

The SAS System

The LIFEREG Procedure

Model Information	
Data Set	WORK.SHORT
Dependent Variable	Log(Duration)
Censoring Variable	event_kind
Censoring Value(s)	0
Number of Observations	246
Noncensored Values	246
Right Censored Values	0
Left Censored Values	0
Interval Censored Values	0
Number of Parameters	2
Name of Distribution	Weibull
Log Likelihood	-285.0352623

Number of Observations Read	246
Number of Observations Used	246

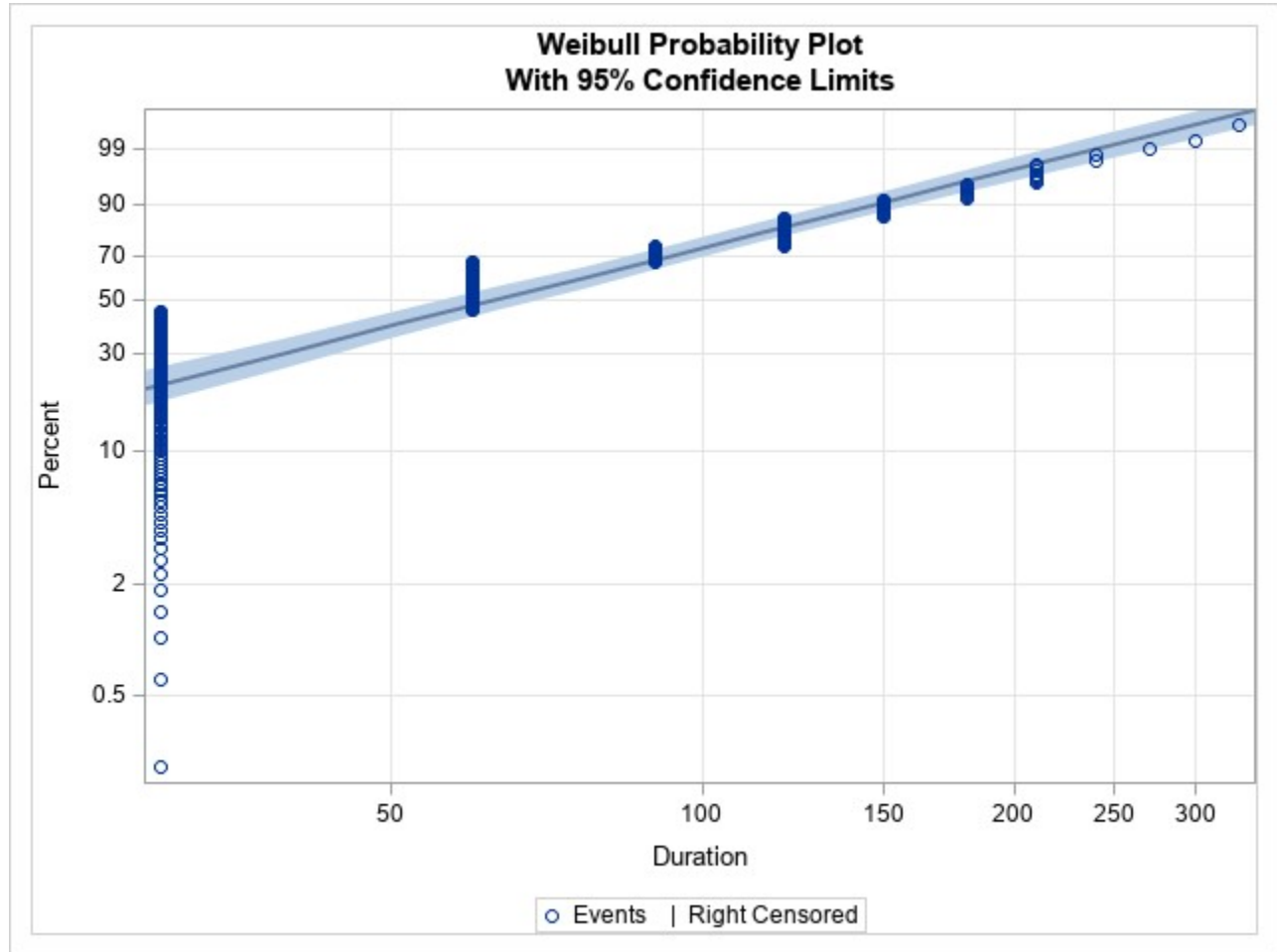
Fit Statistics	
-2 Log Likelihood	570.071
AIC (smaller is better)	574.071
AICC (smaller is better)	574.120
BIC (smaller is better)	581.081

Fit Statistics (Unlogged Response)	
-2 Log Likelihood	2560.285
Weibull AIC (smaller is better)	2564.285
Weibull AICC (smaller is better)	2564.334
Weibull BIC (smaller is better)	2571.296

Algorithm converged.

