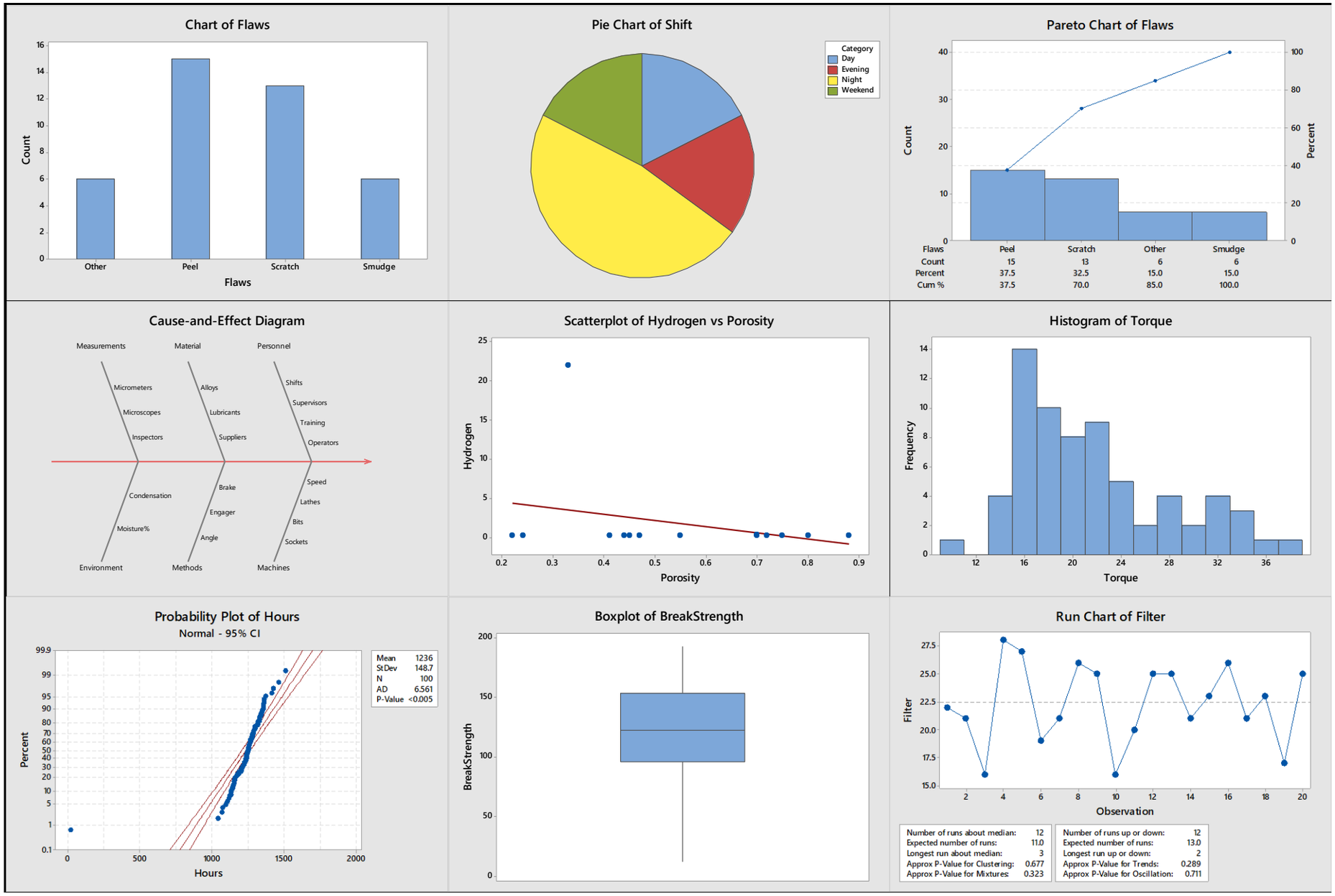
DATA VISUALIZATION USING MINITAB



Data Modeling

Data modeling is the process of creating a data model for an information system by applying certain formal techniques. Analysis of variance (ANOVA) is a collection of statistical models and their associated estimation procedures used to analyse the differences among group means in a sample.

