Average temperature distribution

Variable: avg_temp

Moments			
N	35	Sum Weights	35
Mean	61.1428571	Sum Observations	2140
Std Deviation	15.1621488	Variance	229.890756
Skewness	-0.1713577	Kurtosis	-1.1530121
Uncorrected SS	138662	Corrected SS	7816.28571
Coeff Variation	24.7979069	Std Error Mean	2.56287091

Basic Statistical Measures			
Location		Variability	
Mean	61.14286	Std Deviation	15.16215
Median	61.50000	Variance	229.89076
Mode	75.00000	Range	55.50000
		Interquartile Range	26.50000

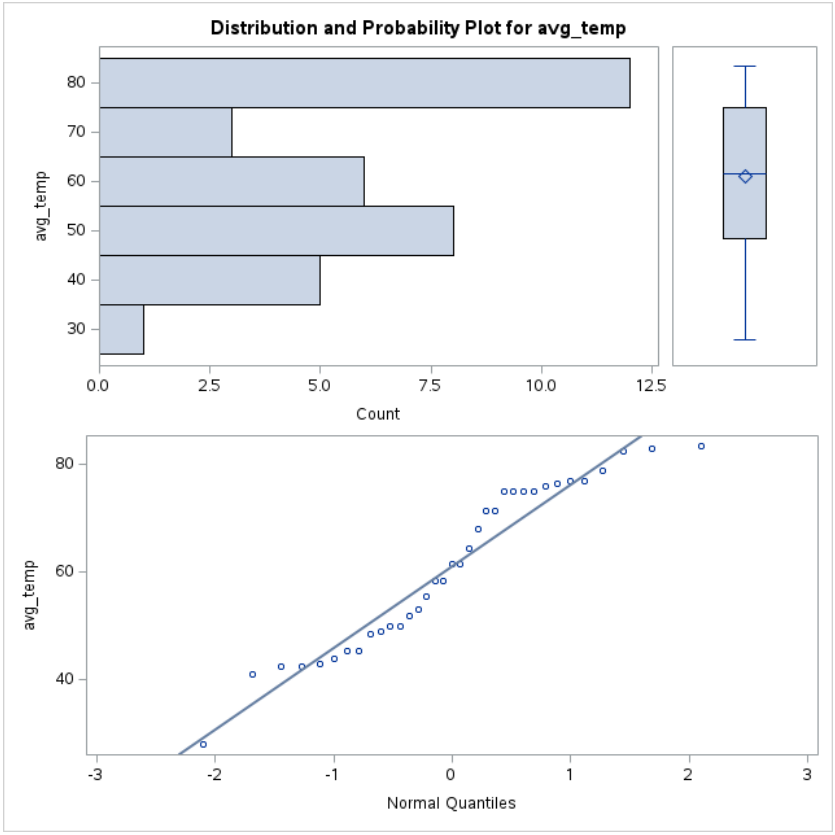
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	23.85717	Pr > |t|	<.0001
Sign	M	17.5	Pr >= |M|	<.0001
Signed Rank	S	315	Pr >= |S|	<.0001

Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.931819	Pr < W	0.0317
Kolmogorov-Smirnov	D	0.16248	Pr > D	0.0198
Cramer-von Mises	W-Sq	0.149879	Pr > W-Sq	0.0230
Anderson-Darling	A-Sq	0.920755	Pr > A-Sq	0.0186

Quantiles (Definition 5)	
Level	Quantile
100% Max	83.5
99%	83.5
95%	83.0
90%	79.0
75% Q3	75.0
50% Median	61.5
25% Q1	48.5
10%	42.5
5%	41.0
1%	28.0
0% Min	28.0

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
28.0	35	77.0	26
41.0	10	79.0	20

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
42.5	7	82.5	28
42.5	4	83.0	23
43.0	9	83.5	22



Natural gas leaks by County, City, and Zipcode

Number of Variable Levels		
Variable	Label	Levels
county	County:	16
city	City	20
zip	Zipcode	29

