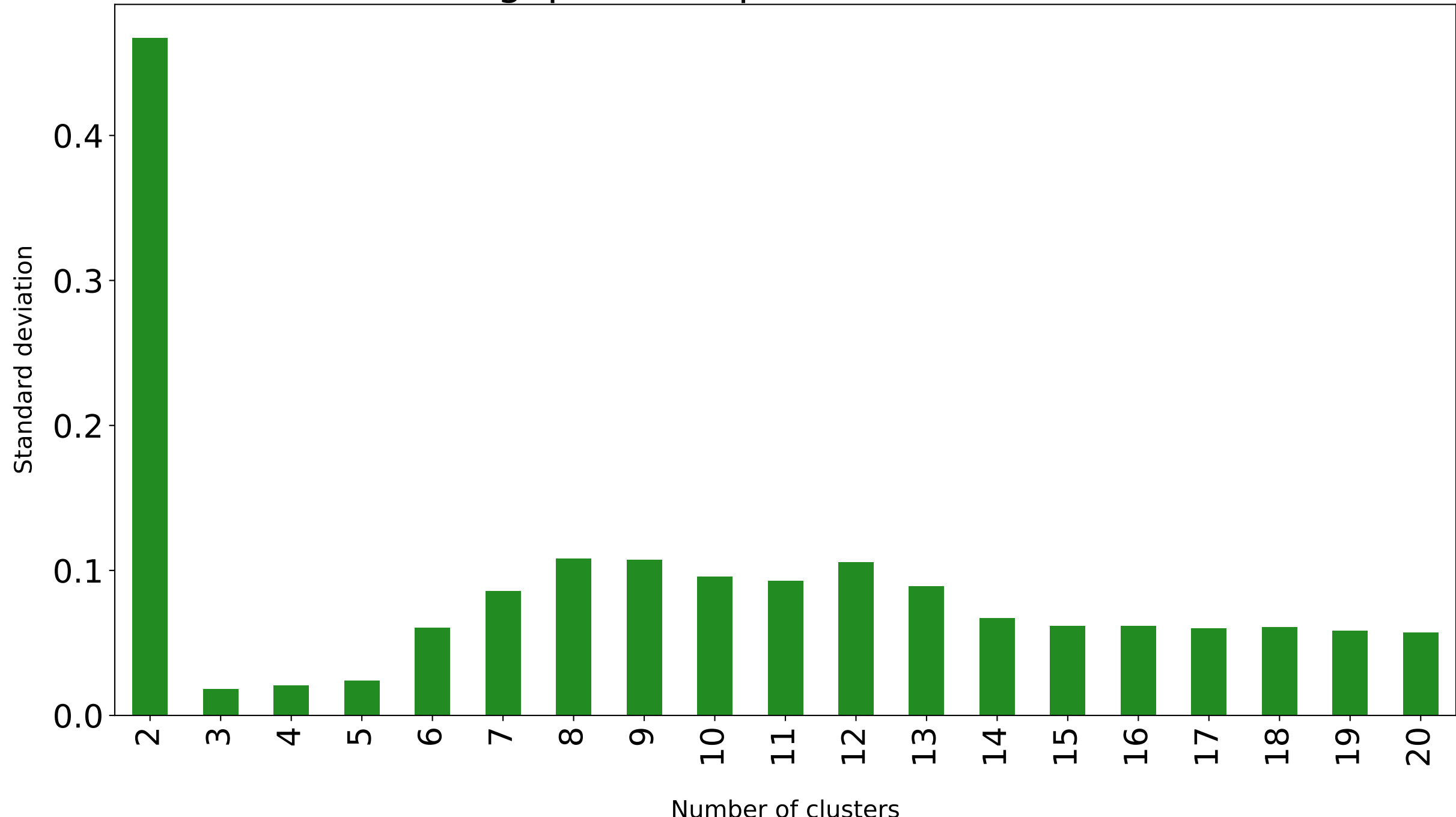
Average values of 20 clustering indices  
gap: 0.60, Tp: 1.00, ward link

k	AR	FM	J	AW	VD	H	F	VI	K	Phi	RT	SS	CVNN	S	Dunn
2.0	1.0	0.9787	0.96504	0.93869	0.01492	0.94818	0.97863	0.08229	0.97878	0.00016	0.95958	0.9445	1.01538	0.27239	0.15541
3.0	1.0	0.98324	0.96729	0.97273	0.00862	0.97465	0.98323	0.08377	0.98324	0.00017	0.97767	0.93754	0.8756	0.28568	0.17514
4.0	1.0	0.9758	0.95313	0.96398	0.01273	0.9668	0.97579	0.10943	0.97581	0.00019	0.97421	0.91179	0.79213	0.31798	0.17514
5.0	1.0	0.97192	0.94593	0.96249	0.01906	0.96276	0.97191	0.12716	0.97194	0.0002	0.97286	0.89927	0.76614	0.33775	0.17514
6.0	1.0	0.97657	0.95442	0.96896	0.01437	0.96927	0.97653	0.11411	0.9766	0.00021	0.978	0.91374	0.77722	0.35061	0.17514
7.0	1.0	0.89053	0.80457	0.87691	0.06312	0.86324	0.8897	0.32593	0.89135	0.00021	0.91564	0.67998	0.80974	0.29293	0.18269
8.0	1.0	0.8516	0.74123	0.7653	0.0884	0.81879	0.84863	0.40831	0.85458	0.00021	0.89465	0.59683	0.80542	0.32709	0.18608
9.0	1.0	0.85528	0.7484	0.7943	0.08745	0.82754	0.85404	0.43274	0.85651	0.00024	0.90997	0.60374	0.78334	0.30025	0.17662
10.0	1.0	0.86241	0.75921	0.81121	0.07911	0.83847	0.8615	0.42827	0.86332	0.00026	0.92089	0.61672	0.76806	0.29166	0.17662
11.0	1.0	0.90315	0.82797	0.89963	0.06879	0.88853	0.90256	0.36425	0.90374	0.00031	0.95029	0.71767	0.74184	0.27018	0.17662
12.0	1.0	0.88619	0.80069	0.84725	0.07874	0.8702	0.88505	0.38925	0.88734	0.00031	0.94482	0.68005	1.16299	0.25726	0.22029
13.0	1.0	0.86234	0.76202	0.7967	0.08337	0.84574	0.85893	0.39031	0.86577	0.00033	0.93995	0.63341	1.14729	0.24553	0.22029
14.0	1.0	0.90678	0.83082	0.90788	0.06254	0.89755	0.90641	0.35169	0.90714	0.00043	0.96676	0.71493	1.14193	0.21844	0.22029
15.0	1.0	0.90035	0.82008	0.89337	0.07206	0.89082	0.90022	0.38811	0.90048	0.00044	0.96577	0.6984	1.13665	0.21759	0.22029
16.0	1.0	0.87662	0.78143	0.87805	0.09023	0.86539	0.87644	0.4455	0.8768	0.00045	0.95961	0.64406	1.1297	0.19893	0.22029
17.0	1.0	0.88252	0.791	0.87546	0.08899	0.87212	0.88239	0.44287	0.88265	0.00046	0.96246	0.65733	1.12633	0.19654	0.22029
18.0	1.0	0.88316	0.79209	0.86239	0.08704	0.87301	0.88296	0.43636	0.88336	0.00047	0.96326	0.65911	1.55395	0.21338	0.25667
19.0	1.0	0.87807	0.78382	0.84715	0.09147	0.86779	0.87764	0.44741	0.87851	0.00047	0.96255	0.64825	1.55166	0.21885	0.25667
20.0	1.0	0.88214	0.79046	0.85164	0.08669	0.8726	0.88164	0.43047	0.88263	0.00049	0.9651	0.65781	1.54852	0.20916	0.25667