IPE-314

QUALITY MANAGEMENT SESSIONAL

Submitted To

AP Tanmoy Das

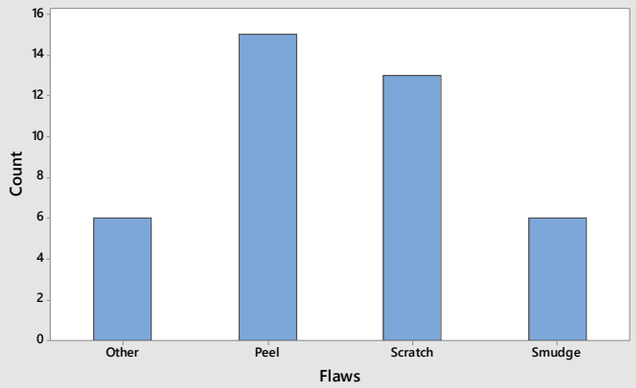
Submitted By

Name: Mezbah Uddin

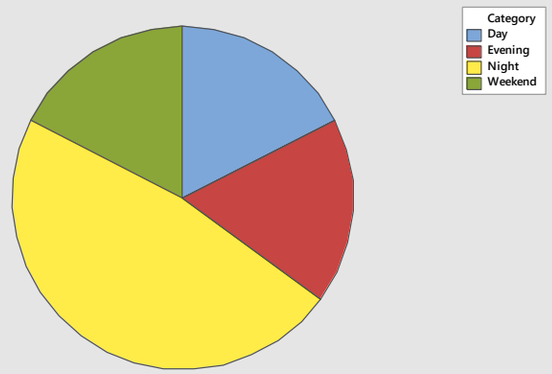
Roll: 201636008

	Vehicle	Type	Fuel	City MPG	Hwy MPG	Combined MPG	Retail ($1000)	Safety (0-5)	Interior Volume	Cargo Volume	Total Volume
1	A	SUV	Gas	17	22	19.25	31.3	4	97.3	89.7	187.0
2	B	Sedan	Gas	21	31	25.50	31.0	4	118.3	14.0	132.3
3	C	Sedan	Hybrid	40	39	39.55	35.6	5	118.3	14.0	132.3
4	D	Sedan	Gas	25	35	29.50	22.1	5	102.7	15.4	118.1
5	E	Sedan	Hybrid	43	39	41.20	26.0	5	102.7	15.4	118.1
6	F	Sedan	Gas	27	34	30.15	16.2	4	92.1	12.3	104.4
7	G	SUV	Gas	16	20	17.80	26.9	3	89.1	66.8	155.9
8	H	SUV	Gas	20	25	22.25	28.9	4	145.7	95.4	241.1

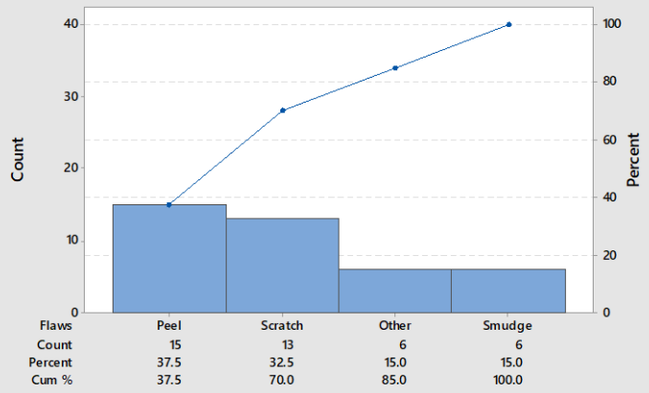
Chart of Flaws



Pie Chart of Shift

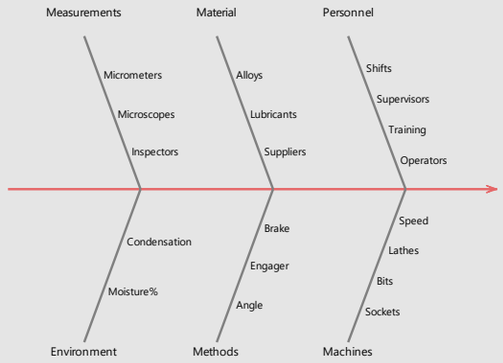


Pareto Chart of Flaws

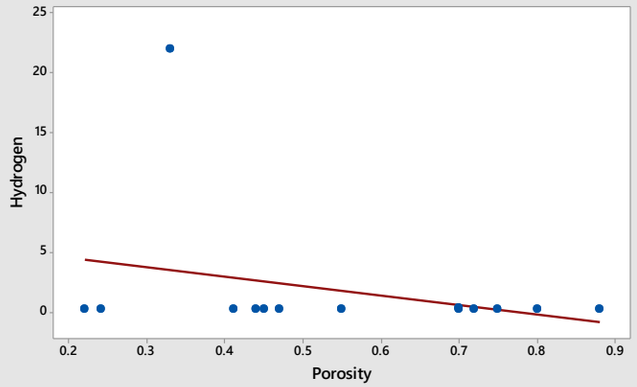


Flaws	Peel	Scratch	Other	Smudge
Count	15	13	6	6
Percent	37.5	32.5	15.0	15.0
Cum %	37.5	70.0	85.0	100.0

