

Z-test

T-test

Chi²-test



Z-test

T-test

Chi²-test



Measures the difference between the expected and observed.



Measures the difference between the expected and observed.

α value p value



$$\chi_c^2 =$$



$$\chi_c^2 = \frac{(o_i - e_i)^2}{e_i}$$

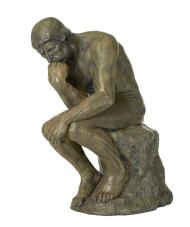
o = observed frequency
e = expected frequency



$$\chi_c^2 = \sum_{i=1}^n \frac{(o_i - e_i)^2}{e_i}$$



$$\chi_c^2 = \sum_{i=1}^n \frac{(o_i - e_i)^2}{e_i}$$

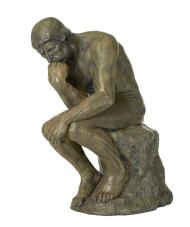




$$\begin{bmatrix} \chi_c^2 \\ = \sum_{i=1}^n \frac{(o_i - e_i)^2}{e_i} \end{bmatrix}$$



$$\chi_c^2 = \sum_{i=1}^n \frac{(o_i - e_i)^2}{e_i}$$







No difference



No difference Very different



$$\chi^2 = \sum_{i=1}^n \frac{(o_i - e_i)^2}{e_i}$$

No difference Very different χ_c



$$\chi^2 = \sum_{i=1}^n \frac{(o_i - e_i)^2}{e_i}$$

No difference χ_{crit} χ_{c} Very different



$$\chi^{2} = \sum_{i=1}^{n} \frac{(o_{i} - e_{i})^{2}}{e_{i}}$$



$$\chi^{2} = \sum_{i=1}^{n} \frac{(o_{i} - e_{i})^{2}}{e_{i}}$$

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d.f.	.995	.99	.975	.95	.9	.1	.05	.025	.01
1	0.00	0.00	0.00	0.00	0.02	2.71	3.84	5.02	6.63
2	0.01	0.02	0.05	0.10	0.21	4.61	5.99	7.38	9.21
3	0.07	0.11	0.22	0.35	0.58	6.25	7.81	9.35	11.34
4	0.21	0.30	0.48	0.71	1.06	7.78	9.49	11.14	13.28
5	0.41	0.55	0.83	1.15	1.61	9.24	11.07	12.83	15.09
6	0.68	0.87	1.24	1.64	2.20	10.64	12.59	14.45	16.81
7	0.99	1.24	1.69	2.17	2.83	12.02	14.07	16.01	18.48
8	1.34	1.65	2.18	2.73	3.49	13.36	15.51	17.53	20.09
9	1.73	2.09	2.70	3.33	4.17	14.68	16.92	19.02	21.67
10	2.16	2.56	3.25	3.94	4.87	15.99	18.31	20.48	23.21
11	2.60	3.05	3.82	4.57	5.58	17.28	19.68	21.92	24.72
12	3.07	3.57	4.40	5.23	6.30	18.55	21.03	23.34	26.22
13	3.57	4.11	5.01	5.89	7.04	19.81	22.36	24.74	27.69
14	4.07	4.66	5.63	6.57	7.79	21.06	23.68	26.12	29.14
15	4.60	5.23	6.26	7.26	8.55	22.31	25.00	27.49	30.58
16	5.14	5.81	6.91	7.96	9.31	23.54	26.30	28.85	32.00
17	5.70	6.41	7.56	8.67	10.09	24.77	27.59	30.19	33.41
18	6.26	7.01	8.23	9.39	10.86	25.99	28.87	31.53	34.81
19	6.84	7.63	8.91	10.12	11.65	27.20	30.14	32.85	36.19
20	7.43	8.26	9.59	10.85	12.44	28.41	31.41	34.17	37.57
22	8.64	9.54	10.98	12.34	14.04	30.81	33.92	36.78	40.29
24	9.89	10.86	12.40	13.85	15.66	33.20	36.42	39.36	42.98
26	11.16	12.20	13.84	15.38	17.29	35.56	38.89	41.92	45.64
28	12.46	13.56	15.31	16.93	18.94	37.92	41.34	44.46	48.28
30	13.79	14.95	16.79	18.49	20.60	40.26	43.77	46.98	50.89
32	15.13	16.36	18.29	20.07	22.27	42.58	46.19	49.48	53.49
34	16.50	17.79	19.81	21.66	23.95	44.90	48.60	51.97	56.06
38	19.29	20.69	22.88	24.88	27.34	49.51	53.38	56.90	61.16
42	22.14	23.65	26.00	28.14	30.77	54.09	58.12	61.78	66.21
46	25.04	26.66	29.16	31.44	34.22	58.64	62.83	66.62	71.20
50	27.99	29.71	32.36	34.76	37.69	63.17	67.50	71.42	76.15



