

Mann Whitney

$n_1, n_2$	Livello di significatività a due code			$n_1, n_2$	Livello di significatività a due code		
	0.05	0.01	0.001		0.05	0.01	0.001
2, 8	3, 19			4, 9	15, 41	11, 45	
2, 9	3, 21			4, 10	15, 45	12, 48	
2, 10	3, 23			4, 11	16, 48	12, 52	
2, 11	4, 24			4, 12	17, 51	13, 55	
2, 12	4, 26			4, 13	18, 54	14, 58	10, 62
2, 13	4, 28			4, 14	19, 57	14, 62	10, 66
2, 14	4, 30			4, 15	20, 60	15, 65	10, 70
2, 15	4, 32			4, 16	21, 63	15, 69	11, 73
2, 16	4, 34			4, 17	21, 67	16, 72	11, 77
2, 17	5, 35			4, 18	22, 70	16, 76	11, 81
2, 18	5, 37			4, 19	23, 73	17, 79	12, 84
2, 19	5, 39	3, 41		4, 20	24, 76	18, 82	12, 88
2, 20	5, 41	3, 43		4, 21	25, 79	18, 86	12, 92
2, 21	6, 42	3, 45		4, 22	26, 82	19, 89	13, 95
2, 22	6, 44	3, 47		4, 23	27, 85	19, 93	13, 99
2, 23	6, 46	3, 49		4, 24	28, 88	20, 96	13, 103
2, 24	6, 48	3, 51		4, 25	28, 92	20, 100	14, 106
2, 25	6, 50	3, 53					
				5, 5	17, 38	15, 40	
3, 5	6, 21			5, 6	18, 42	16, 44	
3, 6	7, 23			5, 7	20, 45	17, 48	
3, 7	7, 26			5, 8	21, 49	17, 53	
3, 8	8, 28			5, 9	22, 53	18, 57	15, 60
3, 9	8, 31	6, 33		5, 10	23, 57	19, 61	15, 65
3, 10	9, 33	6, 36		5, 11	24, 61	20, 65	16, 69
3, 11	9, 36	6, 39		5, 12	26, 64	21, 69	16, 74
3, 12	10, 38	7, 41		5, 13	27, 68	22, 73	17, 78
3, 13	10, 41	7, 44		5, 14	28, 72	22, 78	17, 83
3, 14	11, 43	7, 47		5, 15	29, 76	23, 82	18, 87
3, 15	11, 46	8, 49		5, 16	31, 79	24, 86	18, 92
3, 16	12, 48	8, 52		5, 17	32, 83	25, 90	19, 96
3, 17	12, 51	8, 55		5, 18	33, 87	26, 94	19, 101
3, 18	13, 53	8, 58		5, 19	34, 91	27, 98	20, 105
3, 19	13, 56	9, 60		5, 20	35, 95	28, 102	20, 110
3, 20	14, 58	9, 63		5, 21	37, 98	29, 106	21, 114
3, 21	14, 61	9, 66	6, 69	5, 22	38, 102	29, 111	21, 119
3, 22	15, 63	10, 68	6, 72	5, 23	39, 106	30, 115	22, 123
3, 23	15, 66	10, 71	6, 75	5, 24	40, 110	31, 119	23, 127
3, 24	16, 68	10, 74	6, 78	5, 25	42, 113	32, 123	23, 132
3, 25	19, 71	11, 76	6, 81				
				6, 6	26, 52	23, 55	
4, 4	10, 26			6, 7	27, 57	24, 60	
4, 5	11, 29			6, 8	29, 61	25, 65	21, 69
4, 6	12, 32	10, 34		6, 9	31, 65	26, 70	22, 74
4, 7	13, 35	10, 38		6, 10	32, 70	27, 75	23, 79
4, 8	14, 38	11, 41		6, 11	34, 74	28, 80	23, 85

Adattata da White [114].

Valori critici del test di Wilcoxon con segno

(versione della statistica ottenuta considerando solo la somma dei ranghi positivi)

ONE-TAIL	$\alpha = .05$	$\alpha = .025$	$\alpha = .01$	$\alpha = .005$
TWO-TAIL	$\alpha = .10$	$\alpha = .05$	$\alpha = .02$	$\alpha = .01$
<i>n</i>	<i>(Lower, Upper)</i>			
5	0,15	—, —	—, —	—, —
6	2,19	0,21	—, —	—, —
7	3,25	2,26	0,28	—, —
8	5,31	3,33	1,35	0,36
9	8,37	5,40	3,42	1,44
10	10,45	8,47	5,50	3,52
11	13,53	10,56	7,59	5,61
12	17,61	13,65	10,68	7,71
13	21,70	17,74	12,79	10,81
14	25,80	21,84	16,89	13,92
15	30,90	25,95	19,101	16,104
16	35,101	29,107	23,113	19,117
17	41,112	34,119	27,126	23,130
18	47,124	40,131	32,139	27,144
19	53,137	46,144	37,153	32,158
20	60,150	52,158	43,167	37,173

Source: Adapted from Table 2 of F. Wilcoxon and R. A. Wilcox, *Some Rapid Approximate Statistical Procedures* (Pearl River, NY: Lederle Laboratories, 1964), with permission of the American Cyanamid Company.

Valori critici del test di Wilcoxon con segno

(versione della statistica ottenuta considerando la somma dei ranghi positivi e negativi)

**Valori critici del test *W* di Wilcoxon (test a due code)**

<i>n</i>	<i>Valore critico</i>	<i>p</i>	<i>n</i>	<i>Valore critico</i>	<i>p</i>
5	15	0.062	13	65	0.022
6	21	0.032		57	0.048
	19	0.062	14	73	0.020
7	28	0.016		63	0.050
	24	0.046	15	80	0.022
8	32	0.024		70	0.048
	28	0.054	16	88	0.022
9	39	0.020		76	0.050
	33	0.054	17	97	0.020
10	45	0.020		83	0.050
	39	0.048	18	105	0.020
11	52	0.018		91	0.048
	44	0.054	19	114	0.020
12	58	0.020		98	0.050
	50	0.052	20	124	0.020
				106	0.048

Fonte: adattata da F. Mosteller e R. Rourke, *Study, Statistics, Nonparametrics and Order Statistics*, Addison-Wesley, Reading, Mass, 1973, Tab. A-11.

Valori critici del  $\chi_r^2$  di Friedman

k = 3 trattamenti			k = 4 trattamenti		
n	$\chi_r^2$	P	n	$\chi_r^2$	P
3	6,00	0,028	2	6,00	0,042
4	6,50	0,042	3	7,00	0,054
	8,00	0,005		8,20	0,017
5	5,20	0,093	4	7,50	0,054
	6,40	0,039		9,30	0,011
	8,40	0,008	5	7,80	0,049
6	5,33	0,072		9,96	0,009
	6,33	0,052	6	7,60	0,043
	9,00	0,008		10,20	0,010
7	6,00	0,051	7	7,63	0,051
	8,86	0,008		10,37	0,009
8	6,25	0,047	8	7,65	0,049
	9,00	0,010		10,35	0,010
9	6,22	0,048			
	8,67	0,010			
10	6,20	0,046			
	8,60	0,012			
11	6,54	0,043			
	8,91	0,011			
12	6,17	0,050			
	8,67	0,011			
13	6,00	0,050			
	8,67	0,012			
14	6,14	0,049			
	9,00	0,010			
15	6,40	0,047			
	8,93	0,010			

Fonte: adattata da Owen, *Handbook of Statistical Tables*, U.S. Department of Energy, Addison-Wesley, Reading, Mass., 1962. Per gentile concessione.