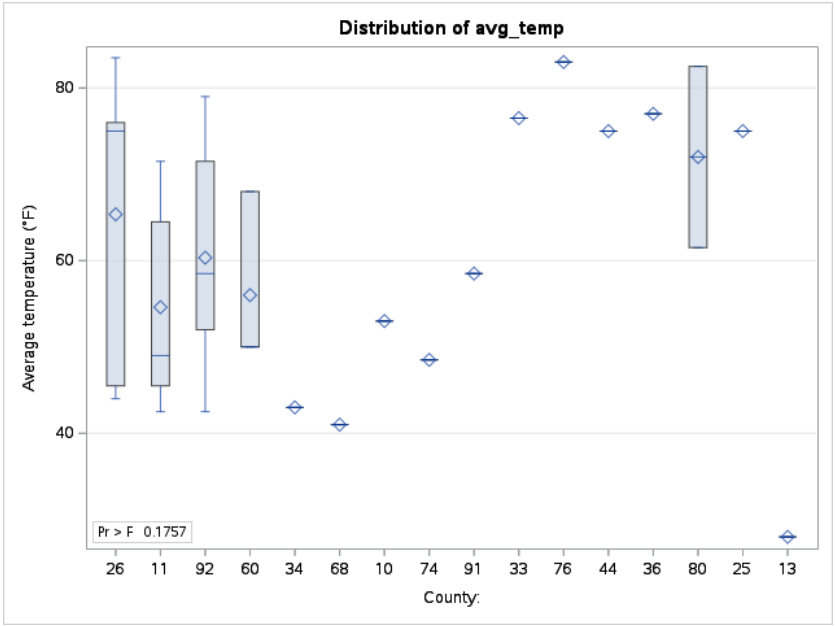
county	city	zip	Frequency	Percent
26	Fayetteville	28311	3	8.57
26	Fayetteville	28303	1	2.86
26	Fayetteville	28304	1	2.86
26	Fayetteville	28305	1	2.86
26	Fayetteville	28306	1	2.86
92	Raleigh	27604	1	2.86
92	Raleigh	27607	1	2.86
92	Raleigh	27612	1	2.86
92	Wake Forest	27587	2	5.71
92	Knightdale	27545	1	2.86
11	Asheville	28806	2	5.71
11	Asheville	28801	1	2.86
11	Black Mountain	28711	1	2.86
11	Leicester	28748	1	2.86
60	Charlotte	28205	2	5.71
60	Charlotte	28223	1	2.86
36	Belmont	28012	2	5.71
80	Salisbury	28146	1	2.86
80	Salisbury	28147	1	2.86
10	Leland	28451	1	2.86
13	Concord	28027	1	2.86
25	New Bern	28560	1	2.86
33	Tarboro	27886	1	2.86
34	Winston-Salem	27101	1	2.86
44	Waynesville	28786	1	2.86
68	Hillsborough	27278	1	2.86
74	Greensville	27834	1	2.86
76	Asheboro	27205	1	2.86
91	Henderson	27536	1	2.86

Exact Kruskal-Wallis Test with Monte Carlo estimation

Analysis of Variance for Variable avg_temp Classified by Variable county		
county	N	Mean
26	7	65.357143
11	5	54.600000
92	6	60.333333
60	3	56.000000
34	1	43.000000
68	1	41.000000
10	1	53.000000
74	1	48.500000
91	1	58.500000
33	1	76.500000
76	1	83.000000
44	1	75.000000
36	2	77.000000

Analysis of Variance for Variable avg_temp Classified by Variable county		
county	N	Mean
80	2	72.000000
25	1	75.000000
13	1	28.000000

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Among	15	4324.395238	288.293016	1.5687	0.1757
Within	19	3491.890476	183.783709		
Average scores were used for ties.					



