

```

1  *-----
   -*
2  User:                dwijd
3  Date:                11 August 2021
4  Time:                14:41:11
5  *-----
   -*
6  * Training Output
7  *-----
   -*
8
9
10
11
12 Variable Summary
13
14      Measurement      Frequency
15  Role      Level      Count
16
17 INPUT      BINARY      2
18 INPUT      INTERVAL    12
19 TARGET     INTERVAL     1
20
21
22
23
24 Predicted and decision variables
25
26 Type      Variable      Label
27
28 TARGET     UCity
29 PREDICTED  P_UCity      Predicted: UCity
30 RESIDUAL   R_UCity      Residual: UCity
31
32
33

```

34

35

36 The DMREG Procedure

37

38 Model Information

39

40 Training Data Set WORK.EM\_DMREG.VIEW

41 DMDB Catalog WORK.REG\_DMDB

42 Target Variable UCity

43 Target Measurement Level Interval

44 Error Normal

45 Link Function Identity

46 Number of Model Parameters 15

47 Number of Observations 31790

48

49

50

51

52 Stepwise Selection Procedure

53

54

55 Step 0: Intercept entered.

56

57

58 Analysis of Variance

59

60 Sum of

61 Source DF Squares Mean Square

F Value Pr > F

62

63 Model 0 0 .

. .

64 Error 31789 1181900 37.179532

65 Corrected Total 31789 1181900

66

67

68 Model Fit Statistics

69

70 R-Square 0.0000 Adj R-Sq 0.0000  
 71 AIC 114945.9594 BIC 114944.0730  
 72 SBC 114954.3263 C(p) 1635747.1576

73

74

75

76

77 Analysis of Maximum Likelihood Estimates

78

79 Standard  
 80 Parameter DF Estimate Error t Value  
 Pr > |t|

81

82 Intercept 1 22.4709 0.0342 657.07  
 <.0001

83

84

85 Step 1: Effect SQRT\_comb08 entered.

86

87

88 Analysis of Variance

89

90 Sum of  
 91 Source DF Squares Mean Square  
 F Value Pr > F

92

93 Model 1 1109626 1109626  
 488041 <.0001

94 Error 31788 72274 2.273631

95 Corrected Total 31789 1181900

96

97

98 Model Fit Statistics

99

100	R-Square	0.9388	Adj R-Sq	0.9388
101	AIC	26113.6097	BIC	26111.9094
102	SBC	26130.3435	C(p)	70185.1681

103

104

105                   Type 3 Analysis of Effects

106

107			Sum of		
108	Effect	DF	Squares	F Value	Pr > F
109					
110	SQRT_comb08	1	1109625.96	488041	<.0001

111

112

113                   Analysis of Maximum Likelihood Estimates

114

115			Standard		
116	Parameter	DF	Estimate	Error	t Value
	Pr >  t				
117					
118	Intercept	1	-8.4870	0.0451	-188.12
	<.0001				
119	SQRT_comb08	1	54.8852	0.0786	698.60
	<.0001				

120

121

122 Step 2: Effect SQRT\_highway08 entered.

123

124

125                   Analysis of Variance

126

127			Sum of		
128	Source	DF	Squares	Mean Square	
	F Value				Pr > F

129

130	Model	2	1132536	566268	
	364638				<.0001

131	Error	31787	49364	1.552960
132	Corrected Total	31789	1181900	

133

134

135 Model Fit Statistics

136

137	R-Square	0.9582	Adj R-Sq	0.9582
138	AIC	13995.7786	BIC	13993.9264
139	SBC	14020.8794	C(p)	37863.2667

140

141

142 Type 3 Analysis of Effects

143

144			Sum of		
145	Effect	DF	Squares	F Value	Pr > F
146					
147	SQRT_comb08	1	154542.524	99514.8	<.0001
148	SQRT_highway08	1	22910.2358	14752.6	<.0001

149

150

151 Analysis of Maximum Likelihood Estimates

152

153			Standard	
154	Parameter	DF	Estimate	t Value
	Pr >  t		Error	
155				
156	Intercept	1	-8.8355	-236.27
	<.0001		0.0374	
157	SQRT_comb08	1	87.7301	315.46
	<.0001		0.2781	
158	SQRT_highway08	1	-31.1906	-121.46
	<.0001		0.2568	

159

160

161 Step 3: Effect UHighway entered.

162

163

164

## Analysis of Variance

165

166

Source	DF	Sum of Squares	Mean Square
F Value	Pr > F		

168

Model	3	1154406	384802
	444865	<.0001	

Error	31786	27494	0.864986
-------	-------	-------	----------

Corrected Total	31789	1181900	
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172

173

## Model Fit Statistics

175

R-Square	0.9767	Adj R-Sq	0.9767
----------	--------	----------	--------

AIC	-4606.8668	BIC	-4606.3759
-----	------------	-----	------------

SBC	-4573.3991	C(p)	7009.7532
-----	------------	------	-----------

179

180

## Type 3 Analysis of Effects

182

183

Effect	DF	Sum of Squares	F Value	Pr > F
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185

SQRT_comb08	1	97285.0409	112470	<.0001
-------------	---	------------	--------	--------

SQRT_highway08	1	44468.4521	51409.4	<.0001
----------------	---	------------	---------	--------

