

Linear Regression

Creation Date: Saturday, July 16, 2022 11:03:46 PM

Author: willibayu28@gmail.com

Contents

Linear Regression

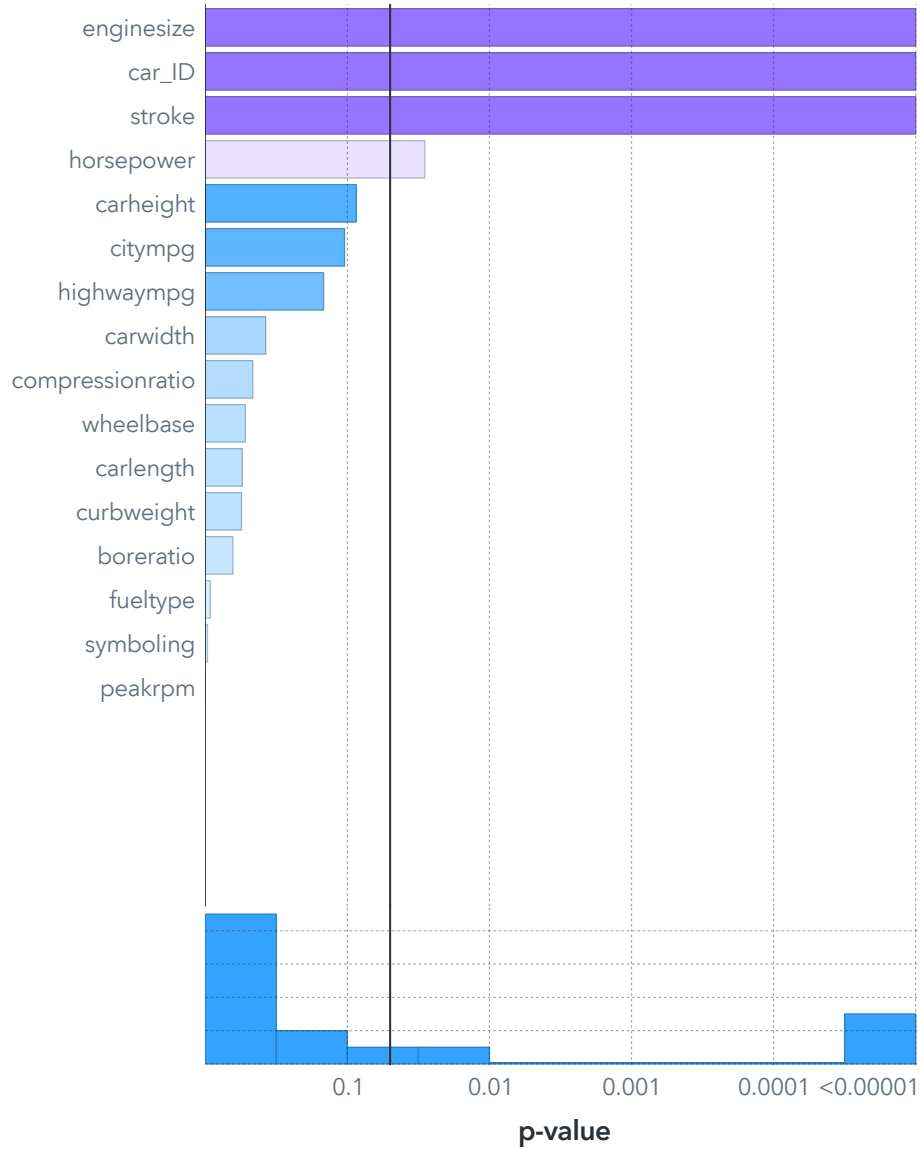
Linear Regression Model	1
Generalized linear model - price 1	1.1
Fit Summary	1.2
Residual Plot	1.3
Assessment	1.4
Expanded Pages	2
Generalized linear model - price 1 Supplement 1	2
Generalized linear model - price 1 Supplement 2	3
Generalized linear model - price 1 Supplement 3	4
Generalized linear model - price 1 Supplement 4	5
Generalized linear model - price 1 Supplement 5	6
Generalized linear model - price 1 Supplement 6	7
Generalized linear model - price 1 Supplement 7	8
Generalized linear model - price 1 Supplement 8	9
Generalized linear model - price 1 Supplement 9	10
Generalized linear model - price 1 Supplement 10	11