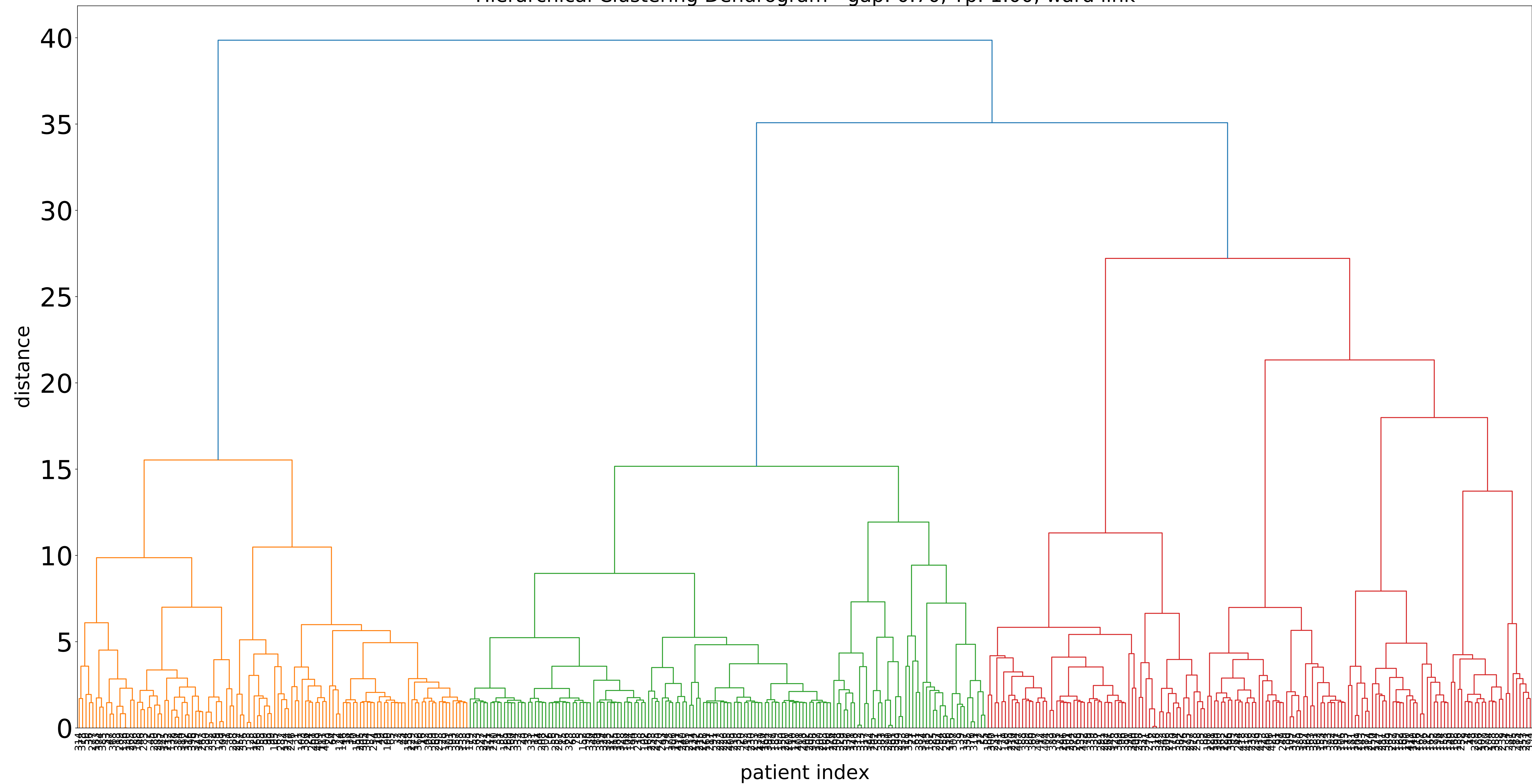
Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.60, Tp: 1.00, ward link



