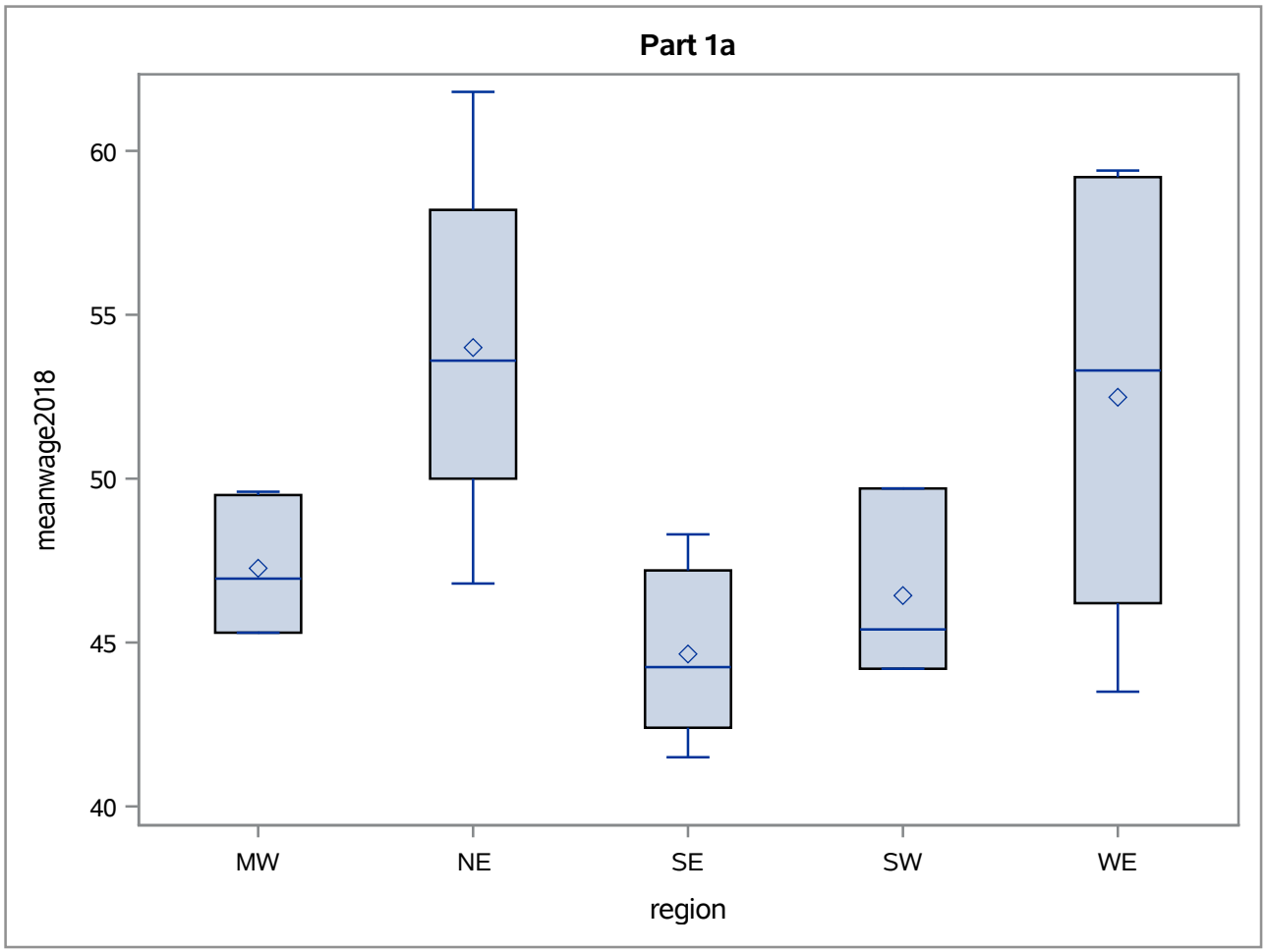
Stat 407/507 Fall 2022 Exam 1 Results

Obs	region	state	meanwage2018	tmnwage2018
1	SW	NM	45.4	.000001586
2	SW	OK	44.2	.000001742
3	SW	TX	49.7	.000001155
4	NE	ME	46.8	.000001426
5	NE	NH	52.4	.000000960
6	NE	RI	54.8	.000000821
7	NE	NY	61.8	.000000539
8	NE	NJ	58.2	.000000665
9	NE	PA	50.0	.000001131
10	MW	MI	49.5	.000001172
11	MW	IN	45.3	.000001598
12	MW	MO	46.5	.000001459
13	MW	WI	47.4	.000001364
14	MW	ND	49.6	.000001164
15	MW	KS	45.3	.000001598
16	SE	WV	42.4	.000002015
17	SE	NC	47.2	.000001384
18	SE	GA	48.3	.000001277
19	SE	AL	43.8	.000001798
20	SE	AR	41.5	.000002172
21	SE	TN	44.7	.000001675
22	WE	WA	59.4	.000000619
23	WE	ID	43.5	.000001842
24	WE	UT	47.9	.000001315
25	WE	CA	59.2	.000000626
26	WE	AK	58.7	.000000645
27	WE	NV	46.2	.000001492