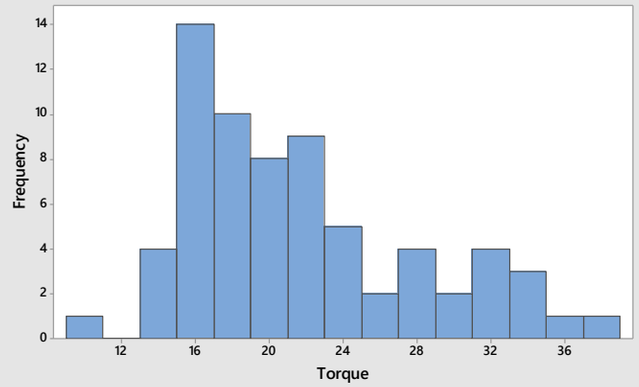
Cause-and-Effect Diagram



Scatterplot of Hydrogen vs Porosity

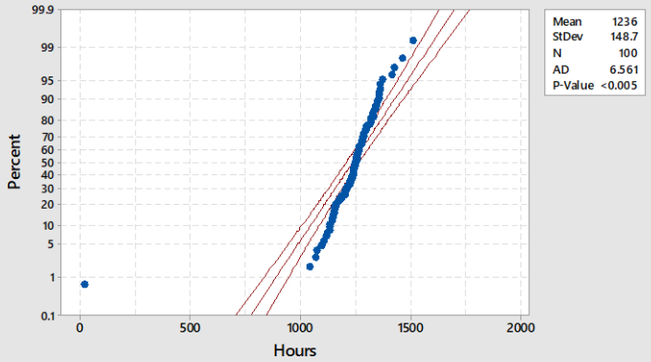


Histogram of Torque



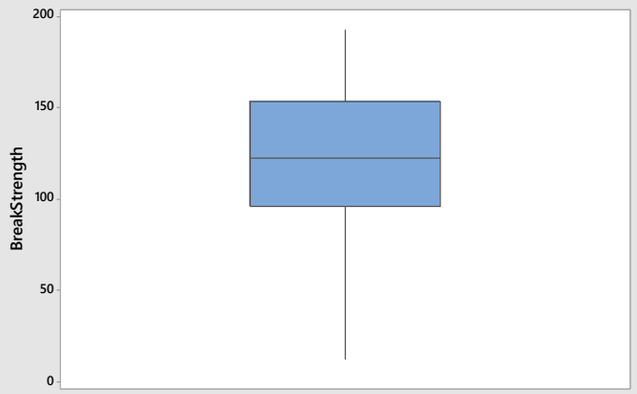
Probability Plot of Hours

Normal - 95% CI

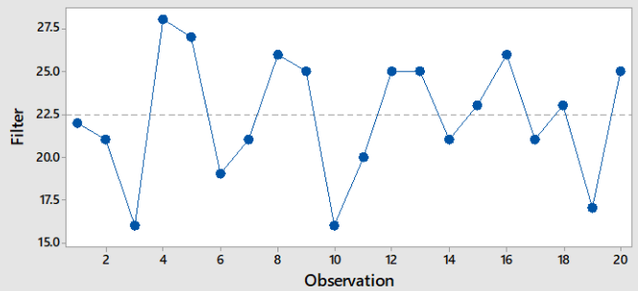


Mean	1236
StDev	148.7
N	100
AD	6.561
P-Value	<0.005

Boxplot of BreakStrength



Run Chart of Filter



Number of runs about median:	12
Expected number of runs:	11.0
Longest run about median:	3
Approx P-Value for Clustering:	0.677
Approx P-Value for Mixtures:	0.323

Number of runs up or down:	12
Expected number of runs:	13.0
Longest run up or down:	2
Approx P-Value for Trends:	0.289
Approx P-Value for Oscillation:	0.711

