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June 1, 2016

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Agenda

Introduction

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Early Planning is Critical to Project Success!!!!!!

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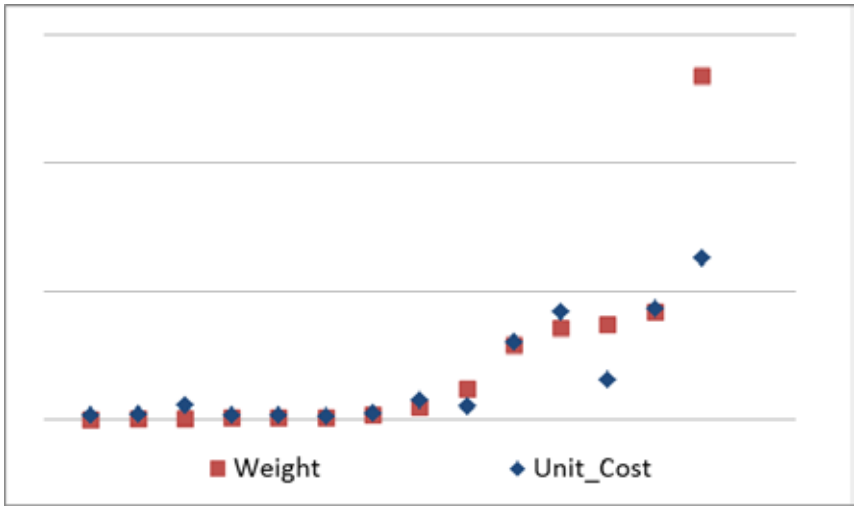


Correlation Matrix

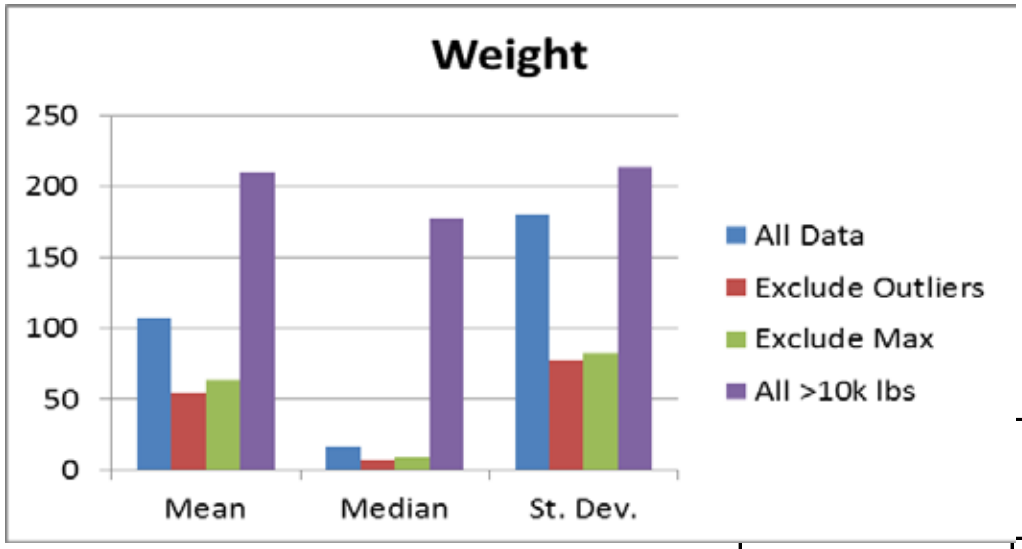
	Unit Cost	*Weight*	*Power*	*Size*	*# of Elements*
Unit_Cost	1				
Weight	0.90	1			
Power	0.42	0.77	1		
Size	-0.23	-0.19	-0.30	1	
# of Elements	0.77	0.70	0.14	1	1

Only two data points have both element and size data

Descriptive Statistics

	Unit Cost (BY15$K)	*Weight (lbs)*	*Power (KW)*	*Size (ft^2)*	*# of Elements*
Observations	14	14	8	6	5
Mean	79,718.30	106,963.28	1,673.87	198.55	5,704.80
Median	27,365.27	16,578.67	1,065.17	161.43	2,000.00
Min	6,383.52	1,250.00	17.84	60.28	1,024.00
Max	314,285.17	667,520.00	6,000.00	500.00	21,000.00
St. Dev.	101,047.45	179,809.98	2,030.30	159.60	8,581.59

Set Up



Weight (lbs.)