UHighway	1	21869.4854	25283.0	<.0001
----------	---	------------	---------	--------

189

190

## Analysis of Maximum Likelihood Estimates

192

193

Parameter	DF	Estimate	Standard Error	t Value
Pr >  t				

195

196	Intercept	1	-4.1185	0.0407	-101.12
	<.0001				
197	SQRT_comb08	1	74.7762	0.2230	335.37
	<.0001				
198	SQRT_highway08	1	-56.3576	0.2486	-226.74
	<.0001				
199	UHighway	1	0.5082	0.00320	159.01
	<.0001				

200

201

202 Step 4: Effect PWR\_city08 entered.

203

204

205 Analysis of Variance

206

207			Sum of	
208	Source	DF	Squares	Mean Square
	F Value	Pr > F		

209

210	Model	4	1155808	288952
	351992	<.0001		

211	Error	31785	26092	0.820904
-----	-------	-------	-------	----------

212	Corrected Total	31789	1181900	
-----	-----------------	-------	---------	--

213

214

215 Model Fit Statistics

216

217	R-Square	0.9779	Adj R-Sq	0.9779
-----	----------	--------	----------	--------

218	AIC	-6268.7157	BIC	-6268.1176
-----	-----	------------	-----	------------

219	SBC	-6226.8812	C(p)	5033.6582
-----	-----	------------	------	-----------

220

221

222 Type 3 Analysis of Effects

223

224			Sum of	
225	Effect	DF	Squares	F Value
				Pr > F

226

227	PWR_city08	1	1402.0158	1707.89	<.0001
228	SQRT_comb08	1	7933.3034	9664.10	<.0001
229	SQRT_highway08	1	38727.0327	47176.1	<.0001
230	UHighway	1	22430.1455	27323.7	<.0001

231

232

233 Analysis of Maximum Likelihood Estimates

234

235				Standard	
236	Parameter	DF	Estimate	Error	t Value
	Pr >  t				

237

238	Intercept	1	-11.0915	0.1733	-63.99
	<.0001				

239	PWR_city08	1	20.7566	0.5023	41.33
	<.0001				

240	SQRT_comb08	1	53.9489	0.5488	98.31
	<.0001				

241	SQRT_highway08	1	-54.0152	0.2487	-217.20
	<.0001				

242	UHighway	1	0.5686	0.00344	165.30
	<.0001				

243

244

245 Step 5: Effect PWR\_barrels08 entered.

246

247

248 Analysis of Variance

249

250			Sum of	
251	Source	DF	Squares	Mean Square
	F Value			
	Pr > F			

252

253	Model	5	1156790	231358
	292845	<.0001		



254	Error	31784	25110	0.790034
255	Corrected Total	31789	1181900	

256

257

258 Model Fit Statistics

259

260	R-Square	0.9788	Adj R-Sq	0.9788
261	AIC	-7486.2306	BIC	-7485.4840
262	SBC	-7436.0291	C(p)	3650.1725

263

264

265 Type 3 Analysis of Effects

266

267			Sum of		
268	Effect	DF	Squares	F Value	Pr > F
269					
270	PWR_barrels08	1	981.9918	1242.97	<.0001
271	PWR_city08	1	1605.6592	2032.39	<.0001
272	SQRT_comb08	1	3548.7929	4491.95	<.0001
273	SQRT_highway08	1	35958.6851	45515.3	<.0001
274	UHighway	1	20845.2020	26385.2	<.0001

275

276

277 Analysis of Maximum Likelihood Estimates

278

279			Standard	
280	Parameter	DF	Estimate	t Value
	Pr >  t		Error	

281

282	Intercept	1	4.5125	0.4741	9.52
					<.0001

283	PWR_barrels08	1	-14.8606	0.4215	-35.26
					<.0001

284	PWR_city08	1	22.3006	0.4947	45.08
					<.0001

285	SQRT_comb08	1	42.3181	0.6314	67.02
-----	-------------	---	---------	--------	-------

286 SQRT\_highway08 1 -52.6760 0.2469 -213.34  
<.0001

287 UHighway 1 0.5529 0.00340 162.44  
<.0001

288

289

290 Step 6: Effect IMP\_cylinders entered.

291

292

293 Analysis of Variance

294

Source	DF	Sum of Squares	Mean Square
F Value	Pr > F		

297

Model	6	1157210	192868
	248275	<.0001	

Error	31783	24690	0.776833
-------	-------	-------	----------

Corrected Total	31789	1181900	
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301

302

303 Model Fit Statistics

304

R-Square	0.9791	Adj R-Sq	0.9791
----------	--------	----------	--------

AIC	-8020.9396	BIC	-8020.1787
-----	------------	-----	------------

SBC	-7962.3712	C(p)	3059.0612
-----	------------	------	-----------

308

309

310 Type 3 Analysis of Effects

311

Effect	DF	Sum of Squares	F Value	Pr > F
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314

IMP_cylinders	1	420.3799	541.15	<.0001
---------------	---	----------	--------	--------

PWR_barrels08	1	1128.4165	1452.59	<.0001
---------------	---	-----------	---------	--------