d.f.	.995	.99	.975	.95	.9	.1	.05	.025	.01
1	0.00	0.00	0.00	0.00	0.02	2.71	3.84	5.02	6.63
2	0.00	0.00	0.05	0.10	0.02	4.61	5.99	7.38	9.21
3	0.01	0.02	0.03	0.10	0.58	6.25	7.81	9.35	11.34
4	0.07	0.30	0.48	0.35	1.06	7.78	9.49	11.14	13.28
5	0.21	0.55	0.43	1.15	1.61	9.24	11.07	12.83	15.09
6	0.41	0.87	1.24	1.64	2.20	10.64	12.59	14.45	16.81
7	0.08	1.24	1.69	2.17	2.83	12.02	14.07	16.01	18.48
8	1.34	1.65	2.18	2.73	3.49	13.36	15.51	17.53	20.09
9	1.73	2.09	2.70	3.33	4.17	14.68	16.92	19.02	20.69 21.67
10	2.16	2.56	3.25	3.94	4.87	15.99	18.31	20.48	23.21
11	2.60	3.05	3.82	$\frac{3.54}{4.57}$	5.58	17.28	19.68	21.92	24.72
12	3.07	$\frac{3.05}{3.57}$	$\frac{3.82}{4.40}$	5.23	6.30	18.55	21.03	23.34	26.22
13	3.57	4.11	5.01	5.89	7.04	19.81	21.03 22.36	24.74	27.69
14	4.07	4.11 4.66	5.63	6.57	7.79	21.06	23.68	26.12	29.14
15	4.60	5.23	6.26	7.26	8.55	21.00 22.31	25.00	27.49	30.58
16	5.14	5.23	6.20	7.26	9.31	22.51 23.54	26.30	28.85	32.00
17	5.70	6.41	7.56	8.67	10.09	23.34 24.77	27.59	30.19	33.41
18	6.26	7.01	8.23	9.39	10.86	$\frac{24.77}{25.99}$	28.87	31.53	34.81
18	6.84	7.63	8.23	9.39 10.12	10.86 11.65	25.99 27.20	$\frac{28.87}{30.14}$	31.53 32.85	$34.81 \\ 36.19$
20	7.43	8.26	9.59	10.85	12.44	28.41	31.41	34.17	37.57
22	8.64	9.54	10.98	12.34	14.04	30.81	33.92	36.78	40.29
24	9.89	10.86	12.40	13.85	15.66	33.20	36.42	39.36	42.98
26	11.16	12.20	13.84	15.38	17.29	35.56	38.89	41.92	45.64
28	12.46	13.56	15.31	16.93	18.94	37.92	41.34	44.46	48.28
30	13.79	14.95	16.79	18.49	20.60	40.26	43.77	46.98	50.89
32	15.13	16.36	18.29	20.07	22.27	42.58	46.19	49.48	53.49
34	16.50	17.79	19.81	21.66	23.95	44.90	48.60	51.97	56.06
38	19.29	20.69	22.88	24.88	27.34	49.51	53.38	56.90	61.16
42	22.14	23.65	26.00	28.14	30.77	54.09	58.12	61.78	66.21
46	25.04	26.66	29.16	31.44	34.22	58.64	62.83	66.62	71.20
50	27.99	29.71	32.36	34.76	37.69	63.17	67.50	71.42	76.15