Part 1a
meanwage2018
60
55
50
45
40
MW
NE
SE
SW
WE
region

The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
region	5	MW NE SE SW WE

Number of Observations Read	27
Number of Observations Used	27

Part 1b

The GLM Procedure

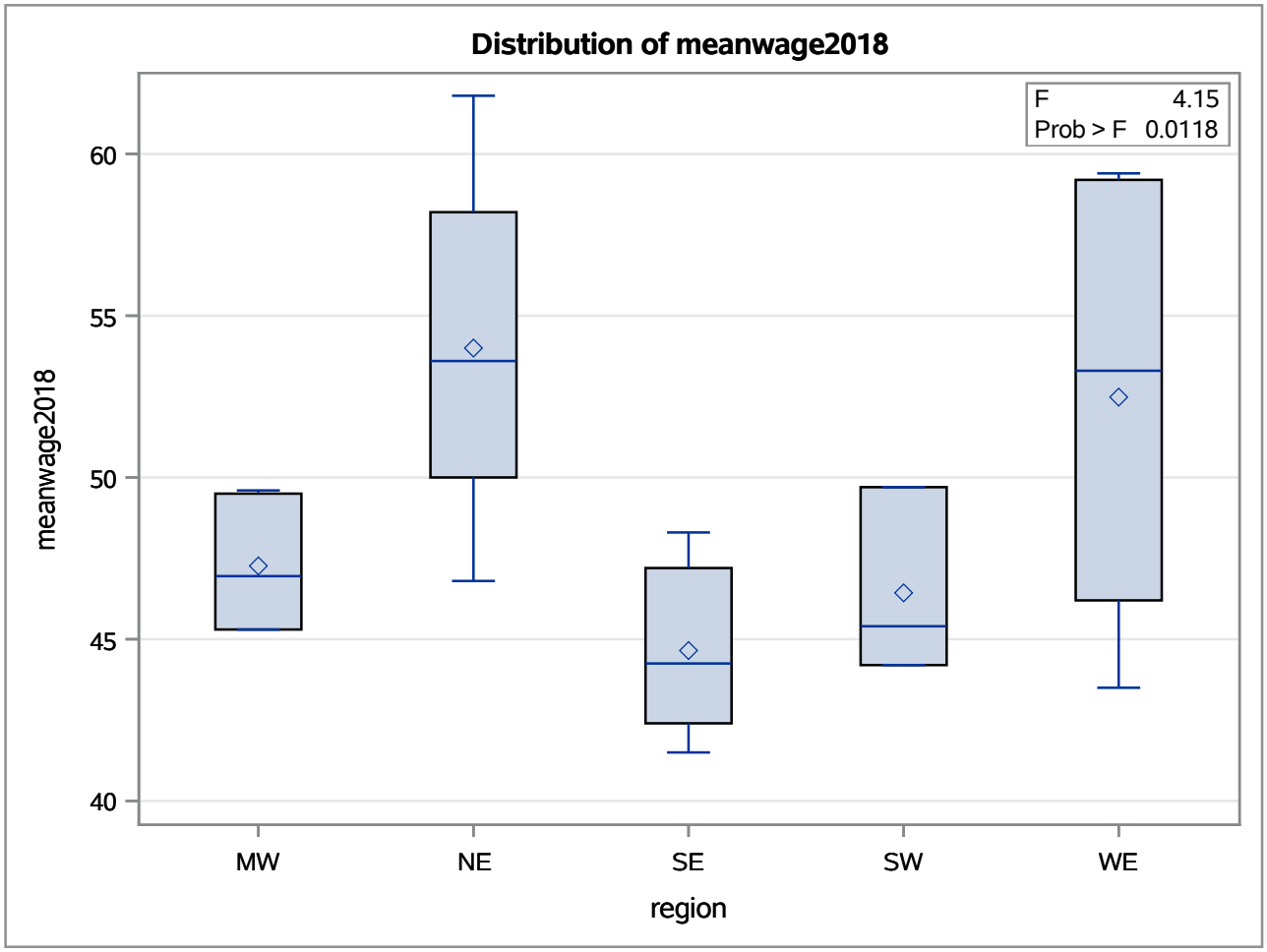
Dependent Variable: meanwage2018

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	372.4640741	93.1160185	4.15	0.0118
Error	22	493.3433333	22.4246970		
Corrected Total	26	865.8074074			

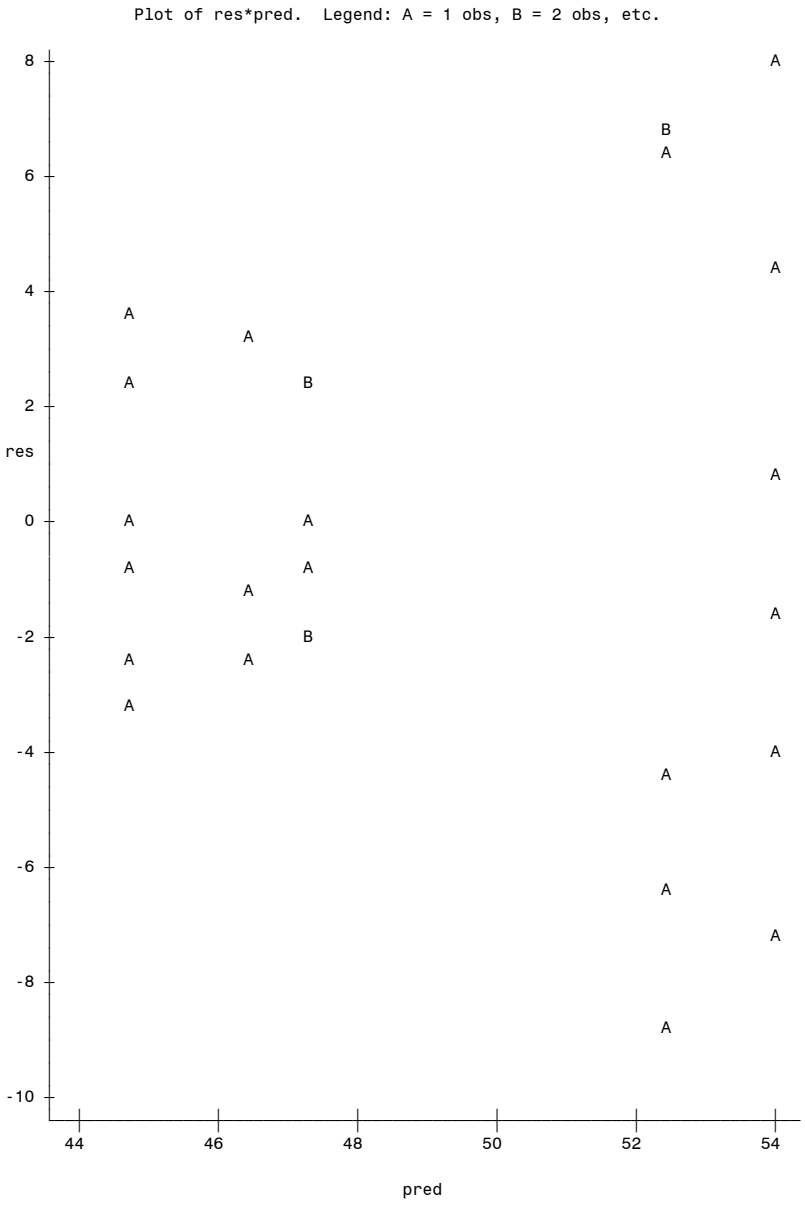
R-Square	Coeff Var	Root MSE	meanwage2018 Mean
0.430193	9.615534	4.735472	49.24815

