6.0 Introduction

In the previous chapter the relationship between physical parameters of fabric with the extraction force, both axial and radial, has been reported. In the present section, an attempt has been made to study the empirical relationship between feel of fabric the various extraction force parameters. It is known that feel of the fabric and the hand values of fabric are synonymous acronym. The so called hand value or fabric feel is subjectively evaluated. There are ways to evaluate the hand value of the fabric objectively from some quantitative test parameters. There are instruments available to do the same as mentioned in previous sections. The present study emphasises the various nozzle extraction force parameters and their relationship with the subjective assessment of fabric. Therefore, the focus of the investigation was to identify some of important extraction force curve parameters. The numerical relationships between the fabrics feel index with curve parameters as well as extraction force are then investigated.

The approach adopted here is same as the normal statistical guideline. Multiple linear regression equations are plotted using Microsoft Excel Spreadsheet data analysis tool. R-square, Standard Error, Sum of Square (SS), Mean Sum of Square (MS), F-statistics, t-statistics, P-Values for various X-variables has been studied. The insignificant X-variables are then eliminated for the subsequent regression analysis. Therefore, in this chapter effort has been made to establish some empirical regression equations so that the same can be used to predict the fabric feel factor based on nozzle extraction testing data.

6.1 Material and Method

6.1.1 Materials

Ten suiting fabric samples, namely SS1, SS2, SS8, SS13, SS14, SS23, SS24, SS28 and SS29 from the previously mentioned suiting samples are selected for this purpose. The details of the sample particulars are already given in previous chapter.

6.1.2 Method

Fabric samples are subjectively assessed by group consist of wide spectrum of individuals, the details of which is given in Annexure – III. The said fabric samples are then tested using the fabric feel tester. The test data are then regressed with the subjective hand evaluations feel factor. Progressively, insignificant coefficients are eliminated and are regressed further to have the idea of relationship between the significant variables and the fabric feel factor.

The nature of the graph also draws lot of attention at some point. After intensive careful observations and also in consultations with various competent experts/authorities in the relevant areas of the operations; some parameters of the graphs were identified to regressed the same with the subjectively assessed hand evaluations feel factor.

6.2 Results and Discussions

The test results of the fabrics samples tested on fabric feel tester and the hand evaluation of fabric feel factors (Annexure III) are given in Table No. 6.1.

Table No. 6.1: Extraction forces and fabric feel factor

Sample No.	Radial (Right) Load, kg		Axial Load, kg		Riadial (Left) Load, kg		Feel Factor
	Peak	Avg	Peak	Avg	Peak	Avg	
SS1	1.113	0.266	0.706	0.28	1.055	0.249	6.54
SS2	2.527	0.763	1.398	0.58	2.442	0.726	6.47
SS8	2.457	0.745	1.344	0.48	2.377	0.718	5.45
SS10	2.202	0.61	1.056	0.41	2.1182	0.585	5.57
SS13	3.0212	0.888	1.642	0.6	2.937	0.85	6.06
SS14	3.5804	1.047	1.718	0.65	3.474	1.005	4.55
SS23	1.9906	0.521	0.93	0.29	1.922	0.495	2.77
SS24	1.2596	0.297	0.694	0.26	1.211	0.284	3.16
SS28	3.475	1.204	2.092	0.85	3.344	1.136	6.88
SS29	3.91	1.426	2.184	0.95	3.734	1.333	7.66

The regression analysis of the above mentioned test data given in Table No. 6.1 are given in the Table No. 6.2. Regression Statistics given in Table No.6.2 (a), ANOVA in Table No. 6.2(b), Residual Output in Table No. 6.2(c) and Probability Output in Table No.6.2(d) are given.

From the regression analysis it can seen that multiple R is quite high, which is indicative of fair regression among the variables i.e. independent parameters like average and peak extraction as well radial – both left and right exist with the fabric feel factor.

The residual outputs are plotted for graphical representations to have better idea and are given in Fig 6.1. Dependent variable line fit plots with predicted Y value are given in Fig 6.2. And the probability output functions are plotted in Fig 6.3. From

the Fig 6.1, it can be seen that in most of the cases, the residuals are evenly scattered with low band width. The observed phenomenon is in agreement with good regression behaviour.

The line fit plot along with predicted Y value given in Fig 6.2 and the probability output function graph given in Fig 6.3; also conjugate the above mentioned characteristics of the data set. Hence, regression is said to be statistically applicable for the observations.

Table No. 6.2: SUMMARY OUTPUT

Table No. 6.2(a): Regression Statistics	
Multiple R	0.91
R Square	0.83
Adjusted R Square	0.49
Standard Error	1.13
Observations	10

Table No. 6.2(b): **ANOVA**

	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	18.88920848	3.1482014	2.450546	0.246890185
Residual	3	3.85408152	1.2846938		
Total	9	22.74329			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-4.13	6.78	-0.61	0.58	-25.71	17.44	-25.71	17.44
X Variable 1	140.71	110.9	1.27	0.29	-212.34	493.77	-212.34	493.77
X Variable 2	-147.36	115.72	-1.27	0.29	-515.62	220.90	-515.62	220.90
X Variable 3	11.47	12.75	0.90	0.43	-29.11	52.06	-29.11	52.06
X Variable 4	10.78	16.49	0.65	0.56	-41.70	63.27	-41.70	63.26
X Variable 5	-140.40	109.29	-1.28	0.29	-488.22	207.40	-488.22	207.40
X Variable 6	120.34	114.91	1.05	0.37	-245.35	486.02	-245.35	486.02

Table No. 6.2(c): **RESIDUAL OUTPUT**

Observation	*Predicted Y*	*Residuals*	*Standard Residuals*
1	6.23	0.30	0.46
2	5.79	0.67	1.03
3	5.06	0.38	0.59
4	5.34	0.22	0.33
5	5.34	0.71	1.08
6	5.26	-0.71	-1.09
7	2.69	0.07	0.11
8	4.24	-1.08	-1.66
9	7.76	-0.88	-1.35
10	7.34	0.31	0.48

Table No. 6.2(d): **PROBABILITY OUTPUT**

Percentile	*Y*
5	2.77
15	3.16
25	4.55
35	5.45
45	5.57
55	6.06
65	6.47
75	6.54
85	6.88
95	7.66

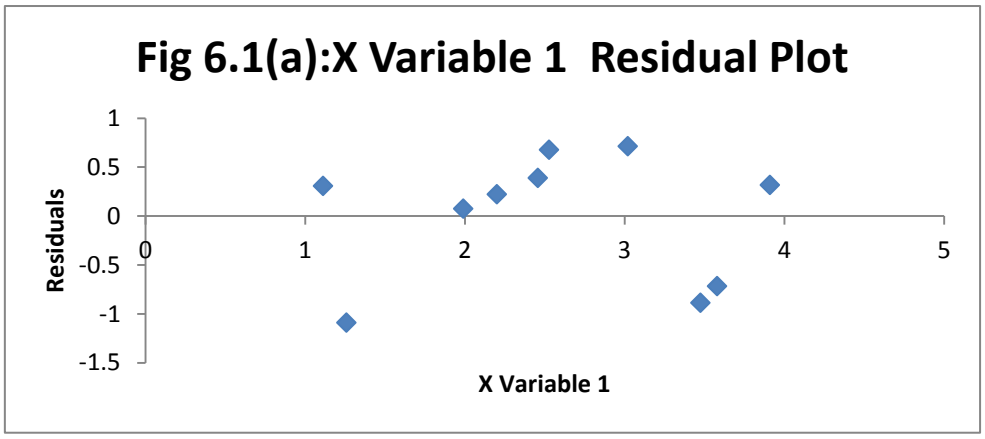


Fig 6.1(a):X Variable 1 Residual Plot
Residuals
X Variable 1
1
0.5
0
-0.5
-1
-1.5
0
1
2
3
4
5

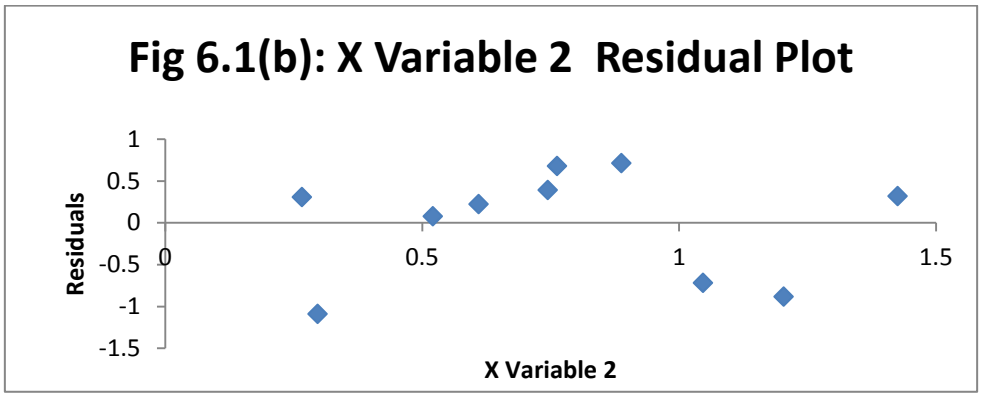


Fig 6.1(b): X Variable 2 Residual Plot
Residuals
X Variable 2
1
0.5
0
-0.5
-1
-1.5
0
0.5
1
1.5

