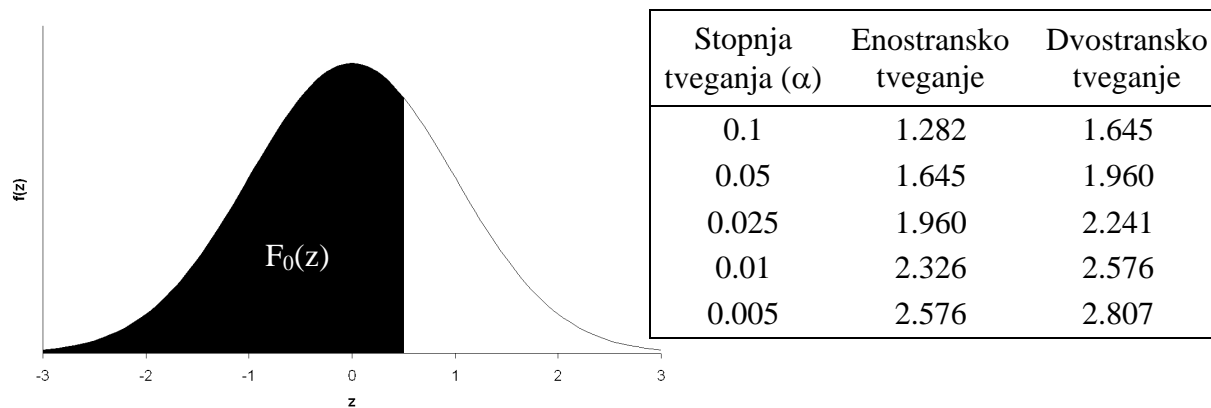


Tabela standardizirane normalne porazdelitve.



$F_0(z)$

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990

t-porazdelitev

Število prostostnih stopenj	Stopnja tveganja (α)				
	0.4	0.2	0.1	0.05	0.01
Dvostransko tveganje					
Enostransko tveganje	0.2	0.1	0.05	0.025	0.005
1	1.376	3.078	6.314	12.706	63.656
2	1.061	1.886	2.920	4.303	9.925
3	0.978	1.638	2.353	3.182	5.841
4	0.941	1.533	2.132	2.776	4.604
5	0.920	1.476	2.015	2.571	4.032
6	0.906	1.440	1.943	2.447	3.707
7	0.896	1.415	1.895	2.365	3.499
8	0.889	1.397	1.860	2.306	3.355
9	0.883	1.383	1.833	2.262	3.250
10	0.879	1.372	1.812	2.228	3.169
11	0.876	1.363	1.796	2.201	3.106
12	0.873	1.356	1.782	2.179	3.055
13	0.870	1.350	1.771	2.160	3.012
14	0.868	1.345	1.761	2.145	2.977
15	0.866	1.341	1.753	2.131	2.947
16	0.865	1.337	1.746	2.120	2.921
17	0.863	1.333	1.740	2.110	2.898
18	0.862	1.330	1.734	2.101	2.878
19	0.861	1.328	1.729	2.093	2.861
20	0.860	1.325	1.725	2.086	2.845
30	0.854	1.310	1.697	2.042	2.750
40	0.851	1.303	1.684	2.021	2.704
50	0.849	1.299	1.676	2.009	2.678
60	0.848	1.296	1.671	2.000	2.660
70	0.847	1.294	1.667	1.994	2.648
80	0.846	1.292	1.664	1.990	2.639
90	0.846	1.291	1.662	1.987	2.632
100	0.845	1.290	1.660	1.984	2.626

F-porazdelitev

Stopnja tveganja ($\alpha = 0.05$)