Source	DF	Type I SS	Mean Square	F Value	Pr > F
region	4	372.4640741	93.1160185	4.15	0.0118

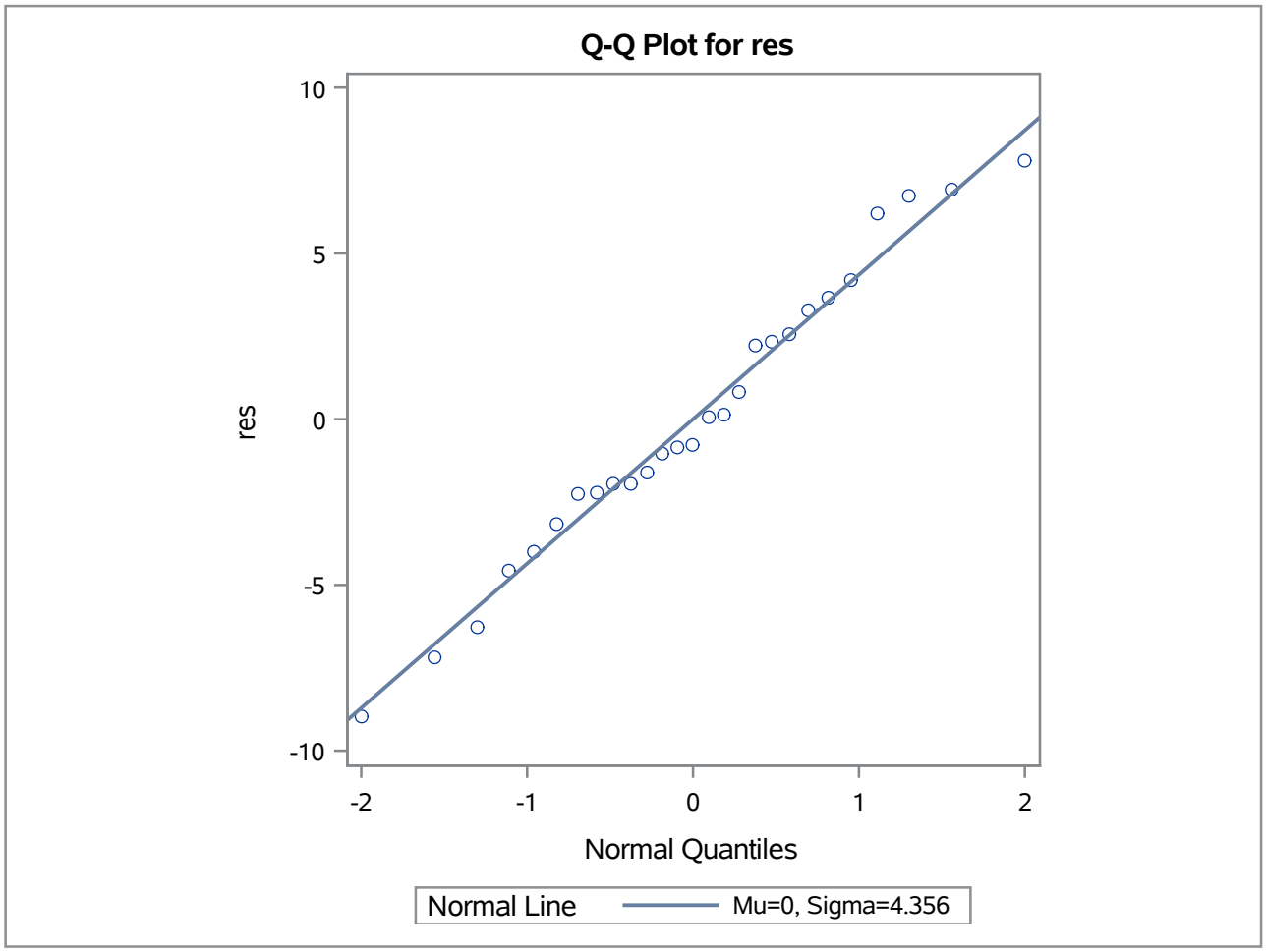
Source	DF	Type III SS	Mean Square	F Value	Pr > F
region	4	372.4640741	93.1160185	4.15	0.0118



Part 1c


Plot of res*pred. Legend: A = 1 obs, B = 2 obs, etc.
8
6
4
2
0
-2
-4
-6
-8
-10
res
44
46
48
50
52
54
pred