Analysis of Maximum Likelihood Parameter Estimates						
Parameter	DF	Estimate	Standard Error	95% Confidence Limits	Chi-Square	Pr > ChiSq

Intercept	1	4.4031	0.0478	4.3094	4.4969	8475.38	<.0001
Scale	1	0.7056	0.0329	0.6439	0.7733		
Weibull Scale	1	81.7071	3.9079	74.3958	89.7369		
Weibull Shape	1	1.4171	0.0662	1.2932	1.5529		



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Censoring Variable	event_kind
Censoring Value(s)	0
Number of Observations	246
Noncensored Values	246
Right Censored Values	0
Left Censored Values	0
Interval Censored Values	0
Number of Parameters	2
Name of Distribution	Lognormal
Log Likelihood	-255.5622895

Number of Observations Read	246
Number of Observations Used	246

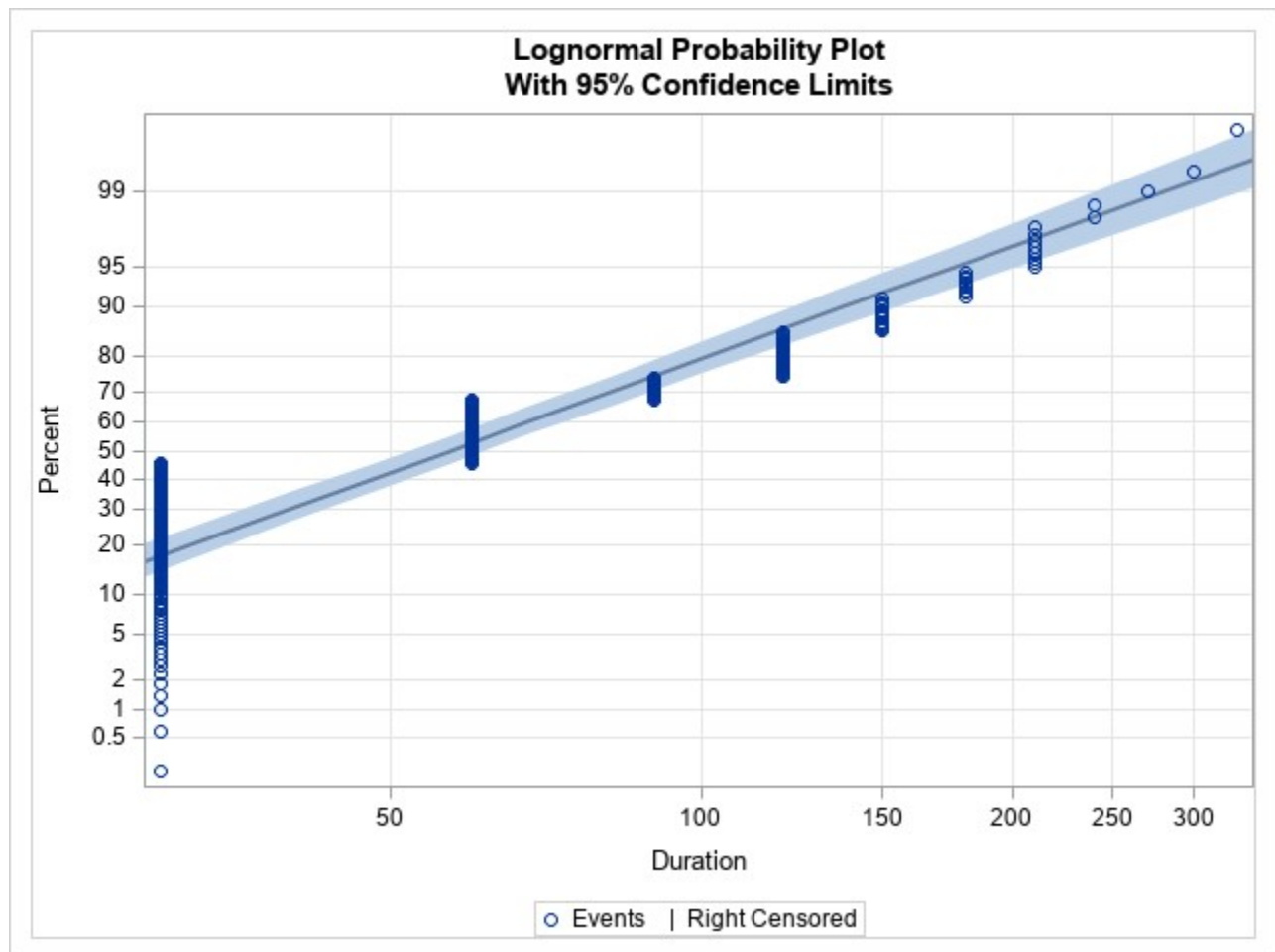
Fit Statistics	
-2 Log Likelihood	511.125
AIC (smaller is better)	515.125
AICC (smaller is better)	515.174
BIC (smaller is better)	522.135

Fit Statistics (Unlogged Response)	
-2 Log Likelihood	2501.339
Lognormal AIC (smaller is better)	2505.339
Lognormal AICC (smaller is better)	2505.388
Lognormal BIC (smaller is better)	2512.350

Algorithm converged.