		Število prostostnih stopenj v števcu													
		1	2	3	4	5	6	7	8	9	10	20	30	40	50
Število prostostnih stopenj v imenovalcu	1	161.446	199.499	215.707	224.583	230.160	233.988	236.767	238.884	240.543	241.882	248.016	250.096	251.144	251.774
	2	18.513	19.000	19.164	19.247	19.296	19.329	19.353	19.371	19.385	19.396	19.446	19.463	19.471	19.476
	3	10.128	9.552	9.277	9.117	9.013	8.941	8.887	8.845	8.812	8.785	8.660	8.617	8.594	8.581
	4	7.709	6.944	6.591	6.388	6.256	6.163	6.094	6.041	5.999	5.964	5.803	5.746	5.717	5.699
	5	6.608	5.786	5.409	5.192	5.050	4.950	4.876	4.818	4.772	4.735	4.558	4.496	4.464	4.444
	6	5.987	5.143	4.757	4.534	4.387	4.284	4.207	4.147	4.099	4.060	3.874	3.808	3.774	3.754
	7	5.591	4.737	4.347	4.120	3.972	3.866	3.787	3.726	3.677	3.637	3.445	3.376	3.340	3.319
	8	5.318	4.459	4.066	3.838	3.688	3.581	3.500	3.438	3.388	3.347	3.150	3.079	3.043	3.020
	9	5.117	4.256	3.863	3.633	3.482	3.374	3.293	3.230	3.179	3.137	2.936	2.864	2.826	2.803
	10	4.965	4.103	3.708	3.478	3.326	3.217	3.135	3.072	3.020	2.978	2.774	2.700	2.661	2.637
	20	4.351	3.493	3.098	2.866	2.711	2.599	2.514	2.447	2.393	2.348	2.124	2.039	1.994	1.966
	30	4.171	3.316	2.922	2.690	2.534	2.421	2.334	2.266	2.211	2.165	1.932	1.841	1.792	1.761
	40	4.085	3.232	2.839	2.606	2.449	2.336	2.249	2.180	2.124	2.077	1.839	1.744	1.693	1.660
	50	4.034	3.183	2.790	2.557	2.400	2.286	2.199	2.130	2.073	2.026	1.784	1.687	1.634	1.599

Hi-kvadrat porazdelitev

Število prostostnih stopenj	Stopnja tveganja (α)				
	0.001	0.01	0.025	0.05	0.1
1	10.8274	6.6349	5.0239	3.8415	2.7055
2	13.8150	9.2104	7.3778	5.9915	4.6052
3	16.2660	11.3449	9.3484	7.8147	6.2514
4	18.4662	13.2767	11.1433	9.4877	7.7794
5	20.5147	15.0863	12.8325	11.0705	9.2363
6	22.4575	16.8119	14.4494	12.5916	10.6446
7	24.3213	18.4753	16.0128	14.0671	12.0170
8	26.1239	20.0902	17.5345	15.5073	13.3616
9	27.8767	21.6660	19.0228	16.9190	14.6837
10	29.5879	23.2093	20.4832	18.3070	15.9872
11	31.2635	24.7250	21.9200	19.6752	17.2750
12	32.9092	26.2170	23.3367	21.0261	18.5493
13	34.5274	27.6882	24.7356	22.3620	19.8119
14	36.1239	29.1412	26.1189	23.6848	21.0641
15	37.6978	30.5780	27.4884	24.9958	22.3071
16	39.2518	31.9999	28.8453	26.2962	23.5418
17	40.7911	33.4087	30.1910	27.5871	24.7690
18	42.3119	34.8052	31.5264	28.8693	25.9894
19	43.8194	36.1908	32.8523	30.1435	27.2036
20	45.3142	37.5663	34.1696	31.4104	28.4120
30	59.7022	50.8922	46.9792	43.7730	40.2560
40	73.4029	63.6908	59.3417	55.7585	51.8050
50	86.6603	76.1538	71.4202	67.5048	63.1671
60	99.6078	88.3794	83.2977	79.0820	74.3970
70	112.3167	100.4251	95.0231	90.5313	85.5270
80	124.8389	112.3288	106.6285	101.8795	96.5782
90	137.2082	124.1162	118.1359	113.1452	107.5650
100	149.4488	135.8069	129.5613	124.3421	118.4980

Kritične vrednosti za Wilcoxonov test predznačenih rangov

Dvostranski test		
N^(b)	5 % tveganje	1 % tveganje
6	0	-
7	2	-
8	3	0
9	5	1
10	8	3
11	10	5
12	13	7
13	17	10
14	21	13
15	25	16
16	30	19
17	35	23
18	40	28
19	46	32
20	52	37