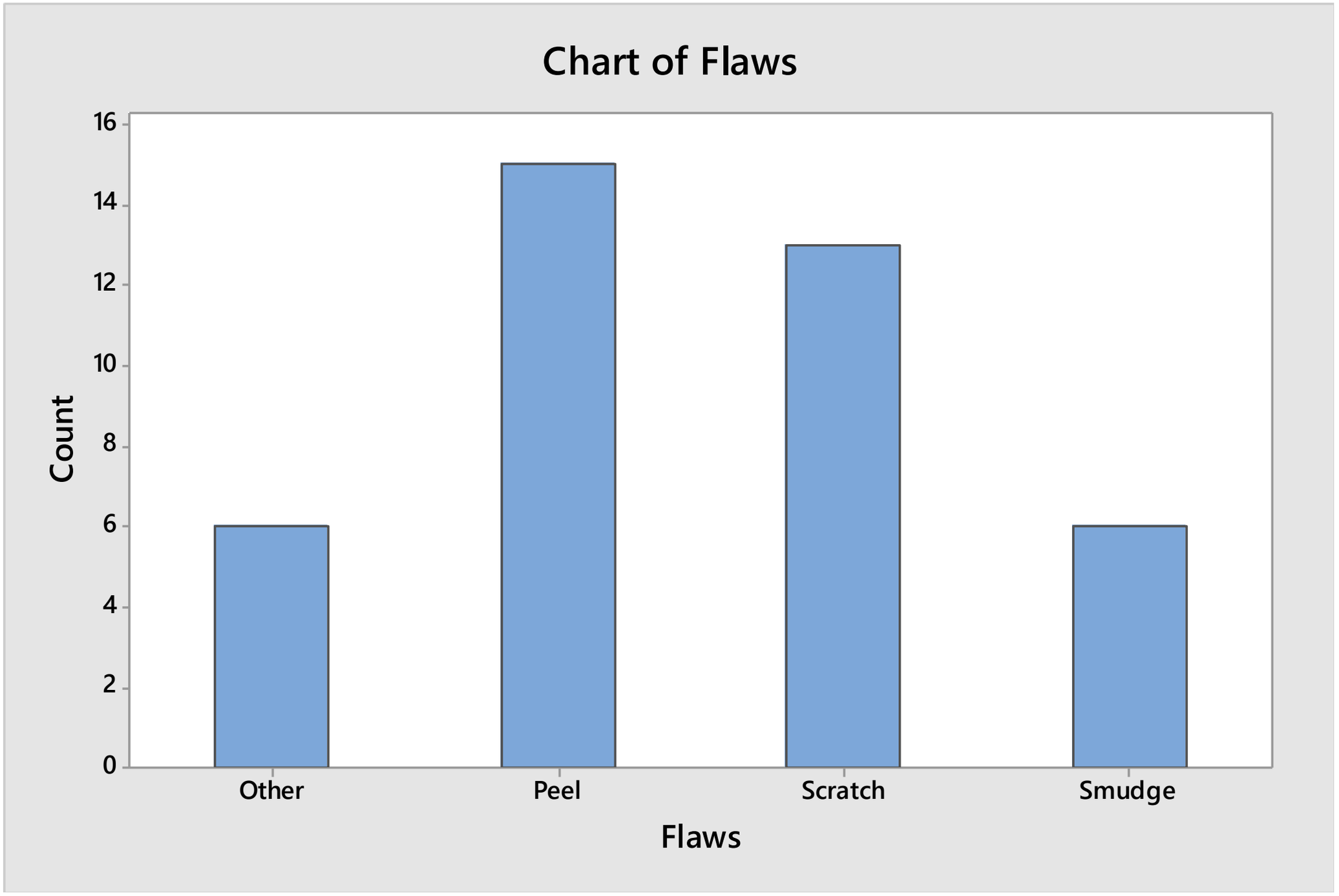
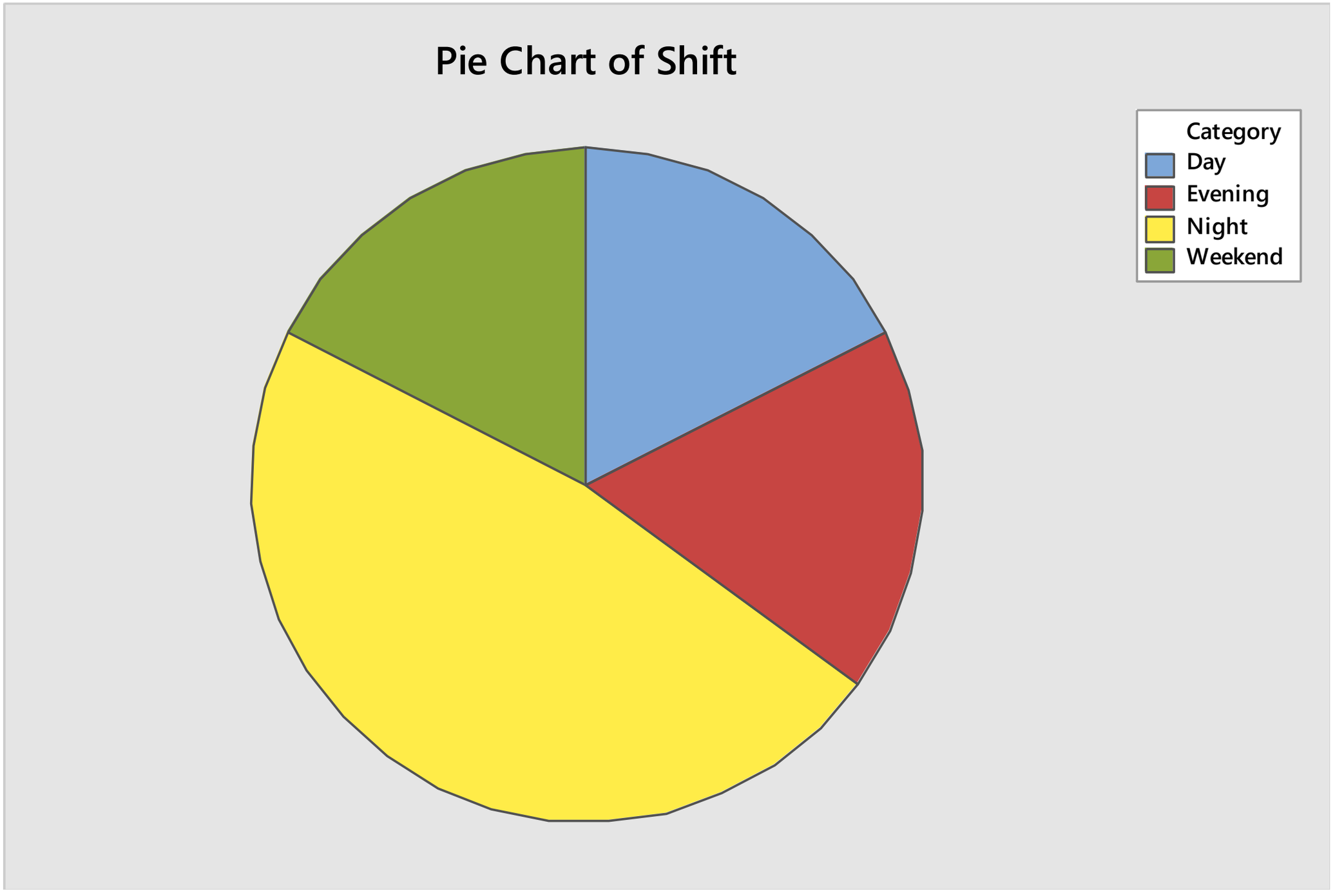