Analysis of Maximum Likelihood Parameter Estimates					
			Standard		

Parameter	DF	Estimate	Error	95% Confidence Limits		Chi-Square	Pr > ChiSq
Intercept	1	4.0452	0.0436	3.9597	4.1306	8608.49	<.0001
Scale	1	0.6838	0.0308	0.6260	0.7470		



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Dependent Variable	Log(Duration)
Censoring Variable	event_kind
Censoring Value(s)	0
Number of Observations	246
Noncensored Values	246
Right Censored Values	0
Left Censored Values	0
Interval Censored Values	0
Number of Parameters	2
Name of Distribution	LLogistic
Log Likelihood	-265.1576007

Number of Observations Read	246
Number of Observations Used	246

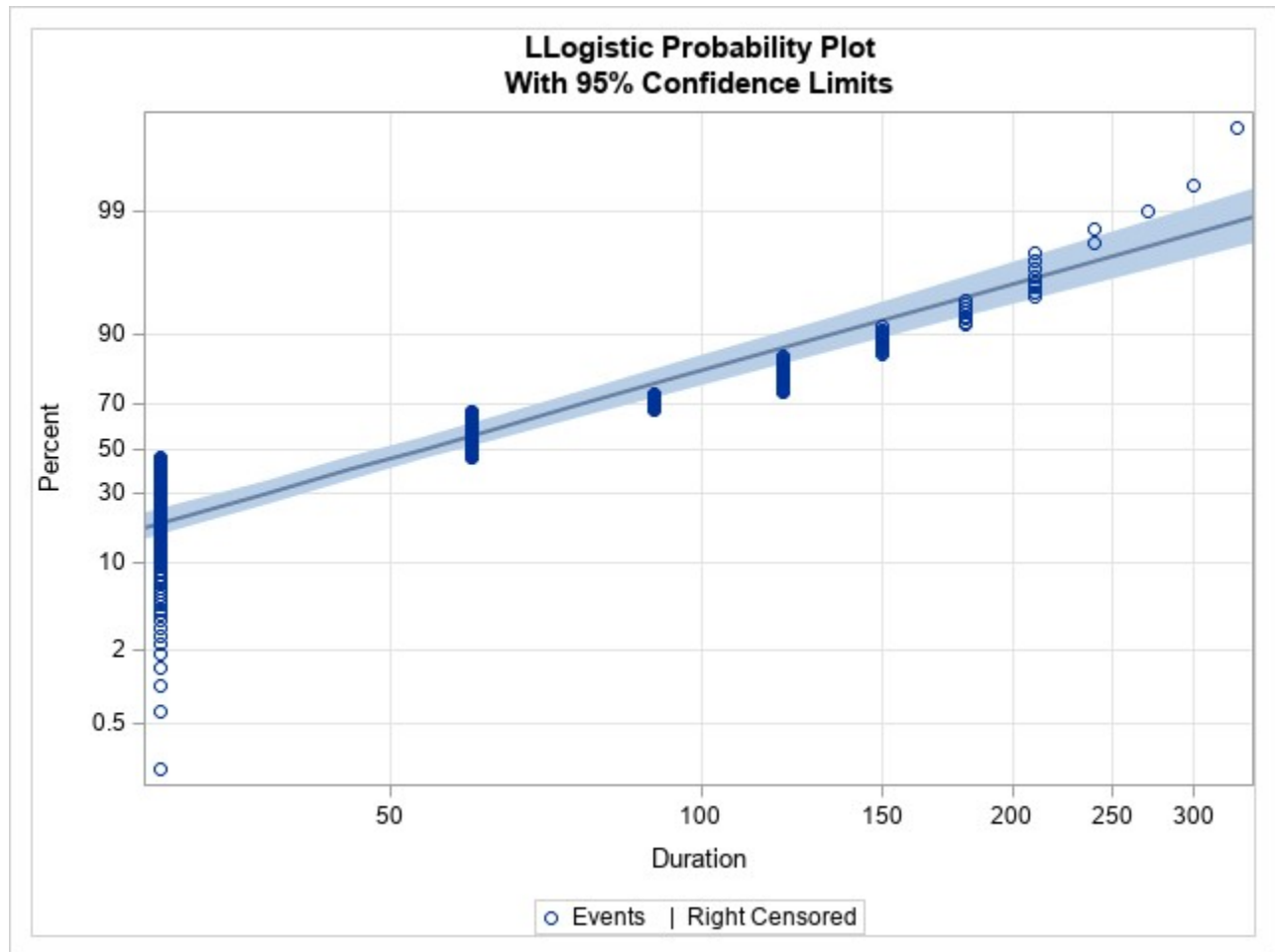
Fit Statistics	
-2 Log Likelihood	530.315
AIC (smaller is better)	534.315
AICC (smaller is better)	534.365
BIC (smaller is better)	541.326

Fit Statistics (Unlogged Response)	
-2 Log Likelihood	2520.530
LLogistic AIC (smaller is better)	2524.530
LLogistic AICC (smaller is better)	2524.579
LLogistic BIC (smaller is better)	2531.540

Algorithm converged.

