

for the column name --- rejected count rate

countM: Mardia's test

countH: Henze-Zirkler's test

countR: Royston's test

countN: N-statistic (energy test)

count2: Any 2 rejected tests

Seed times: 500

Power study

multivariate t distribution

For the row name ---

composition:a b, rho:c d, df:g h

probes(dimension):e , size:f

$a^*t_{(e)}(g) + b^*t_{(e)}(h)$,

sample size = f , dimension = e,

mix proportion: a, b, a + b = 1,

rho: c, d,

it represents the correlation

matrix with compound symmetry

structure with correlation c and d

for the two multivariate t

distributions respectively.

	countM	countH	countR	countN	countHR	countHN	countRN	count2	countHRN
composition:1,rho:0.9,df:3,probes:2,size:10	0.278	0.196	0.224	0.238	0.12	0.192	0.146	0.222	0.118
composition:1,rho:0.9,df:3,probes:2,size:30	0.68	0.602	0.572	0.656	0.47	0.594	0.506	0.634	0.468
composition:1,rho:0.9,df:3,probes:2,size:50	0.78	0.804	0.772	0.844	0.706	0.802	0.738	0.834	0.706
composition:1,rho:0.9,df:3,probes:2,size:100	0.904	0.962	0.924	0.968	0.908	0.944	0.902	0.974	0.89
composition:1,rho:0.9,df:3,probes:4,size:10	0.242	0.172	0.266	0.252	0.09	0.168	0.118	0.196	0.09
composition:1,rho:0.9,df:3,probes:4,size:30	0.906	0.78	0.614	0.884	0.558	0.778	0.592	0.816	0.556
composition:1,rho:0.9,df:3,probes:4,size:50	0.972	0.952	0.812	0.98	0.792	0.952	0.806	0.966	0.792
composition:1,rho:0.9,df:3,probes:4,size:100	1	0.998	0.972	1	0.972	0.998	0.972	0.998	0.972
composition:1,rho:0.9,df:3,probes:8,size:10	0	0.13	0.262	0.116	0.042	0.1	0.044	0.11	0.038
composition:1,rho:0.9,df:3,probes:8,size:30	0.992	0.864	0.638	0.976	0.596	0.864	0.632	0.9	0.596
composition:1,rho:0.9,df:3,probes:8,size:50	1	0.99	0.824	1	0.818	0.99	0.824	0.996	0.818
composition:1,rho:0.9,df:3,probes:8,size:100	1	1	0.978	1	0.978	1	0.978	1	0.978
composition:1,rho:0.9,df:3,probes:9,size:10	0	1	0.25	0.216	0.25	0.216	0.058	0.408	0.058
composition:1,rho:0.9,df:3,probes:9,size:30	0.996	0.864	0.67	0.982	0.604	0.862	0.666	0.928	0.602
composition:1,rho:0.9,df:3,probes:9,size:50	1	0.998	0.85	1	0.85	0.998	0.85	0.998	0.85
composition:1,rho:0.9,df:3,probes:9,size:100	1	1	0.972	1	0.972	1	0.972	1	0.972
composition:1,rho:0.9,df:9,probes:2,size:10	0.104	0.064	0.074	0.082	0.024	0.06	0.032	0.068	0.024
composition:1,rho:0.9,df:9,probes:2,size:30	0.236	0.112	0.18	0.158	0.066	0.104	0.082	0.132	0.06
composition:1,rho:0.9,df:9,probes:2,size:50	0.29	0.158	0.232	0.212	0.09	0.15	0.116	0.18	0.088
composition:1,rho:0.9,df:9,probes:2,size:100	0.396	0.27	0.38	0.356	0.166	0.258	0.23	0.322	0.166
composition:1,rho:0.9,df:9,probes:4,size:10	0.068	0.052	0.102	0.108	0.016	0.048	0.03	0.062	0.016
composition:1,rho:0.9,df:9,probes:4,size:30	0.408	0.172	0.22	0.302	0.07	0.168	0.118	0.216	0.07
composition:1,rho:0.9,df:9,probes:4,size:50	0.536	0.24	0.27	0.396	0.118	0.234	0.172	0.292	0.116
composition:1,rho:0.9,df:9,probes:4,size:100	0.702	0.44	0.414	0.666	0.246	0.436	0.34	0.53	0.246
composition:1,rho:0.9,df:9,probes:8,size:10	0	0.098	0.102	0.086	0.014	0.076	0.012	0.082	0.01
composition:1,rho:0.9,df:9,probes:8,size:30	0.638	0.186	0.184	0.482	0.038	0.182	0.12	0.264	0.038
composition:1,rho:0.9,df:9,probes:8,size:50	0.834	0.358	0.256	0.704	0.098	0.352	0.204	0.458	0.098