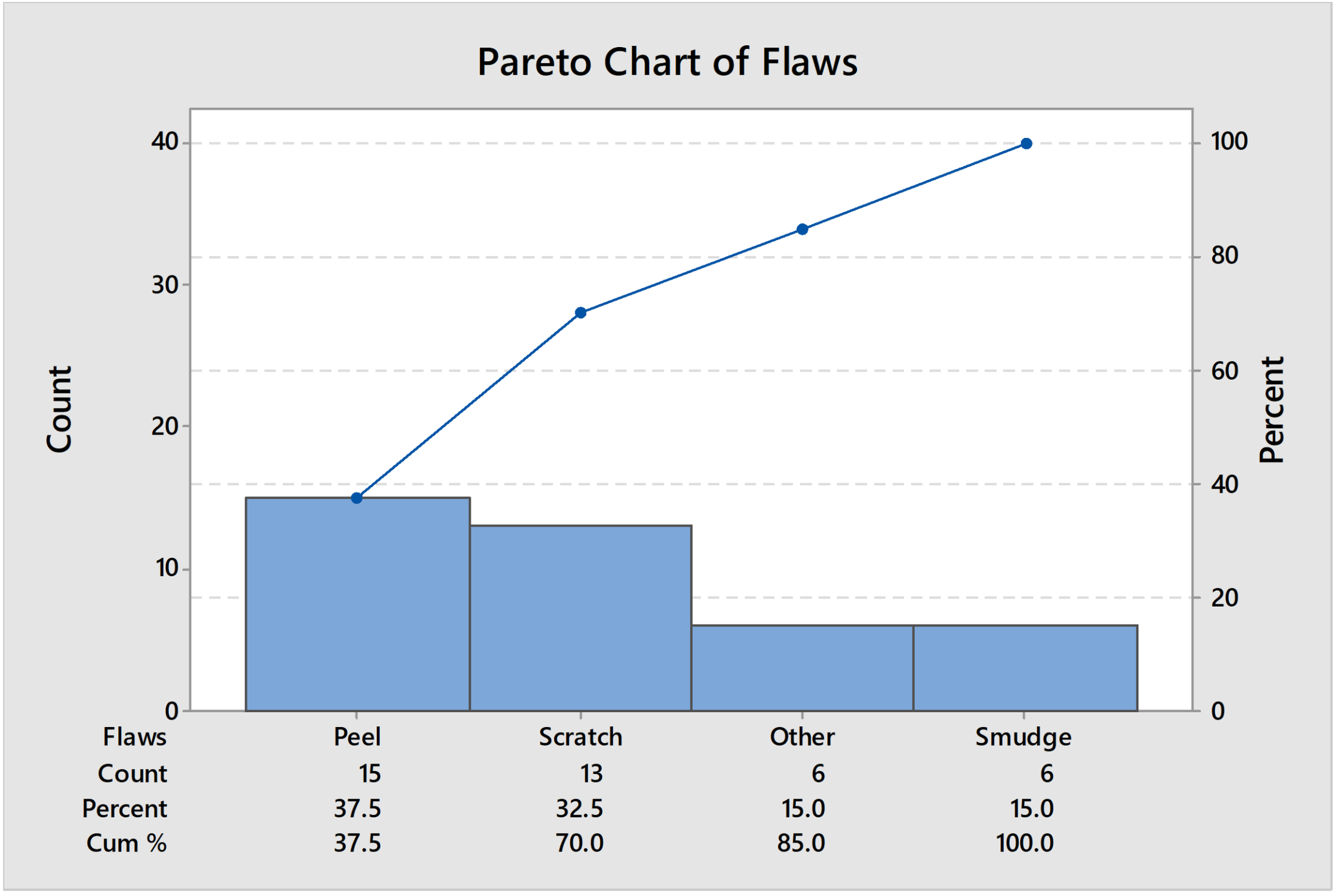