	All Data	Exclude Outliers	Exclude Max	All >10k lbs
Observations	14	12	13	7
Min	1,250	1,250	1,250	24,211
Max	667,520	210,175	210,175	667,520

Set Up

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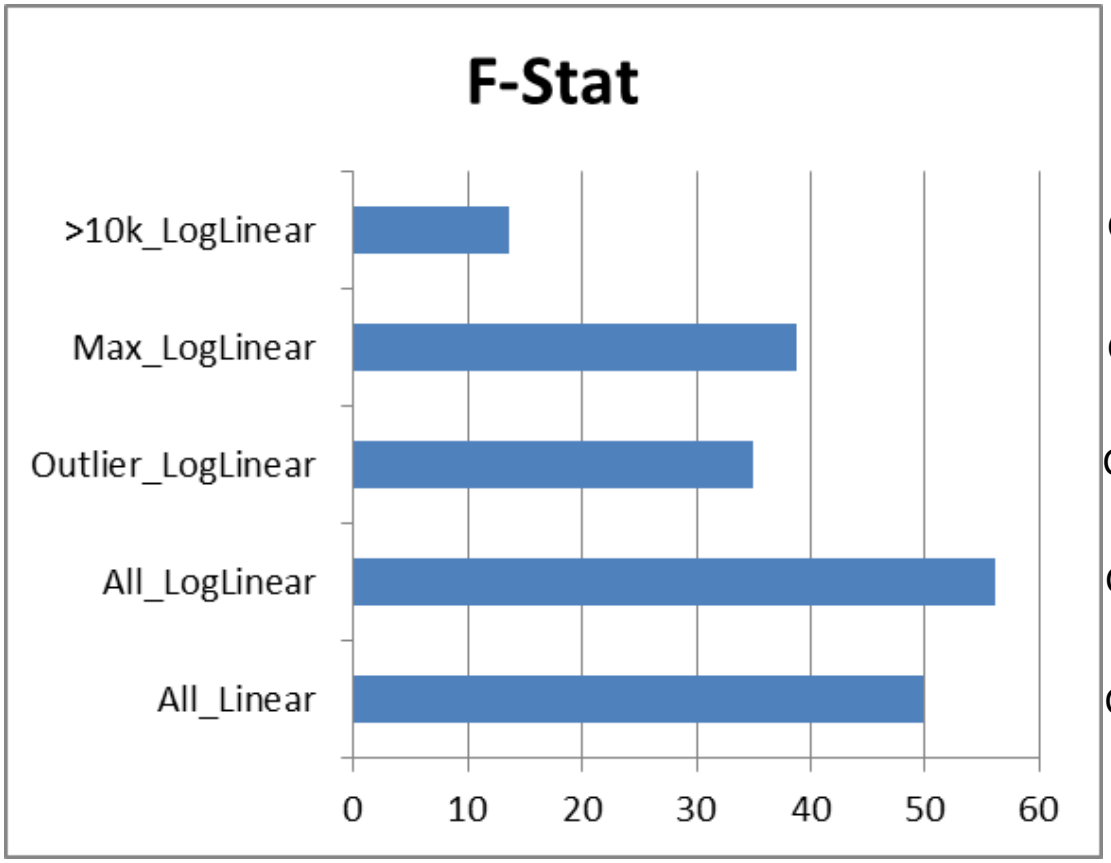

CV = 41.45%; UC = 12.23 * Weight ^ 0.7677

CV = 73.06%; UC = 86.31 * Weight ^ 0.5957

CV = 64.76%; UC = 68.11 * Weight ^ 0.6243

CV = 54.47%; UC = 77.25 * Weight ^ 0.6083

CV = 58.09%; UC = 25749 + 0.5046 * Weight

Consistent results!