Analysis of Maximum Likelihood Parameter Estimates					
			Standard		

Parameter	DF	Estimate	Error	95% Confidence Limits		Chi-Square	Pr > ChiSq
Intercept	1	3.9879	0.0470	3.8957	4.0801	7189.40	<.0001
Scale	1	0.4116	0.0212	0.3720	0.4553		



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Dependent Variable	Log(Duration)
Censoring Variable	event_kind
Censoring Value(s)	0
Number of Observations	246
Noncensored Values	246
Right Censored Values	0
Left Censored Values	0
Interval Censored Values	0
Number of Parameters	1
Name of Distribution	Gamma
Log Likelihood	-282.3217356

Number of Observations Read	246
Number of Observations Used	246

Fit Statistics	
-2 Log Likelihood	564.643
AIC (smaller is better)	566.643
AICC (smaller is better)	566.660
BIC (smaller is better)	570.149

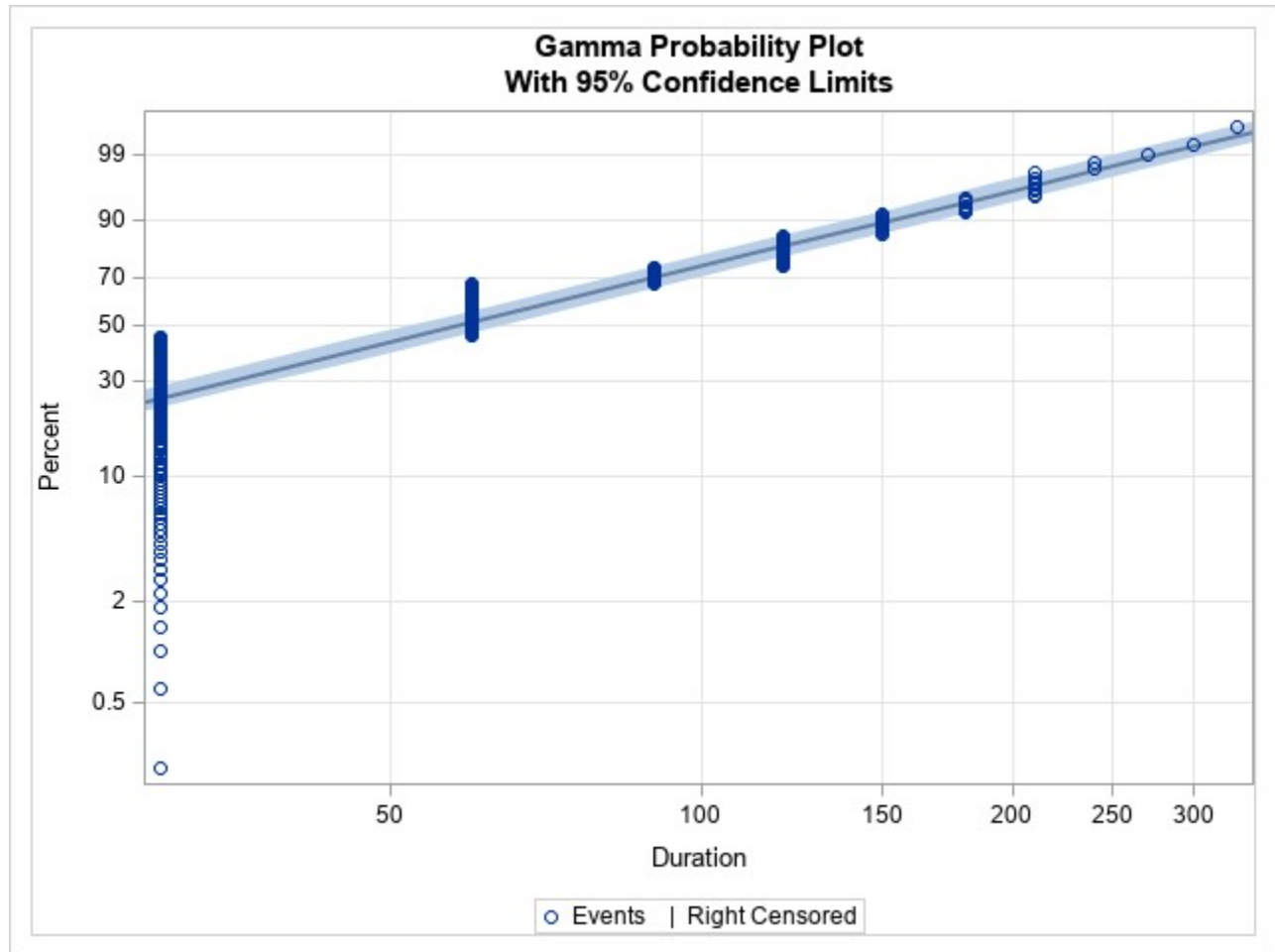
Fit Statistics (Unlogged Response)	
-2 Log Likelihood	2554.858
Gamma AIC (smaller is better)	2556.858
Gamma AICC (smaller is better)	2556.874
Gamma BIC (smaller is better)	2560.363

Algorithm converged.