The UNIVARIATE Procedure



The TRANSREG Procedure

Box-Cox Transformation Information for meanwage2018				
Lambda		**R-Square**	**Log Like**	
-8.00		0.43	-41.6841	
-7.95		0.43	-41.6339	
-7.90		0.43	-41.5584	
-7.85		0.43	-41.4755	
-7.80		0.43	-41.4194	
-7.75		0.43	-41.3607	
-7.70		0.43	-41.3013	
-7.65		0.43	-41.2412	
-7.60		0.43	-41.1814	
-7.55		0.43	-41.1182	
-7.50		0.43	-41.0586	
-7.45		0.43	-40.9984	
-7.40		0.43	-40.9389	
-7.35		0.43	-40.8828	
-7.30		0.43	-40.8237	
-7.25		0.44	-40.7679	
-7.20		0.44	-40.7148	
-7.15		0.44	-40.6585	
-7.10		0.44	-40.6046	
-7.05		0.44	-40.5508	
-7.00		0.44	-40.4982	*
-6.95		0.44	-40.4459	*
-6.90		0.44	-40.3937	*
-6.85		0.44	-40.3429	*
-6.80		0.44	-40.2927	*
-6.75		0.44	-40.2427	*
-6.70		0.44	-40.1940	*
-6.65		0.44	-40.1457	*
-6.60		0.44	-40.0982	*
-6.55		0.44	-40.0513	*
-6.50		0.44	-40.0050	*
-6.45		0.44	-39.9596	*
-6.40		0.44	-39.9148	*

< - Best Lambda
*** - 95% Confidence Interval**
+ - Convenient Lambda

The TRANSREG Procedure

Box-Cox Transformation Information for meanwage2018				
Lambda		**R-Square**	**Log Like**	
-6.35		0.44	-39.8708	*
-6.30		0.44	-39.8273	*
-6.25		0.44	-39.7847	*
-6.20		0.44	-39.7427	*
-6.15		0.44	-39.7014	*
-6.10		0.44	-39.6609	*
-6.05		0.44	-39.6210	*
-6.00		0.44	-39.5818	*
-5.95		0.44	-39.5434	*
-5.90		0.44	-39.5057	*
-5.85		0.44	-39.4688	*
-5.80		0.44	-39.4325	*
-5.75		0.44	-39.3970	*
-5.70		0.44	-39.3622	*
-5.65		0.44	-39.3282	*
-5.60		0.44	-39.2949	*
-5.55		0.44	-39.2623	*
-5.50		0.44	-39.2305	*
-5.45		0.44	-39.1994	*
-5.40		0.44	-39.1691	*
-5.35		0.44	-39.1395	*
-5.30		0.44	-39.1107	*
-5.25		0.44	-39.0826	*
-5.20		0.44	-39.0553	*
-5.15		0.44	-39.0287	*
-5.10		0.44	-39.0029	*
-5.05		0.44	-38.9779	*
-5.00		0.44	-38.9536	*
-4.95		0.44	-38.9301	*
-4.90		0.44	-38.9073	*
-4.85		0.44	-38.8854	*
-4.80		0.44	-38.8642	*
-4.75		0.44	-38.8438	*

< - Best Lambda
*** - 95% Confidence Interval**
+ - Convenient Lambda

The TRANSREG Procedure

Box-Cox Transformation Information for meanwage2018				
Lambda		**R-Square**	**Log Like**	
-4.70		0.44	-38.8242	*
-4.65		0.44	-38.8053	*
-4.60		0.44	-38.7873	*
-4.55		0.44	-38.7700	*
-4.50		0.44	-38.7535	*
-4.45		0.44	-38.7378	*
-4.40		0.44	-38.7229	*
-4.35		0.44	-38.7088	*
-4.30		0.44	-38.6954	*
-4.25		0.44	-38.6829	*
-4.20		0.44	-38.6712	*
-4.15		0.44	-38.6603	*
-4.10		0.44	-38.6501	*
-4.05		0.44	-38.6408	*
-4.00		0.44	-38.6323	*
-3.95		0.44	-38.6246	*
-3.90		0.44	-38.6177	*
-3.85		0.44	-38.6116	*
-3.80		0.44	-38.6063	*
-3.75		0.44	-38.6019	*
-3.70		0.44	-38.5982	*
-3.65		0.44	-38.5954	*
-3.60		0.44	-38.5934	*
-3.55		0.44	-38.5922	*
-3.50		0.44	-38.5919	<
-3.45		0.44	-38.5923	*
-3.40		0.44	-38.5936	*
-3.35		0.44	-38.5957	*
-3.30		0.44	-38.5987	*
-3.25		0.44	-38.6024	*
-3.20		0.44	-38.6070	*
-3.15		0.44	-38.6124	*
-3.10		0.44	-38.6187	*

< - Best Lambda
*** - 95% Confidence Interval**
+ - Convenient Lambda

The TRANSREG Procedure

Box-Cox Transformation Information for meanwage2018				
Lambda		**R-Square**	**Log Like**	
-3.05		0.44	-38.6258	*
-3.00		0.44	-38.6337	*
-2.95		0.44	-38.6424	*
-2.90		0.44	-38.6520	*
-2.85		0.44	-38.6625	*
-2.80		0.44	-38.6737	*
-2.75		0.44	-38.6858	*
-2.70		0.44	-38.6988	*
-2.65		0.44	-38.7125	*
-2.60		0.44	-38.7272	*
-2.55		0.44	-38.7426	*
-2.50		0.44	-38.7589	*
-2.45		0.44	-38.7761	*
-2.40		0.44	-38.7940	*
-2.35		0.44	-38.8129	*
-2.30		0.44	-38.8326	*
-2.25		0.44	-38.8531	*
-2.20		0.44	-38.8744	*
-2.15		0.44	-38.8966	*
-2.10		0.44	-38.9197	*
-2.05		0.44	-38.9436	*
-2.00		0.44	-38.9683	*
-1.95		0.44	-38.9939	*
-1.90		0.44	-39.0204	*
-1.85		0.44	-39.0476	*
-1.80		0.44	-39.0758	*
-1.75		0.44	-39.1048	*
-1.70		0.44	-39.1346	*
-1.65		0.44	-39.1652	*
-1.60		0.44	-39.1968	*
-1.55		0.44	-39.2291	*
-1.50		0.44	-39.2623	*
-1.45		0.44	-39.2964	*