d.f.	.995	.99	.975	.95	.9	.1	.05	.025	.01
1	0.00	0.00	0.00	0.00	0.02	2.71	3.84	5.02	6.63
2	0.01	0.02	0.05	0.10	0.21	4.61	5.99	7.38	9.21
3	0.07	0.11	0.22	0.35	0.58	6.25	7.81	9.35	11.34
4	0.21	0.30	0.48	0.71	1.06	7.78	9.49	11.14	13.28
5	0.41	0.55	0.83	1.15	1.61	9.24	11.07	12.83	15.09
6	0.68	0.87	1.24	1.64	2.20	10.64	12.59	14.45	16.81
7	0.99	1.24	1.69	2.17	2.83	12.02	14.07	16.01	18.48
8	1.34	1.65	2.18	2.73	3.49	13.36	15.51	17.53	20.09
9	1.73	2.09	2.70	3.33	4.17	14.68	16.92	19.02	21.67
10	2.16	2.56	3.25	3.94	4.87	15.99	18.31	20.48	23.21
11	2.60	3.05	3.82	4.57	5.58	17.28	19.68	21.92	24.72
12	3.07	3.57	4.40	5.23	6.30	18.55	21.03	23.34	26.22
13	3.57	4.11	5.01	5.89	7.04	19.81	22.36	24.74	27.69
14	4.07	4.66	5.63	6.57	7.79	21.06	23.68	26.12	29.14
15	4.60	5.23	6.26	7.26	8.55	22.31	25.00	27.49	30.58
16	5.14	5.81	6.91	7.96	9.31	23.54	26.30	28.85	32.00
17	5.70	6.41	7.56	8.67	10.09	24.77	27.59	30.19	33.41
18	6.26	7.01	8.23	9.39	10.86	25.99	28.87	31.53	34.81
19	6.84	7.63	8.91	10.12	11.65	27.20	30.14	32.85	36.19
20	7.43	8.26	9.59	10.85	12.44	28.41	31.41	34.17	37.57
22	8.64	9.54	10.98	12.34	14.04	30.81	33.92	36.78	40.29
24	9.89	10.86	12.40	13.85	15.66	33.20	36.42	39.36	42.98
26	11.16	12.20	13.84	15.38	17.29	35.56	38.89	41.92	45.64
28	12.46	13.56	15.31	16.93	18.94	37.92	41.34	44.46	48.28
30	13.79	14.95	16.79	18.49	20.60	40.26	43.77	46.98	50.89
32	15.13	16.36	18.29	20.07	22.27	42.58	46.19	49.48	53.49
34	16.50	17.79	19.81	21.66	23.95	44.90	48.60	51.97	56.06
38	19.29	20.69	22.88	24.88	27.34	49.51	53.38	56.90	61.16
42	22.14	23.65	26.00	28.14	30.77	54.09	58.12	61.78	66.21
46	25.04	26.66	29.16	31.44	34.22	58.64	62.83	66.62	71.20
50	27.99	29.71	32.36	34.76	37.69	63.17	67.50	71.42	76.15