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



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

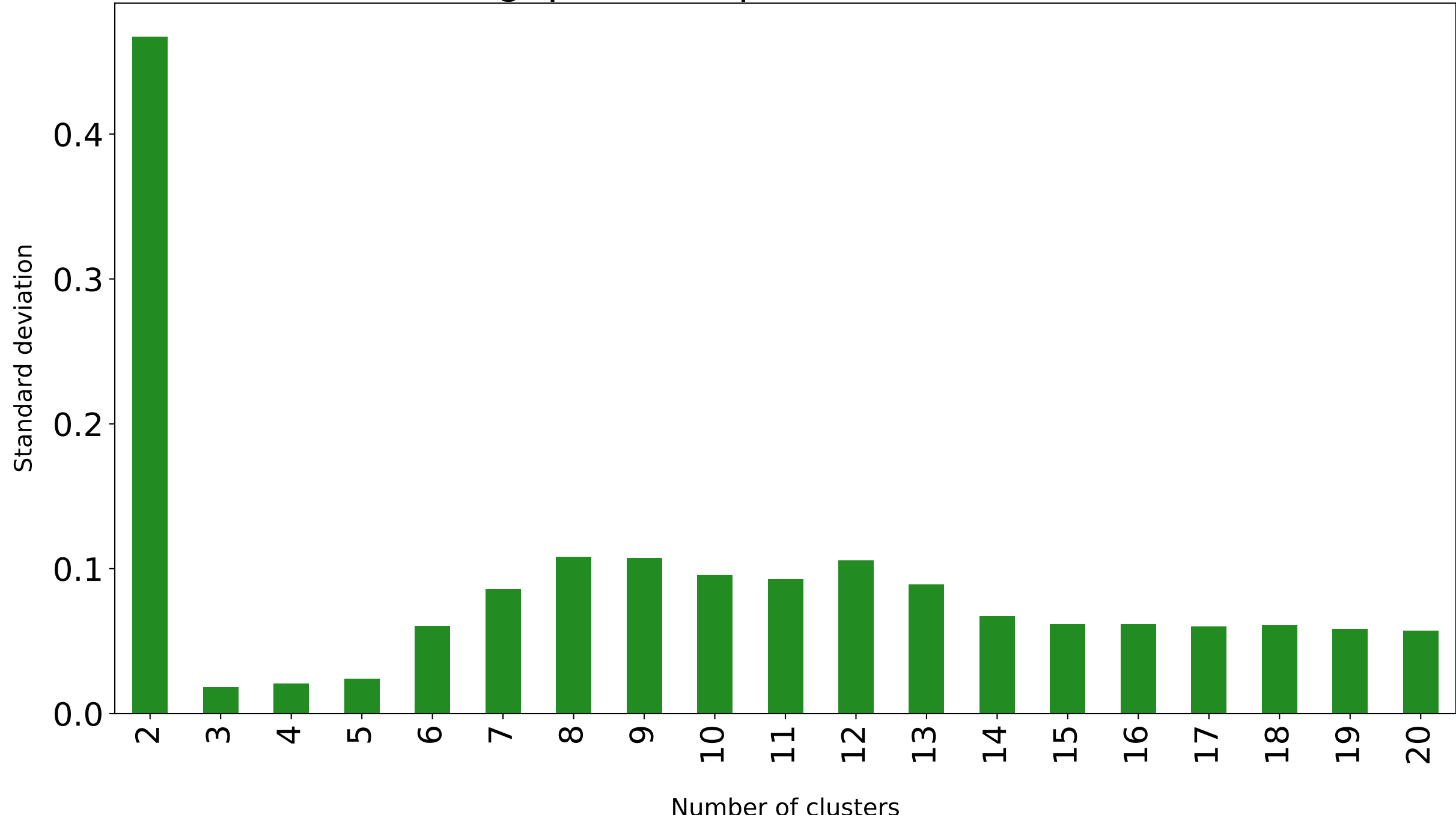


Cophenetic Correlation Coefficient: 0.6949553053179386

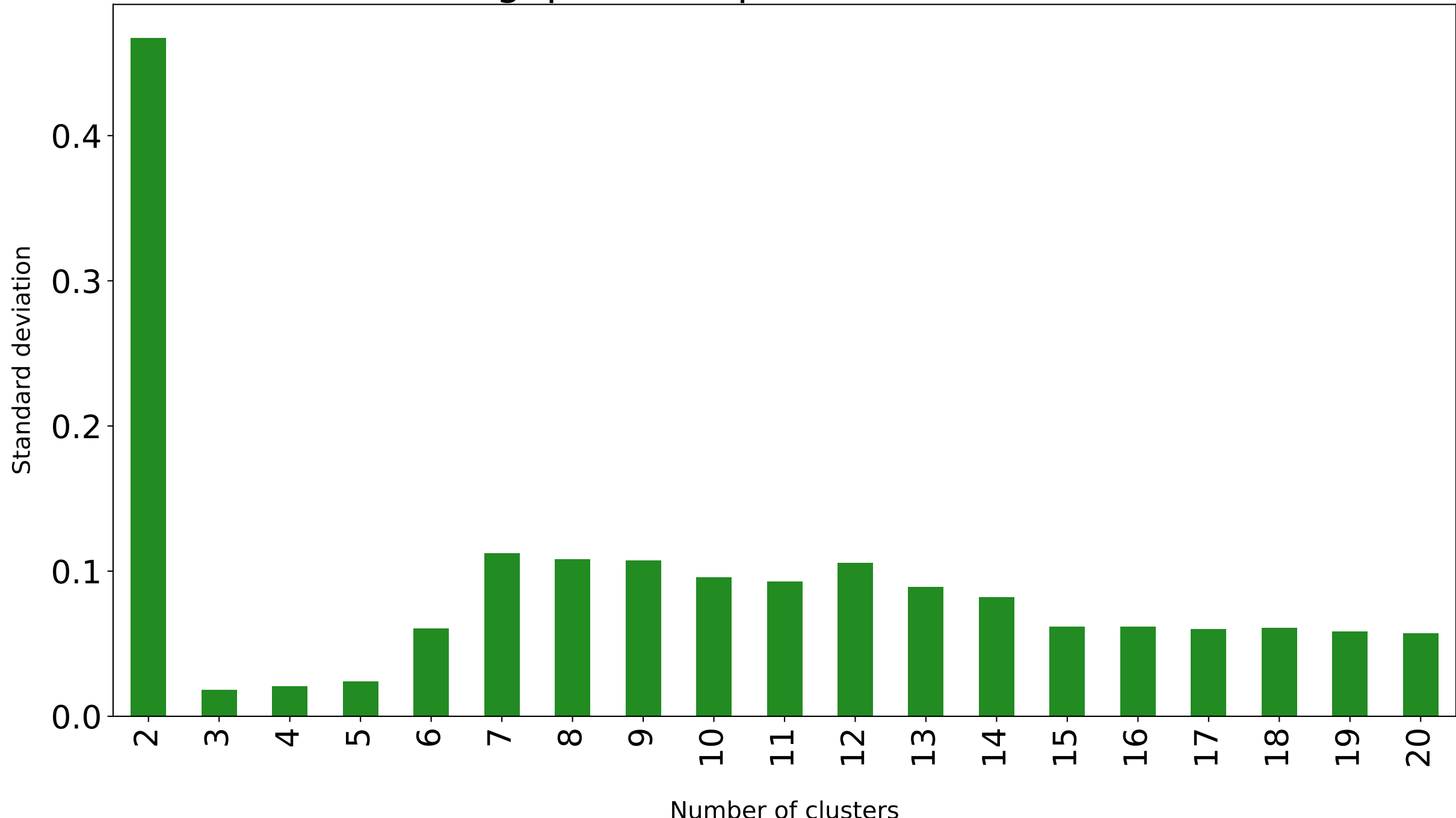
Average values of 20 clustering indices  
gap: 0.70, Tp: 1.00, ward link

k	AR	FM	J	AW	VD	H	F	VI	K	Phi	RT	SS	CVNN	S	Dunn
2.0	1.0	0.98906	0.98283	0.9726	0.00779	0.97348	0.98901	0.0381	0.9891	0.00016	0.98036	0.97437	1.00538	0.26866	0.21105
3.0	1.0	0.99077	0.98191	0.98594	0.00454	0.98606	0.99077	0.0472	0.99077	0.00017	0.98768	0.96516	0.87377	0.28286	0.25134
4.0	1.0	0.98318	0.9673	0.97655	0.01006	0.97694	0.98317	0.08456	0.98318	0.00019	0.98208	0.93802	0.8035	0.3108	0.25134
5.0	1.0	0.97905	0.95949	0.97416	0.01844	0.9722	0.97904	0.1085	0.97907	0.00021	0.97966	0.92398	0.76838	0.33111	0.25183
6.0	1.0	0.98187	0.96519	0.97381	0.01334	0.97638	0.98172	0.08652	0.98202	0.00021	0.98325	0.93591	0.77669	0.34761	0.25183
7.0	1.0	0.86912	0.77928	0.83146	0.06989	0.83658	0.86868	0.31395	0.86957	0.0002	0.90241	0.66201	0.75434	0.30811	0.19981
8.0	1.0	0.89239	0.80626	0.93434	0.06221	0.87213	0.88985	0.31582	0.89495	0.00026	0.93129	0.68565	0.69149	0.25889	0.19981
9.0	1.0	0.90904	0.83574	0.9176	0.05565	0.89267	0.90831	0.29573	0.90977	0.00027	0.94554	0.72638	0.68537	0.29403	0.20807
10.0	1.0	0.91218	0.84068	0.90853	0.06103	0.89737	0.91177	0.32338	0.9126	0.00029	0.95039	0.73164	0.68436	0.27891	0.20807
11.0	1.0	0.89929	0.81952	0.89824	0.07065	0.88364	0.89892	0.3667	0.89967	0.0003	0.94711	0.70095	0.66878	0.26676	0.20807
12.0	1.0	0.91408	0.84414	0.91752	0.06241	0.90192	0.91344	0.33106	0.91472	0.00032	0.95788	0.73747	0.65437	0.26124	0.20807
13.0	1.0	0.89756	0.81985	0.87994	0.07355	0.88463	0.89606	0.35975	0.89907	0.00034	0.95421	0.71044	0.67352	0.25753	0.18857
14.0	1.0	0.83549	0.71789	0.74505	0.09904	0.81686	0.83046	0.43082	0.84057	0.00034	0.93131	0.57483	1.57033	0.24651	0.2486
15.0	1.0	0.90319	0.82482	0.91077	0.06841	0.89393	0.90265	0.36362	0.90373	0.00044	0.96642	0.70658	1.56658	0.21858	0.2486
16.0	1.0	0.90437	0.82653	0.90488	0.07007	0.89553	0.90418	0.37441	0.90456	0.00046	0.96809	0.7075	1.561	0.22032	0.2486
17.0	1.0	0.90416	0.82621	0.8985	0.07386	0.89551	0.90406	0.38528	0.90426	0.00046	0.96875	0.70683	1.5572	0.21665	0.2486
18.0	1.0	0.90091	0.82086	0.88852	0.07897	0.89216	0.90079	0.39662	0.90103	0.00047	0.96832	0.69919	1.5546	0.22363	0.2486
19.0	1.0	0.89773	0.81552	0.88424	0.08142	0.88897	0.89759	0.40064	0.89788	0.00048	0.96817	0.69139	1.5519	0.22002	0.2486
20.0	1.0	0.89715	0.81463	0.89989	0.08162	0.88873	0.89696	0.40719	0.89734	0.0005	0.96926	0.69038	1.54321	0.20515	0.2486