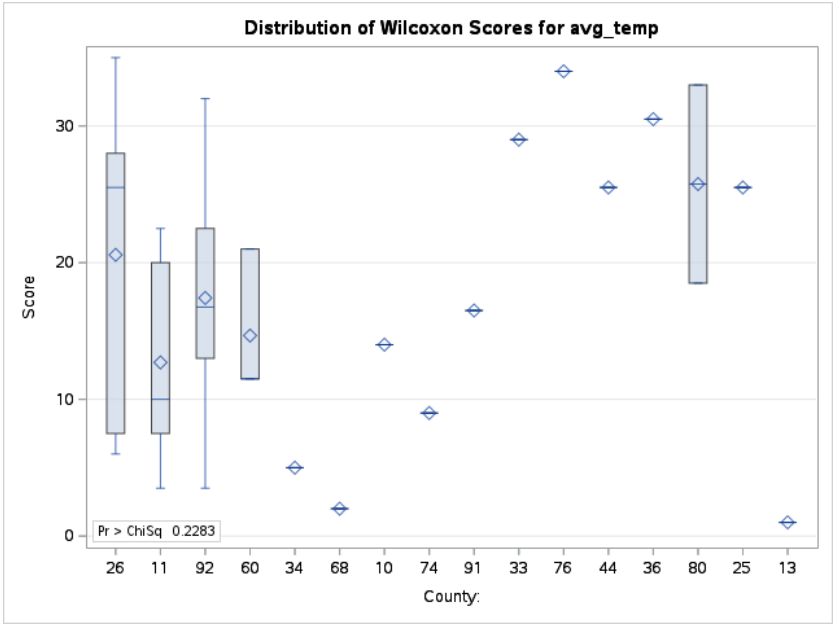
Exact Kruskal-Wallis Test with Monte Carlo estimation

Wilcoxon Scores (Rank Sums) for Variable avg_temp Classified by Variable county					
county	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
26	7	144.00	126.0	24.219827	20.571429
11	5	63.50	90.0	21.187935	12.700000
92	6	104.50	108.0	22.820104	17.416667
60	3	44.00	54.0	16.950348	14.666667
34	1	5.00	18.0	10.087475	5.000000
68	1	2.00	18.0	10.087475	2.000000
Average scores were used for ties.					

Wilcoxon Scores (Rank Sums) for Variable avg_temp Classified by Variable county					
county	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
10	1	14.00	18.0	10.087475	14.000000
74	1	9.00	18.0	10.087475	9.000000
91	1	16.50	18.0	10.087475	16.500000
33	1	29.00	18.0	10.087475	29.000000
76	1	34.00	18.0	10.087475	34.000000
44	1	25.50	18.0	10.087475	25.500000
36	2	61.00	36.0	14.054486	30.500000
80	2	51.50	36.0	14.054486	25.750000
25	1	25.50	18.0	10.087475	25.500000
13	1	1.00	18.0	10.087475	1.000000
Average scores were used for ties.					

Kruskal-Wallis Test		
Chi-Square	DF	Pr > ChiSq
18.6872	15	0.2283

Monte Carlo Estimates for the Exact Test					
Probability	Estimate	99% Confidence Limits		Samples	Seed
Pr >= ChiSq	0.1394	0.1305	0.1483	10000	43