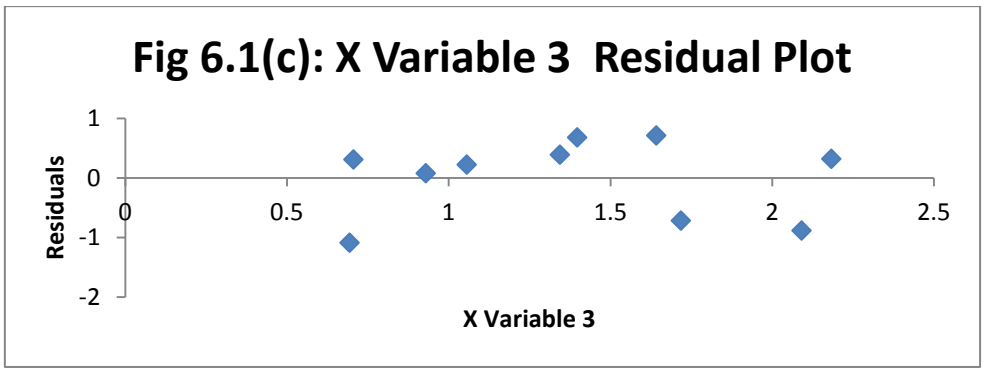


Fig 6.1(c): X Variable 3 Residual Plot
Residuals
X Variable 3
1
0
-1
-2
0
0.5
1
1.5
2
2.5

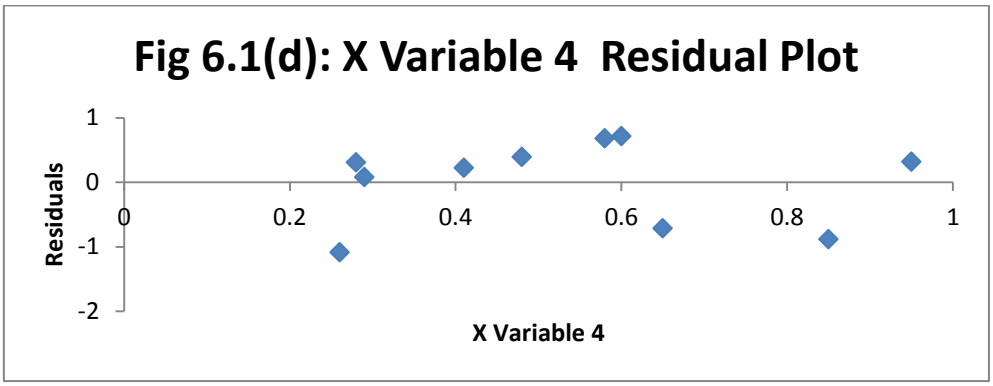


Fig 6.1(d): X Variable 4 Residual Plot
Residuals
X Variable 4
1
0
-1
-2
0
0.2
0.4
0.6
0.8
1

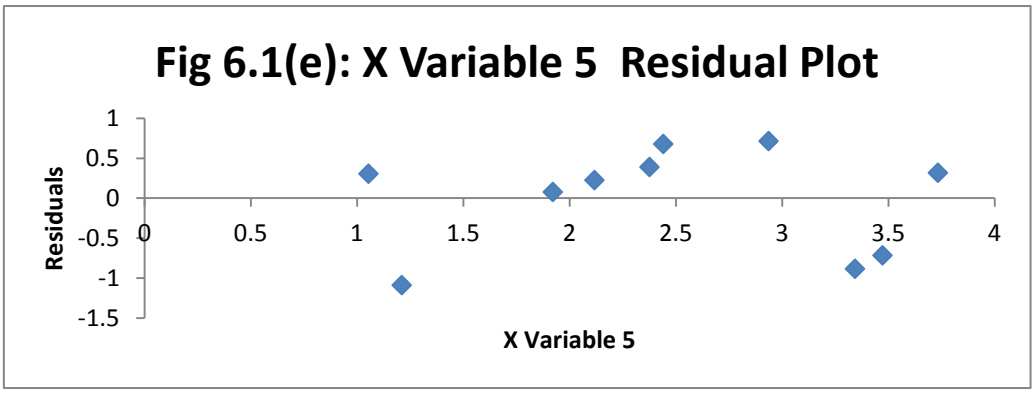


Fig 6.1(e): X Variable 5 Residual Plot
Residuals
X Variable 5
1
0.5
0
-0.5
-1
-1.5
0
0.5
1
1.5
2
2.5
3
3.5
4

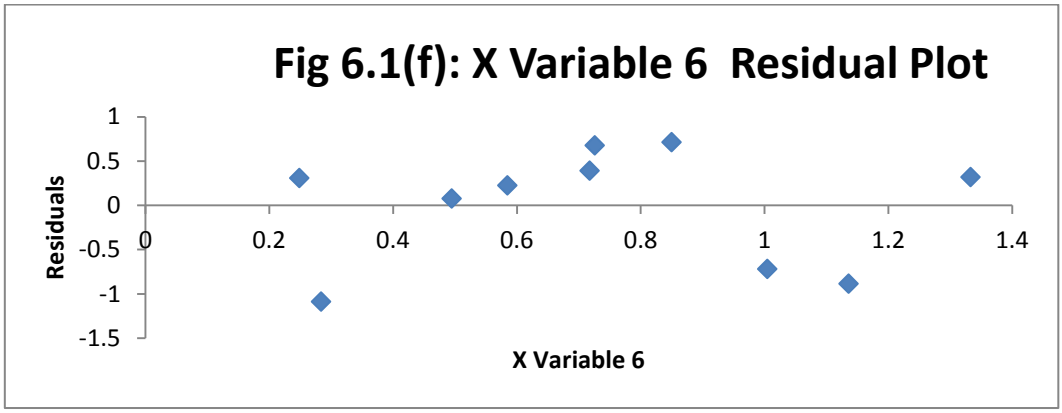


Fig 6.1(f): X Variable 6 Residual Plot
Residuals
X Variable 6
1
0.5
0
-0.5
-1
-1.5
0
0.2
0.4
0.6
0.8
1
1.2
1.4

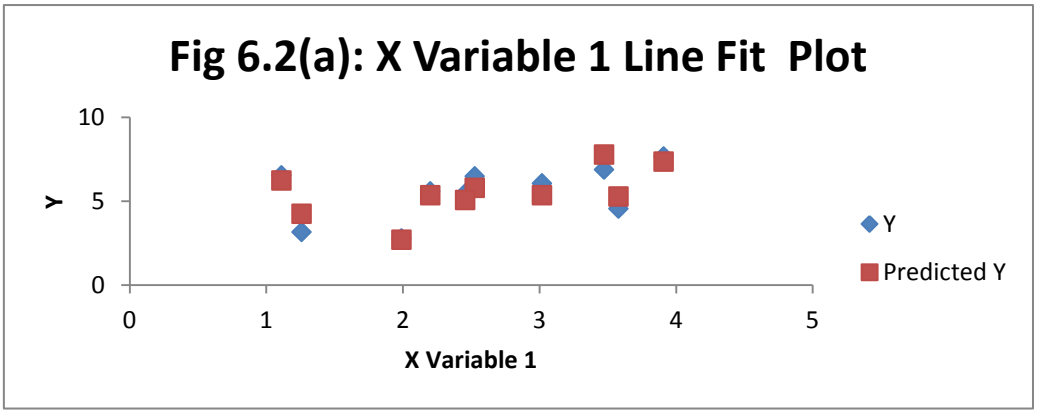


Fig 6.2(a): X Variable 1 Line Fit Plot
Y
X Variable 1
Predicted Y
10
5
0
0
1
2
3
4
5

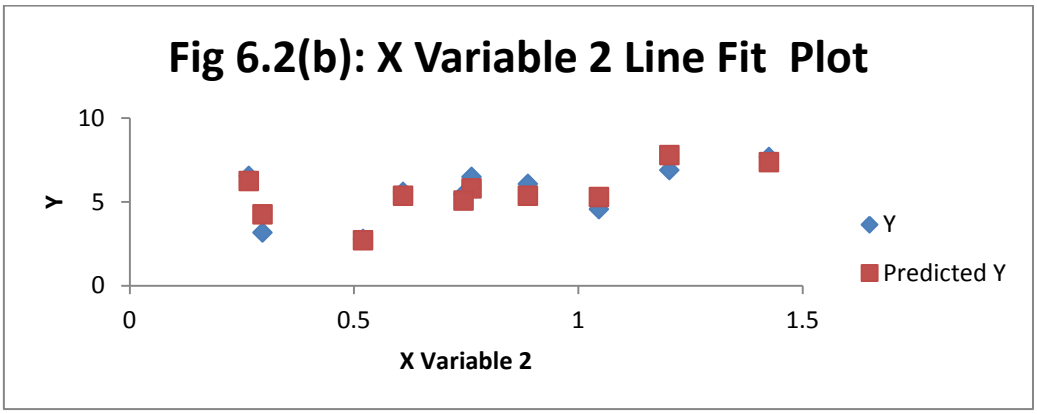


Fig 6.2(b): X Variable 2 Line Fit Plot
Y
X Variable 2
Predicted Y
10
5
0
0
0.5
1
1.5