ENAČBE

povprečna vrednost: $\bar{X} = \frac{1}{n} \sum_{i=1}^n X_i$

standardni odklon: $s = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}} = \sqrt{\frac{\sum_{i=1}^n (X_i^2) - \frac{1}{n} \cdot \left(\sum_{i=1}^n X_i\right)^2}{n-1}}$

standardizirani odklon: $z = \frac{x - \mu}{\sigma}$

standardna napaka: $SE = \sigma_{\bar{X}} = \frac{\sigma}{\sqrt{n}} \sim \frac{s}{\sqrt{n}}$

interval zaupanja za povprečje: $CI = \bar{x} \pm \text{krit.meja} \cdot SE$

izstopajoče vrednosti: $X > X_{Q3} + 1.5 \cdot (X_{Q3} - X_{Q1})$
 $X < X_{Q1} - 1.5 \cdot (X_{Q3} - X_{Q1})$

ekstremne vrednosti: $X > X_{Q3} + 3 \cdot (X_{Q3} - X_{Q1})$
 $X < X_{Q1} - 3 \cdot (X_{Q3} - X_{Q1})$

z-test: $z_{\text{exp}} = \frac{\bar{X} - \mu_0}{\sigma / \sqrt{n}}$

t-test: $t_{\text{exp}} = \frac{\bar{X} - \mu_0}{s / \sqrt{n}}$

F-test: $F_{\text{exp}} = \frac{s_A^2}{s_B^2}$

Hi-kvadrat test: $\chi_{\text{exp}}^2 = \sum \frac{(O-E)^2}{E}$

Yatesova korektura: $\chi_{\text{exp}}^2 = \sum \frac{(|O-E| - 0,5)^2}{E}$

t-test za enake variance (d.f.= n_A+n_B-2):

$$t_{\text{exp}} = \frac{\bar{X}_A - \bar{X}_B}{\sqrt{s_P^2/n_A + s_P^2/n_B}} = \frac{\bar{X}_A - \bar{X}_B}{s_P} \cdot \sqrt{\frac{n_A \cdot n_B}{n_A + n_B}}$$

skupna varianca:

$$s_P = \sqrt{\frac{\sum_{i=1}^{n_A} (A_i - \bar{A})^2 + \sum_{i=1}^{n_B} (B_i - \bar{B})^2}{n_A - 1 + n_B - 1}} = \sqrt{\frac{(n_A - 1) \cdot s_A^2 + (n_B - 1) \cdot s_B^2}{n_A + n_B - 2}}$$

t-test za neenake variance:

$$t_{\text{eks}} = \frac{|\bar{x}_A - \bar{x}_B|}{\sqrt{s_A^2/n_A + s_B^2/n_B}}$$

določitev t_{tab} : $n_A = n_B = n \rightarrow$ d.f. = (n-1)
 $n_A \neq n_B \rightarrow t_{\text{tab}} = (w_1 \cdot t_1 + w_2 \cdot t_2) / (w_1 + w_2)$

$$t_1 \text{ pri d.f.} = n_A - 1 \quad w_1 = s_A^2 / n_A$$

$$t_2 \text{ pri d.f.} = n_B - 1 \quad w_2 = s_B^2 / n_B$$

Wilcoxonov test predznačnih rangov (d.f. >20; T=vsota pozitivnih oz. negativnih rangov):

$$Z = \frac{|T - df \cdot (df + 1) / 4|}{\sqrt{df \cdot (df + 1) \cdot (2 \cdot df + 1) / 24}}$$

Wilcoxonov test vsot rangov (T1 = vsota rangov manjšega vzorca; n1 = velikost manjšega vzorca (n1 ≥ 10); n2 = velikost večjega vzorca)

$$Z = \frac{|T_1 - n_1 \cdot (n_1 + n_2 + 1) / 2|}{\sqrt{n_1 \cdot n_2 \cdot (n_1 + n_2 + 1) / 12}}$$