$$df = (n_1-1) (n_2-1)$$

d.f.	.995	.99	.975	.95	.9	.1	.05	.025	.01
1	0.00	0.00	0.00	0.00	0.02	2.71	3.84	5.02	6.63
2	0.01	0.02	0.05	0.10	0.21	4.61	5.99	7.38	9.21
3	0.07	0.11	0.22	0.35	0.58	6.25	7.81	9.35	11.34
4	0.21	0.30	0.48	0.71	1.06	7.78	9.49	11.14	13.28
5	0.41	0.55	0.83	1.15	1.61	9.24	11.07	12.83	15.09
6	0.68	0.87	1.24	1.64	2.20	10.64	12.59	14.45	16.81
7	0.99	1.24	1.69	2.17	2.83	12.02	14.07	16.01	18.48
8	1.34	1.65	2.18	2.73	3.49	13.36	15.51	17.53	20.09
9	1.73	2.09	2.70	3.33	4.17	14.68	16.92	19.02	21.67
10	2.16	2.56	3.25	3.94	4.87	15.99	18.31	20.48	23.21
11	2.60	3.05	3.82	4.57	5.58	17.28	19.68	21.92	24.72
12	3.07	3.57	4.40	5.23	6.30	18.55	21.03	23.34	26.22
13	3.57	4.11	5.01	5.89	7.04	19.81	22.36	24.74	27.69
14	4.07	4.66	5.63	6.57	7.79	21.06	23.68	26.12	29.14
15	4.60	5.23	6.26	7.26	8.55	22.31	25.00	27.49	30.58
16	5.14	5.81	6.91	7.96	9.31	23.54	26.30	28.85	32.00
17	5.70	6.41	7.56	8.67	10.09	24.77	27.59	30.19	33.41
18	6.26	7.01	8.23	9.39	10.86	25.99	28.87	31.53	34.81
19	6.84	7.63	8.91	10.12	11.65	27.20	30.14	32.85	36.19
20	7.43	8.26	9.59	10.85	12.44	28.41	31.41	34.17	37.57
22	8.64	9.54	10.98	12.34	14.04	30.81	33.92	36.78	40.29
24	9.89	10.86	12.40	13.85	15.66	33.20	36.42	39.36	42.98
26	11.16	12.20	13.84	15.38	17.29	35.56	38.89	41.92	45.64
28	12.46	13.56	15.31	16.93	18.94	37.92	41.34	44.46	48.28
30	13.79	14.95	16.79	18.49	20.60	40.26	43.77	46.98	50.89
32	15.13	16.36	18.29	20.07	22.27	42.58	46.19	49.48	53.49
34	16.50	17.79	19.81	21.66	23.95	44.90	48.60	51.97	56.06
38	19.29	20.69	22.88	24.88	27.34	49.51	53.38	56.90	61.16
42	22.14	23.65	26.00	28.14	30.77	54.09	58.12	61.78	66.21
46	25.04	26.66	29.16	31.44	34.22	58.64	62.83	66.62	71.20
50	27.99	29.71	32.36	34.76	37.69	63.17	67.50	71.42	76.15



$$df = (n_1-1) (n_2-1)$$

n₁: Categories in first variable

Chi² Test

ı	d.f.	.995	.99	.975	.95	.9	.1	.05	.025	.01
ı	1	0.00	0.00	0.00	0.00	0.02	2.71	3.84	5.02	6.63
ı	2	0.01	0.02	0.05	0.10	0.21	4.61	5.99	7.38	9.21
ı	3	0.07	0.11	0.22	0.35	0.58	6.25	7.81	9.35	11.34
ı	4	0.21	0.30	0.48	0.71	1.06	7.78	9.49	11.14	13.28
ı	5	0.41	0.55	0.83	1.15	1.61	9.24	11.07	12.83	15.09
ı	6	0.68	0.87	1.24	1.64	2.20	10.64	12.59	14.45	16.81
ı	7	0.99	1.24	1.69	2.17	2.83	12.02	14.07	16.01	18.48
ı	8	1.34	1.65	2.18	2.73	3.49	13.36	15.51	17.53	20.09
ı	9	1.73	2.09	2.70	3.33	4.17	14.68	16.92	19.02	21.67
ı	10	2.16	2.56	3.25	3.94	4.87	15.99	18.31	20.48	23.21
ı	11	2.60	3.05	3.82	4.57	5.58	17.28	19.68	21.92	24.72
ı	12	3.07	3.57	4.40	5.23	6.30	18.55	21.03	23.34	26.22
ı	13	3.57	4.11	5.01	5.89	7.04	19.81	22.36	24.74	27.69
ı	14	4.07	4.66	5.63	6.57	7.79	21.06	23.68	26.12	29.14
ı	15	4.60	5.23	6.26	7.26	8.55	22.31	25.00	27.49	30.58
ı	16	5.14	5.81	6.91	7.96	9.31	23.54	26.30	28.85	32.00
ı	17	5.70	6.41	7.56	8.67	10.09	24.77	27.59	30.19	33.41
ı	18	6.26	7.01	8.23	9.39	10.86	25.99	28.87	31.53	34.81
ı	19	6.84	7.63	8.91	10.12	11.65	27.20	30.14	32.85	36.19
ı	20	7.43	8.26	9.59	10.85	12.44	28.41	31.41	34.17	37.57
ı	22	8.64	9.54	10.98	12.34	14.04	30.81	33.92	36.78	40.29
ı	24	9.89	10.86	12.40	13.85	15.66	33.20	36.42	39.36	42.98
ı	26	11.16	12.20	13.84	15.38	17.29	35.56	38.89	41.92	45.64
ı	28	12.46	13.56	15.31	16.93	18.94	37.92	41.34	44.46	48.28
ı	30	13.79	14.95	16.79	18.49	20.60	40.26	43.77	46.98	50.89
ı	32	15.13	16.36	18.29	20.07	22.27	42.58	46.19	49.48	53.49
ı	34	16.50	17.79	19.81	21.66	23.95	44.90	48.60	51.97	56.06
ı	38	19.29	20.69	22.88	24.88	27.34	49.51	53.38	56.90	61.16
۱	42	22.14	23.65	26.00	28.14	30.77	54.09	58.12	61.78	66.21
ı	46	25.04	26.66	29.16	31.44	34.22	58.64	62.83	66.62	71.20
١	50	27.99	29.71	32.36	34.76	37.69	63.17	67.50	71.42	76.15
- 1										