317	PWR_city08	1	1897.6424	2442.79	<.0001
318	SQRT_comb08	1	3600.9281	4635.40	<.0001
319	SQRT_highway08	1	36379.0467	46830.0	<.0001
320	UHighway	1	19658.1622	25305.5	<.0001

321

322

323 Analysis of Maximum Likelihood Estimates

324

325				Standard	
326	Parameter	DF	Estimate	Error	t Value
	Pr >  t				

327

328	Intercept	1	3.3944	0.4726	7.18
	<.0001				

329	IMP_cylinders	1	0.1105	0.00475	23.26
	<.0001				

330	PWR_barrels08	1	-16.0485	0.4211	-38.11
	<.0001				

331	PWR_city08	1	24.8338	0.5025	49.42
	<.0001				

332	SQRT_comb08	1	42.6381	0.6263	68.08
	<.0001				

333	SQRT_highway08	1	-53.2877	0.2462	-216.40
	<.0001				

334	UHighway	1	0.5421	0.00341	159.08
	<.0001				

335

336

337 Step 7: Effect PWR\_youSaveSpend entered.

338

339

340 Analysis of Variance

341

342			Sum of	
343	Source	DF	Squares	Mean Square
	F Value	Pr > F		

```

344
345 Model              7              1157730              165390
      217478      <.0001
346 Error              31782              24170              0.760492
347 Corrected Total    31789              1181900

```

348

349

350 Model Fit Statistics

351

```

352 R-Square          0.9795      Adj R-Sq      0.9795
353 AIC              -8695.7561      BIC          -8694.8497
354 SBC              -8628.8209      C(p)          2327.2538

```

355

356

357 Type 3 Analysis of Effects

358

```

359              Sum of
360 Effect              DF      Squares      F Value      Pr > F
361
362 IMP_cylinders          1      624.2957      820.91      <.0001
363 PWR_barrels08          1      1102.2299      1449.36      <.0001
364 PWR_city08             1      1952.8189      2567.83      <.0001
365 PWR_youSaveSpend       1      520.1012      683.90      <.0001
366 SQRT_comb08            1      2782.0508      3658.22      <.0001
367 SQRT_highway08         1      31580.6643      41526.6      <.0001
368 UHighway              1      18472.4986      24290.2      <.0001

```

369

370

371 Analysis of Maximum Likelihood Estimates

372

```

373              Standard
374 Parameter              DF      Estimate      Error      t Value
      Pr > |t|

```

375

```

376 Intercept              1      3.6117      0.4677      7.72
      <.0001

```

377	IMP_cylinders	1	0.1380	0.00482	28.65
	<.0001				
378	PWR_barrels08	1	-15.8635	0.4167	-38.07
	<.0001				
379	PWR_city08	1	25.2024	0.4973	50.67
	<.0001				
380	PWR_youSaveSpend	1	2.2479	0.0860	26.15
	<.0001				
381	SQRT_comb08	1	38.6153	0.6384	60.48
	<.0001				
382	SQRT_highway08	1	-51.5215	0.2528	-203.78
	<.0001				
383	UHighway	1	0.5302	0.00340	155.85
	<.0001				

384

385

386 Step 8: Effect FuelNum entered.

387

388

389 Analysis of Variance

390

Source	DF	Sum of Squares	Mean Square
F Value	Pr > F		

393

Model	8	1158833	144854
	199570	<.0001	

Error	31781	23068	0.725830
-------	-------	-------	----------

Corrected Total	31789	1181900	
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397

398

399 Model Fit Statistics

400

R-Square	0.9805	Adj R-Sq	0.9805
----------	--------	----------	--------

AIC	-10177.7613	BIC	-10176.1805
-----	-------------	-----	-------------

SBC	-10102.4591	C(p)	773.9404
-----	-------------	------	----------

404

405

406 Type 3 Analysis of Effects

407

408

Effect	DF	Sum of Squares	F Value	Pr > F
FuelNum	1	1102.3606	1518.76	<.0001
IMP_cylinders	1	373.6674	514.81	<.0001
PWR_barrels08	1	2061.2235	2839.81	<.0001
PWR_city08	1	2137.7034	2945.18	<.0001
PWR_youSaveSpend	1	1528.8928	2106.41	<.0001
SQRT_comb08	1	1034.7959	1425.67	<.0001
SQRT_highway08	1	27563.7015	37975.4	<.0001
UHighway	1	16013.9379	22062.9	<.0001

419

420

421 Analysis of Maximum Likelihood Estimates

422

423

Parameter	DF	Estimate	Standard Error	t Value	Pr >  t
Intercept	1	16.8365	0.5691	29.58	<.0001
FuelNum	1	-0.4471	0.0115	-38.97	<.0001
IMP_cylinders	1	0.1081	0.00477	22.69	<.0001
PWR_barrels08	1	-25.1070	0.4711	-53.29	<.0001
PWR_city08	1	26.4232	0.4869	54.27	<.0001
PWR_youSaveSpend	1	5.1554	0.1123	45.90	<.0001
SQRT_comb08	1	26.3702	0.6984	37.76	<.0001

433 SQRT\_highway08 1 -49.3466 0.2532 -194.87  
 <.0001

434 UHighway 1 0.5038 0.00339 148.54  
 <.0001

435

436

437 Step 9: Effect Transmission entered.

438

439

440 Analysis of Variance

441

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
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444