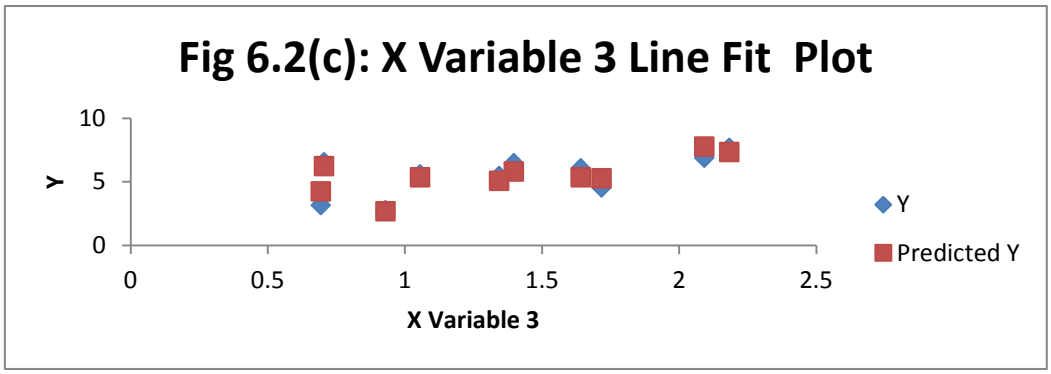


Fig 6.2(c): X Variable 3 Line Fit Plot
Y
10
5
0
0
0.5
1
1.5
2
2.5
X Variable 3
Y
Predicted Y

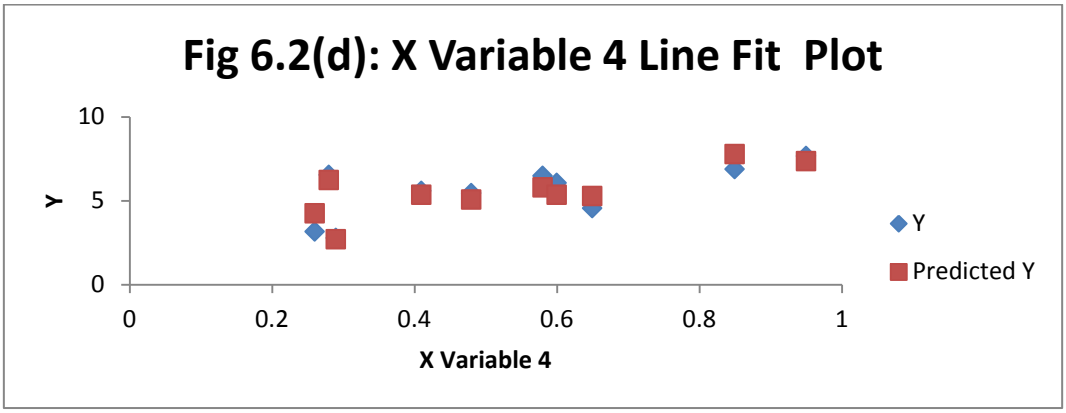


Fig 6.2(d): X Variable 4 Line Fit Plot
Y
10
5
0
0
0.2
0.4
0.6
0.8
1
X Variable 4
Y
Predicted Y

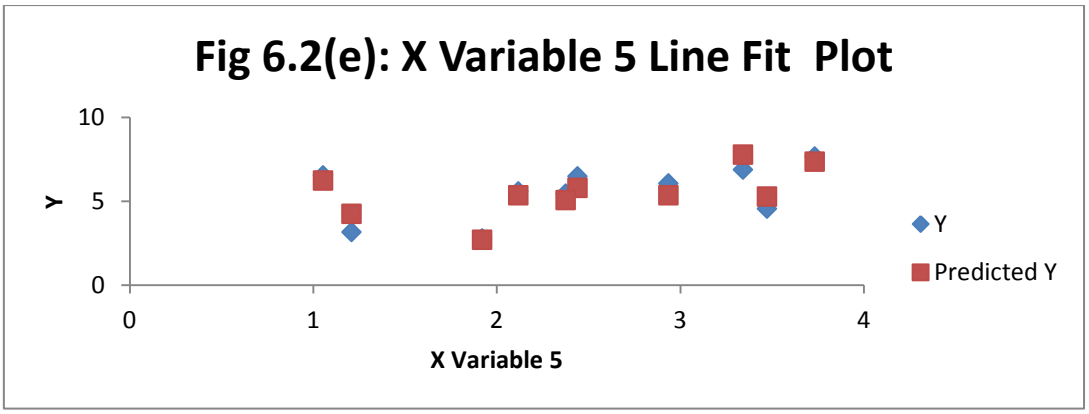


Fig 6.2(e): X Variable 5 Line Fit Plot
Y
10
5
0
0
1
2
3
4
X Variable 5
Y
Predicted Y

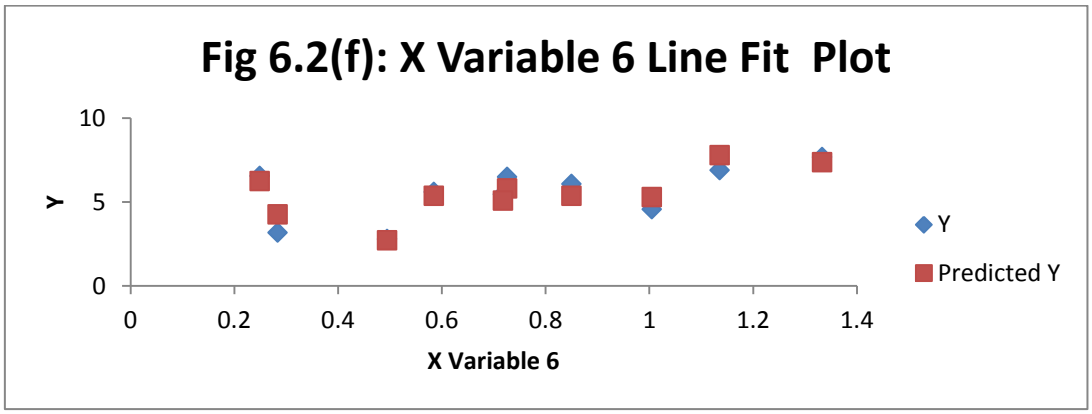
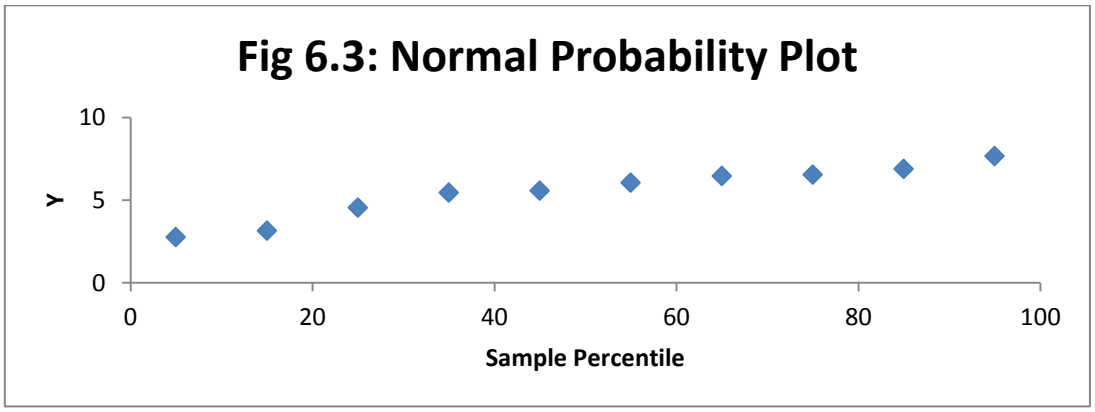


Fig 6.2(f): X Variable 6 Line Fit Plot
Y
10
5
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
X Variable 6
Y
Predicted Y



The above mentioned regression analysis is perfectly alright. But, a close observation of Table No 6.2(b) reveals some more interesting facts. It can be seen that the coefficient of X variable 1 and 5 i.e. peak left and right radial extraction force respectively, nullify the effect of each other. The coefficient of X variable 2 and 6 i.e. average left and right radial extraction forces respectively, also exhibit almost similar nullifying effect of each other. Peak force is just one reading.

Therefore, in the subsequent steps of regression analysis only average extraction force is considered for regression. Radial average is considered at this stage, even though it is mentioned that it has nullifying effect; because average extraction force is average of many readings. Hence average extraction force not rejected out rightly.

The further regression analysis as mentioned above is given in the Table No. 6.3. Regression Statistics given in Table No.6.3 (a), ANOVA in Table No. 6.3(b),

Residual Output in Table No. 6.3(c) and Probability Output in Table No.6.3(d) are given.

In this case of regression analysis, it can be seen that multiple R has gone down significantly, even though the number of independent variables are just three instead of six.

Similar to earlier line of graphical analysis, the residual outputs are plotted for graphical representations are given in Fig 6.4. The dependent variable line fit plots with predicted Y value are given in Fig 6.5 and the probability output functions are plotted in Fig 6.6. From the Fig 6.4 it can be seen that in most of the cases, the residuals are evenly scattered with low band width. The observed phenomenon is in agreement with good regression behaviour.