Linear Regression Model



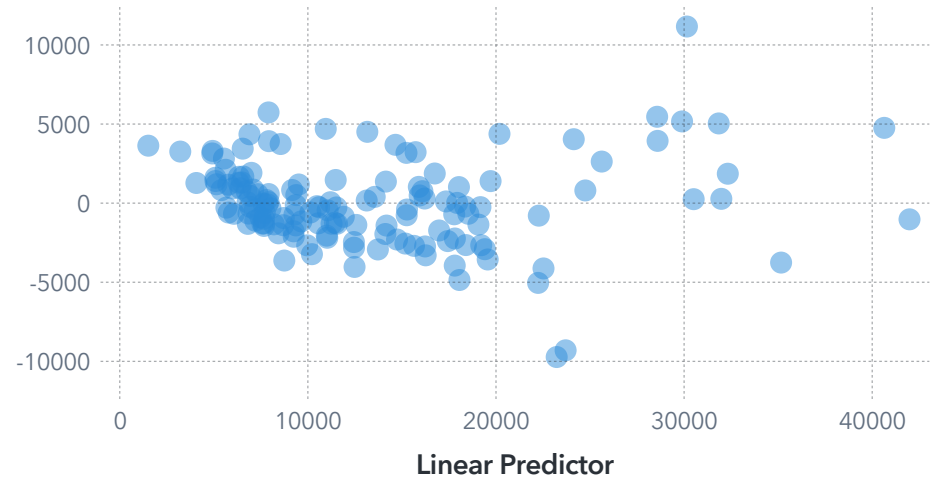
Generalized Linear Model **price** Fit: **AICC 2,723.55** Observations: **205 of 205**

Fit Summary

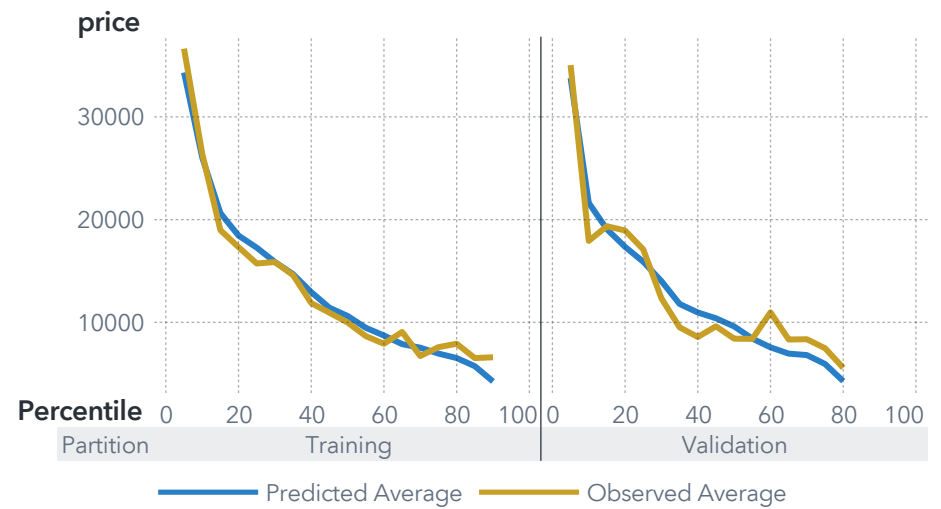


Residual Plot

Residual



Assessment



Description	Value
Data Source	Public.CARPRICE_ASSIGNMENT
Response Variable	price
Distribution	Normal
Link Function	Identity
Optimization Technique	Newton-Raphson with Ridging
Predicted Response	P_price



Description	Value	✕✕
Number of Model Effects	17	
Number of Classification Effects	1	
Number of Columns in X	18	
Rank of Cross-product Matrix	16	
Number of Observations Read	205	
Number of Observations Used	205	
Number of Observations Used for Training	144	
Number of Observations Used for Validation	61	