< - Best Lambda
*** - 95% Confidence Interval**
+ - Convenient Lambda

The TRANSREG Procedure

Box-Cox Transformation Information for meanwage2018				
Lambda		**R-Square**	**Log Like**	
-1.40		0.44	-39.3313	*
-1.35		0.44	-39.3670	*
-1.30		0.44	-39.4036	*
-1.25		0.44	-39.4411	*
-1.20		0.44	-39.4793	*
-1.15		0.44	-39.5185	*
-1.10		0.44	-39.5584	*
-1.05		0.44	-39.5992	*
-1.00	+	0.44	-39.6409	*
-0.95		0.44	-39.6834	*
-0.90		0.44	-39.7267	*
-0.85		0.44	-39.7709	*
-0.80		0.44	-39.8159	*
-0.75		0.44	-39.8618	*
-0.70		0.44	-39.9085	*
-0.65		0.44	-39.9560	*
-0.60		0.44	-40.0044	*
-0.55		0.44	-40.0536	*
-0.50		0.44	-40.1036	*
-0.45		0.44	-40.1545	*
-0.40		0.44	-40.2062	*
-0.35		0.44	-40.2587	*
-0.30		0.44	-40.3121	*
-0.25		0.44	-40.3663	*
-0.20		0.44	-40.4213	*
-0.15		0.44	-40.4772	*
-0.10		0.44	-40.5339	
-0.05		0.44	-40.5914	
0.00		0.44	-40.6497	
0.05		0.44	-40.7088	
0.10		0.44	-40.7688	
0.15		0.44	-40.8296	
0.20		0.43	-40.8912	

< - Best Lambda
*** - 95% Confidence Interval**
+ - Convenient Lambda

The TRANSREG Procedure

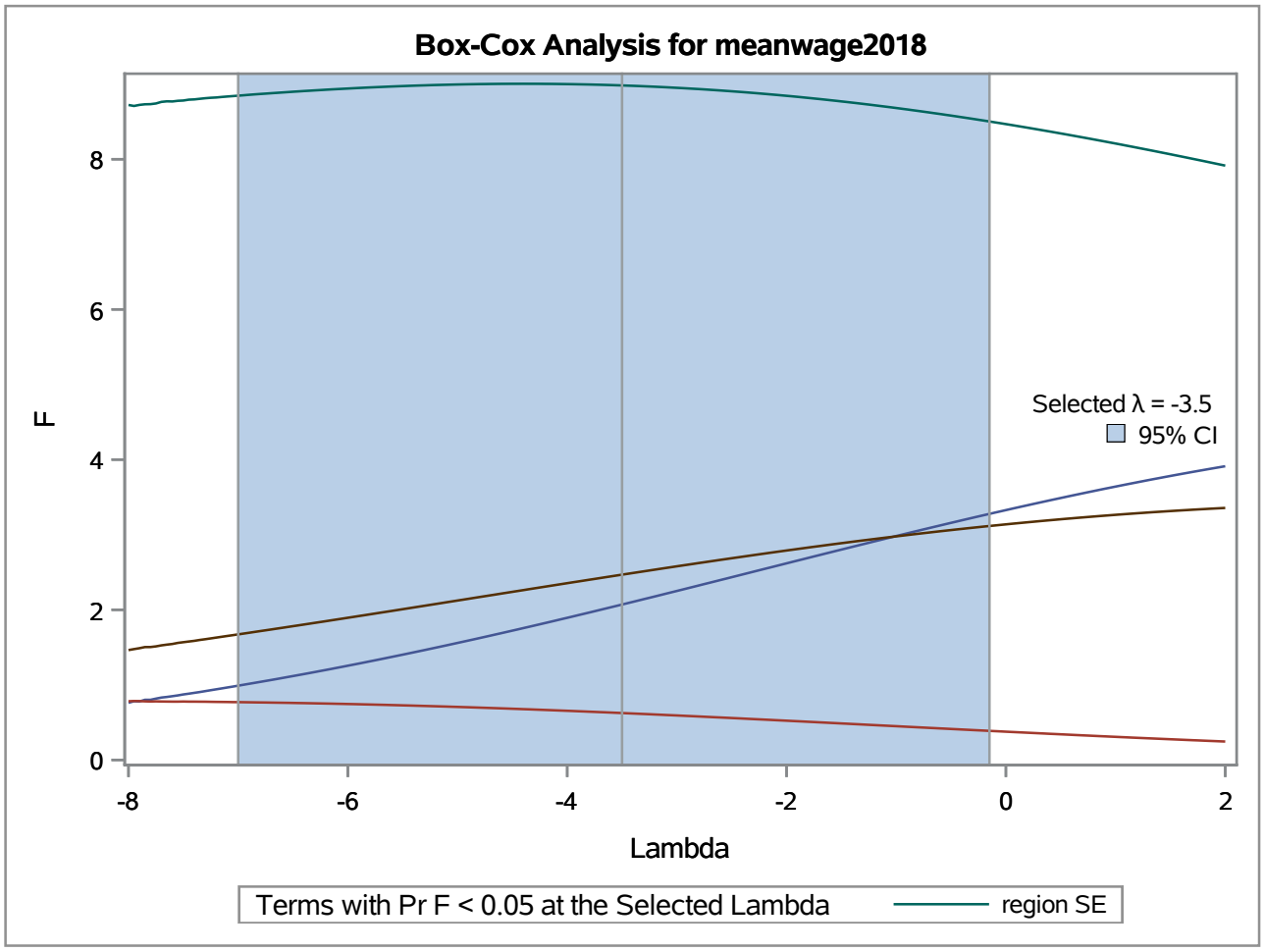
Box-Cox Transformation Information for meanwage2018				
Lambda		**R-Square**	**Log Like**	
0.25		0.43	-40.9537	
0.30		0.43	-41.0169	
0.35		0.43	-41.0810	
0.40		0.43	-41.1459	
0.45		0.43	-41.2115	
0.50		0.43	-41.2780	
0.55		0.43	-41.3453	
0.60		0.43	-41.4135	
0.65		0.43	-41.4824	
0.70		0.43	-41.5521	
0.75		0.43	-41.6226	
0.80		0.43	-41.6939	
0.85		0.43	-41.7661	
0.90		0.43	-41.8390	
0.95		0.43	-41.9127	
1.00		0.43	-41.9872	
1.05		0.43	-42.0625	
1.10		0.43	-42.1386	
1.15		0.43	-42.2155	
1.20		0.43	-42.2931	
1.25		0.43	-42.3716	
1.30		0.43	-42.4508	
1.35		0.43	-42.5308	
1.40		0.43	-42.6116	
1.45		0.43	-42.6931	
1.50		0.43	-42.7754	
1.55		0.43	-42.8585	
1.60		0.43	-42.9424	
1.65		0.43	-43.0271	
1.70		0.43	-43.1125	
1.75		0.42	-43.1986	
1.80		0.42	-43.2856	
1.85		0.42	-43.3732	
< - Best Lambda *** - 95% Confidence Interval** **+ - Convenient Lambda**				