The line fit plot along with predicted Y value given in Fig 6.5 and the probability output function graph given in Fig 6.6; also commensurate the above mentioned characteristics of the data set. Hence, regression is said to be statistically significant.

Table No. 6.3: SUMMARY OUTPUT

Table No. 6.3(a): *Regression Statistics*	
Multiple R	0.85
R Square	0.73
Adjusted R Square	0.59
Standard Error	1.02
Observations	10

Table No. 6.3(b): ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	16.52	5.51	5.31	0.04
Residual	6	6.23	1.04		
Total	9	22.74			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	2.51	1.05	2.39	0.054	-0.06	5.08	-0.06	5.08
X Variable 1	-11.94	44.63	-0.27	0.80	-121.13	97.26	-121.13	97.26
X Variable 2	20.63	7.88	2.62	0.04	1.34	39.92	1.34	39.92
X Variable 3	1.67	44.79	0.04	0.97	-107.92	111.27	-107.92	111.27

Table No. 6.3(c): RESIDUAL OUTPUT

Observation	*Predicted Y*	*Residuals*	*Standard Residuals*
1	5.53	1.01	1.22
2	6.58	-0.11	-0.13
3	4.72	0.73	0.87
4	4.67	0.90	1.08
5	5.711	0.35	0.42
6	5.10	-0.55	-0.67
7	3.10	-0.33	-0.40
8	4.80	-1.64	-1.98
9	7.57	-0.69	-0.84
10	7.32	0.34	0.41

Table No. 6.3(d): PROBABILITY OUTPUT

Percentile	*Y*
5	2.77
15	3.16
25	4.55
35	5.45
45	5.57
55	6.06
65	6.47
75	6.54
85	6.88
95	7.66

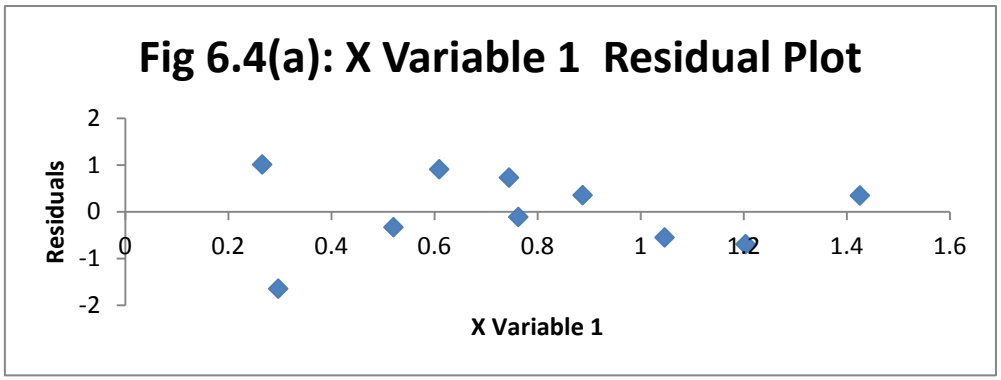


Fig 6.4(a): X Variable 1 Residual Plot
Residuals
X Variable 1
2
1
0
-1
-2
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6

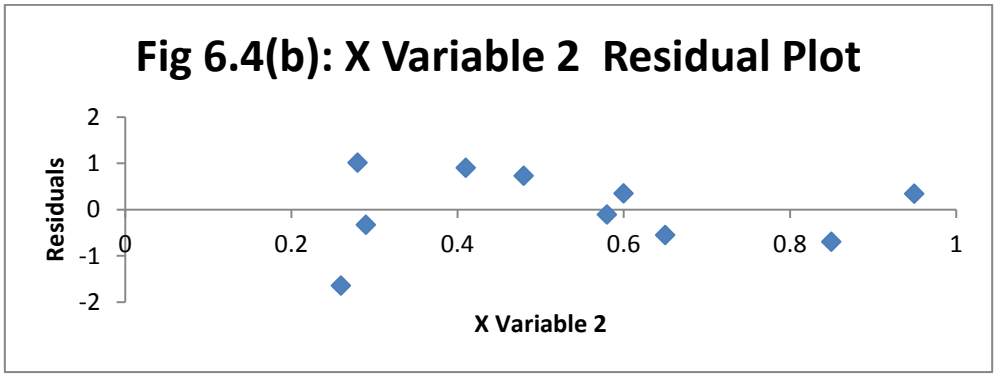


Fig 6.4(b): X Variable 2 Residual Plot
Residuals
X Variable 2
2
1
0
-1
-2
0
0.2
0.4
0.6
0.8
1

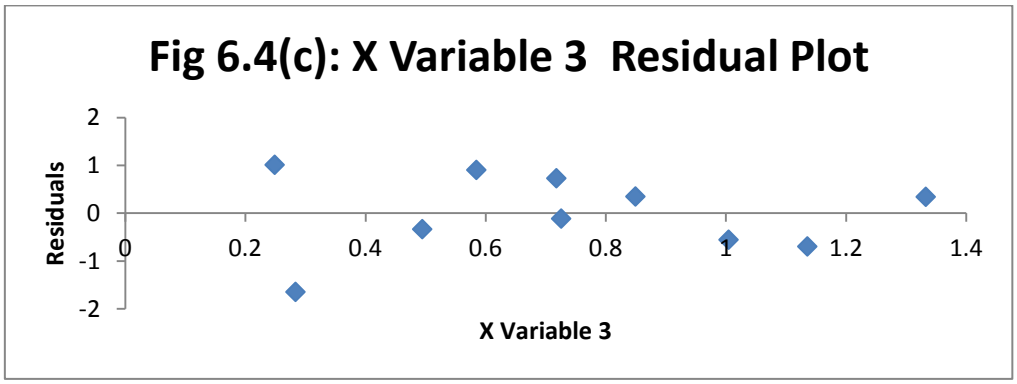


Fig 6.4(c): X Variable 3 Residual Plot
Residuals
X Variable 3
2
1
0
-1
-2
0
0.2
0.4
0.6
0.8
1
1.2
1.4

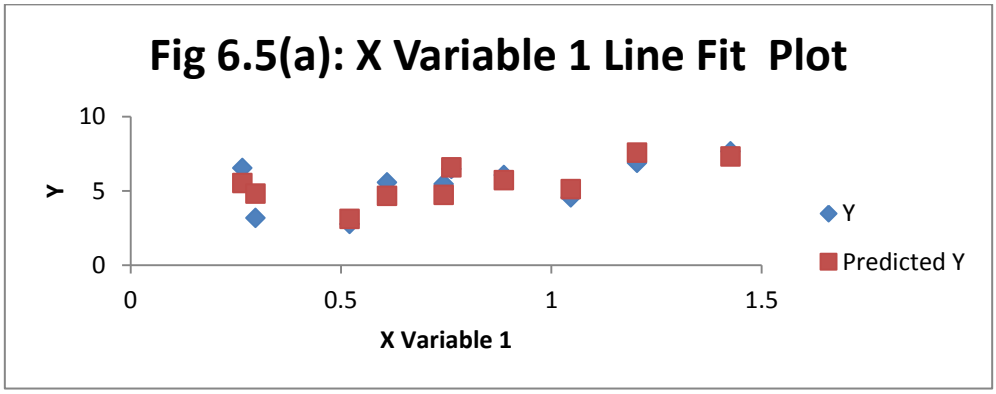
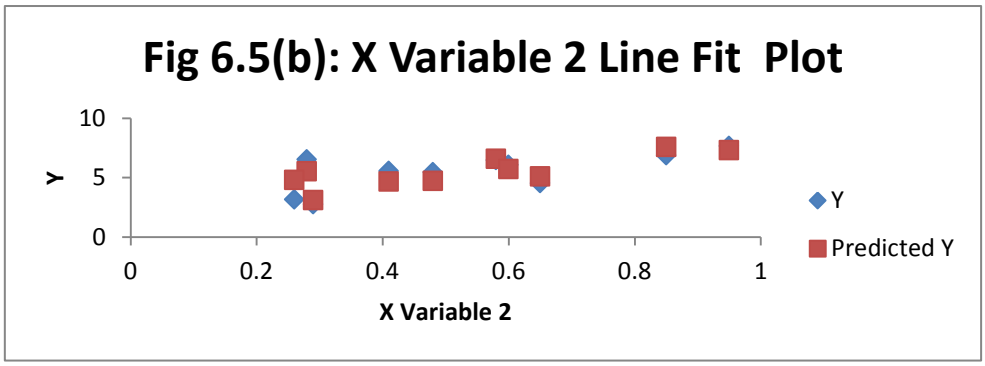
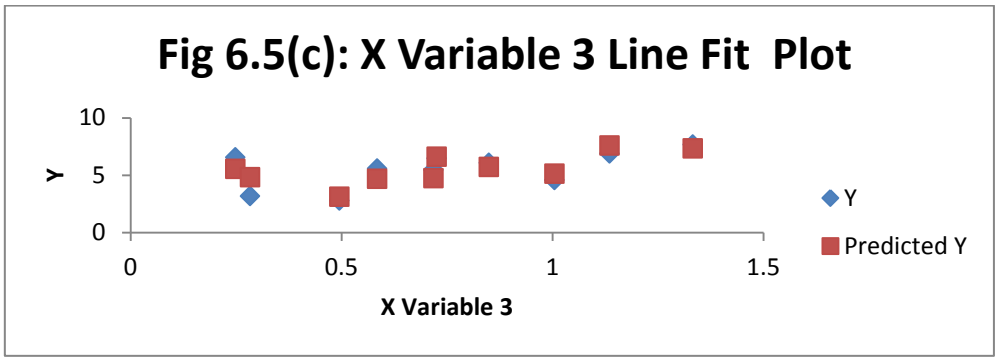
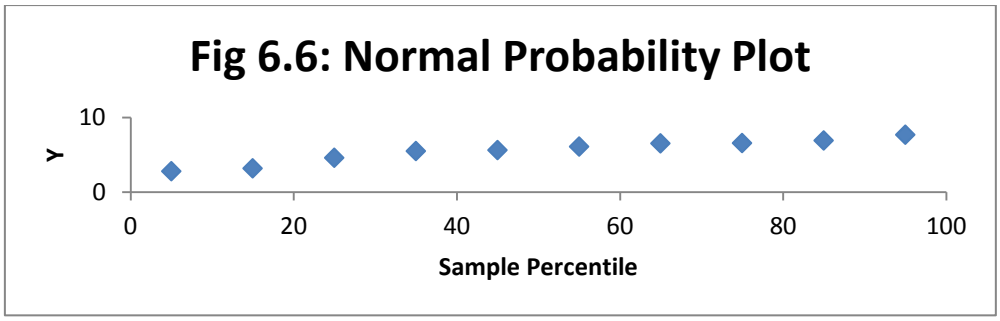