composition:1,rho:0.9,df:9,probes:8,size:100	0.962	0.732	0.408	0.948	0.324	0.732	0.392	0.8	0.324
composition:1,rho:0.9,df:9,probes:9,size:10	0	1	0.094	0.138	0.094	0.138	0.01	0.222	0.01
composition:1,rho:0.9,df:9,probes:9,size:30	0.634	0.182	0.204	0.49	0.052	0.176	0.128	0.256	0.05
composition:1,rho:0.9,df:9,probes:9,size:50	0.9	0.418	0.306	0.794	0.138	0.418	0.276	0.556	0.138
composition:1,rho:0.9,df:9,probes:9,size:100	0.984	0.726	0.432	0.97	0.346	0.726	0.426	0.806	0.346
composition:1,rho:0.9,df:15,probes:2,size:10	0.07	0.056	0.056	0.074	0.016	0.054	0.026	0.064	0.016
composition:1,rho:0.9,df:15,probes:2,size:30	0.158	0.096	0.14	0.12	0.054	0.086	0.07	0.114	0.048
composition:1,rho:0.9,df:15,probes:2,size:50	0.168	0.088	0.152	0.12	0.048	0.084	0.06	0.1	0.046
composition:1,rho:0.9,df:15,probes:2,size:100	0.25	0.088	0.222	0.144	0.05	0.088	0.078	0.116	0.05
composition:1,rho:0.9,df:15,probes:4,size:10	0.042	0.052	0.092	0.08	0.02	0.044	0.028	0.052	0.02
composition:1,rho:0.9,df:15,probes:4,size:30	0.274	0.1	0.144	0.176	0.028	0.094	0.052	0.122	0.026
composition:1,rho:0.9,df:15,probes:4,size:50	0.346	0.112	0.174	0.218	0.042	0.104	0.08	0.146	0.04
composition:1,rho:0.9,df:15,probes:4,size:100	0.432	0.206	0.256	0.332	0.088	0.19	0.142	0.248	0.086
composition:1,rho:0.9,df:15,probes:8,size:10	0	0.104	0.084	0.086	0.012	0.078	0.01	0.08	0.01
composition:1,rho:0.9,df:15,probes:8,size:30	0.362	0.096	0.132	0.248	0.024	0.086	0.054	0.116	0.024
composition:1,rho:0.9,df:15,probes:8,size:50	0.618	0.152	0.158	0.422	0.046	0.146	0.086	0.186	0.046
composition:1,rho:0.9,df:15,probes:8,size:100	0.774	0.352	0.24	0.674	0.126	0.342	0.204	0.424	0.124
composition:1,rho:0.9,df:15,probes:9,size:10	0	1	0.074	0.156	0.074	0.156	0.022	0.208	0.022
composition:1,rho:0.9,df:15,probes:9,size:30	0.374	0.094	0.144	0.252	0.028	0.074	0.058	0.116	0.022
composition:1,rho:0.9,df:15,probes:9,size:50	0.654	0.134	0.178	0.46	0.036	0.126	0.116	0.21	0.034
composition:1,rho:0.9,df:15,probes:9,size:100	0.826	0.346	0.228	0.712	0.094	0.336	0.194	0.444	0.09
composition:1,rho:0,df:3,probes:2,size:10	0.278	0.196	0.27	0.238	0.164	0.192	0.186	0.218	0.162
composition:1,rho:0,df:3,probes:2,size:30	0.68	0.602	0.712	0.656	0.574	0.594	0.62	0.648	0.57
composition:1,rho:0,df:3,probes:2,size:50	0.78	0.804	0.85	0.844	0.774	0.802	0.808	0.84	0.772
composition:1,rho:0,df:3,probes:2,size:100	0.904	0.962	0.982	0.968	0.956	0.944	0.96	0.984	0.938
composition:1,rho:0,df:3,probes:4,size:10	0.242	0.172	0.38	0.252	0.13	0.168	0.176	0.218	0.128
composition:1,rho:0,df:3,probes:4,size:30	0.906	0.78	0.84	0.884	0.72	0.778	0.798	0.86	0.718
composition:1,rho:0,df:3,probes:4,size:50	0.972	0.952	0.96	0.98	0.926	0.952	0.95	0.976	0.926
composition:1,rho:0,df:3,probes:4,size:100	1	0.998	1	1	0.998	0.998	1	1	0.998
composition:1,rho:0,df:3,probes:8,size:10	0	0.13	0.444	0.116	0.074	0.1	0.07	0.12	0.062
composition:1,rho:0,df:3,probes:8,size:30	0.992	0.864	0.956	0.976	0.838	0.864	0.94	0.966	0.838
composition:1,rho:0,df:3,probes:8,size:50	1	0.99	0.998	1	0.988	0.99	0.998	1	0.988
composition:1,rho:0,df:3,probes:8,size:100	1	1	1	1	1	1	1	1	1
composition:1,rho:0,df:3,probes:9,size:10	0	1	0.446	0.07	0.446	0.07	0.042	0.474	0.042