Generalized linear model - price 1 Supplement 3

Reason	Status
Convergence criterion (ABSGCONV=1E-7) satisfied.	0

Statistic	Value	✕✕
-2 Log Likelihood	2684.694	
AIC	2718.694	
AICC	2723.551	
BIC	2769.181	

Generalized linear model - price 1 Supplement 6

Parameter	Estimate	Standard Error	Chi-Square	Pr > ChiSq
Intercept	-40770.6	16532.1	6.081884	0.01366
fueltype diesel	-580.578	5990.33	0.009393	0.92279
fueltype gas	0	.	.	.
horsepower	39.3601	17.97358	4.795601	0.02853
boreratio	623.436	1331.277	0.219304	0.63957
car_ID	-23.5885	4.3726	29.10199	<0.00001
carheight	279.0417	162.7592	2.93932	0.08645
carlength	-37.5556	62.70341	0.358729	0.54921
carwidth	223.9653	252.9308	0.784076	0.37590
citympg	-319.397	196.8607	2.632349	0.10471
compressionratio	322.5053	439.8294	0.537657	0.46341
curbweight	1.192369	2.024683	0.346823	0.55592
enginesize	126.8756	15.00509	71.49559	<0.00001
highwaympg	249.1674	171.8373	2.102555	0.14705
peakrpm	2.110068	0	Infinity	<0.00001
stroke	-3939.88	874.7289	20.28702	<0.00001
symboling	11.57671	260.8572	0.00197	0.96460
wheelbase	71.9867	112.5615	0.409001	0.52248
Dispersion	7317898	862422.5	.	.

Generalized linear model - price 1 Supplement 7

Effect	DF	Chi-Square	Pr > ChiSq
fueltype	1	0.009393	0.92279
horsepower	1	4.795601	0.02853
boreratio	1	0.219304	0.63957
car_ID	1	29.10199	<0.00001
carheight	1	2.93932	0.08645
carlength	1	0.358729	0.54921
carwidth	1	0.784076	0.37590
citympg	1	2.632349	0.10471
compressionratio	1	0.537657	0.46341
curbweight	1	0.346823	0.55592
enginesize	1	71.49559	<0.00001
highwaympg	1	2.102555	0.14705
peakrpm	0	.	.
stroke	1	20.28702	<0.00001
symboling	1	0.00197	0.96460
wheelbase	1	0.409001	0.52248

Generalized linear model - price 1 Supplement 8

Percentile	Training Observations	Training Predicted Average	Training Observed Average	Validation Observations	Validation Predicted Average	Validation Observed Average
5	8	34322.782417	36643.6875	4	33789.477577	35044.5
10	8	26059.973877	26435.75	4	21628.865207	17929.75
15	8	20640.087118	18976.125	4	19061.69068	19358.75
20	8	18444.090807	17323.020875	4	17347.736371	18937.5
25	8	17270.165857	15729.875	4	15894.602398	17096.25
30	8	15875.548892	15869.25	4	14009.595113	12325.25
35	8	14689.962563	14595.75	4	11786.680049	9515
40	8	12939.820508	11873.125	4	10959.49674	8575.5
45	8	11424.779741	10936.875	4	10395.606051	9614.25
50	8	10620.696224	9985.625	4	9600.7738621	8411.25
55	8	9471.1502077	8657.625	4	8415.8731419	8391.25
60	8	8717.4147397	7915	4	7564.6754867	10970.75
65	8	7879.3991015	9064.75	4	6956.0281426	8327.875
70	8	7530.5053392	6721.25	4	6811.1435048	8357.75
75	8	6960.2939876	7586.8125	4	5948.5292376	7481.5
80	8	6523.4861653	7916.625	1	4279.0634509	5572
85	8	5732.9001731	6520.5	0	.	.
90	8	4247.588156	6599	0	.	.
95	0	.	.	0	.	.
100	0	.	.	0	.	.

Generalized linear model - price 1 Supplement 9

Partition	ASE	Observed Average	SSE	Observations Used	Unused
Training	7,317,897.8817	36643.6875	1,053,777,294.9664	144	0
Validation	13,108,782.8466	35044.5	799,635,753.6456	61	0