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

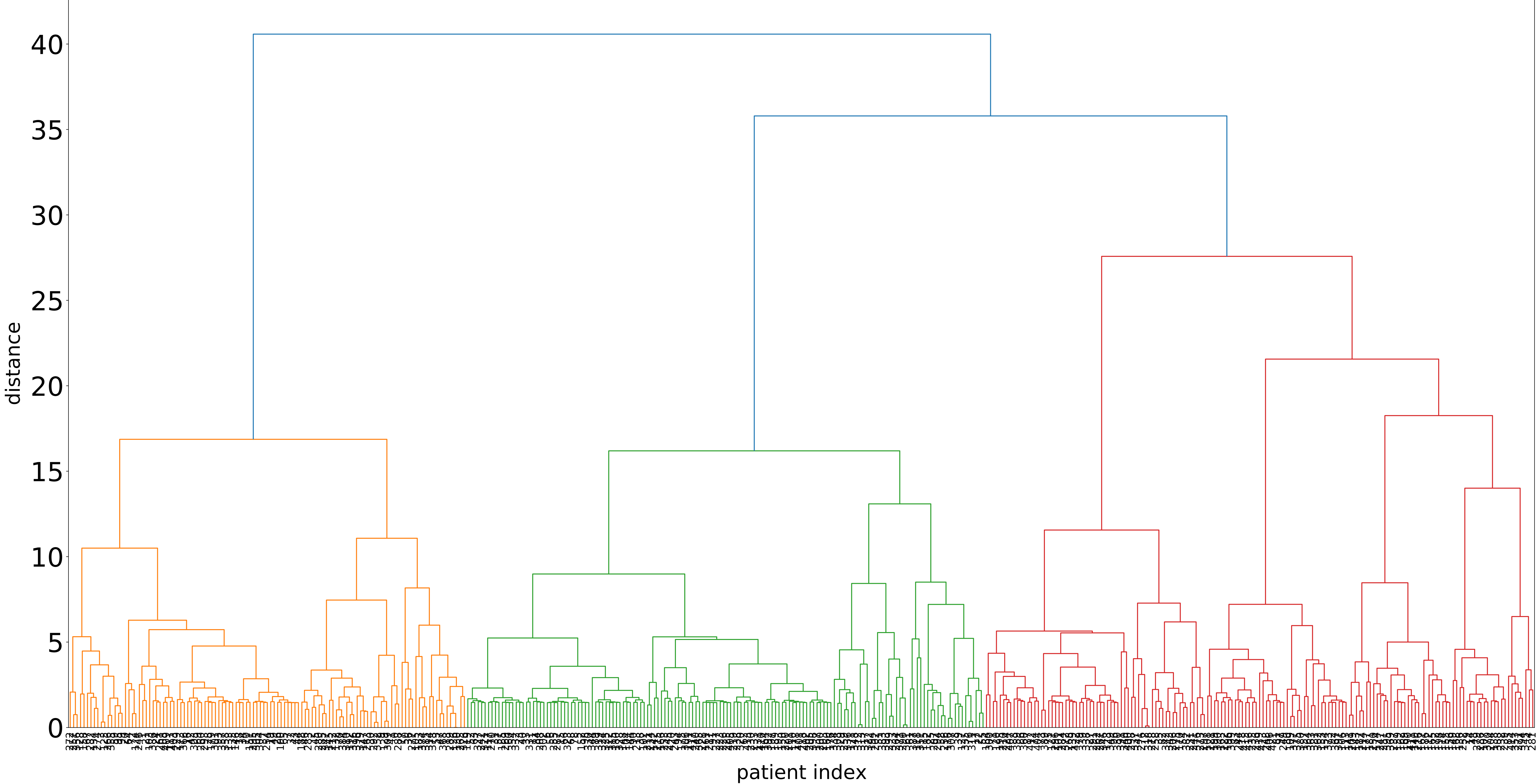


Standard deviation of Huberts index versus number of clusters  
gap: 0.70, Tp: 1.00, ward link