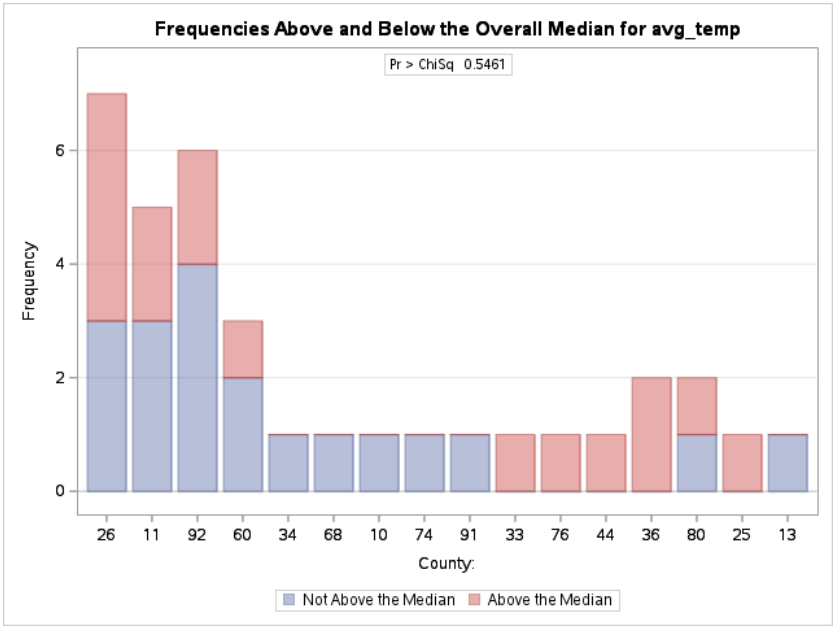


Exact Kruskal-Wallis Test with Monte Carlo estimation

Median Scores (Number of Points Above Median) for Variable avg_temp Classified by Variable county					
county	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
26	7	4.00	3.400000	1.165181	0.571429
11	5	2.00	2.428571	1.019321	0.400000
92	6	2.50	2.914286	1.097842	0.416667
60	3	1.00	1.457143	0.815457	0.333333
34	1	0.00	0.485714	0.485294	0.000000
68	1	0.00	0.485714	0.485294	0.000000
10	1	0.00	0.485714	0.485294	0.000000
74	1	0.00	0.485714	0.485294	0.000000
91	1	0.00	0.485714	0.485294	0.000000
33	1	1.00	0.485714	0.485294	1.000000
76	1	1.00	0.485714	0.485294	1.000000
44	1	1.00	0.485714	0.485294	1.000000
36	2	2.00	0.971429	0.676141	1.000000
80	2	1.50	0.971429	0.676141	0.750000
25	1	1.00	0.485714	0.485294	1.000000
13	1	0.00	0.485714	0.485294	0.000000
Average scores were used for ties.					

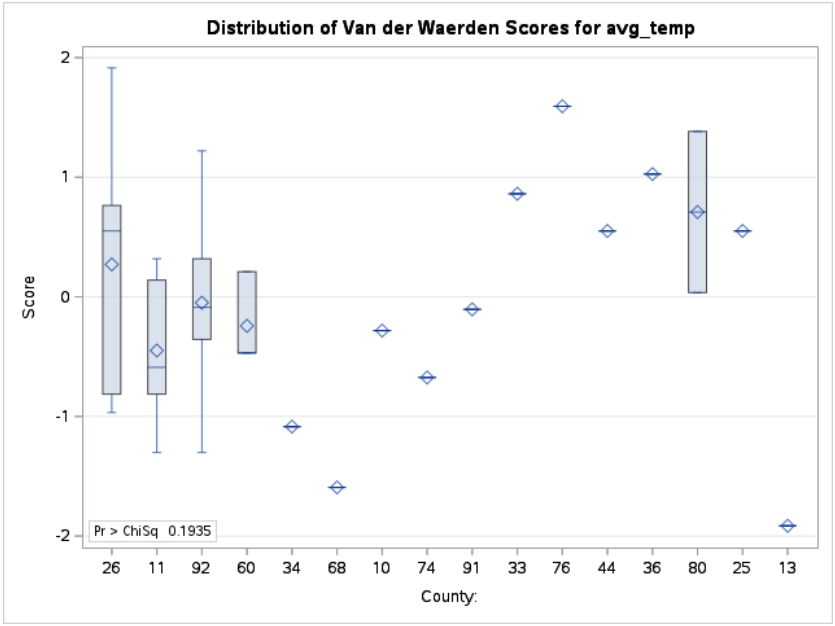
Median One-Way Analysis		
Chi-Square	DF	Pr > ChiSq
13.7296	15	0.5461

Monte Carlo Estimates for the Exact Test					
Probability	Estimate	99% Confidence Limits		Samples	Seed
Pr >= ChiSq	0.6648	0.6526	0.6770	10000	468284561