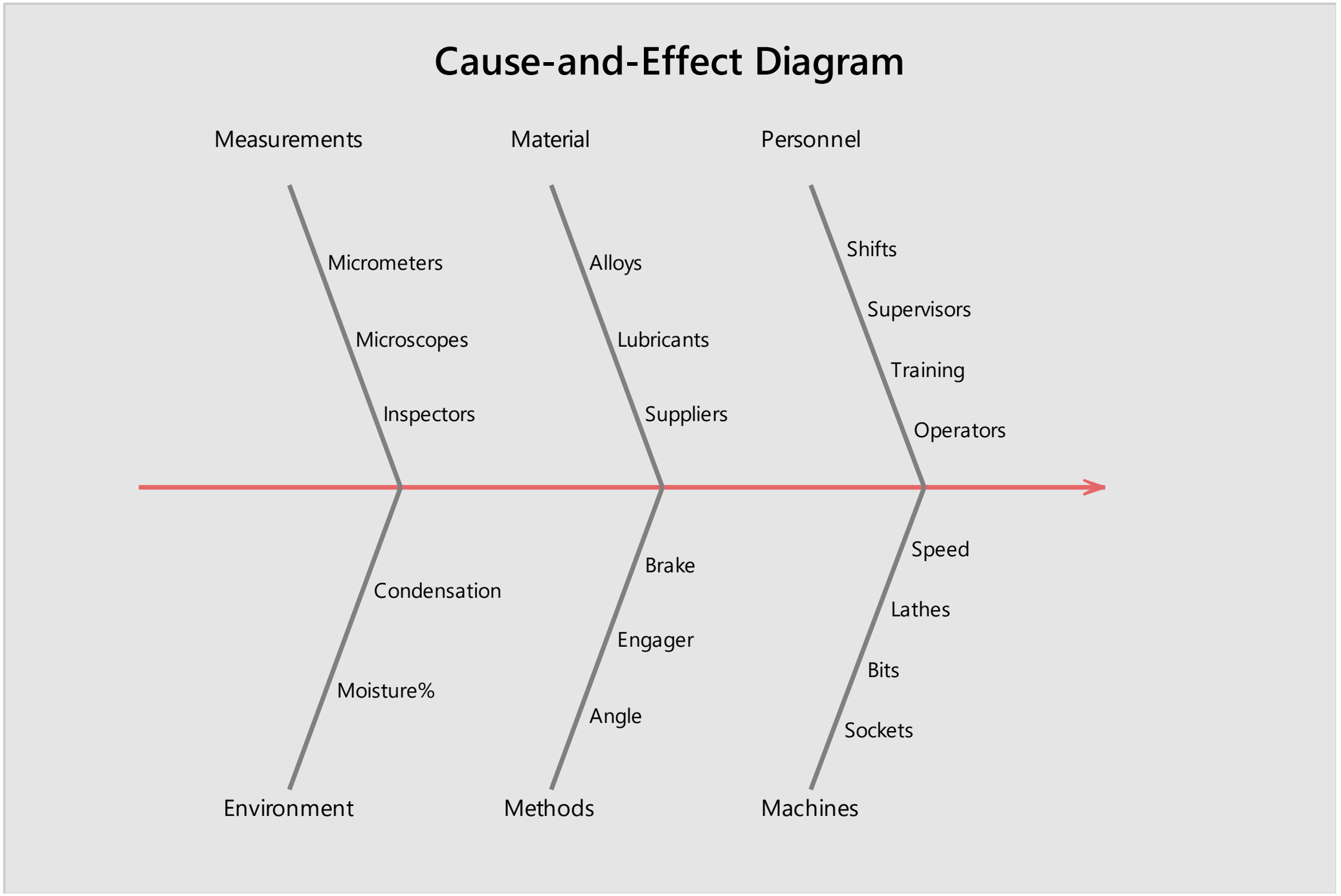
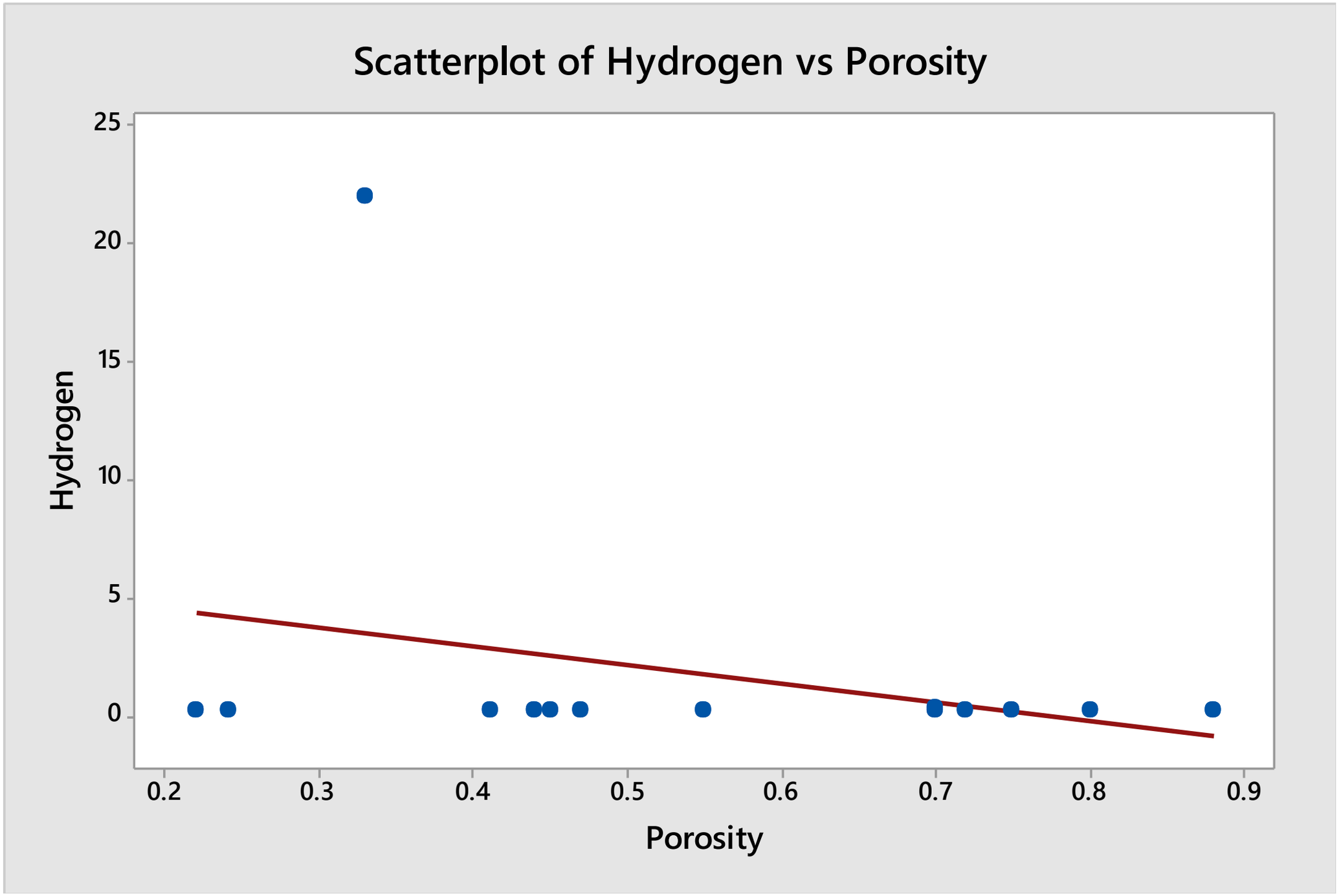