Hierarchical Clustering Dendrogram - gap: 0.80, Tp: 1.00, ward link

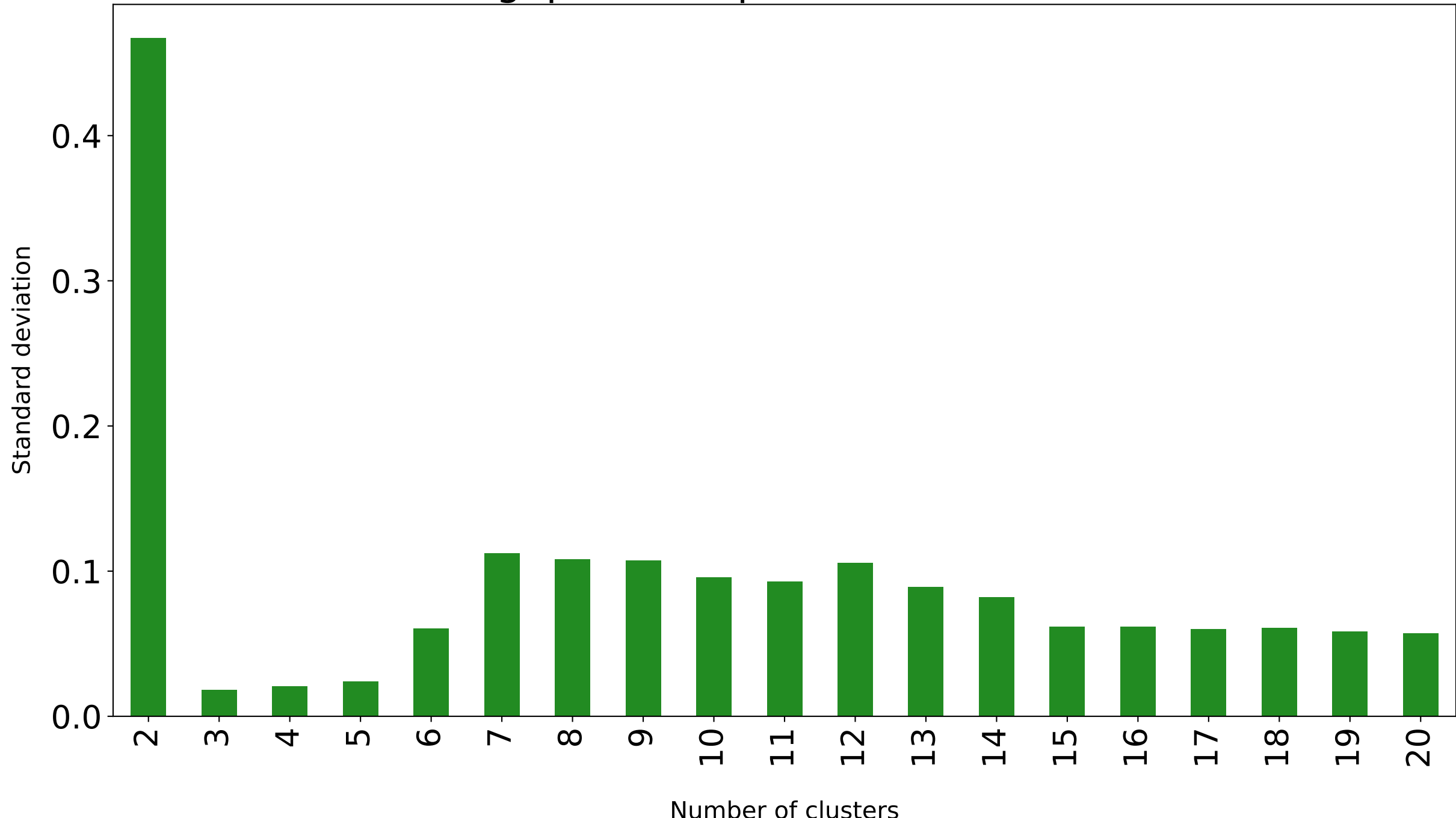


Cophenetic Correlation Coefficient: 0.6676535721146479

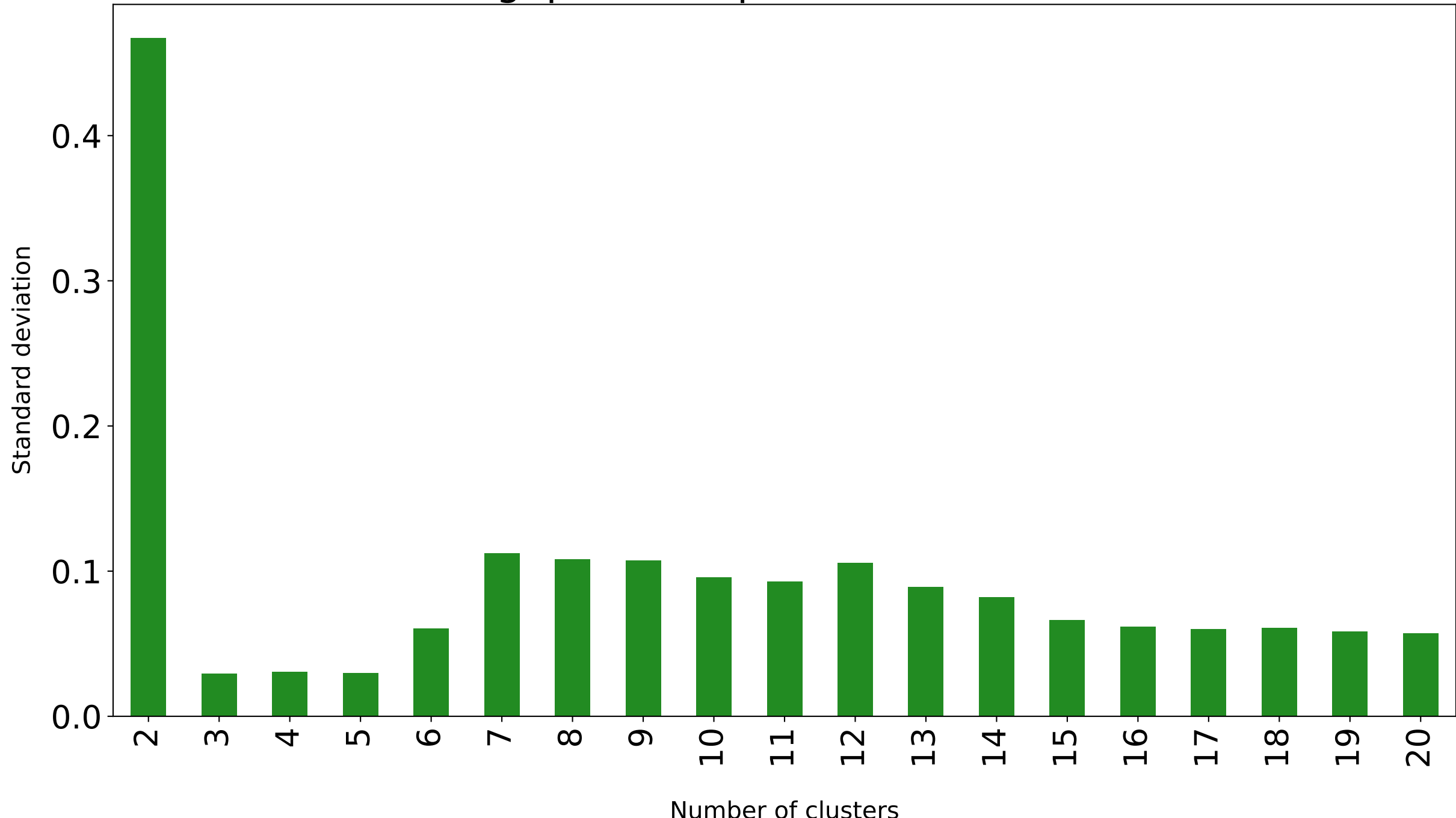
Average values of 20 clustering indices  
gap: 0.80, Tp: 1.00, ward link

k	AR	FM	J	AW	VD	H	F	VI	K	Phi	RT	SS	CVNN	S	Dunn
2.0	1.0	0.99003	0.98297	0.97768	0.00674	0.97557	0.99	0.04434	0.99006	0.00016	0.98013	0.97153	1.0	0.26086	0.1975
3.0	1.0	0.98654	0.97409	0.98027	0.00682	0.97966	0.98654	0.06274	0.98654	0.00017	0.98227	0.95153	0.87974	0.27681	0.23563
4.0	1.0	0.97709	0.95604	0.97031	0.01364	0.96859	0.97707	0.10764	0.97711	0.00019	0.97573	0.91843	0.81594	0.30478	0.23563
5.0	1.0	0.97359	0.94935	0.97017	0.02223	0.96494	0.97354	0.13072	0.97363	0.0002	0.97443	0.90636	0.78339	0.32463	0.23563
6.0	1.0	0.96159	0.92859	0.93631	0.02771	0.95053	0.96097	0.1456	0.96221	0.00021	0.96594	0.87686	0.79711	0.3412	0.23563
7.0	1.0	0.85693	0.7593	0.81572	0.07733	0.82184	0.85633	0.34131	0.85753	0.0002	0.89441	0.63355	0.76854	0.30584	0.19972
8.0	1.0	0.89537	0.81163	0.93237	0.06096	0.87576	0.89317	0.3177	0.89758	0.00026	0.93377	0.69314	0.70286	0.25877	0.20241
9.0	1.0	0.90617	0.83035	0.9145	0.05985	0.88935	0.90531	0.31162	0.90703	0.00027	0.94384	0.71747	0.69675	0.29201	0.22125
10.0	1.0	0.91236	0.84045	0.91089	0.06158	0.89758	0.91187	0.3293	0.91284	0.00029	0.95037	0.73047	0.70556	0.28096	0.22125
11.0	1.0	0.89659	0.81404	0.90059	0.07489	0.88052	0.89616	0.38133	0.89702	0.0003	0.94562	0.69123	0.68847	0.26622	0.22125
12.0	1.0	0.89949	0.81874	0.89915	0.07861	0.8848	0.89914	0.39617	0.89984	0.00031	0.94984	0.69748	0.79522	0.25455	0.21451
13.0	1.0	0.9218	0.85682	0.93258	0.06581	0.91141	0.92104	0.34397	0.92256	0.00034	0.96346	0.75623	0.77984	0.25054	0.21451
14.0	1.0	0.82681	0.69973	0.91896	0.10326	0.80877	0.81964	0.45769	0.83409	0.00037	0.93093	0.54728	0.78023	0.21611	0.21451
15.0	1.0	0.86461	0.76186	0.90878	0.08803	0.85117	0.86135	0.42047	0.86792	0.00041	0.94983	0.62509	1.56451	0.21201	0.21451
16.0	1.0	0.88925	0.80189	0.90726	0.07811	0.87883	0.88797	0.40168	0.89054	0.00044	0.96176	0.67577	1.55838	0.21626	0.21451
17.0	1.0	0.90102	0.82102	0.90665	0.07597	0.89206	0.90056	0.39585	0.90148	0.00046	0.96739	0.70033	1.55333	0.21554	0.21451
18.0	1.0	0.90385	0.82578	0.89927	0.07543	0.89534	0.90369	0.39284	0.90402	0.00047	0.96913	0.70652	1.54973	0.22041	0.25122
19.0	1.0	0.90364	0.82524	0.89828	0.07674	0.89535	0.90352	0.39386	0.90377	0.00048	0.96989	0.70523	1.54651	0.21877	0.25122
20.0	1.0	0.90063	0.8203	0.88906	0.07977	0.89227	0.90052	0.4021	0.90073	0.00049	0.9696	0.69818	1.5427	0.22267	0.25122

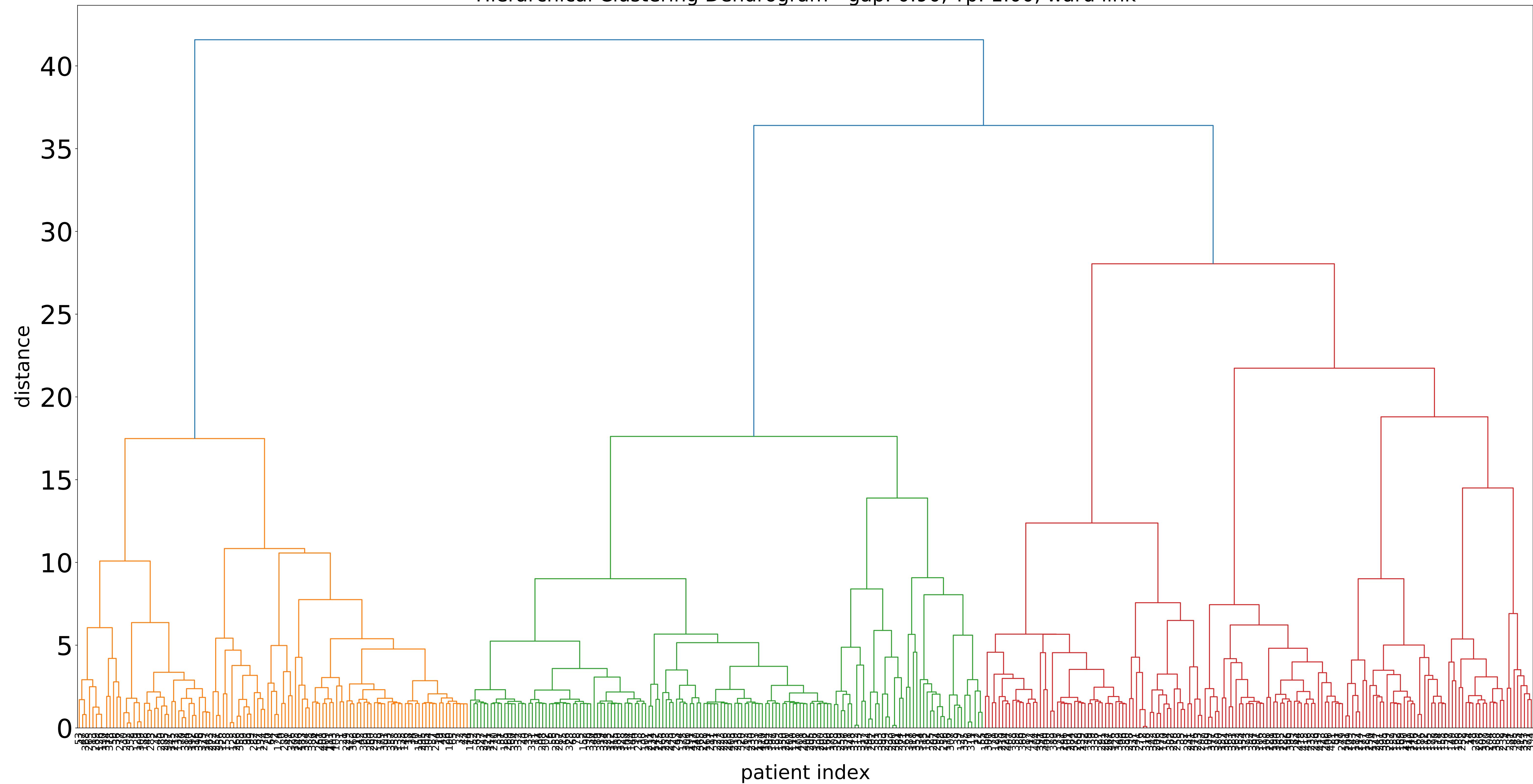
Standard deviation of Adjusted Rand versus number of clusters  
gap: 0.80, Tp: 1.00, ward link