Chi-square Distribution Table

df :	= (n.	₁ -1)	(n ₂ -	1)

n₁: Categories in first variable

n₂: Categories in second variable

	_								
d.f.	.995	.99	.975	.95	.9	.1	.05	.025	.01
1	0.00	0.00	0.00	0.00	0.02	2.71	3.84	5.02	6.63
2	0.01	0.02	0.05	0.10	0.21	4.61	5.99	7.38	9.21
3	0.07	0.11	0.22	0.35	0.58	6.25	7.81	9.35	11.34
4	0.21	0.30	0.48	0.71	1.06	7.78	9.49	11.14	13.28
5	0.41	0.55	0.83	1.15	1.61	9.24	11.07	12.83	15.09
6	0.68	0.87	1.24	1.64	2.20	10.64	12.59	14.45	16.81
7	0.99	1.24	1.69	2.17	2.83	12.02	14.07	16.01	18.48
8	1.34	1.65	2.18	2.73	3.49	13.36	15.51	17.53	20.09
9	1.73	2.09	2.70	3.33	4.17	14.68	16.92	19.02	21.67
10	2.16	2.56	3.25	3.94	4.87	15.99	18.31	20.48	23.21
11	2.60	3.05	3.82	4.57	5.58	17.28	19.68	21.92	24.72
12	3.07	3.57	4.40	5.23	6.30	18.55	21.03	23.34	26.22
13	3.57	4.11	5.01	5.89	7.04	19.81	22.36	24.74	27.69
14	4.07	4.66	5.63	6.57	7.79	21.06	23.68	26.12	29.14
15	4.60	5.23	6.26	7.26	8.55	22.31	25.00	27.49	30.58
16	5.14	5.81	6.91	7.96	9.31	23.54	26.30	28.85	32.00
17	5.70	6.41	7.56	8.67	10.09	24.77	27.59	30.19	33.41
18	6.26	7.01	8.23	9.39	10.86	25.99	28.87	31.53	34.81
19	6.84	7.63	8.91	10.12	11.65	27.20	30.14	32.85	36.19
20	7.43	8.26	9.59	10.85	12.44	28.41	31.41	34.17	37.57
22	8.64	9.54	10.98	12.34	14.04	30.81	33.92	36.78	40.29
24	9.89	10.86	12.40	13.85	15.66	33.20	36.42	39.36	42.98
26	11.16	12.20	13.84	15.38	17.29	35.56	38.89	41.92	45.64
28	12.46	13.56	15.31	16.93	18.94	37.92	41.34	44.46	48.28
30	13.79	14.95	16.79	18.49	20.60	40.26	43.77	46.98	50.89
32	15.13	16.36	18.29	20.07	22.27	42.58	46.19	49.48	53.49
34	16.50	17.79	19.81	21.66	23.95	44.90	48.60	51.97	56.06
38	19.29	20.69	22.88	24.88	27.34	49.51	53.38	56.90	61.16
42	22.14	23.65	26.00	28.14	30.77	54.09	58.12	61.78	66.21
46	25.04	26.66	29.16	31.44	34.22	58.64	62.83	66.62	71.20
50	27.99	29.71	32.36	34.76	37.69	63.17	67.50	71.42	76.15
	_								