Fig 6.5(a): X Variable 1 Line Fit Plot
Y
X Variable 1
10
5
0
0
0.5
1
1.5
Y
Predicted Y







As mentioned earlier that the coefficient of X variable 1 and 5 i.e. peak left and right radial extraction force respectively, nullify the effect of each other. The coefficient of X variable 2 and 6 i.e. average left and right radial extraction forces respectively, also exhibit almost similar nullifying effect of each other. Therefore, another effort has been made to do a regression analysis by taking only extraction force – both average and peak. This was done in the line of understanding that one may consider of avoiding recording of radial force data and the instrument can be made further simplified.

The regression analysis in this line is done and is given in the Table No. 6.4. Regression Statistics given in Table No. 6.4 (a), ANOVA in Table No. 6.4(b), Residual Output in Table No. 6.4(c) and Probability Output in Table No. 6.4(d) are given.

In this case of regression analysis, it can be seen that multiple R has still gone down further but, still correlation coefficient value very much within stistical significance limit.

The graphical analysis, the residual outputs are plotted for graphical representations are given in Fig 6.7. The dependent variable line fit plots with predicted Y value are given in Fig 6.8 and the probability output functions are plotted in Fig 6.9.

Table No. 6.4: SUMMARY OUTPUT

Table No. 6.4(a): *Regression Statistics*	
Multiple R	0.79
R Square	0.62
Adjusted R Square	0.51
Standard Error	1.11
Observations	10

Table No. 6.4(b): ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	14.07	7.04	5.68	0.03
Residual	7	8.67	1.24		
Total	9	22.74			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4.33	1.19	3.63	0.01	1.50	7.14	1.50	7.15
X Variable 1	-6.56	4.01	-1.64	0.15	-16.06	2.92	-16.06	2.93
X Variable 2	19.10	9.01	2.12	0.07	-2.20	40.41	-2.20	40.41

Table No. 6.4(c): RESIDUAL OUTPUT

Observation	*Predicted Y*	*Residuals*	*Standard Residuals*
1	5.04	1.50	1.53
2	6.23	0.24	0.25
3	4.67	0.78	0.79
4	5.23	0.34	0.35
5	5.01	1.05	1.07
6	5.46	-0.92	-0.93
7	3.76	-0.99	-1.01
8	4.74	-1.58	-1.61
9	6.83	0.05	0.05
10	8.14	-0.48	-0.49

Table No. 6.4(d): PROBABILITY OUTPUT

Percentile	*Y*
5	2.77
15	3.16
25	4.55
35	5.45
45	5.57
55	6.06
65	6.47
75	6.54
85	6.88
95	7.66

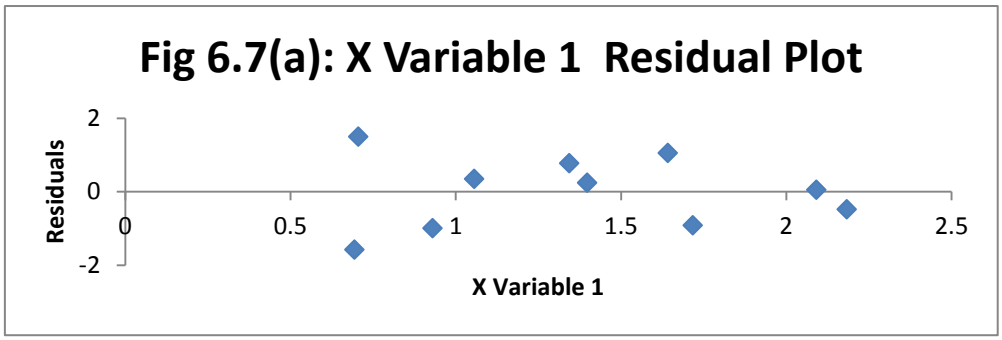


Fig 6.7(a): X Variable 1 Residual Plot
Residuals
2
0
-2
0
0.5
1
1.5
2
2.5
X Variable 1

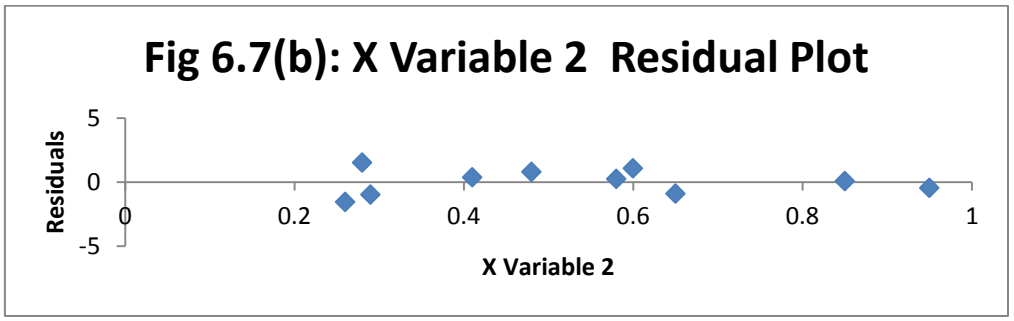


Fig 6.7(b): X Variable 2 Residual Plot
Residuals
5
0
-5
0
0.2
0.4
0.6
0.8
1
X Variable 2

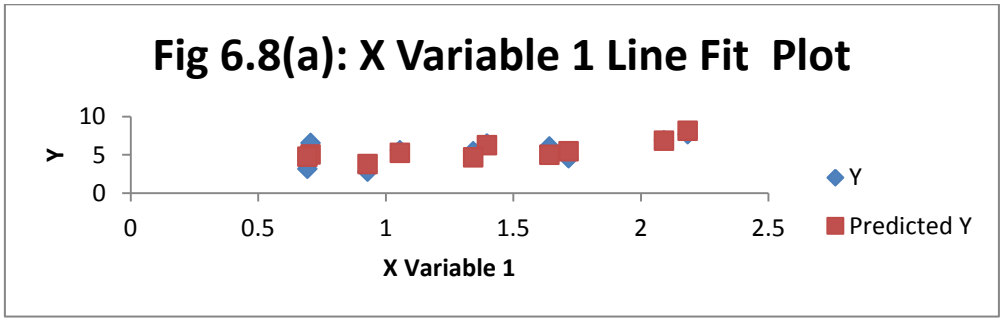


Fig 6.8(a): X Variable 1 Line Fit Plot
Y
10
5
0
0
0.5
1
1.5
2
2.5
X Variable 1
Y
Predicted Y

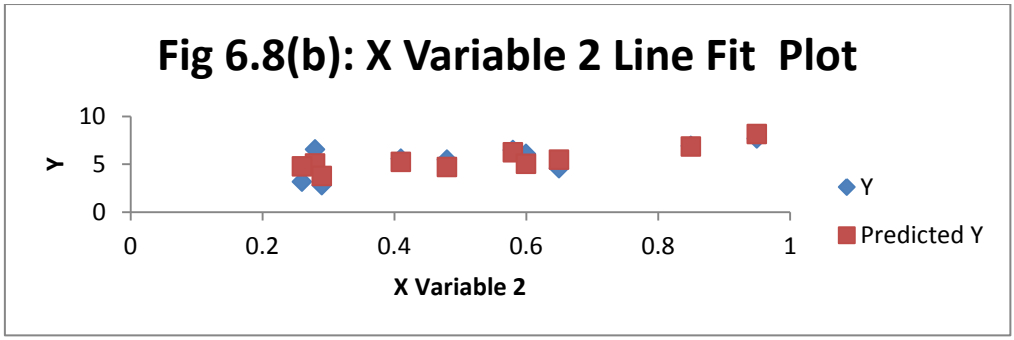


Fig 6.8(b): X Variable 2 Line Fit Plot
Y
10
5
0
0
0.2
0.4
0.6
0.8
1
X Variable 2
Y
Predicted Y