The TRANSREG Procedure

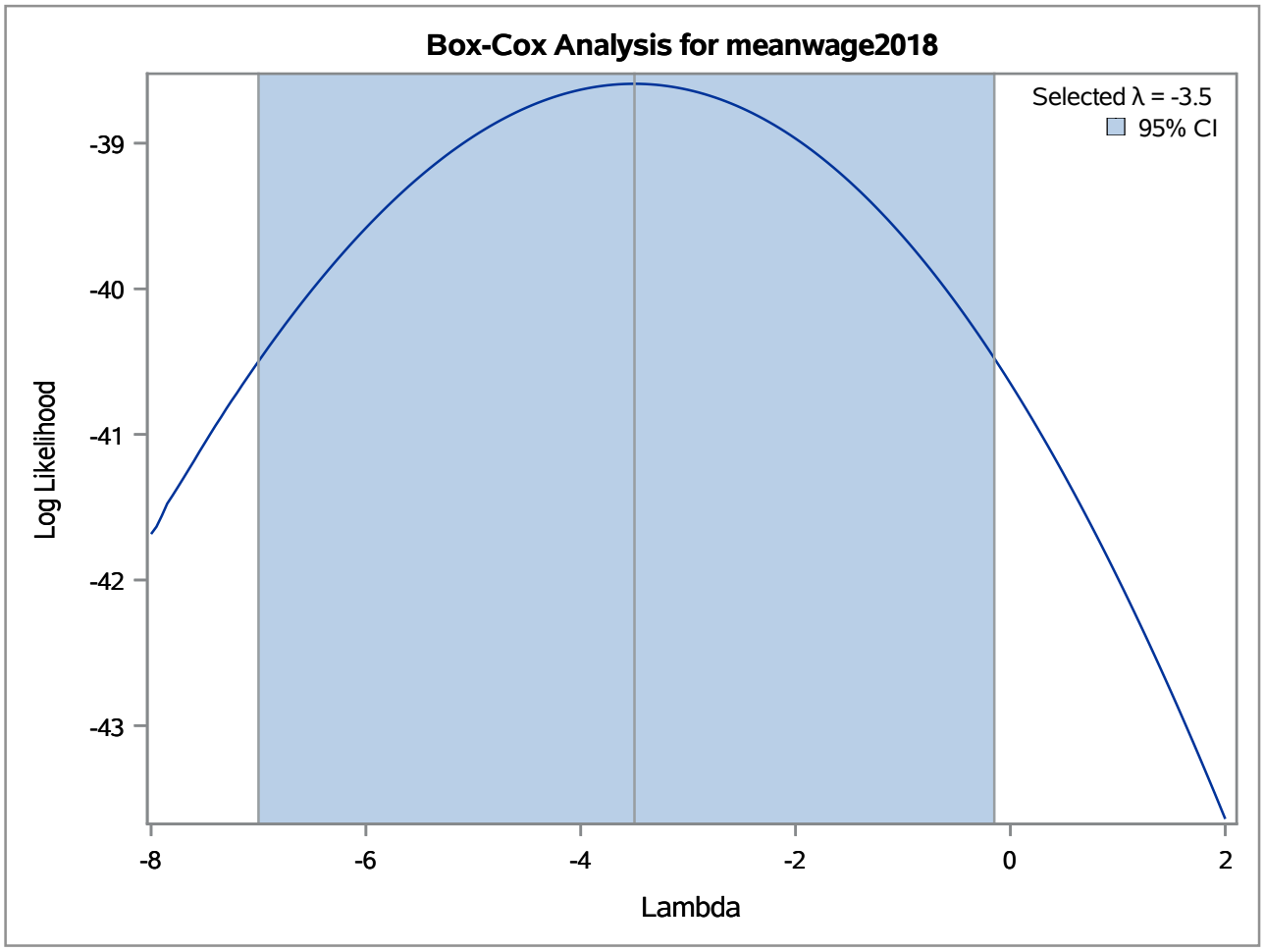
Box-Cox Transformation Information for meanwage2018				
Lambda		**R-Square**	**Log Like**	
1.90		0.42	-43.4617	
1.95		0.42	-43.5509	
2.00		0.42	-43.6408	

< - Best Lambda
*** - 95% Confidence Interval**
+ - Convenient Lambda

The TRANSREG Procedure



The TRANSREG Procedure



Dependent Variable BoxCox(meanwage2018)

Class Level Information		
Class	Levels	Values
region	5	MW NE SE SW WE

Number of Observations Read	27
Number of Observations Used	27
Warning: Constant Variables	1