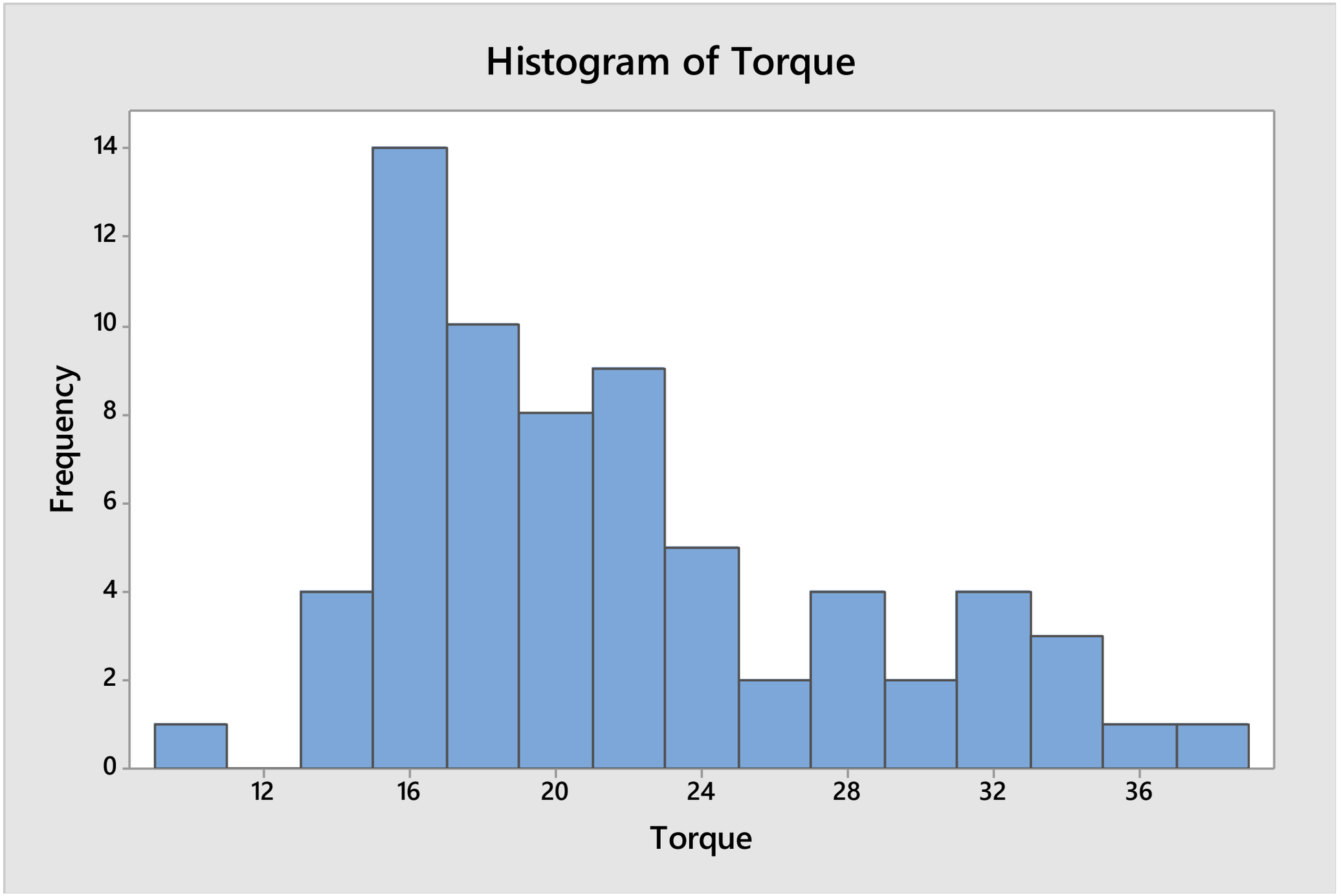
Chart of Flaws
Count
16
14
12
10
8
6
4
2
0
Other
Peel
Scratch
Smudge
Flaws