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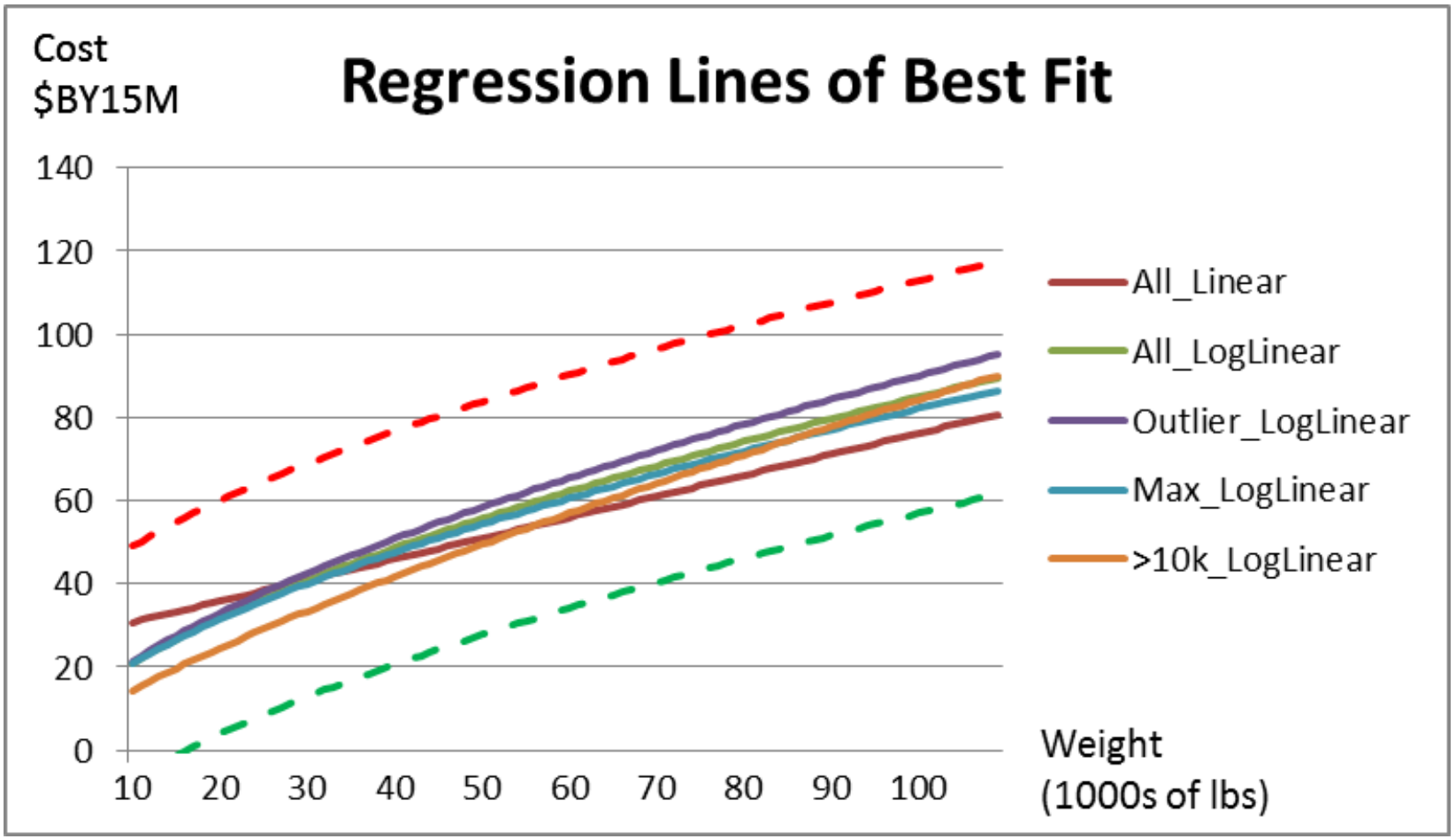
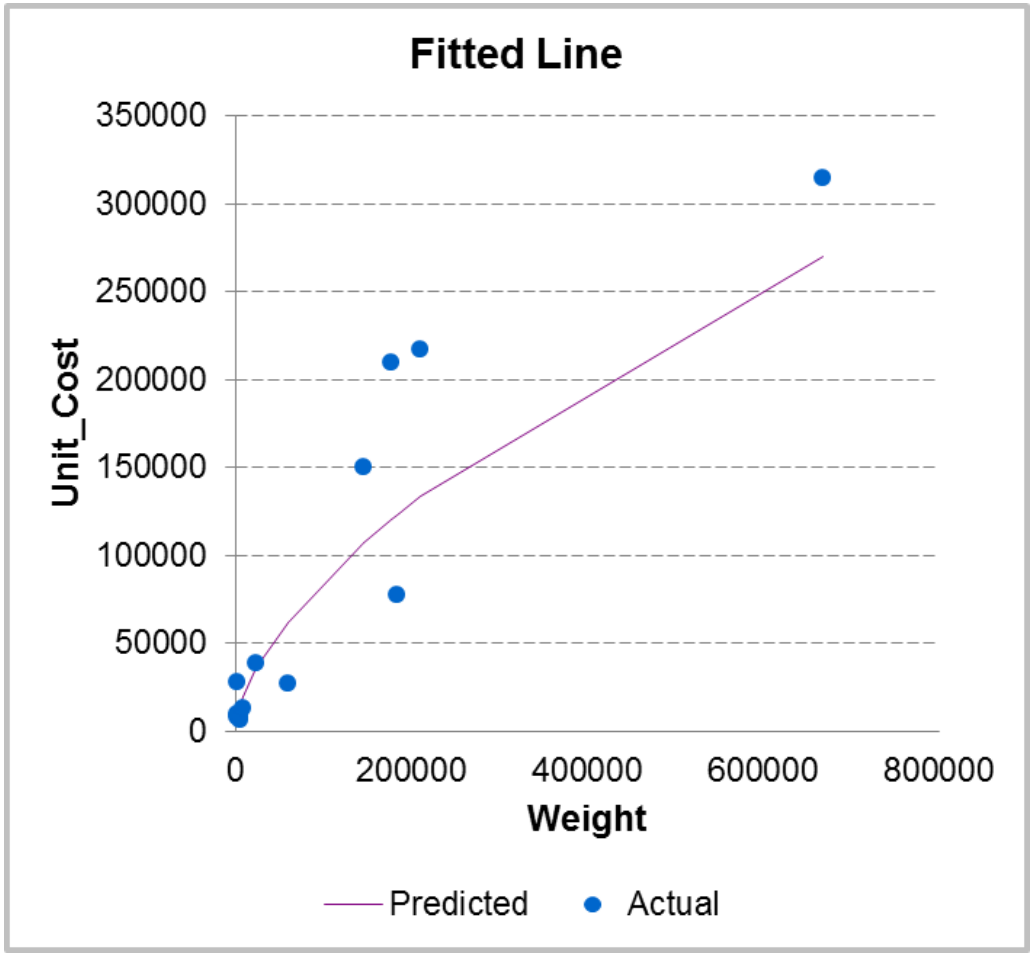