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



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

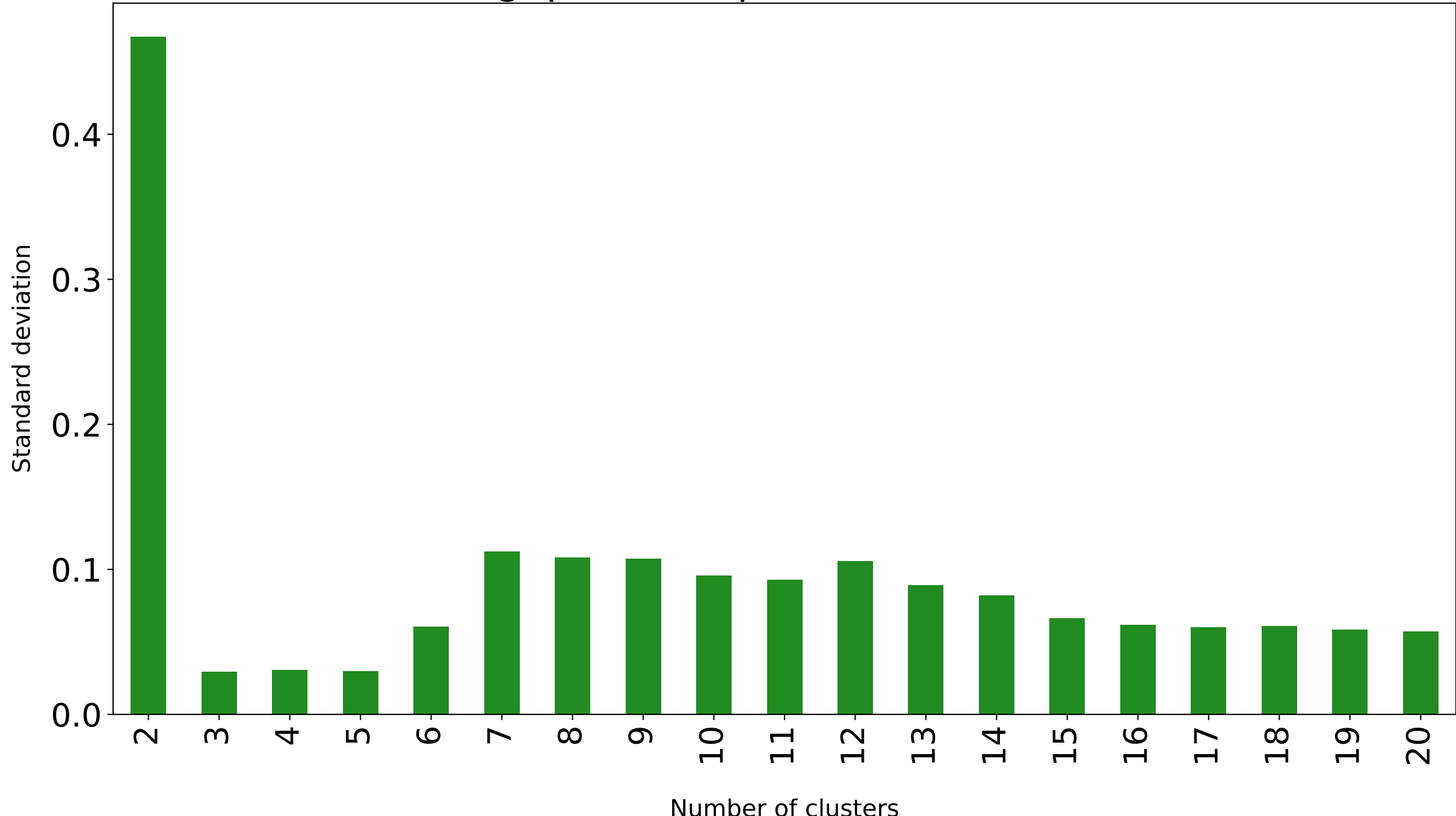


Cophenetic Correlation Coefficient: 0.6411699189912075

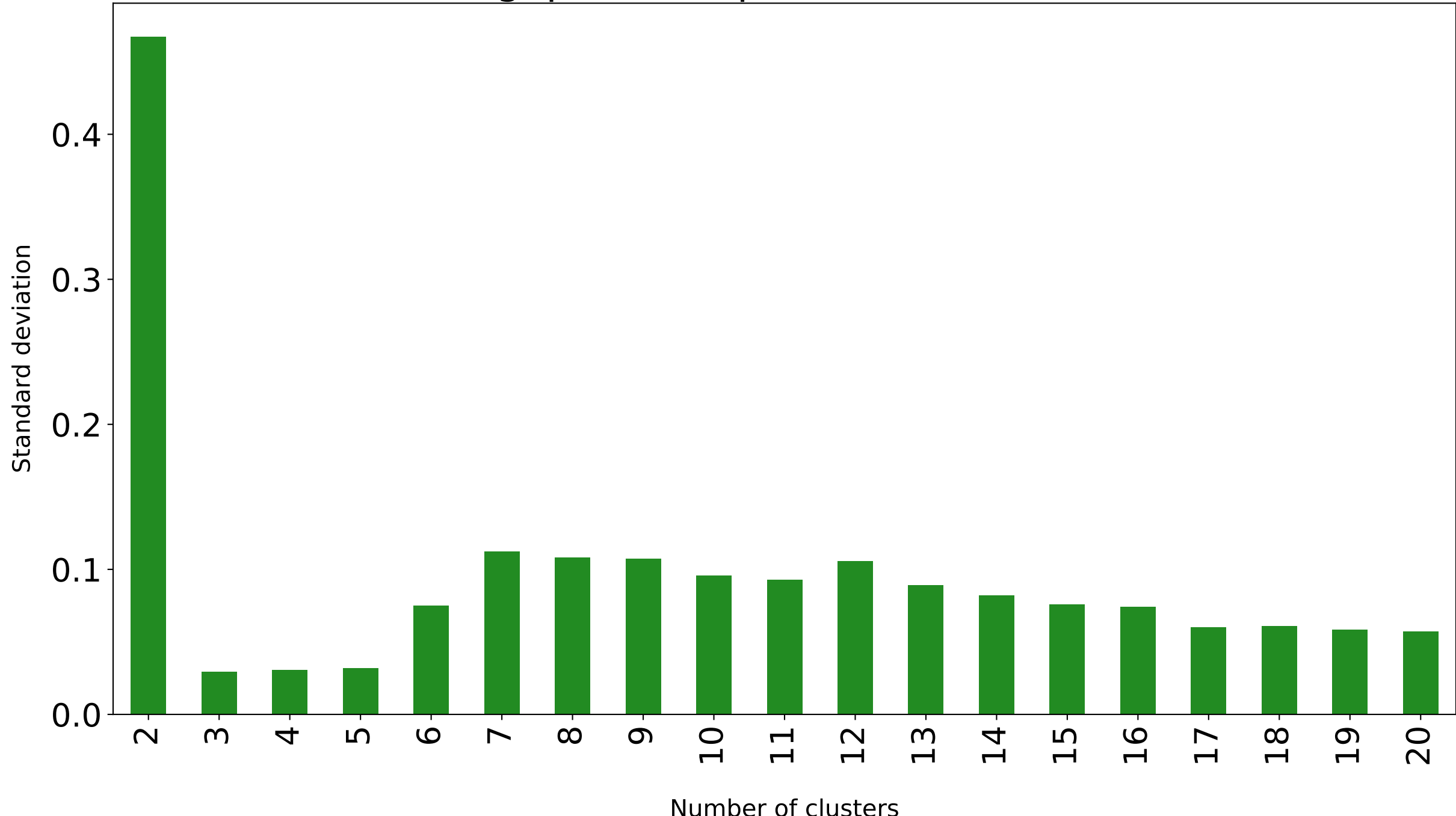
Average values of 20 clustering indices  
gap: 0.90, Tp: 1.00, ward link