Analysis of Maximum Likelihood Parameter Estimates						
Parameter	DF	Estimate	Standard Error	95% Confidence Limits	Chi-Square	Pr > ChiSq

Intercept	1	4.2978	0.0517	4.1964	4.3991	6908.48	<.0001
Scale	0	0.8110	0.0000	0.8110	0.8110		
Shape	0	0.8110	0.0000	0.8110	0.8110		

Lagrange Multiplier Statistics		
Parameter	Chi-Square	Pr > ChiSq
Scale	9.3709	0.0022
Shape	63.9221	<.0001



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Censoring Variable	event_kind
Censoring Value(s)	0
Number of Observations	246
Noncensored Values	246
Right Censored Values	0
Left Censored Values	0
Interval Censored Values	0
Number of Parameters	13
Name of Distribution	Weibull
Log Likelihood	-259.505129

Number of Observations Read	246
Number of Observations Used	246

Fit Statistics	
-2 Log Likelihood	519.010
AIC (smaller is better)	545.010
AICC (smaller is better)	546.579
BIC (smaller is better)	590.580

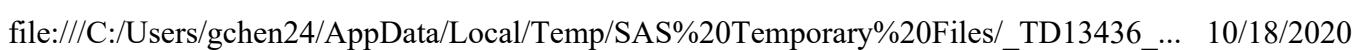
Fit Statistics (Unlogged Response)	
-2 Log Likelihood	2509.225
Weibull AIC (smaller is better)	2535.225
Weibull AICC (smaller is better)	2536.794
Weibull BIC (smaller is better)	2580.794

Algorithm converged.

Type III Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq

Unemployment	1	0.3355	0.5624
UnemploymentRate	1	0.3820	0.5365
CPI_U	1	5.9350	0.0148
Monthly_Retail_and_F	1	2.3582	0.1246
Ave_Temperature_F	1	0.2059	0.6500
Ave_Precipitation	1	2.8824	0.0896
Ave_Snowfall	1	5.1803	0.0228
Ave_heating_degree_d	1	0.1441	0.7042
Ave_Cooling_Degree_D	1	0.7788	0.3775
Daily_Dew_Point	1	0.9995	0.3174
Daily_Wind_Speed	1	0.0124	0.9114

Analysis of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	95% Confidence Limits		Chi-Square	Pr > ChiSq
Intercept	1	3.9216	9.0378	-13.7922	21.6354	0.19	0.6644
Unemployment	1	-0.0000	0.0000	-0.0000	0.0000	0.34	0.5624
UnemploymentRate	1	49.5959	80.2465	-107.684	206.8762	0.38	0.5365
CPI_U	1	-0.0254	0.0104	-0.0458	-0.0050	5.93	0.0148
Monthly_Retail_and_F	1	0.0000	0.0000	-0.0000	0.0000	2.36	0.1246
Ave_Temperature_F	1	0.0590	0.1301	-0.1959	0.3140	0.21	0.6500
Ave_Precipitation	1	1.2927	0.7614	-0.1996	2.7850	2.88	0.0896
Ave_Snowfall	1	1.8350	0.8062	0.2548	3.4152	5.18	0.0228
Ave_heating_degree_d	1	0.0499	0.1314	-0.2077	0.3075	0.14	0.7042
Ave_Cooling_Degree_D	1	-0.1204	0.1364	-0.3877	0.1470	0.78	0.3775
Daily_Dew_Point	1	0.0240	0.0240	-0.0231	0.0712	1.00	0.3174
Daily_Wind_Speed	1	0.0058	0.0520	-0.0961	0.1077	0.01	0.9114
Scale	1	0.6313	0.0298	0.5755	0.6926		
Weibull Shape	1	1.5839	0.0748	1.4439	1.7375		



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Censoring Value(s)	0
Number of Observations	246
Noncensored Values	246
Right Censored Values	0
Left Censored Values	0
Interval Censored Values	0
Number of Parameters	13
Name of Distribution	Lognormal
Log Likelihood	-233.9727344

Number of Observations Read	246
Number of Observations Used	246

Fit Statistics	
-2 Log Likelihood	467.945
AIC (smaller is better)	493.945
AICC (smaller is better)	495.514
BIC (smaller is better)	539.515