The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
region	5	MW NE SE SW WE

Number of Observations Read	27
Number of Observations Used	27

Part 1e

The GLM Procedure

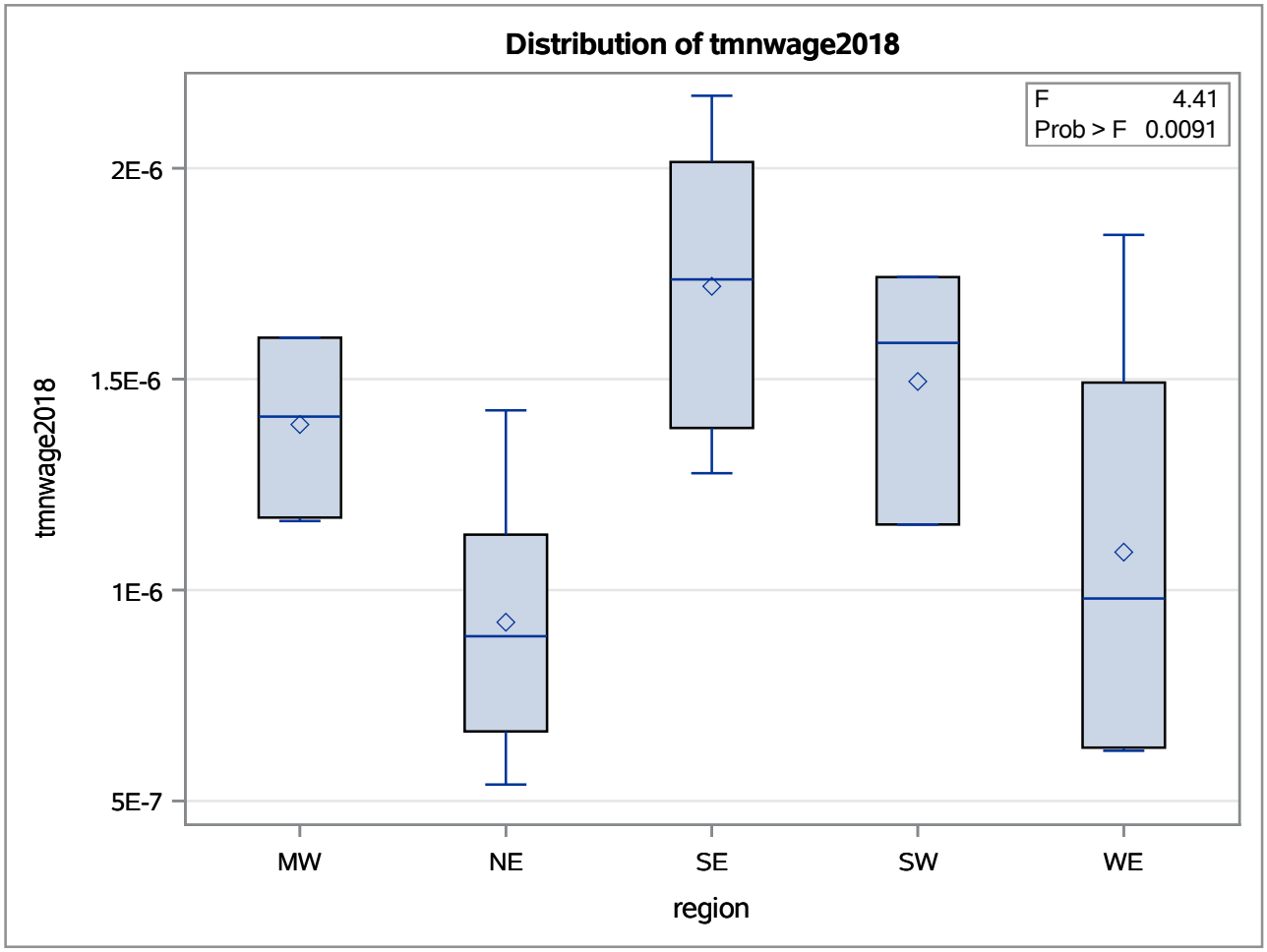
Dependent Variable: tmnwage2018

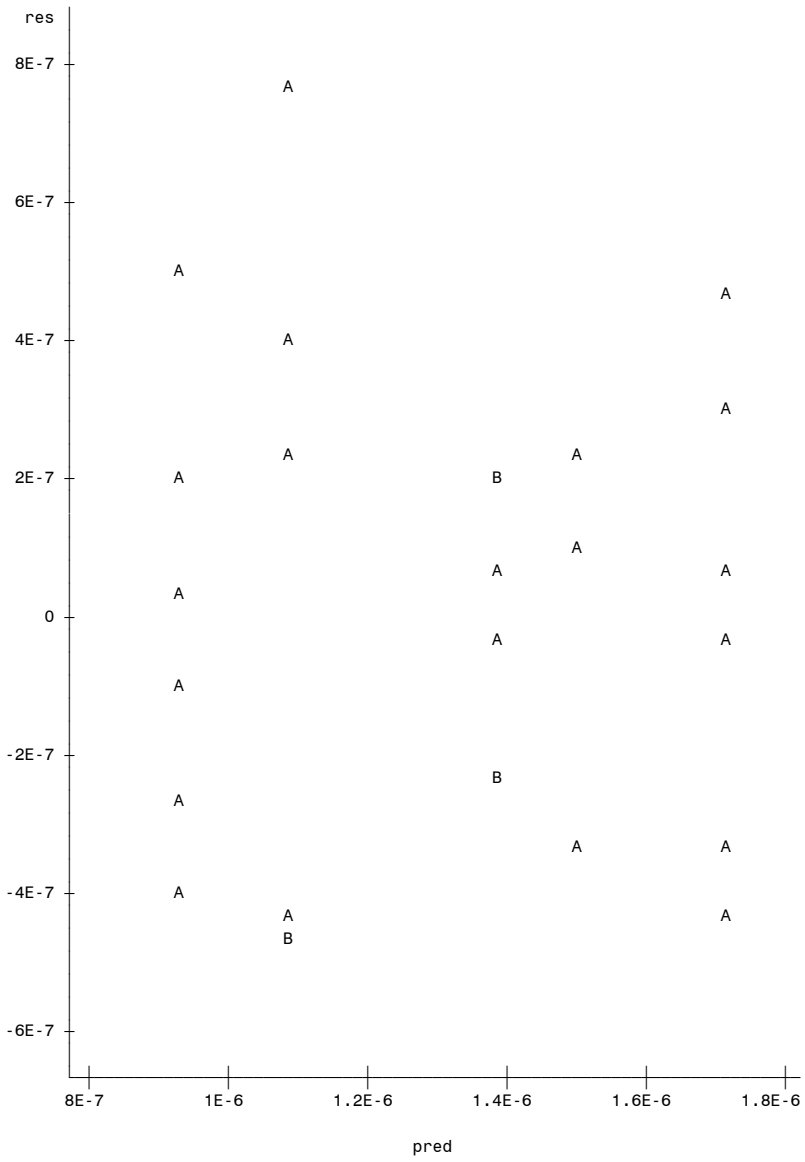
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	2.337259E-12	5.843149E-13	4.41	0.0091
Error	22	2.91807E-12	1.326396E-13		
Corrected Total	26	5.25533E-12			