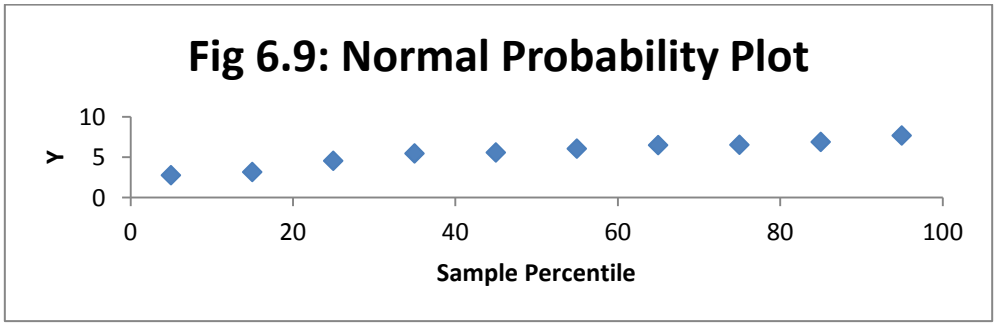


Fig 6.9: Normal Probability Plot
Y
10
5
0
0
20
40
60
80
100
Sample Percentile

Extraction curve parameters like slope of the curve, area under the curve, time taken to arrive at peak load, etc. are always a matter of interest since the beginning of this experiment.

In consultation with various technical experts in the field, the parameters, therefore, considered for regression are given in Table No 6.5 and the same is marked in the graph as shown in Fig 6.10.

Table No. 6.5: Extraction Curve Parameters Notations

Extraction curve parameters	Notation	Unit
Peak load height for extraction curve	H_E	Kg
Peak load distance for extraction curve	D_E	mm
Area under the extraction curve	A_E	Kg.mm
Zero load duration for extraction curve	L	mm
Peak load height for radial curve	H_R	Kg
Peak load distance for radial curve	D_R	mm
Area under the curve for radial curve	A_R	Kg.mm

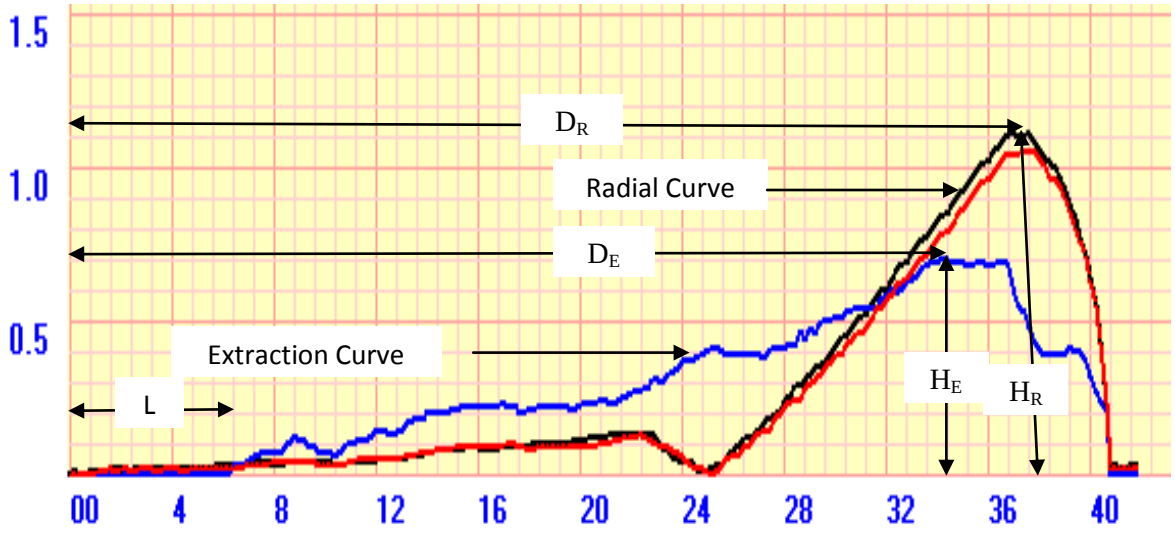


Fig.6.10: Extraction Curve Parameters Notations

The graphical parameters mentioned above are measured for all the ten suiting fabric samples mentioned in the beginning of this chapter are given in Table No 6.6 along with subjectively measured fabric feel factors (Annexure-III). These data are then regressed.

Table No. 6.6: Extraction Curve Parameters

S No.	Feel Factor	H_E	D_E	A_E	L	H_R	D_R	A_R
SS1	7.66	0.3	15	32.1	2.3	0.03	10.5	3.9
SS2	6.88	0.48	15.2	42.4	3	0.07	14.8	7.5
SS8	3.16	0.49	15.5	27.2	3.2	0.06	12.3	2.4
SS10	2.77	0.36	12.8	41.5	0.6	0.04	12.8	3.6
SS13	4.55	0.96	15.9	80.4	0.4	0.09	15.6	7.5
SS14	6.06	0.82	15	35.4	1.9	0.24	17	6.6
SS23	5.57	0.22	14	13.5	0	0.03	14.6	4.5
SS24	5.45	0.18	12.4	17.3	2.4	0.02	15.2	3
SS28	6.47	1.16	15.3	58.8	1.5	0.7	17.2	19.4
SS29	6.54	1.46	14.6	92.2	0.1	1.2	16.8	36.1

The regression analysis of the data mentioned in Table No. 6.6 is given in the Table No. 6.7. Regression Statistics given in Table No.6.7 (a), ANOVA in Table No. 6.7(b), Residual Output in Table No. 6.7(c) and Probability Output in Table No.6.7(d) are given.

The residual outputs are plotted for graphical representations to have better idea and are given in Fig 6.11. Dependent variable line fit plots with predicted Y value are given in Fig 6.12. And the probability output functions are plotted in Fig 6.13.

The anatomy of the above mentioned table and the figures gives a mixed reaction. It can seen that the correlation coefficient, f-stat, p-value, predicted Y and residuals are statistically well within the limit of acceptance, but Y-intercept a bit discouraging. Therefore, further investigation in this line may be carried in due course of time with large sample.

Table No. 6.7: SUMMARY OUTPUT

Table No. 6.7(a): *Regression Statistics*	
Multiple R	0.75
R Square	0.56
Adjusted R Square	-0.98
Standard Error	2.24
Observations	10

Table No. 6.7(b): ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	7	12.72613	1.818019	0.362981	0.868946
Residual	2	10.01716	5.00858		
Total	9	22.74329			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-56.36	92.62	-0.61	0.60	-454.86	342.12	-454.856	342.13
X Variable 1	-37.24	65.24	-0.57	0.62	-317.96	243.47	-317.964	243.47
X Variable 2	3.39	5.11	0.66	0.58	-18.61	25.39	-18.605	25.39
X Variable 3	0.28	0.59	0.48	0.68	-2.26	2.82	-2.256	2.82
X Variable 4	-0.05	1.00	-0.05	0.96	-4.36	4.26	-4.363	4.26
X Variable 5	47.93	102.30	0.47	0.68	-392.22	488.08	-392.224	488.08
X Variable 6	1.58	2.63	0.60	0.61	-9.72	12.89	-9.720	12.89
X Variable 7	-1.17	3.00	-0.39072	0.73	-14.08	11.73	-14.081	11.74

Table No. 6.7(c): RESIDUAL OUTPUT

Observation	*Predicted Y*	*Residuals*	*Standard Residuals*
1	5.77	1.89	1.79
2	7.12	-0.23	-0.22
3	5.02	-1.86	-1.76
4	3.28	-0.51	-0.48
5	4.64	-0.09	-0.09
6	4.56	1.49	1.42
7	6.06	-0.48	-0.46
8	5.29	0.16	0.15
9	6.86	-0.39	-0.37
10	6.52	0.02	0.02

Table No. 6.7(d): PROBABILITY OUTPUT

Percentile	*Y*
5	2.77
15	3.16
25	4.55
35	5.45
45	5.57
55	6.06
65	6.47
75	6.54
85	6.88
95	7.66

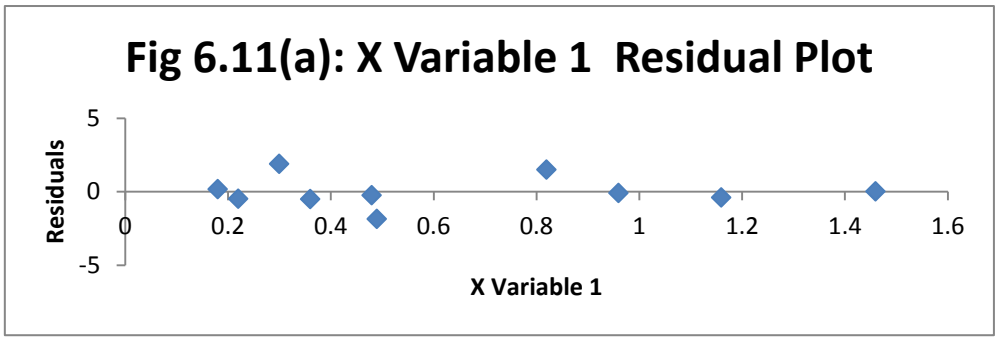


Fig 6.11(a): X Variable 1 Residual Plot
Residuals
5
0
-5
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
X Variable 1