Van der Waerden One-Way Analysis		
Chi-Square	DF	Pr > ChiSq
19.4631	15	0.1935

Monte Carlo Estimates for the Exact Test					
Probability	Estimate	99% Confidence Limits		Samples	Seed
Pr >= ChiSq	0.1179	0.1096	0.1262	10000	1398794103



Exact Kruskal-Wallis Test with Monte Carlo estimation

Van der Waerden Scores (Normal) for Variable avg_temp Classified by Variable county					
county	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
26	7	1.895505	0.0	2.188096	0.270786
11	5	-2.245881	0.0	1.914186	-0.449176
92	6	-0.293400	0.0	2.061641	-0.048900
60	3	-0.728787	0.0	1.531349	-0.242929
34	1	-1.085325	0.0	0.911335	-1.085325
68	1	-1.593219	0.0	0.911335	-1.593219
10	1	-0.282216	0.0	0.911335	-0.282216
74	1	-0.674490	0.0	0.911335	-0.674490
91	1	-0.104698	0.0	0.911335	-0.104698
33	1	0.861634	0.0	0.911335	0.861634
76	1	1.593219	0.0	0.911335	1.593219
44	1	0.550790	0.0	0.911335	0.550790
36	2	2.052746	0.0	1.269727	1.026373
80	2	1.417837	0.0	1.269727	0.708918
25	1	0.550790	0.0	0.911335	0.550790
13	1	-1.914506	0.0	0.911335	-1.914506
Average scores were used for ties.					

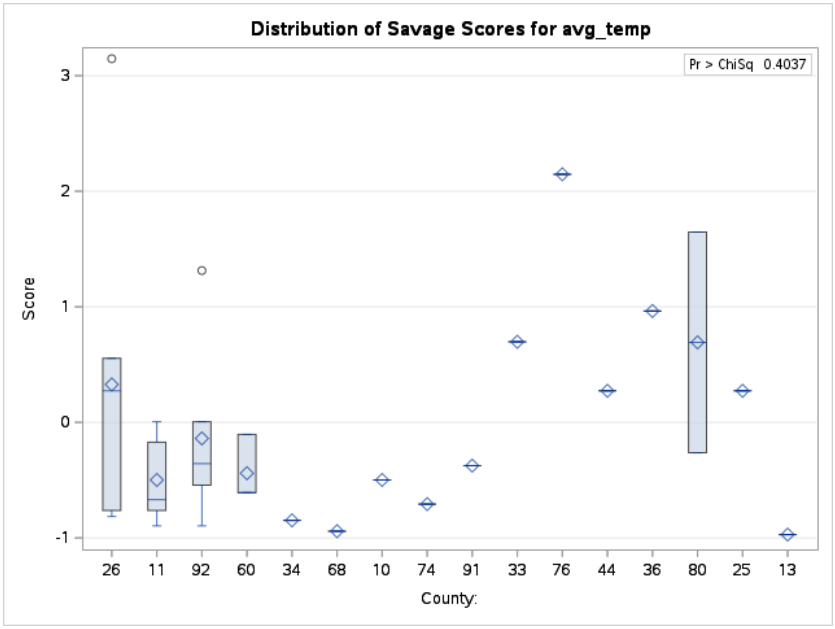
Exact Kruskal-Wallis Test with Monte Carlo estimation

Savage Scores (Exponential) for Variable avg_temp Classified by Variable county					
county	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
26	7	2.294386	0.0	2.251384	0.327769
11	5	-2.494136	0.0	1.969551	-0.498827
92	6	-0.835881	0.0	2.121271	-0.139313
60	3	-1.321468	0.0	1.575641	-0.440489
34	1	-0.848206	0.0	0.937694	-0.848206
68	1	-0.942017	0.0	0.937694	-0.942017
10	1	-0.498577	0.0	0.937694	-0.498577
74	1	-0.707638	0.0	0.937694	-0.707638
91	1	-0.374642	0.0	0.937694	-0.374642
33	1	0.696781	0.0	0.937694	0.696781
Average scores were used for ties.					