Model	9	1159085	128787	179396	<.0001
-------	---	---------	--------	--------	--------

Error	31780	22815	0.717895		
-------	-------	-------	----------	--	--

Corrected Total	31789	1181900			
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448

449

450 Model Fit Statistics

451

R-Square	0.9807	Adj R-Sq	0.9807
----------	--------	----------	--------

AIC	-10526.2113	BIC	-10524.4596
-----	-------------	-----	-------------

SBC	-10442.5422	C(p)	419.1274
-----	-------------	------	----------

455

456

457 Type 3 Analysis of Effects

458

Effect	DF	Sum of Squares	F Value	Pr > F
--------	----	----------------	---------	--------

461

FuelNum	1	1072.5585	1494.03	<.0001
---------	---	-----------	---------	--------

IMP_cylinders	1	465.0170	647.75	<.0001
---------------	---	----------	--------	--------

464	PWR_barrels08	1	2020.5174	2814.50	<.0001
465	PWR_city08	1	2223.2754	3096.94	<.0001
466	PWR_youSaveSpend	1	1489.2038	2074.40	<.0001
467	SQRT_comb08	1	1022.5670	1424.40	<.0001
468	SQRT_highway08	1	27620.1732	38473.8	<.0001
469	Transmission	1	252.8987	352.28	<.0001
470	UHighway	1	16120.0320	22454.6	<.0001

471

472

473                      Analysis of Maximum Likelihood Estimates

474

475				Standard	
476	Parameter	DF	Estimate	Error	t Value
	Pr >  t				
477					
478	Intercept	1	16.2515	0.5669	28.67
	<.0001				
479	FuelNum	1	-0.4412	0.0114	-38.65
	<.0001				
480	IMP_cylinders	1	0.1221	0.00480	25.45
	<.0001				
481	PWR_barrels08	1	-24.8671	0.4687	-53.05
	<.0001				
482	PWR_city08	1	27.0013	0.4852	55.65
	<.0001				
483	PWR_youSaveSpend	1	5.0905	0.1118	45.55
	<.0001				
484	SQRT_comb08	1	26.2158	0.6946	37.74
	<.0001				
485	SQRT_highway08	1	-49.4003	0.2519	-196.15
	<.0001				
486	Transmission	1	0.0987	0.00526	18.77
	<.0001				
487	UHighway	1	0.5057	0.00337	149.85
	<.0001				

488



489

490 Step 10: Effect IMP\_displ entered.

491

492

493

# Analysis of Variance

494

495

Source	DF	Sum of Squares	Mean Square
F Value	Pr > F		

497

Model	10	1159259	115926
	162715	<.0001	

Error	31779	22641	0.712450
-------	-------	-------	----------

Corrected Total	31789	1181900	
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501

502

503

## Model Fit Statistics

504

R-Square	0.9808	Adj R-Sq	0.9808
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AIC	-10767.2739	BIC	-10765.3799
-----	-------------	-----	-------------

SBC	-10675.2379	C(p)	175.9516
-----	-------------	------	----------

508

509

510

## Type 3 Analysis of Effects

511

512

Effect	DF	Sum of Squares	F Value	Pr > F
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514

FuelNum	1	1164.0159	1633.82	<.0001
---------	---	-----------	---------	--------

IMP_cylinders	1	601.6515	844.48	<.0001
---------------	---	----------	--------	--------

IMP_displ	1	173.7734	243.91	<.0001
-----------	---	----------	--------	--------

PWR_barrels08	1	1949.2122	2735.93	<.0001
---------------	---	-----------	---------	--------

PWR_city08	1	2257.2857	3168.34	<.0001
------------	---	-----------	---------	--------

PWR_youSaveSpend	1	1616.1659	2268.46	<.0001
------------------	---	-----------	---------	--------

SQRT_comb08	1	937.2336	1315.51	<.0001
-------------	---	----------	---------	--------

SQRT_highway08	1	27766.9075	38973.9	<.0001
----------------	---	------------	---------	--------

523	Transmission	1	232.7545	326.70	<.0001
524	UHighway	1	16293.6936	22870.0	<.0001

525

526

527                      Analysis of Maximum Likelihood Estimates

528

529				Standard	
530	Parameter	DF	Estimate	Error	t Value
	Pr >  t				

531

532	Intercept	1	16.3399	0.5647	28.93
	<.0001				

533	FuelNum	1	-0.4631	0.0115	-40.42
	<.0001				

534	IMP_cylinders	1	0.1978	0.00681	29.06
	<.0001				

535	IMP_displ	1	-0.1453	0.00930	-15.62
	<.0001				

536	PWR_barrels08	1	-24.4620	0.4677	-52.31
	<.0001				

537	PWR_city08	1	27.2183	0.4836	56.29
	<.0001				

538	PWR_youSaveSpend	1	5.3722	0.1128	47.63
	<.0001				

539	SQRT_comb08	1	25.2071	0.6950	36.27
	<.0001				

540	SQRT_highway08	1	-49.5884	0.2512	-197.42
	<.0001				

541	Transmission	1	1	0.0948	0.00525	18.07
	<.0001					

542	UHighway	1	0.5110	0.00338	151.23
	<.0001				

543

544

545 Step 11: Effect Vtype entered.

546

547

548

## Analysis of Variance

549

550

Source	DF	Sum of Squares	Mean Square
F Value	Pr > F		

552

Model	11	1159362	105397
148605	<.0001		

Error	31778	22538	0.709240
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Corrected Total	31789	1181900	
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556