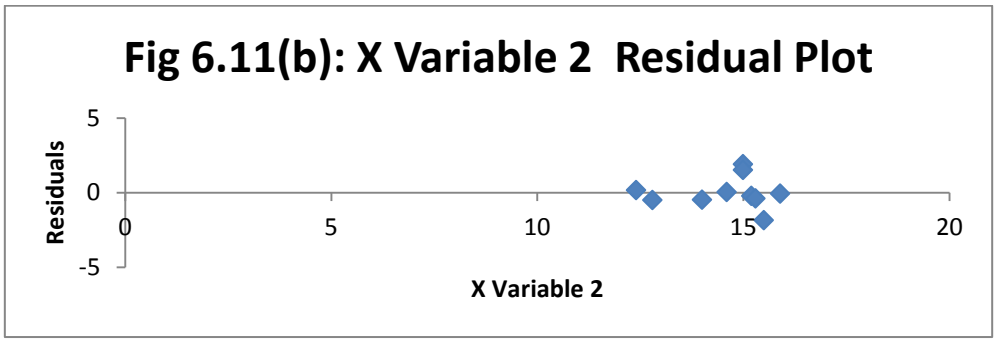


Fig 6.11(b): X Variable 2 Residual Plot
Residuals
5
0
-5
0
5
10
15
20
X Variable 2

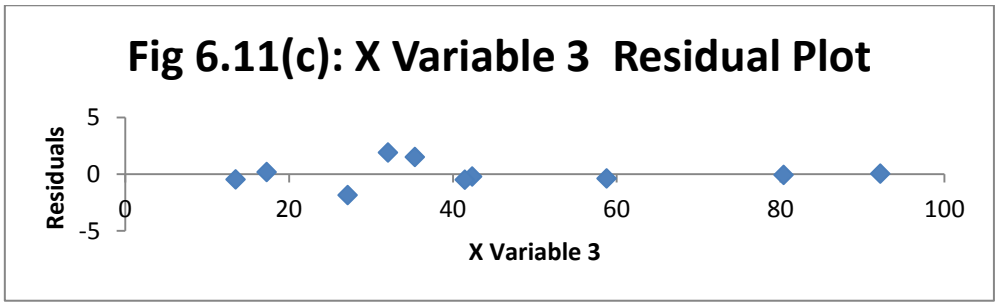


Fig 6.11(c): X Variable 3 Residual Plot
Residuals
5
0
-5
0
20
40
60
80
100
X Variable 3

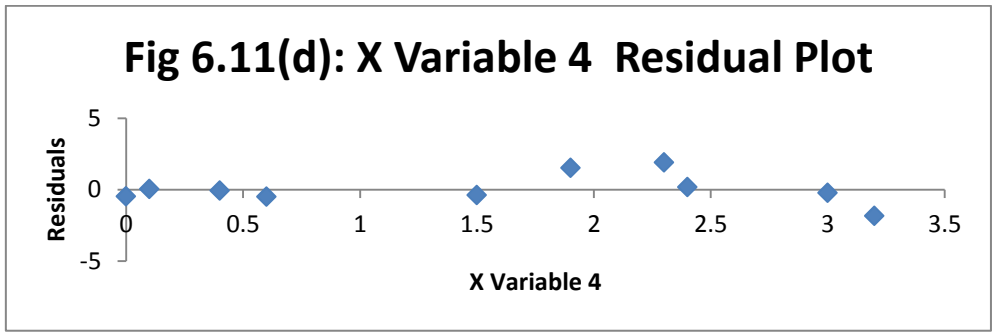


Fig 6.11(d): X Variable 4 Residual Plot
Residuals
5
0
-5
0
0.5
1
1.5
2
2.5
3
3.5
X Variable 4

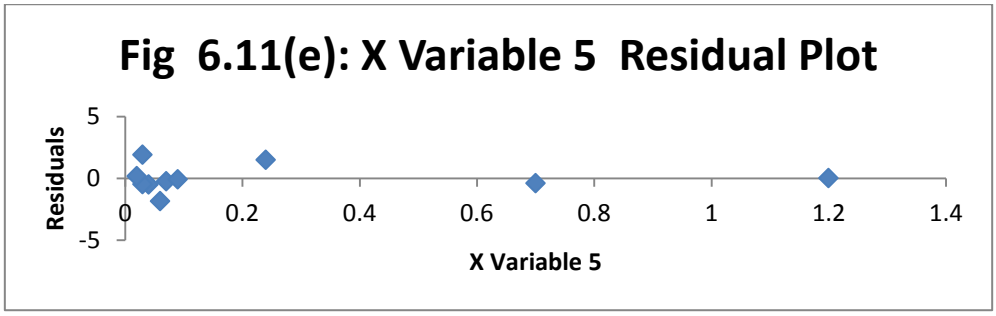


Fig 6.11(e): X Variable 5 Residual Plot
Residuals
5
0
-5
0
0.2
0.4
0.6
0.8
1
1.2
1.4
X Variable 5

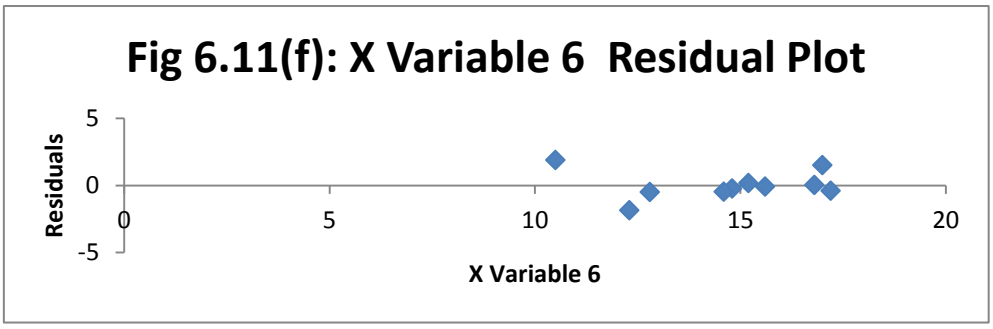


Fig 6.11(f): X Variable 6 Residual Plot
Residuals
5
0
-5
0
5
10
15
20
X Variable 6

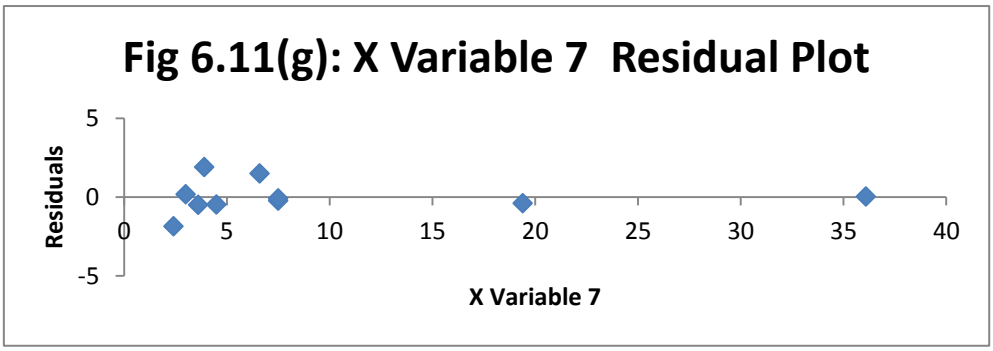


Fig 6.11(g): X Variable 7 Residual Plot
Residuals
5
0
-5
0
5
10
15
20
25
30
35
40
X Variable 7

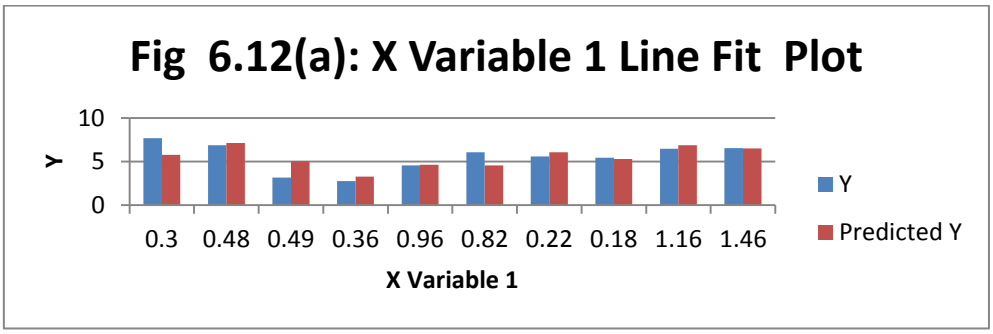


Fig 6.12(a): X Variable 1 Line Fit Plot
Y
10
5
0
0.3
0.48
0.49
0.36
0.96
0.82
0.22
0.18
1.16
1.46
X Variable 1
Y
Predicted Y