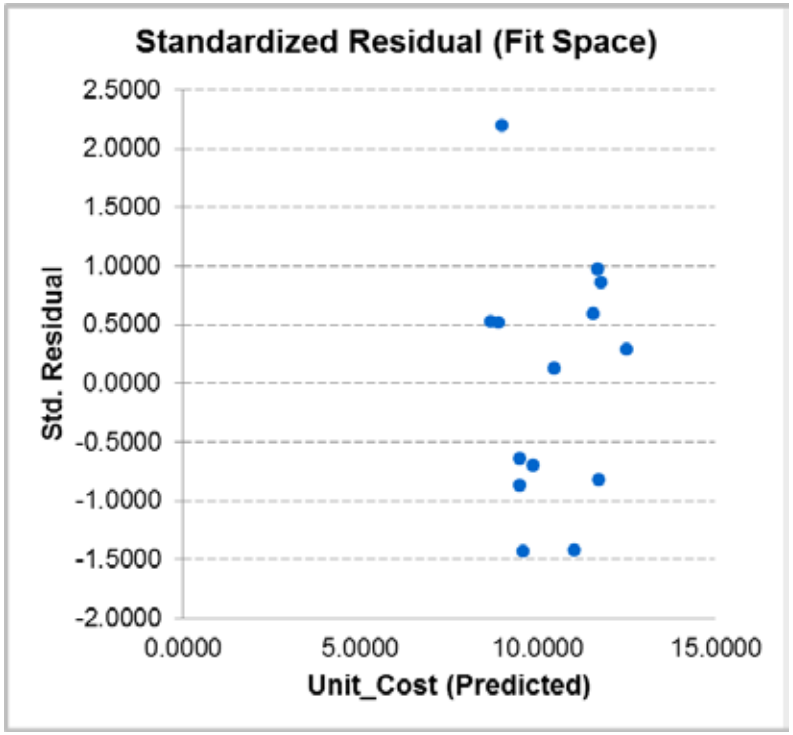
Upper and lower bounds represented by absolute mean of residuals