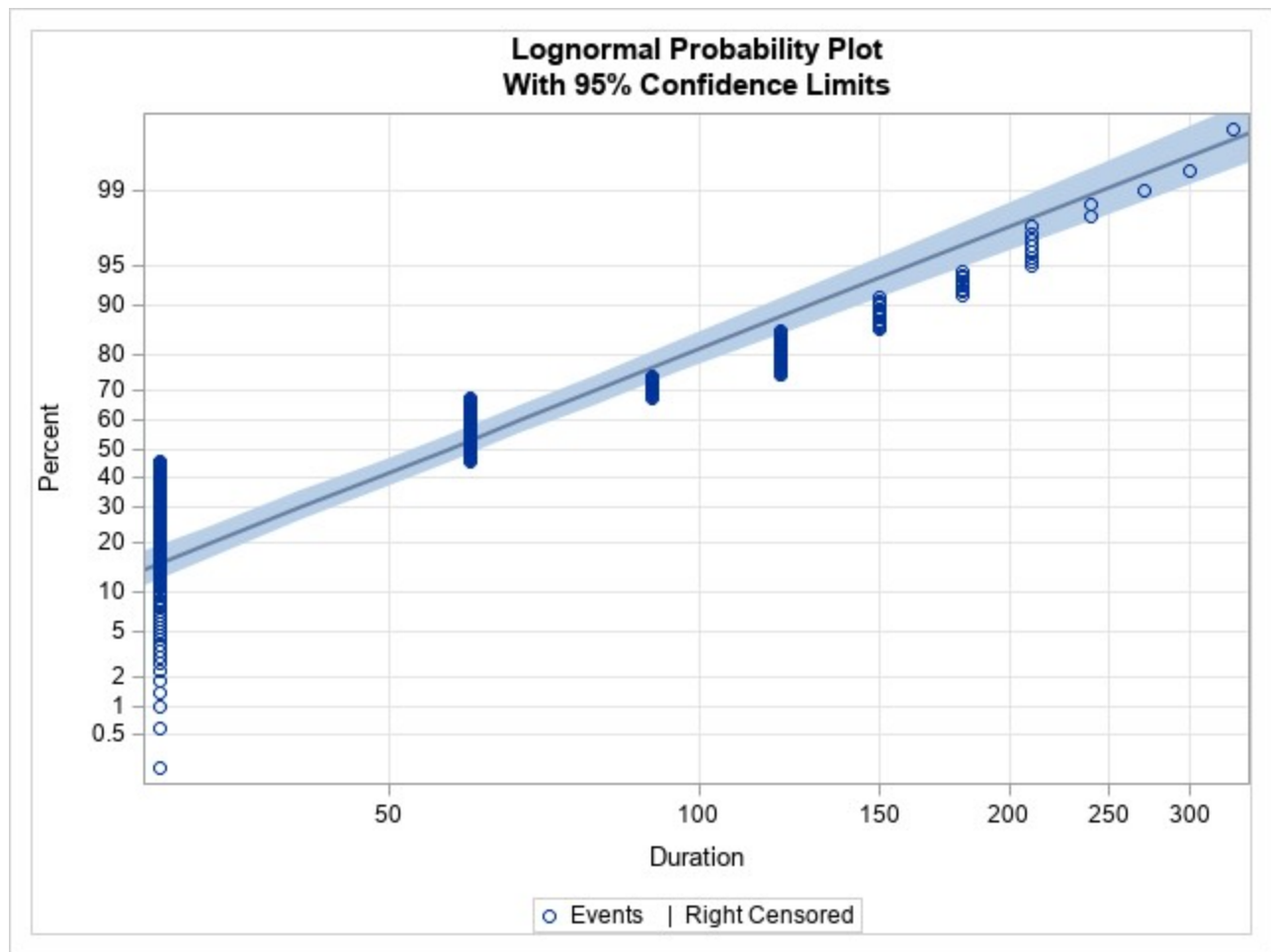
Fit Statistics (Unlogged Response)	
-2 Log Likelihood	2458.160
Lognormal AIC (smaller is better)	2484.160
Lognormal AICC (smaller is better)	2485.729
Lognormal BIC (smaller is better)	2529.729

Algorithm converged.

Type III Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq

Unemployment	1	0.3463	0.5562
UnemploymentRate	1	0.3544	0.5517
CPI_U	1	7.5705	0.0059
Monthly_Retail_and_F	1	0.2299	0.6316
Ave_Temperature_F	1	0.1213	0.7276
Ave_Precipitation	1	3.6242	0.0569
Ave_Snowfall	1	0.3088	0.5784
Ave_heating_degree_d	1	0.0194	0.8893
Ave_Cooling_Degree_D	1	0.2994	0.5842
Daily_Dew_Point	1	0.0143	0.9049
Daily_Wind_Speed	1	1.7919	0.1807

Analysis of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	95% Confidence Limits		Chi-Square	Pr > ChiSq
Intercept	1	7.3738	7.7838	-7.8821	22.6298	0.90	0.3435
Unemployment	1	0.0000	0.0000	-0.0000	0.0000	0.35	0.5562
UnemploymentRate	1	-47.7906	80.2827	-205.142	109.5607	0.35	0.5517
CPI_U	1	-0.0289	0.0105	-0.0495	-0.0083	7.57	0.0059
Monthly_Retail_and_F	1	0.0000	0.0000	-0.0000	0.0000	0.23	0.6316
Ave_Temperature_F	1	0.0386	0.1109	-0.1787	0.2559	0.12	0.7276
Ave_Precipitation	1	1.3340	0.7007	-0.0394	2.7073	3.62	0.0569
Ave_Snowfall	1	0.4539	0.8169	-1.1472	2.0550	0.31	0.5784
Ave_heating_degree_d	1	0.0156	0.1120	-0.2039	0.2351	0.02	0.8893
Ave_Cooling_Degree_D	1	-0.0630	0.1151	-0.2885	0.1626	0.30	0.5842
Daily_Dew_Point	1	0.0026	0.0219	-0.0403	0.0456	0.01	0.9049
Daily_Wind_Speed	1	0.0693	0.0518	-0.0322	0.1708	1.79	0.1807
Scale	1	0.6264	0.0282	0.5734	0.6842		