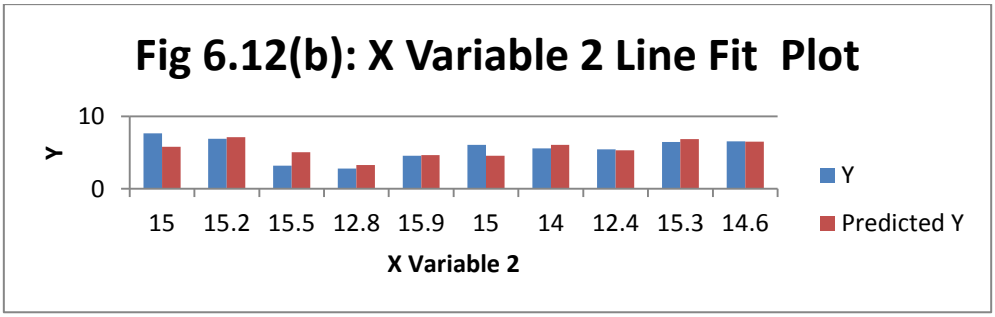


Fig 6.12(b): X Variable 2 Line Fit Plot
Y
10
0
15
15.2
15.5
12.8
15.9
15
14
12.4
15.3
14.6
X Variable 2
Y
Predicted Y

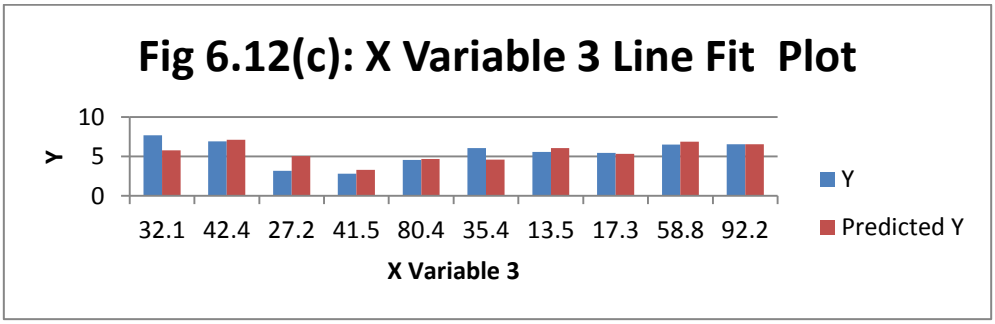


Fig 6.12(c): X Variable 3 Line Fit Plot
Y
10
5
0
32.1
42.4
27.2
41.5
80.4
35.4
13.5
17.3
58.8
92.2
X Variable 3
Y
Predicted Y

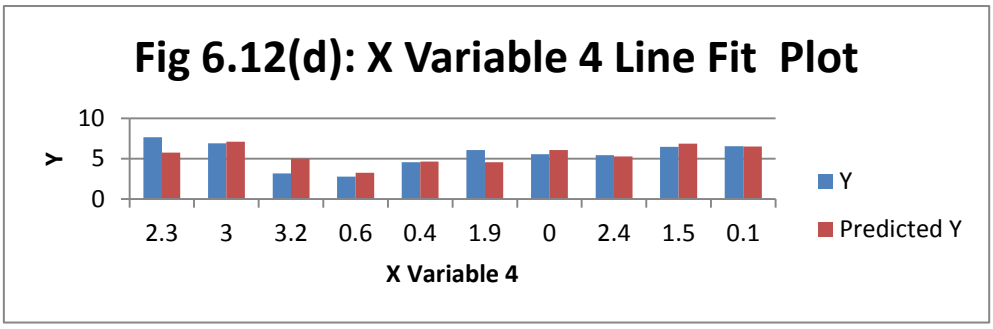


Fig 6.12(d): X Variable 4 Line Fit Plot
Y
10
5
0
2.3 3 3.2 0.6 0.4 1.9 0 2.4 1.5 0.1
X Variable 4
Y
Predicted Y

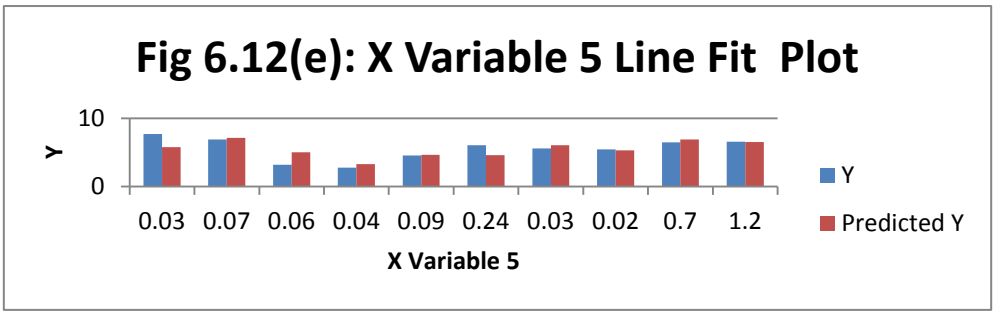


Fig 6.12(e): X Variable 5 Line Fit Plot
Y
10
0
0.03 0.07 0.06 0.04 0.09 0.24 0.03 0.02 0.7 1.2
X Variable 5
Y
Predicted Y

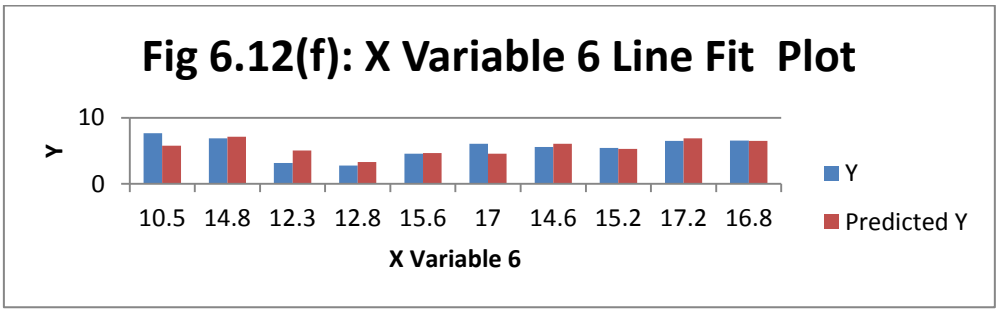


Fig 6.12(f): X Variable 6 Line Fit Plot
Y
10
0
10.5 14.8 12.3 12.8 15.6 17 14.6 15.2 17.2 16.8
X Variable 6
Y
Predicted Y

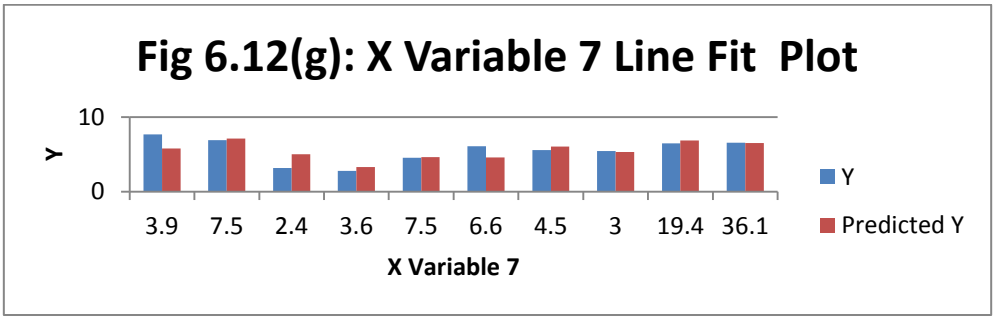


Fig 6.12(g): X Variable 7 Line Fit Plot
Y
10
0
3.9 7.5 2.4 3.6 7.5 6.6 4.5 3 19.4 36.1
X Variable 7
Y
Predicted Y

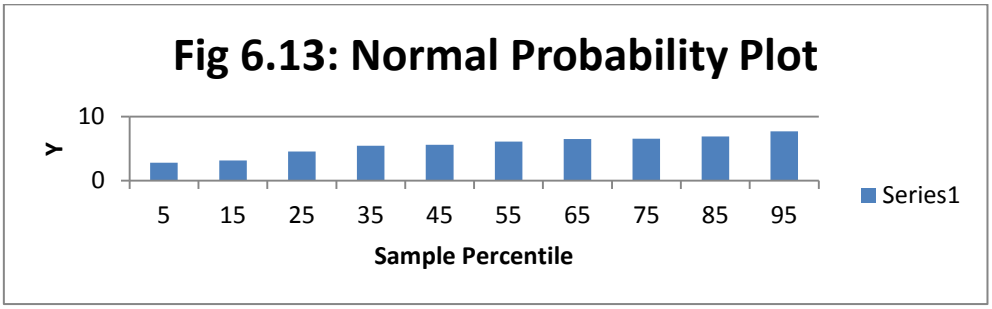


Fig 6.13: Normal Probability Plot
Y
10
0
5 15 25 35 45 55 65 75 85 95
Sample Percentile
Series1

6.3 Conclusion

The regression analysis technique is quite age old method but still it is very handy and effective method to establish the relationship among variables.

In the present case the test data have been tried to regress in various ways. Statistically, almost all the cases have been found to be within the acceptable range. Hence the regressed fabric feel factor can be directly used to predict from the single test data of the said instrument.