R-Square	Coeff Var	Root MSE	tmnwage2018 Mean
0.444741	27.90365	3.64197E-7	1.3052E-6

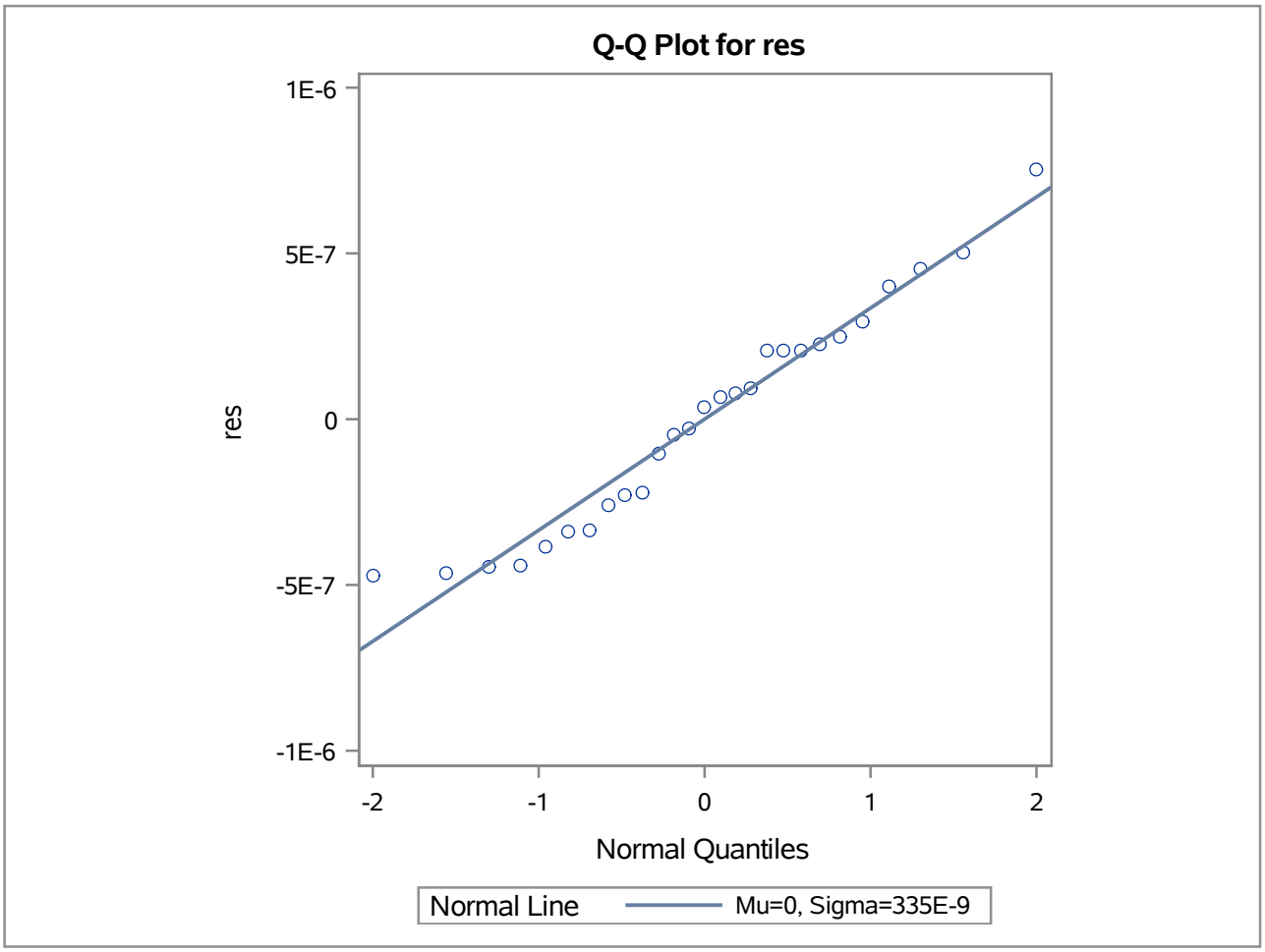
Source	DF	Type I SS	Mean Square	F Value	Pr > F
region	4	2.337259E-12	5.843149E-13	4.41	0.0091

Source	DF	Type III SS	Mean Square	F Value	Pr > F
region	4	2.337259E-12	5.843149E-13	4.41	0.0091




Plot of res*pred. Legend: A = 1 obs, B = 2 obs, etc.
res
8E-7
6E-7
4E-7
2E-7
0
-2E-7
-4E-7
-6E-7
8E-7
1E-6
1.2E-6
1.4E-6
1.6E-6
1.8E-6
pred

The UNIVARIATE Procedure



r	ndf	ddf	nonc	fcr	power
2	4	5	11.08	5.19217	0.37981
3	4	10	16.62	3.47805	0.73849
4	4	15	22.16	3.05557	0.91430

Plot of power*r. Legend: A = 1 obs, B = 2 obs, etc.