All Observations, Log-Linear Equation





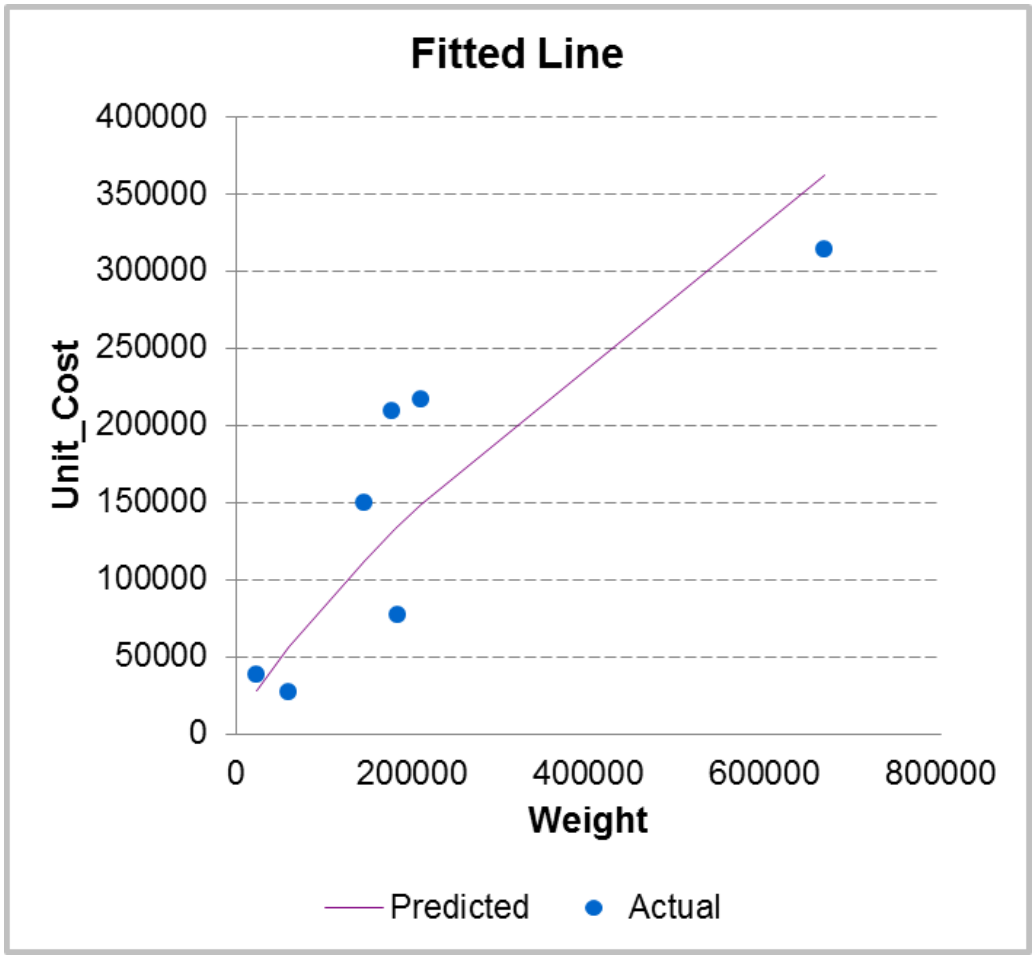
$$\widehat{Cost} = 77.25 * Weight^{0.6083}$$