Chi-square Distribution Table

df =	(n ₁ -1)	(n_2-1)
------	---------------------	-----------

n₁: Categories in first variable

n₂: Categories in second variable

				•					
d.f.	.995	.99	.975	.95	.9	.1	.05	.025	.01
1	0.00	0.00	0.00	0.00	0.02	2.71	3.84	5.02	6.63
2	0.01	0.02	0.05	0.10	0.21	4.61	5.99	7.38	9.21
3	0.07	0.11	0.22	0.35	0.58	6.25	7.81	9.35	11.34
4	0.21	0.30	0.48	0.71	1.06	7.78	9.49	11.14	13.28
5	0.41	0.55	0.83	1.15	1.61	9.24	11.07	12.83	15.09
6	0.68	0.87	1.24	1.64	2.20	10.64	12.59	14.45	16.81
7	0.99	1.24	1.69	2.17	2.83	12.02	14.07	16.01	18.48
8	1.34	1.65	2.18	2.73	3.49	13.36	15.51	17.53	20.09
9	1.73	2.09	2.70	3.33	4.17	14.68	16.92	19.02	21.67
10	2.16	2.56	3.25	3.94	4.87	15.99	18.31	20.48	23.21
11	2.60	3.05	3.82	4.57	5.58	17.28	19.68	21.92	24.72
12	3.07	3.57	4.40	5.23	6.30	18.55	21.03	23.34	26.22
13	3.57	4.11	5.01	5.89	7.04	19.81	22.36	24.74	27.69
14	4.07	4.66	5.63	6.57	7.79	21.06	23.68	26.12	29.14
15	4.60	5.23	6.26	7.26	8.55	22.31	25.00	27.49	30.58
16	5.14	5.81	6.91	7.96	9.31	23.54	26.30	28.85	32.00
17	5.70	6.41	7.56	8.67	10.09	24.77	27.59	30.19	33.41
18	6.26	7.01	8.23	9.39	10.86	25.99	28.87	31.53	34.81
19	6.84	7.63	8.91	10.12	11.65	27.20	30.14	32.85	36.19
20	7.43	8.26	9.59	10.85	12.44	28.41	31.41	34.17	37.57
22	8.64	9.54	10.98	12.34	14.04	30.81	33.92	36.78	40.29
24	9.89	10.86	12.40	13.85	15.66	33.20	36.42	39.36	42.98
26	11.16	12.20	13.84	15.38	17.29	35.56	38.89	41.92	45.64
28	12.46	13.56	15.31	16.93	18.94	37.92	41.34	44.46	48.28
30	13.79	14.95	16.79	18.49	20.60	40.26	43.77	46.98	50.89
32	15.13	16.36	18.29	20.07	22.27	42.58	46.19	49.48	53.49
34	16.50	17.79	19.81	21.66	23.95	44.90	48.60	51.97	56.06
38	19.29	20.69	22.88	24.88	27.34	49.51	53.38	56.90	61.16
42	22.14	23.65	26.00	28.14	30.77	54.09	58.12	61.78	66.21
46	25.04	26.66	29.16	31.44	34.22	58.64	62.83	66.62	71.20
50	27.99	29.71	32.36	34.76	37.69	63.17	67.50	71.42	76.15
	•								