Savage Scores (Exponential) for Variable avg_temp Classified by Variable county					
county	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
76	1	2.146781	0.0	0.937694	2.146781
44	1	0.272864	0.0	0.937694	0.272864
36	2	1.926896	0.0	1.306452	0.963448
80	2	1.383422	0.0	1.306452	0.691711
25	1	0.272864	0.0	0.937694	0.272864
13	1	-0.971429	0.0	0.937694	-0.971429
Average scores were used for ties.					

Savage One-Way Analysis		
Chi-Square	DF	Pr > ChiSq
15.6788	15	0.4037

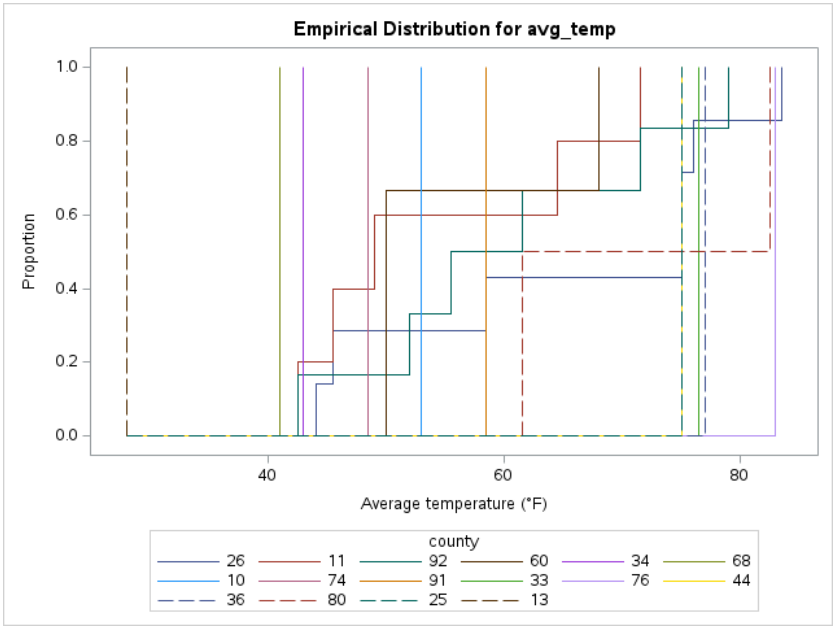
Monte Carlo Estimates for the Exact Test					
Probability	Estimate	99% Confidence Limits		Samples	Seed
Pr >= ChiSq	0.4223	0.4096	0.4350	10000	446622230



Kolmogorov-Smirnov Test for Variable avg_temp Classified by Variable county			
county	N	EDF at Maximum	Deviation from Mean at Maximum
26	7	0.428571	-0.604743
11	5	1.000000	0.766652
92	6	0.833333	0.431577
60	3	1.000000	0.593846
34	1	1.000000	0.342857
68	1	1.000000	0.342857
10	1	1.000000	0.342857
74	1	1.000000	0.342857
91	1	1.000000	0.342857
33	1	0.000000	-0.657143
76	1	0.000000	-0.657143
44	1	0.000000	-0.657143
36	2	0.000000	-0.929340
80	2	0.500000	-0.222234
25	1	0.000000	-0.657143
13	1	1.000000	0.342857
Total	35	0.657143	
Maximum Deviation Occurred at Observation 13			
Value of avg_temp at Maximum = 71.50			

Kolmogorov-Smirnov Statistics (Asymptotic)			
KS	0.371795	KSa	2.199567

Exact Kruskal-Wallis Test with Monte Carlo estimation



Cramer-von Mises Test for Variable avg_temp Classified by Variable county		
county	N	Summed Deviation from Mean
26	7	0.067102
11	5	0.161516
92	6	0.043425
60	3	0.134842
34	1	0.214017
68	1	0.283405
10	1	0.092385
74	1	0.143813
91	1	0.082589
33	1	0.192793
76	1	0.304630
44	1	0.113609
36	2	0.423137
80	2	0.145994
25	1	0.113609
13	1	0.310344

Cramer-von Mises Statistics (Asymptotic)			
CM	0.080777	CMa	2.827211