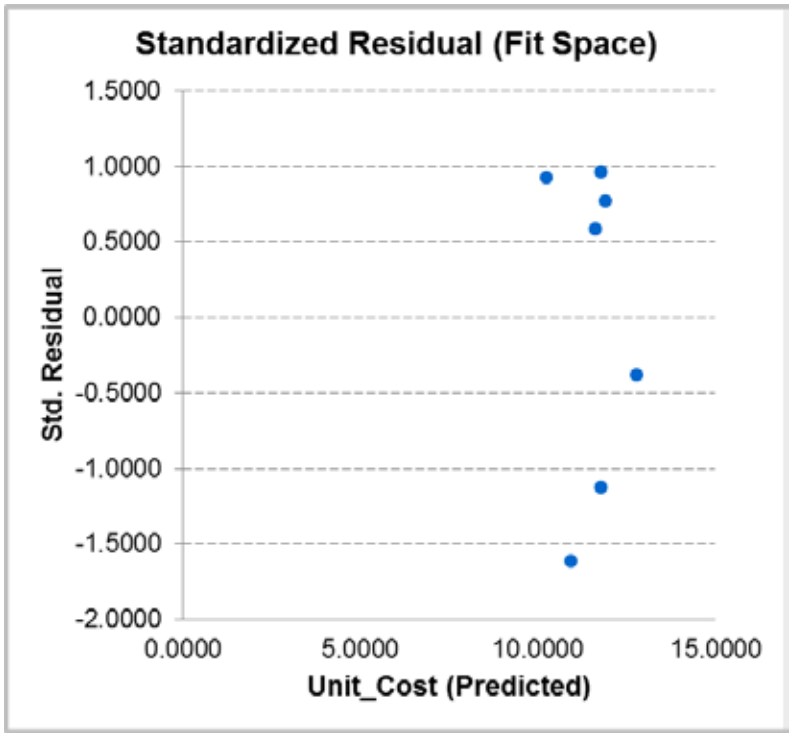
CV = 54.47%

F Statistic = 56.08

Variable	Coefficient	Std Dev of Coef	Beta Value	T-Statistic (Coef/SD)	P-Value	Prob Not Zero
Intercept	4.3471	0.8279		5.2509	0.0002	0.9998
Weight	0.6083	0.0812	0.9076	7.4887	0.0000	1.0000

All Observations, Log-Linear Equation





$$\widehat{Cost} = 12.23 * Weight^{0.7677}$$

CV = 41.45%

F Statistic = 13.57

Variable	Coefficient	Std Dev of Coef	Beta Value	T-Statistic (Coef/SD)	P-Value	Prob Not Zero
Intercept	2.5041	2.4746		1.0119	0.3580	0.6420
Weight	0.7677	0.2084	0.8549	3.6840	0.0142	0.9858