• Claim = 41/100





• Claim = 41/100



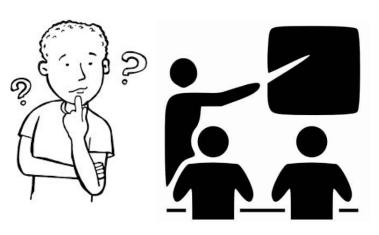


- Claim = 41/100
- Prev. Year = 33/100





- Claim = 41/100
- Prev. Year = 33/100









Alpha = ddof =	Successful	Unsuccessful	
prev. year	33	67	
claim	41	59	





Alpha = 0.05 ddof =	Successful	Unsuccessful
prev. year	33	67
claim	41	59





Alpha = 0.05 ddof =	Successful	Unsuccessful
prev. year	33	67
claim	41	59

$$ddof = (n_1 - 1)(n_2 - 1)$$





Alpha = 0.05 ddof =	Successful	Unsuccessful
prev. year	33	67
claim	41	59

$$ddof = (n_1-1)(n_2-1) = (2-1)(2-1) = 1$$





Alpha = 0.05 ddof = 1	Successful	Unsuccessful
prev. year	33	67
claim	41	59

 χ_c^2

 $\chi^2_{\rm statistic}$





 ${\bf Chi\text{-}square\ Distribution\ Table}$

ddof = 1

alpha = 0.05

.01
6.63
9.21
11.34
13.28
15.09
16.81
18.48
20.09
21.67
23.21
24.72
26.22
27.69
29.14
30.58
32.00
33.41
34.81
36.19
37.57
40.29
42.98
45.64
48.28
50.89
53.49
56.06
61.16
66.21
71.20
76.15



 ${\bf Chi\text{-}square\ Distribution\ Table}$

ddof = 1

alpha = 0.05

				•					
d.f.	.995	.99	.975	.95	.9	.1	.05	.025	.01
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13	3.57	4.11	5.01	5.89	7.04	19.81	22.36	24.74	27.69
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19	6.84	7.63	8.91	10.12	11.65	27.20	30.14	32.85	36.19
20	7.43	8.26	9.59	10.85	12.44	28.41	31.41	34.17	37.57
22	8.64	9.54	10.98	12.34	14.04	30.81	33.92	36.78	40.29
24	9.89	10.86	12.40	13.85	15.66	33.20	36.42	39.36	42.98
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50	27.99	29.71	32.36	34.76	37.69	63.17	67.50	71.42	76.15



Alpha = 0.05 ddof = 1	Successful	Unsuccessful
prev. year	33	67
claim	41	59

$$\chi_c^2 = 3.84$$

$$\chi^2_{\rm statistic}$$

$$\chi^2 = \sum_{i=1}^n \frac{(o_i - e_i)^2}{e_i}$$





Alpha = 0.05 ddof = 1	Successful	Unsuccessful
prev. year	33	67
claim	41	59

$$\chi_c^2 = 3.84$$

$$\chi^2_{\rm statistic}$$

$$\chi^2 = \sum_{i=1}^{n} \frac{(o_i - e_i)^2}{e_i} = \frac{(33 - 41)^2}{41} + \frac{(67 - 59)^2}{59} = 2.64$$





Alpha = 0.05 ddof = 1	Successful	Unsuccessful
prev. year	33	67
claim	41	59

$$\chi_c^2 = 3.84$$

$$\chi^2_{\text{statistic}} = 2.64$$





Alpha = 0.05 ddof = 1	Successful	Unsuccessful
prev. year	33	67
claim	41	59

$$\chi_c^2 = 3.84$$

$$\chi^2_{\text{statistic}} = 2.64$$

"WinIIT"



Very different

No difference

 $\chi_{\text{statistic}}$

 χ_{crit}

Not significantly different

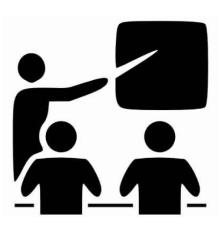
Significantly different



Prev. Year ~ Claim









Thank You!