557

## Model Fit Statistics

559

R-Square	0.9809	Adj R-Sq	0.9809
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AIC	-10909.7961	BIC	-10907.8030
-----	-------------	-----	-------------

SBC	-10809.3932	C(p)	33.0590
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563

564

## Type 3 Analysis of Effects

566

567

Effect	DF	Sum of Squares	F Value	Pr > F
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569

FuelNum	1	1144.4835	1613.67	<.0001
---------	---	-----------	---------	--------

IMP_cylinders	1	547.3736	771.77	<.0001
---------------	---	----------	--------	--------

IMP_displ	1	150.1380	211.69	<.0001
-----------	---	----------	--------	--------

PWR_barrels08	1	1926.7381	2716.62	<.0001
---------------	---	-----------	---------	--------

PWR_city08	1	2285.9609	3223.11	<.0001
------------	---	-----------	---------	--------

PWR_youSaveSpend	1	1590.8352	2243.01	<.0001
------------------	---	-----------	---------	--------

SQRT_comb08	1	916.0832	1291.64	<.0001
-------------	---	----------	---------	--------

SQRT_highway08	1	27772.5216	39158.1	<.0001
----------------	---	------------	---------	--------

Transmission	1	213.5046	301.03	<.0001
--------------	---	----------	--------	--------

UHighway	1	16394.1973	23115.1	<.0001
----------	---	------------	---------	--------

Vtype	1	102.6956	144.80	<.0001
-------	---	----------	--------	--------

581

582

583 Analysis of Maximum Likelihood Estimates

584

585

Parameter	DF	Estimate	Standard Error	t Value
-----------	----	----------	----------------	---------

Pr > |t|

587

Intercept	1	16.0070	0.5642	28.37
-----------	---	---------	--------	-------

<.0001

FuelNum	1	-0.4593	0.0114	-40.17
---------	---	---------	--------	--------

<.0001

IMP_cylinders	1	0.1896	0.00683	27.78
---------------	---	--------	---------	-------

<.0001

IMP_displ	1	-0.1356	0.00932	-14.55
-----------	---	---------	---------	--------

<.0001

PWR_barrels08	1	-24.3275	0.4667	-52.12
---------------	---	----------	--------	--------

<.0001

PWR_city08	1	27.4048	0.4827	56.77
------------	---	---------	--------	-------

<.0001

PWR_youSaveSpend	1	5.3323	0.1126	47.36
------------------	---	--------	--------	-------

<.0001

SQRT_comb08	1	24.9344	0.6938	35.94
-------------	---	---------	--------	-------

<.0001

SQRT_highway08	1	-49.5935	0.2506	-197.88
----------------	---	----------	--------	---------

<.0001

Transmission	1	0.0910	0.00524	17.35
--------------	---	--------	---------	-------

<.0001

UHighway	1	0.5147	0.00339	152.04
----------	---	--------	---------	--------

<.0001

Vtype	1	0.0266	0.00221	12.03
-------	---	--------	---------	-------

<.0001

600

601

602 Step 12: Effect DriveNum entered.

603

604

605

## Analysis of Variance

606

607

Source	DF	Sum of Squares	Mean Square
F Value	Pr > F		

609

Model	12	1159373	96614
136285	<.0001		

Error	31777	22527	0.708913
-------	-------	-------	----------

Corrected Total	31789	1181900	
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613

614

## Model Fit Statistics

616

R-Square	0.9809	Adj R-Sq	0.9809
----------	--------	----------	--------

AIC	-10923.4687	BIC	-10921.4632
-----	-------------	-----	-------------

SBC	-10814.6989	C(p)	19.3859
-----	-------------	------	---------

620

621

## Type 3 Analysis of Effects

623

624

Effect	DF	Sum of Squares	F Value	Pr > F
--------	----	----------------	---------	--------

626

DriveNum	1	11.1087	15.67	<.0001
----------	---	---------	-------	--------

FuelNum	1	1141.7950	1610.63	<.0001
---------	---	-----------	---------	--------

IMP_cylinders	1	549.8768	775.66	<.0001
---------------	---	----------	--------	--------

IMP_displ	1	144.0804	203.24	<.0001
-----------	---	----------	--------	--------

PWR_barrels08	1	1928.5182	2720.39	<.0001
---------------	---	-----------	---------	--------

PWR_city08	1	2282.6059	3219.87	<.0001
------------	---	-----------	---------	--------

PWR_youSaveSpend	1	1589.9910	2242.86	<.0001
------------------	---	-----------	---------	--------

SQRT_comb08	1	913.1732	1288.13	<.0001
-------------	---	----------	---------	--------

SQRT_highway08	1	27641.2341	38991.0	<.0001
----------------	---	------------	---------	--------

Transmission	1	219.4025	309.49	<.0001
--------------	---	----------	--------	--------

UHighway	1	16396.0136	23128.4	<.0001
----------	---	------------	---------	--------