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Dependent Variable	Log(Duration)
Censoring Variable	event_kind
Censoring Value(s)	0
Number of Observations	246
Noncensored Values	246
Right Censored Values	0
Left Censored Values	0
Interval Censored Values	0
Number of Parameters	13
Name of Distribution	LLogistic
Log Likelihood	-239.5048976

Number of Observations Read	246
Number of Observations Used	246

Fit Statistics	
-2 Log Likelihood	479.010
AIC (smaller is better)	505.010
AICC (smaller is better)	506.579
BIC (smaller is better)	550.579

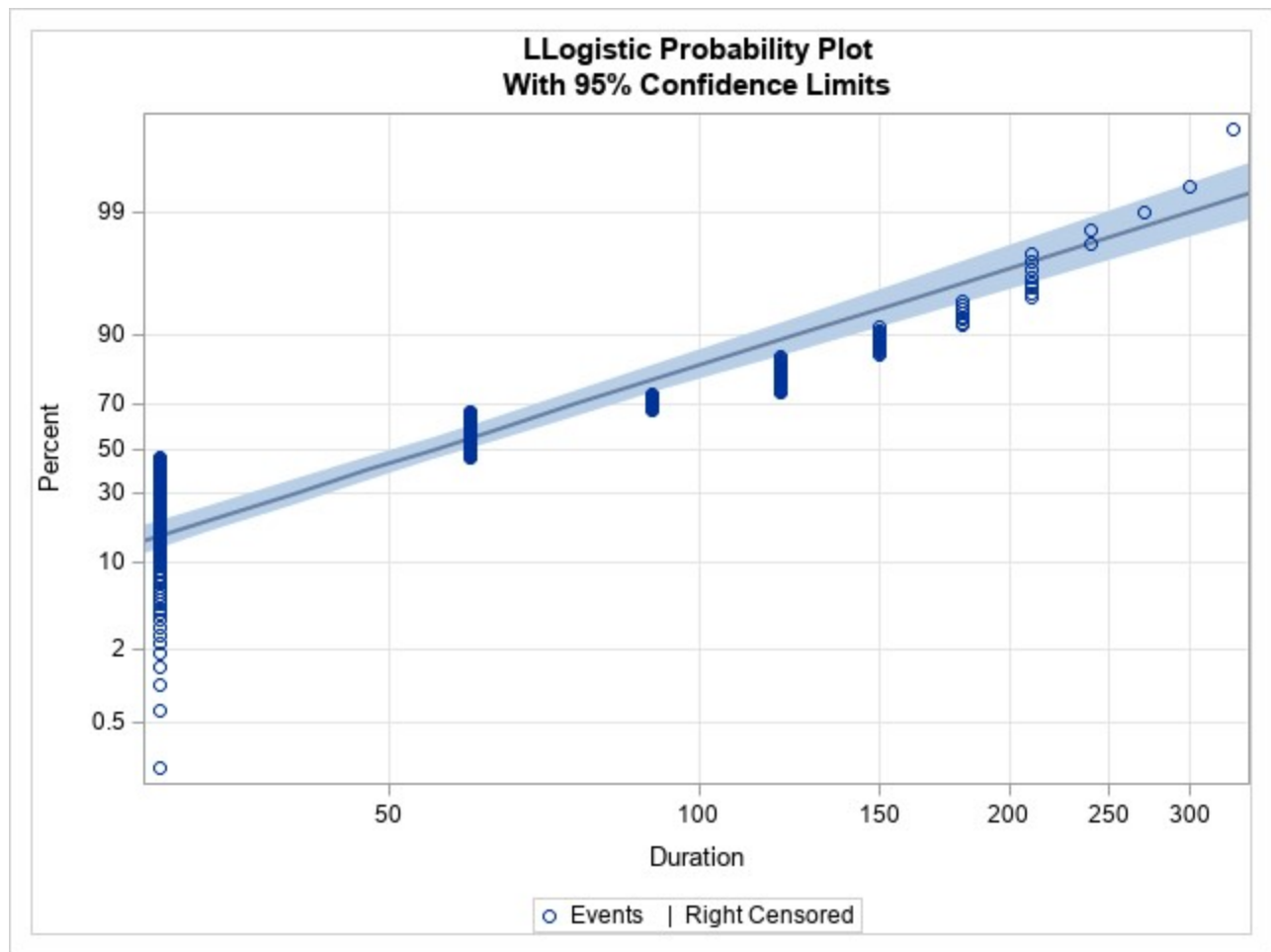
Fit Statistics (Unlogged Response)	
-2 Log Likelihood	2469.224
LLogistic AIC (smaller is better)	2495.224
LLogistic AICC (smaller is better)	2496.793
LLogistic BIC (smaller is better)	2540.794

Algorithm converged.