k	AR	FM	J	AW	VD	H	F	VI	K	Phi	RT	SS	CVNN	S	Dunn
2.0	1.0	0.98182	0.9713	0.95489	0.01303	0.95654	0.98174	0.06141	0.98189	0.00016	0.96743	0.95707	1.0	0.26012	0.18559
3.0	1.0	0.98488	0.97077	0.97669	0.00755	0.97717	0.98488	0.07049	0.98488	0.00017	0.98003	0.94501	0.88664	0.27455	0.2163
4.0	1.0	0.97524	0.95254	0.96847	0.01508	0.96605	0.97522	0.11703	0.97525	0.00019	0.9738	0.9122	0.81675	0.30217	0.2163
5.0	1.0	0.96895	0.94069	0.96695	0.02806	0.9588	0.96889	0.1535	0.969	0.0002	0.97003	0.89117	0.79974	0.31982	0.2163
6.0	1.0	0.9201	0.85493	0.85479	0.05286	0.89809	0.91837	0.24591	0.92183	0.0002	0.93157	0.76156	0.78815	0.33644	0.2163
7.0	1.0	0.89496	0.81911	0.89052	0.06069	0.87061	0.89413	0.28256	0.89578	0.00023	0.92462	0.71585	0.73742	0.27124	0.22705
8.0	1.0	0.89943	0.81911	0.9127	0.0617	0.88066	0.89825	0.32264	0.90062	0.00026	0.93762	0.70193	0.69207	0.26318	0.1445
9.0	1.0	0.90277	0.82477	0.88938	0.06742	0.88545	0.90233	0.33503	0.90321	0.00027	0.94269	0.70782	0.71069	0.29249	0.15735
10.0	1.0	0.9054	0.82921	0.88331	0.06895	0.88954	0.90514	0.35313	0.90566	0.00028	0.94709	0.71375	0.69453	0.28119	0.17308
11.0	1.0	0.89287	0.80859	0.87936	0.07759	0.87622	0.89264	0.39403	0.8931	0.0003	0.94398	0.68417	0.67674	0.27007	0.17308
12.0	1.0	0.90725	0.83119	0.90954	0.07203	0.89393	0.90696	0.38914	0.90754	0.00032	0.95429	0.71448	0.6581	0.2625	0.17308
13.0	1.0	0.92153	0.85506	0.92375	0.06815	0.91077	0.92132	0.37407	0.92173	0.00034	0.96274	0.74915	0.73389	0.25698	0.17379
14.0	1.0	0.92334	0.85961	0.92305	0.06892	0.9134	0.92289	0.37178	0.92379	0.00035	0.96517	0.7594	0.72668	0.25379	0.17379
15.0	1.0	0.8993	0.82095	0.8686	0.07946	0.88731	0.89732	0.39743	0.90131	0.00035	0.95669	0.71008	1.55548	0.24461	0.19004
16.0	1.0	0.83643	0.71827	0.89385	0.10127	0.82023	0.83168	0.47327	0.84124	0.0004	0.93916	0.57117	1.55541	0.21498	0.19004
17.0	1.0	0.87572	0.78039	0.8943	0.08419	0.86421	0.87392	0.43394	0.87754	0.00044	0.9575	0.64764	1.54854	0.22095	0.19004
18.0	1.0	0.8894	0.80221	0.88931	0.08144	0.8796	0.88882	0.42833	0.88998	0.00047	0.96429	0.67423	1.54372	0.21866	0.19004
19.0	1.0	0.89187	0.80608	0.8831	0.08421	0.88255	0.89169	0.4351	0.89206	0.00048	0.96619	0.67833	1.54043	0.22611	0.19004
20.0	1.0	0.90086	0.82076	0.89734	0.08258	0.89259	0.90071	0.41417	0.90101	0.00049	0.96986	0.69911	1.53133	0.22392	0.19004

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

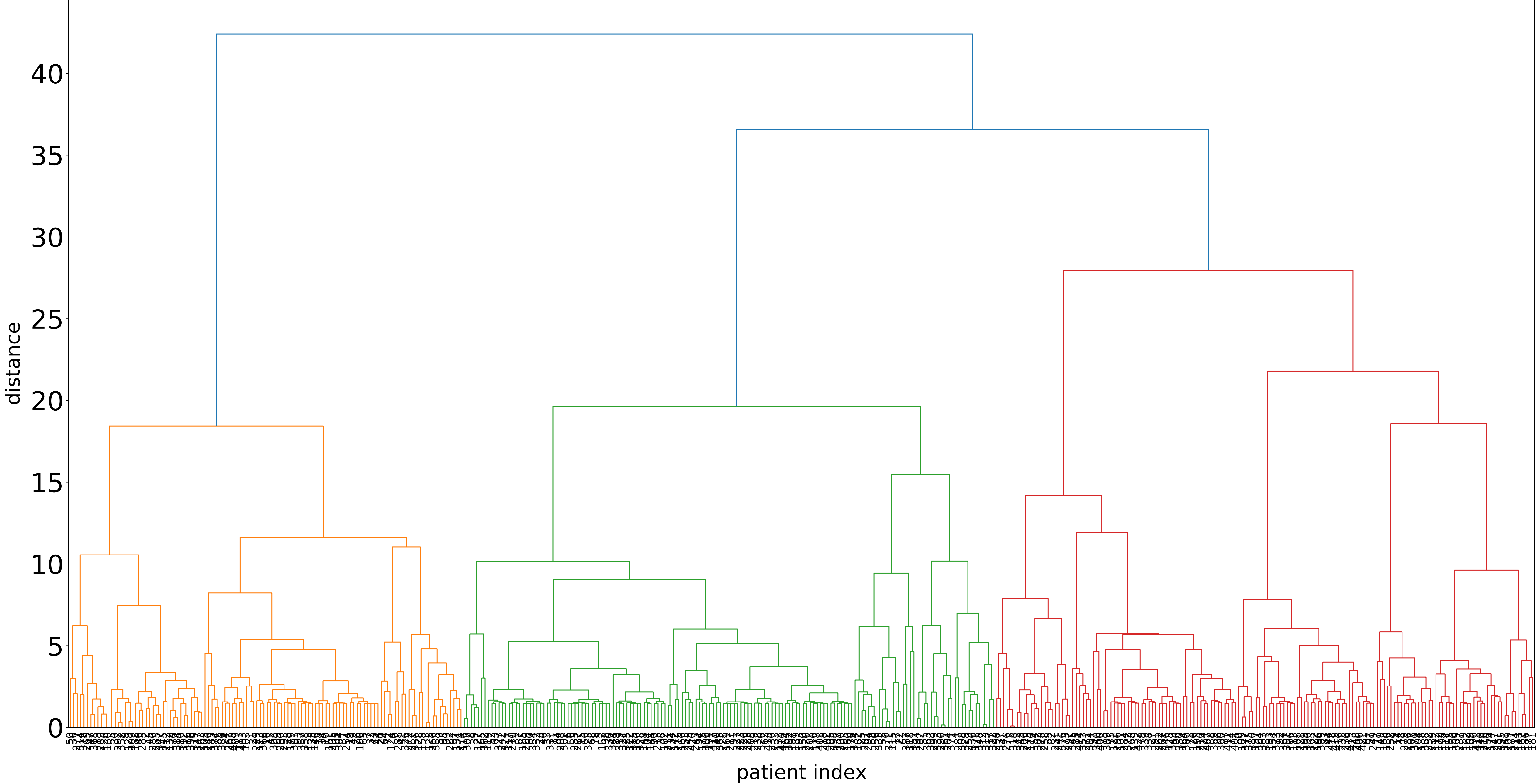


Standard deviation of Huberts index versus number of clusters  
gap: 0.90, Tp: 1.00, ward link