638 Vtype 1 102.8232 145.04 <.0001

639

640

641 Analysis of Maximum Likelihood Estimates

642

643			Standard	
644	Parameter	DF	Estimate	Error
	Pr >  t			t Value

645

646	Intercept	1	15.9603	0.5641	28.29
	<.0001				

647	DriveNum	1	0.0241	0.00609	3.96
	<.0001				

648	FuelNum	1	-0.4588	0.0114	-40.13
	<.0001				

649	IMP_cylinders	1	0.1901	0.00682	27.85
	<.0001				

650	IMP_displ	1	-0.1331	0.00934	-14.26
	<.0001				

651	PWR_barrels08	1	-24.3393	0.4667	-52.16
	<.0001				

652	PWR_city08	1	27.3860	0.4826	56.74
	<.0001				

653	PWR_youSaveSpend	1	5.3309	0.1126	47.36
	<.0001				

654	SQRT_comb08	1	24.8971	0.6937	35.89
	<.0001				

655	SQRT_highway08	1	-49.5422	0.2509	-197.46
	<.0001				

656	Transmission	1	0.0925	0.00526	17.59
	<.0001				

657	UHighway	1	0.5147	0.00338	152.08
	<.0001				

658	Vtype	1	0.0266	0.00221	12.04
	<.0001				

659

660

661 Step 13: Effect PWR\_fuelCost08 entered.

662

663

664 Analysis of Variance

665

Source	DF	Sum of Squares	Mean Square
F Value	Pr > F		

668

Model	13	1159378	89183
	125826	<.0001	

Error	31776	22522	0.708777
-------	-------	-------	----------

Corrected Total	31789	1181900	
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672

673

674 Model Fit Statistics

675

R-Square	0.9809	Adj R-Sq	0.9809
AIC	-10928.5576	BIC	-10926.5455
SBC	-10811.4209	C(p)	14.2992

679

680

681 Type 3 Analysis of Effects

682

Effect	DF	Sum of Squares	F Value	Pr > F
DriveNum	1	11.1633	15.75	<.0001
FuelNum	1	1145.0427	1615.52	<.0001
IMP_cylinders	1	546.2829	770.74	<.0001
IMP_displ	1	130.2200	183.72	<.0001
PWR_barrels08	1	1686.4942	2379.44	<.0001
PWR_city08	1	2203.2078	3108.46	<.0001
PWR_fuelCost08	1	5.0228	7.09	0.0078
PWR_youSaveSpend	1	316.4019	446.41	<.0001

694	SQRT_comb08	1	822.5159	1160.47	<.0001
695	SQRT_highway08	1	27390.4548	38644.6	<.0001
696	Transmission	1	221.0155	311.83	<.0001
697	UHighway	1	16129.1133	22756.2	<.0001
698	Vtype	1	100.4209	141.68	<.0001

699

700

701 Analysis of Maximum Likelihood Estimates

702

703				Standard	
704	Parameter	DF	Estimate	Error	t Value
	Pr >  t				

705

706	Intercept	1	15.0243	0.6647	22.60
	<.0001				

707	DriveNum	1	0.0242	0.00609	3.97
	<.0001				

708	FuelNum	1	-0.4621	0.0115	-40.19
	<.0001				

709	IMP_cylinders	1	0.1895	0.00683	27.76
	<.0001				

710	IMP_displ	1	-0.1286	0.00949	-13.55
	<.0001				

711	PWR_barrels08	1	-24.8888	0.5102	-48.78
	<.0001				

712	PWR_city08	1	27.7006	0.4968	55.75
	<.0001				

713	PWR_fuelCost08	1	1.6165	0.6072	2.66
	0.0078				

714	PWR_youSaveSpend	1	6.0289	0.2853	21.13
	<.0001				

715	SQRT_comb08	1	24.4164	0.7167	34.07
	<.0001				

716	SQRT_highway08	1	-49.4867	0.2517	-196.58
	<.0001				

717	Transmission	1	1	0.0928	0.00526	17.66
-----	--------------	---	---	--------	---------	-------



718 UHighway 1 0.5137 0.00341 150.85

719 Vtype 1 0.0263 0.00221 11.90

720  
721  
722 Step 14: Effect MPGdNum entered.

723  
724  
725 Analysis of Variance

Source	DF	Sum of Squares	Mean Square
F Value	Pr > F		
Model	14	1159379	82813
116840	<.0001		
Error	31775	22521	0.708771
Corrected Total	31789	1181900	

733  
734  
735 Model Fit Statistics

R-Square	0.9809	Adj R-Sq	0.9809
AIC	-10927.8574	BIC	-10925.8433
SBC	-10802.3538	C(p)	15.0000

740  
741  
742 Type 3 Analysis of Effects

Effect	DF	Sum of Squares	F Value	Pr > F
DriveNum	1	11.4139	16.10	<.0001
FuelNum	1	1140.9508	1609.76	<.0001

749	IMP_cylinders	1	545.2702	769.32	<.0001
750	IMP_displ	1	130.3189	183.87	<.0001
751	MPGdNum	1	0.9209	1.30	0.2544
752	PWR_barrels08	1	1682.0273	2373.16	<.0001
753	PWR_city08	1	2195.9830	3098.30	<.0001
754	PWR_fuelCost08	1	4.7308	6.67	0.0098
755	PWR_youSaveSpend	1	315.0987	444.57	<.0001
756	SQRT_comb08	1	822.7715	1160.84	<.0001
757	SQRT_highway08	1	27212.6979	38394.2	<.0001
758	Transmission	1	218.4368	308.19	<.0001
759	UHighway	1	16109.7448	22729.1	<.0001
760	Vtype	1	100.1228	141.26	<.0001