composition:1,rho:0,df:3,probes:9,size:30	0.996	0.864	0.948	0.982	0.828	0.862	0.936	0.97	0.828
composition:1,rho:0,df:3,probes:9,size:50	1	0.998	0.998	1	0.996	0.998	0.998	1	0.996
composition:1,rho:0,df:3,probes:9,size:100	1	1	1	1	1	1	1	1	1
composition:1,rho:0,df:9,probes:2,size:10	0.104	0.064	0.084	0.082	0.03	0.06	0.04	0.074	0.028
composition:1,rho:0,df:9,probes:2,size:30	0.236	0.112	0.228	0.158	0.078	0.104	0.114	0.14	0.078
composition:1,rho:0,df:9,probes:2,size:50	0.29	0.158	0.296	0.212	0.112	0.15	0.154	0.196	0.11
composition:1,rho:0,df:9,probes:2,size:100	0.396	0.27	0.474	0.356	0.224	0.258	0.288	0.334	0.218
composition:1,rho:0,df:9,probes:4,size:10	0.068	0.052	0.116	0.108	0.018	0.048	0.038	0.068	0.018
composition:1,rho:0,df:9,probes:4,size:30	0.408	0.172	0.338	0.302	0.12	0.168	0.202	0.25	0.12
composition:1,rho:0,df:9,probes:4,size:50	0.536	0.24	0.44	0.396	0.186	0.234	0.298	0.346	0.186
composition:1,rho:0,df:9,probes:4,size:100	0.702	0.44	0.618	0.666	0.34	0.436	0.508	0.608	0.338
composition:1,rho:0,df:9,probes:8,size:10	0	0.098	0.116	0.086	0.02	0.076	0.016	0.08	0.016
composition:1,rho:0,df:9,probes:8,size:30	0.638	0.186	0.144	0.482	0.132	0.182	0.318	0.372	0.13
composition:1,rho:0,df:9,probes:8,size:50	0.834	0.358	0.582	0.704	0.272	0.352	0.5	0.588	0.268
composition:1,rho:0,df:9,probes:8,size:100	0.962	0.732	0.854	0.948	0.664	0.732	0.834	0.902	0.664
composition:1,rho:0,df:9,probes:9,size:10	0	1	0.12	0.066	0.12	0.066	0.004	0.182	0.004
composition:1,rho:0,df:9,probes:9,size:30	0.634	0.182	0.428	0.49	0.118	0.176	0.286	0.348	0.116
composition:1,rho:0,df:9,probes:9,size:50	0.9	0.418	0.634	0.794	0.316	0.418	0.566	0.668	0.316
composition:1,rho:0,df:9,probes:9,size:100	0.984	0.726	0.864	0.97	0.668	0.726	0.858	0.916	0.668
composition:1,rho:0,df:15,probes:2,size:10	0.07	0.056	0.076	0.074	0.028	0.054	0.038	0.064	0.028
composition:1,rho:0,df:15,probes:2,size:30	0.158	0.096	0.156	0.12	0.058	0.086	0.078	0.114	0.054
composition:1,rho:0,df:15,probes:2,size:50	0.168	0.088	0.192	0.12	0.064	0.084	0.082	0.106	0.062
composition:1,rho:0,df:15,probes:2,size:100	0.25	0.088	0.276	0.144	0.06	0.088	0.104	0.132	0.06
composition:1,rho:0,df:15,probes:4,size:10	0.042	0.052	0.098	0.08	0.012	0.044	0.022	0.058	0.01
composition:1,rho:0,df:15,probes:4,size:30	0.274	0.1	0.2	0.176	0.054	0.094	0.09	0.134	0.052
composition:1,rho:0,df:15,probes:4,size:50	0.346	0.112	0.266	0.218	0.068	0.104	0.14	0.18	0.066
composition:1,rho:0,df:15,probes:4,size:100	0.432	0.206	0.364	0.332	0.132	0.19	0.214	0.276	0.13
composition:1,rho:0,df:15,probes:8,size:10	0	0.104	0.08	0.086	0.018	0.078	0.016	0.08	0.016
composition:1,rho:0,df:15,probes:8,size:30	0.362	0.096	0.256	0.248	0.038	0.086	0.118	0.17	0.036
composition:1,rho:0,df:15,probes:8,size:50	0.618	0.152	0.35	0.422	0.092	0.146	0.228	0.282	0.092
composition:1,rho:0,df:15,probes:8,size:100	0.774	0.352	0.528	0.674	0.226	0.342	0.412	0.54	0.22
composition:1,rho:0,df:15,probes:9,size:10	0	1	0.082	0.052	0.082	0.052	0	0.134	0
composition:1,rho:0,df:15,probes:9,size:30	0.374	0.094	0.21	0.252	0.036	0.074	0.094	0.14	0.032
composition:1,rho:0,df:15,probes:9,size:50	0.654	0.134	0.354	0.46	0.068	0.126	0.248	0.31	0.066
composition:1,rho:0,df:15,probes:9,size:100	0.826	0.346	0.542	0.712	0.242	0.336	0.464	0.562	0.24