Type III Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq

Unemployment	1	0.5443	0.4607
UnemploymentRate	1	0.5811	0.4459
CPI_U	1	10.2191	0.0014
Monthly_Retail_and_F	1	0.0989	0.7532
Ave_Temperature_F	1	0.1378	0.7104
Ave_Precipitation	1	4.4608	0.0347
Ave_Snowfall	1	0.0000	0.9983
Ave_heating_degree_d	1	0.0104	0.9189
Ave_Cooling_Degree_D	1	0.2315	0.6304
Daily_Dew_Point	1	0.0414	0.8388
Daily_Wind_Speed	1	2.9424	0.0863

Analysis of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	95% Confidence Limits		Chi-Square	Pr > ChiSq
Intercept	1	8.6867	8.1692	-7.3246	24.6981	1.13	0.2876
Unemployment	1	0.0000	0.0000	-0.0000	0.0000	0.54	0.4607
UnemploymentRate	1	-64.1651	84.1762	-229.147	100.8173	0.58	0.4459
CPI_U	1	-0.0341	0.0107	-0.0549	-0.0132	10.22	0.0014
Monthly_Retail_and_F	1	0.0000	0.0000	-0.0000	0.0000	0.10	0.7532
Ave_Temperature_F	1	0.0430	0.1157	-0.1838	0.2697	0.14	0.7104
Ave_Precipitation	1	1.4910	0.7059	0.1074	2.8746	4.46	0.0347
Ave_Snowfall	1	0.0017	0.8007	-1.5677	1.5711	0.00	0.9983
Ave_heating_degree_d	1	0.0119	0.1171	-0.2176	0.2415	0.01	0.9189
Ave_Cooling_Degree_D	1	-0.0583	0.1212	-0.2959	0.1793	0.23	0.6304
Daily_Dew_Point	1	-0.0045	0.0221	-0.0479	0.0389	0.04	0.8388
Daily_Wind_Speed	1	0.0912	0.0532	-0.0130	0.1954	2.94	0.0863
Scale	1	0.3658	0.0192	0.3301	0.4054		



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Censoring Variable	event_kind
Censoring Value(s)	0
Number of Observations	246
Noncensored Values	246
Right Censored Values	0
Left Censored Values	0
Interval Censored Values	0
Number of Parameters	12
Name of Distribution	Gamma
Log Likelihood	-265.2089251

Number of Observations Read	246
Number of Observations Used	246

Fit Statistics	
-2 Log Likelihood	530.418
AIC (smaller is better)	554.418
AICC (smaller is better)	555.757
BIC (smaller is better)	596.482

Fit Statistics (Unlogged Response)	
-2 Log Likelihood	2520.632
Gamma AIC (smaller is better)	2544.632
Gamma AICC (smaller is better)	2545.971
Gamma BIC (smaller is better)	2586.696

Algorithm converged.

Type III Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq

Unemployment	1	0.0135	0.9076
UnemploymentRate	1	0.0175	0.8946
CPI_U	1	4.1006	0.0429
Monthly_Retail_and_F	1	0.8638	0.3527
Ave_Temperature_F	1	0.0986	0.7536
Ave_Precipitation	1	2.1791	0.1399
Ave_Snowfall	1	1.6532	0.1985
Ave_heating_degree_d	1	0.0461	0.8300
Ave_Cooling_Degree_D	1	0.3502	0.5540
Daily_Dew_Point	1	0.2954	0.5868
Daily_Wind_Speed	1	0.2502	0.6170

Analysis of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	95% Confidence Limits		Chi-Square	Pr > ChiSq
Intercept	1	5.4135	11.0166	-16.1786	27.0056	0.24	0.6231
Unemployment	1	-0.0000	0.0000	-0.0000	0.0000	0.01	0.9076
UnemploymentRate	1	13.6965	103.4130	-188.989	216.3823	0.02	0.8946
CPI_U	1	-0.0272	0.0134	-0.0536	-0.0009	4.10	0.0429
Monthly_Retail_and_F	1	0.0000	0.0000	-0.0000	0.0000	0.86	0.3527
Ave_Temperature_F	1	0.0495	0.1578	-0.2597	0.3587	0.10	0.7536
Ave_Precipitation	1	1.3865	0.9392	-0.4544	3.2274	2.18	0.1399
Ave_Snowfall	1	1.3343	1.0377	-0.6996	3.3682	1.65	0.1985
Ave_heating_degree_d	1	0.0342	0.1593	-0.2780	0.3464	0.05	0.8300
Ave_Cooling_Degree_D	1	-0.0976	0.1649	-0.4207	0.2256	0.35	0.5540
Daily_Dew_Point	1	0.0161	0.0297	-0.0421	0.0744	0.30	0.5868
Daily_Wind_Speed	1	0.0332	0.0665	-0.0970	0.1635	0.25	0.6170
Scale	0	0.8110	0.0000	0.8110	0.8110		
Shape	0	0.8110	0.0000	0.8110	0.8110		

Lagrange Multiplier Statistics		
Parameter	Chi-Square	Pr > ChiSq
Scale	37.8396	<.0001
Shape	45.4765	<.0001