761

762

763 Analysis of Maximum Likelihood Estimates

764

765				Standard	
766	Parameter	DF	Estimate	Error	t Value
	Pr >  t				
767					
768	Intercept	1	15.0465	0.6650	22.63
	<.0001				
769	DriveNum	1	0.0245	0.00609	4.01
	<.0001				
770	FuelNum	1	-0.4616	0.0115	-40.12
	<.0001				
771	IMP_cylinders	1	0.1894	0.00683	27.74
	<.0001				
772	IMP_displ	1	-0.1287	0.00949	-13.56
	<.0001				
773	MPGdNum	0	1	0.00591	0.00519
	0.2544				1.14
774	PWR_barrels08	1	-24.8695	0.5105	-48.72
	<.0001				
775	PWR_city08	1	27.6777	0.4972	55.66
	<.0001				

776	PWR_fuelCost08	1	1.5720	0.6085	2.58
	0.0098				
777	PWR_youSaveSpend	1	6.0192	0.2855	21.08
	<.0001				
778	SQRT_comb08	1	24.4205	0.7168	34.07
	<.0001				
779	SQRT_highway08	1	-49.4652	0.2524	-195.94
	<.0001				
780	Transmission	1	0.0925	0.00527	17.56
	<.0001				
781	UHighway	1	0.5136	0.00341	150.76
	<.0001				
782	Vtype	1	0.0263	0.00221	11.89
	<.0001				

783

784

785 NOTE: All effects have been entered into the model.

786

787

# 788 Summary of Stepwise Selection

789

790	Effect	Number
791 Step	Entered	In
Pr > F	DF	F Value
792		
793 1	SQRT_comb08	1
	<.0001	488041
794 2	SQRT_highway08	2
	<.0001	14752.6
795 3	UHighway	3
	<.0001	25283.0
796 4	PWR_city08	4
	<.0001	1707.89
797 5	PWR_barrels08	5
	<.0001	1242.97
798 6	IMP_cylinders	6
		541.15

```

      <.0001
799      7      PWR_youSaveSpend      1      7      683.90
      <.0001
800      8      FuelNum      1      8      1518.76
      <.0001
801      9      Transmission      1      9      352.28
      <.0001
802      10     IMP_displ      1      10     243.91
      <.0001
803      11     Vtype      1      11     144.80
      <.0001
804      12     DriveNum      1      12     15.67
      <.0001
805      13     PWR_fuelCost08      1      13     7.09
      0.0078
806      14     MPGdNum      1      14     1.30
      0.2544

```

807

808

809 The selected model is the model trained in the last step (Step 14). It consists of the following effects:

810

811 Intercept DriveNum FuelNum IMP\_cylinders IMP\_displ MPGd  
 Num PWR\_barrels08 PWR\_city08 PWR\_fuelCost08 PWR\_youSaveS  
 pend Sqrt\_comb08 Sqrt\_highway08 Transmission UHighway V  
 type

812

813

814 Analysis of Variance

815

```

816      Sum of
817 Source      DF      Squares      Mean Square
      F Value      Pr > F

```

818

```

819 Model      14      1159379      82813
      116840      <.0001

```

820	Error	31775	22521	0.708771
821	Corrected Total	31789	1181900	

822

823

824 Model Fit Statistics

825

826	R-Square	0.9809	Adj R-Sq	0.9809
827	AIC	-10927.8574	BIC	-10925.8433
828	SBC	-10802.3538	C(p)	15.0000

829

830

831 Type 3 Analysis of Effects

832

833			Sum of		
834	Effect	DF	Squares	F Value	Pr > F
835					
836	DriveNum	1	11.4139	16.10	<.0001
837	FuelNum	1	1140.9508	1609.76	<.0001
838	IMP_cylinders	1	545.2702	769.32	<.0001
839	IMP_displ	1	130.3189	183.87	<.0001
840	MPGdNum	1	0.9209	1.30	0.2544
841	PWR_barrels08	1	1682.0273	2373.16	<.0001
842	PWR_city08	1	2195.9830	3098.30	<.0001
843	PWR_fuelCost08	1	4.7308	6.67	0.0098
844	PWR_youSaveSpend	1	315.0987	444.57	<.0001
845	SQRT_comb08	1	822.7715	1160.84	<.0001
846	SQRT_highway08	1	27212.6979	38394.2	<.0001
847	Transmission	1	218.4368	308.19	<.0001
848	UHighway	1	16109.7448	22729.1	<.0001
849	Vtype	1	100.1228	141.26	<.0001