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

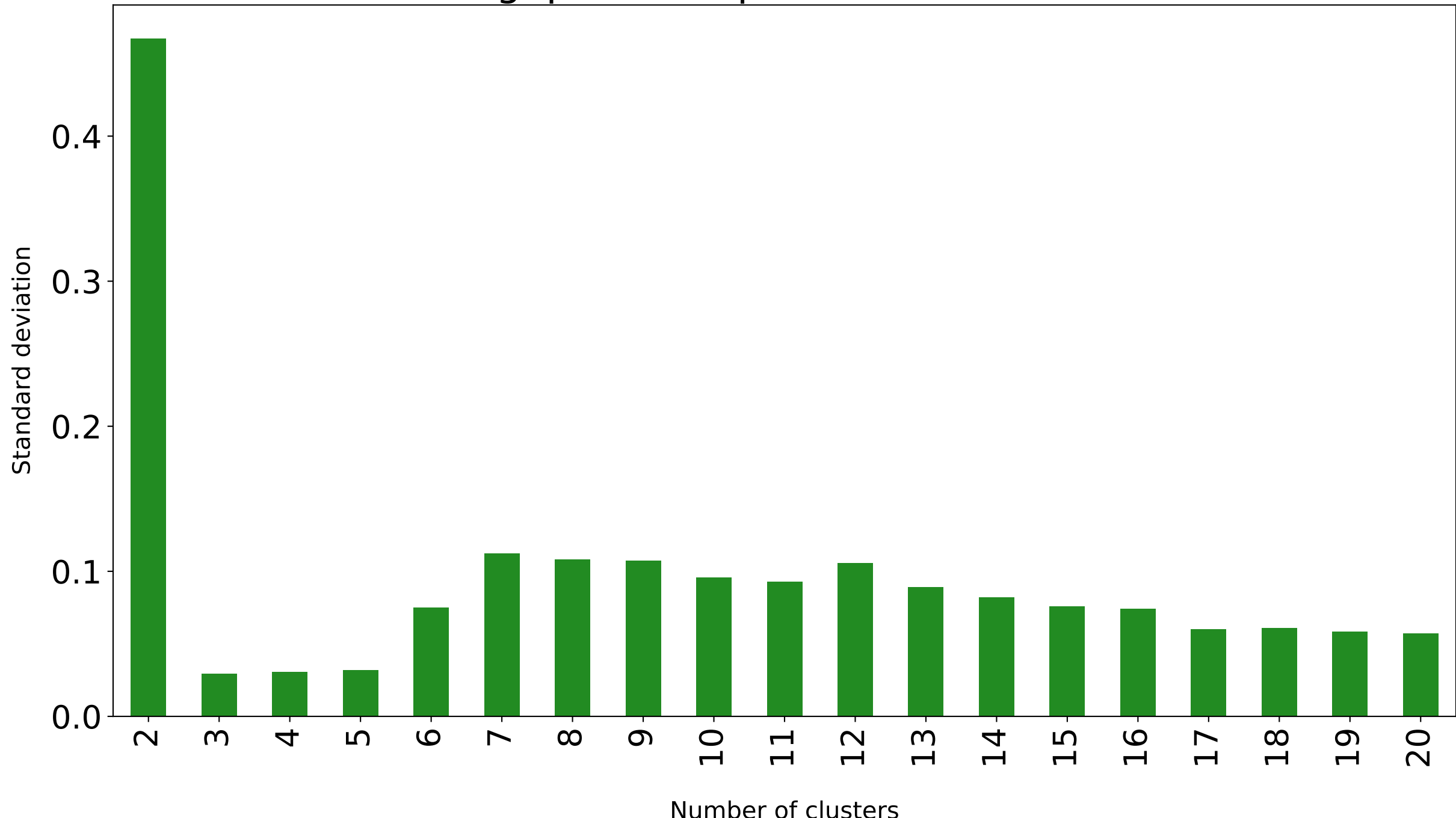


Cophenetic Correlation Coefficient: 0.6125325428254579

Average values of 20 clustering indices  
gap: 1.00, Tp: 1.00, ward link

k	AR	FM	J	AW	VD	H	F	VI	K	Phi	RT	SS	CVNN	S	Dunn
2.0	1.0	0.97339	0.95854	0.93331	0.01908	0.93659	0.97328	0.08402	0.9735	0.00015	0.95315	0.9394	1.0	0.25669	0.17503
3.0	1.0	0.96705	0.93756	0.94999	0.01649	0.95025	0.96704	0.14426	0.96705	0.00017	0.95711	0.88627	0.88994	0.26606	0.19175
4.0	1.0	0.95439	0.91399	0.93923	0.02702	0.93733	0.95436	0.21247	0.95442	0.00019	0.95193	0.84514	0.82882	0.28543	0.19175
5.0	1.0	0.9377	0.88694	0.90543	0.04491	0.9176	0.9374	0.26828	0.938	0.00019	0.94169	0.80755	0.80538	0.31152	0.19175
6.0	1.0	0.87449	0.78375	0.86193	0.07682	0.84229	0.87381	0.41851	0.87517	0.00021	0.90314	0.65898	0.77039	0.25162	0.19175
7.0	1.0	0.86015	0.75912	0.79371	0.08655	0.8287	0.85852	0.4425	0.86179	0.00022	0.9013	0.6254	0.77814	0.30103	0.19175
8.0	1.0	0.88064	0.7882	0.84687	0.07435	0.85804	0.88013	0.42722	0.88116	0.00025	0.92646	0.6549	0.73481	0.29192	0.13242
9.0	1.0	0.87895	0.78514	0.83147	0.08328	0.85737	0.8784	0.45835	0.87949	0.00026	0.92893	0.65019	0.71957	0.28762	0.1514
10.0	1.0	0.8606	0.75711	0.82508	0.09616	0.8375	0.86033	0.51086	0.86088	0.00027	0.92371	0.61325	0.69685	0.27944	0.1585
11.0	1.0	0.87068	0.77187	0.82004	0.08808	0.8503	0.87001	0.48084	0.87135	0.00028	0.93146	0.63226	0.68812	0.29083	0.1585
12.0	1.0	0.88417	0.79309	0.86228	0.08507	0.86731	0.88395	0.47926	0.88439	0.00031	0.94271	0.6593	0.663	0.27217	0.1585
13.0	1.0	0.89452	0.80944	0.85976	0.07918	0.87967	0.89419	0.45532	0.89485	0.00032	0.949	0.68166	0.74644	0.2764	0.1585
14.0	1.0	0.9017	0.8213	0.87025	0.07543	0.88827	0.90143	0.43386	0.90197	0.00033	0.95365	0.69849	0.73962	0.27168	0.1585
15.0	1.0	0.89646	0.81332	0.8563	0.0814	0.88289	0.8956	0.44605	0.89734	0.00034	0.95249	0.6897	0.7348	0.26853	0.17869
16.0	1.0	0.89376	0.8119	0.85673	0.08844	0.88151	0.8914	0.42684	0.89615	0.00036	0.95539	0.69798	0.92806	0.25143	0.17869
17.0	1.0	0.8525	0.74596	0.77672	0.10179	0.83685	0.84771	0.46316	0.85735	0.00036	0.94151	0.61384	0.92239	0.25033	0.17869
18.0	1.0	0.81976	0.69183	0.70885	0.11234	0.80153	0.81232	0.48563	0.8273	0.00036	0.93027	0.54334	1.53773	0.24657	0.19079
19.0	1.0	0.88655	0.79756	0.88998	0.08202	0.87664	0.88559	0.42081	0.88751	0.00047	0.96362	0.66867	1.53491	0.22111	0.19079
20.0	1.0	0.90066	0.8203	0.90482	0.07794	0.89234	0.90011	0.39519	0.90122	0.00049	0.96943	0.69933	1.52509	0.21981	0.19079

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



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