850

851

852 Analysis of Maximum Likelihood Estimates

853

854			Standard		
855	Parameter	DF	Estimate	Error	t Value

```

      Pr > |t|
856
857 Intercept          1      15.0465      0.6650      22.63
      <.0001
858 DriveNum          1       0.0245      0.00609      4.01
      <.0001
859 FuelNum           1      -0.4616      0.0115     -40.12
      <.0001
860 IMP_cylinders      1       0.1894      0.00683      27.74
      <.0001
861 IMP_displ          1      -0.1287      0.00949     -13.56
      <.0001
862 MPGdNum            0       1       0.00591      0.00519      1.14
      0.2544
863 PWR_barrels08      1     -24.8695      0.5105     -48.72
      <.0001
864 PWR_city08         1      27.6777      0.4972      55.66
      <.0001
865 PWR_fuelCost08     1       1.5720      0.6085       2.58
      0.0098
866 PWR_youSaveSpend   1       6.0192      0.2855      21.08
      <.0001
867 SQRT_comb08        1      24.4205      0.7168      34.07
      <.0001
868 SQRT_highway08     1     -49.4652      0.2524    -195.94
      <.0001
869 Transmission       1       1       0.0925      0.00527      17.56
      <.0001
870 UHighway           1       0.5136      0.00341     150.76
      <.0001
871 Vtype              1       0.0263      0.00221      11.89
      <.0001
872
873
874 *-----
      -*
```

```

875 * Score Output
876 *-----
877  -*
878
879 *-----
880  -*
881 * Report Output
882 *-----
883  -*
884
885
886 Fit Statistics
887
888 Target=UCity Target Label=' '
889
890     Fit
891 Statistics      Statistics Label              Train
      Test
892
893  _AIC_          Akaike's Information Criterion    -10927.86
894      .
894  _ASE_          Average Squared Error              0.71
895      0.70
895  _AVERR_        Average Error Function              0.71
896      0.70
896  _DFE_          Degrees of Freedom for Error        31775.00
897      .
897  _DFM_          Model Degrees of Freedom            15.00
898      .
898  _DFT_          Total Degrees of Freedom            31790.00
899      .
899  _DIV_          Divisor for ASE                      31790.00
900      7947.00

```

900	_ERR_ 5565.09	Error Function	22521.19
901	_FPE_ .	Final Prediction Error	0.71
902	_MAX_ 16.03	Maximum Absolute Error	16.03
903	_MSE_ 0.70	Mean Square Error	0.71
904	_NOBS_ 7947.00	Sum of Frequencies	31790.00
905	_NW_ .	Number of Estimate Weights	15.00
906	_RASE_ 0.84	Root Average Sum of Squares	0.84
907	_RFPE_ .	Root Final Prediction Error	0.84
908	_RMSE_ 0.84	Root Mean Squared Error	0.84
909	_SBC_ .	Schwarz's Bayesian Criterion	-10802.35
910	_SSE_ 5565.09	Sum of Squared Errors	22521.19
911	_SUMW_ 7947.00	Sum of Case Weights Times Freq	31790.00

912

913

914

915

916 Assessment Score Rankings

917

918 Data Role=TRAIN Target Variable=UCity Target Label=' '

919

	Number of	Mean	Mean
Depth	Observations	Target	Predicted
923	5	1591	38.2146
			37.2029



924	10	1589	32.0236	31.7212
925	15	1589	29.2448	29.4536
926	20	1589	27.6473	27.9189
927	25	1592	26.2933	26.5656
928	30	1587	25.1575	25.3893
929	35	1590	24.2736	24.4676
930	40	1590	23.3412	23.6706
931	45	1590	22.6031	22.9318
932	50	1588	21.8234	22.1423
933	55	1591	21.1703	21.4175
934	60	1589	20.5538	20.7097
935	65	1590	19.9695	20.0809
936	70	1590	19.2755	19.4204
937	75	1589	18.7621	18.7961
938	80	1588	18.0800	18.0329
939	85	1590	17.1623	17.1089
940	90	1591	16.1854	15.9962
941	95	1589	14.8033	14.4747
942	100	1588	12.8158	11.8994

943

944

945

946

947 Assessment Score Distribution

948

949 Data Role=TRAIN Target Variable=UCity Target Label=' '

950

951	Range for	Mean	Mean	Number of
	Model			
952	Predicted	Target	Predicted	Observations
	Score			

953

954	57.109 - 60.589	59.0000	60.2993	9
	58.8490			

955	50.147 - 53.628	55.5000	51.1287	2
	51.8874			

956	46.666 - 48.4066	50.147	52.2727	48.6900	11
957	43.185 - 44.9258	46.666	49.1769	45.4263	65
958	39.705 - 41.4450	43.185	42.6611	41.1327	180
959	36.224 - 37.9641	39.705	38.8435	37.7865	575
960	32.743 - 34.4833	36.224	34.7918	34.2057	1011
961	29.262 - 31.0025	32.743	30.8390	30.7725	2279
962	25.781 - 27.5217	29.262	27.1962	27.4586	3963
963	22.300 - 24.0409	25.781	23.6828	23.9601	6673
964	18.820 - 20.5601	22.300	20.3242	20.5032	8211
965	15.339 - 17.0792	18.820	17.4061	17.3254	5541
966	11.858 - 13.5984	15.339	14.3071	13.8752	2717
967	8.377 - 10.1176	11.858	11.8856	10.6438	494
968	4.896 - 6.6368	8.377	10.0364	7.2198	55
969	-9.027 - -7.2865	-5.546	7.0000	-9.0269	4