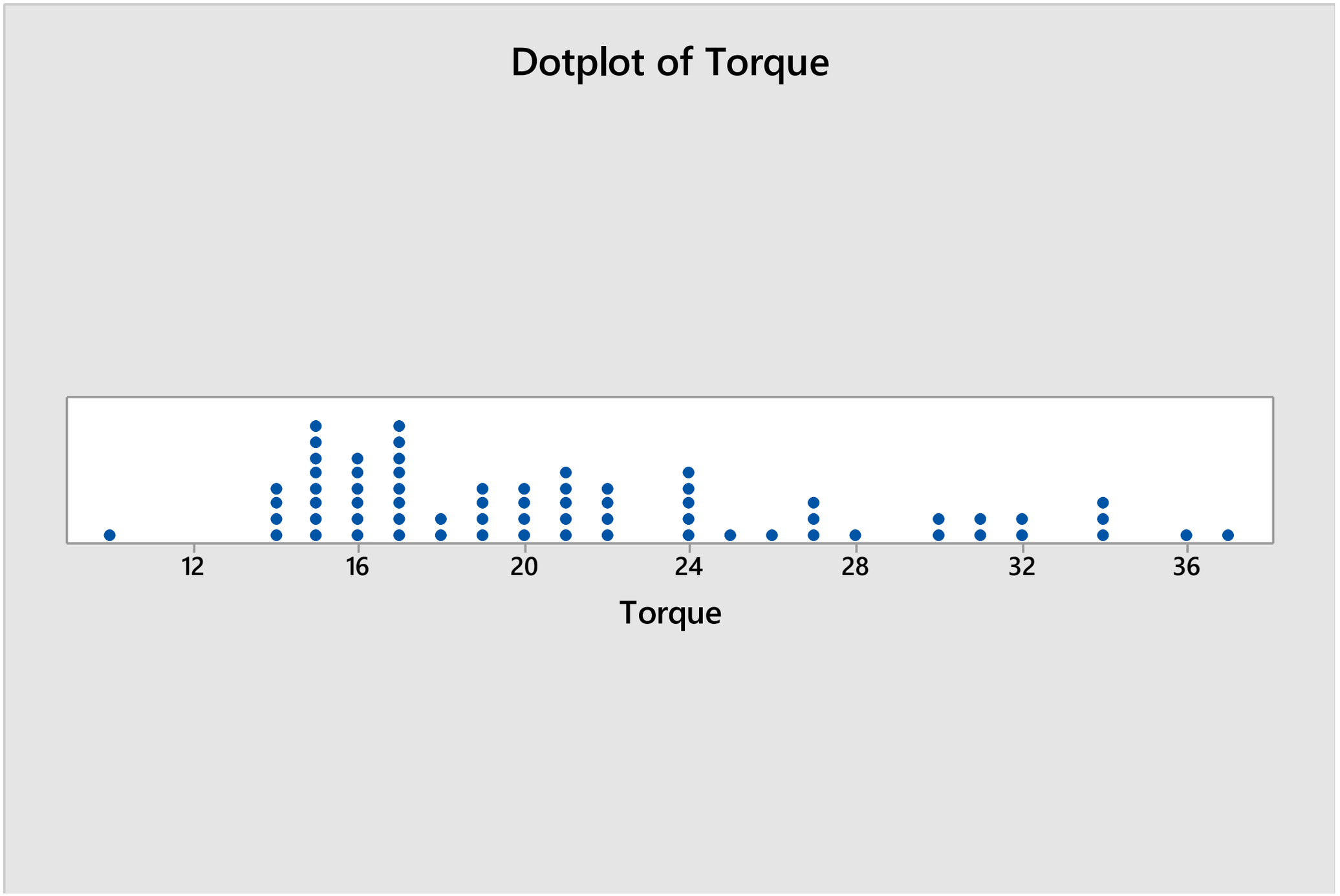

Pie Chart of Shift
Category
Day
Evening
Night
Weekend

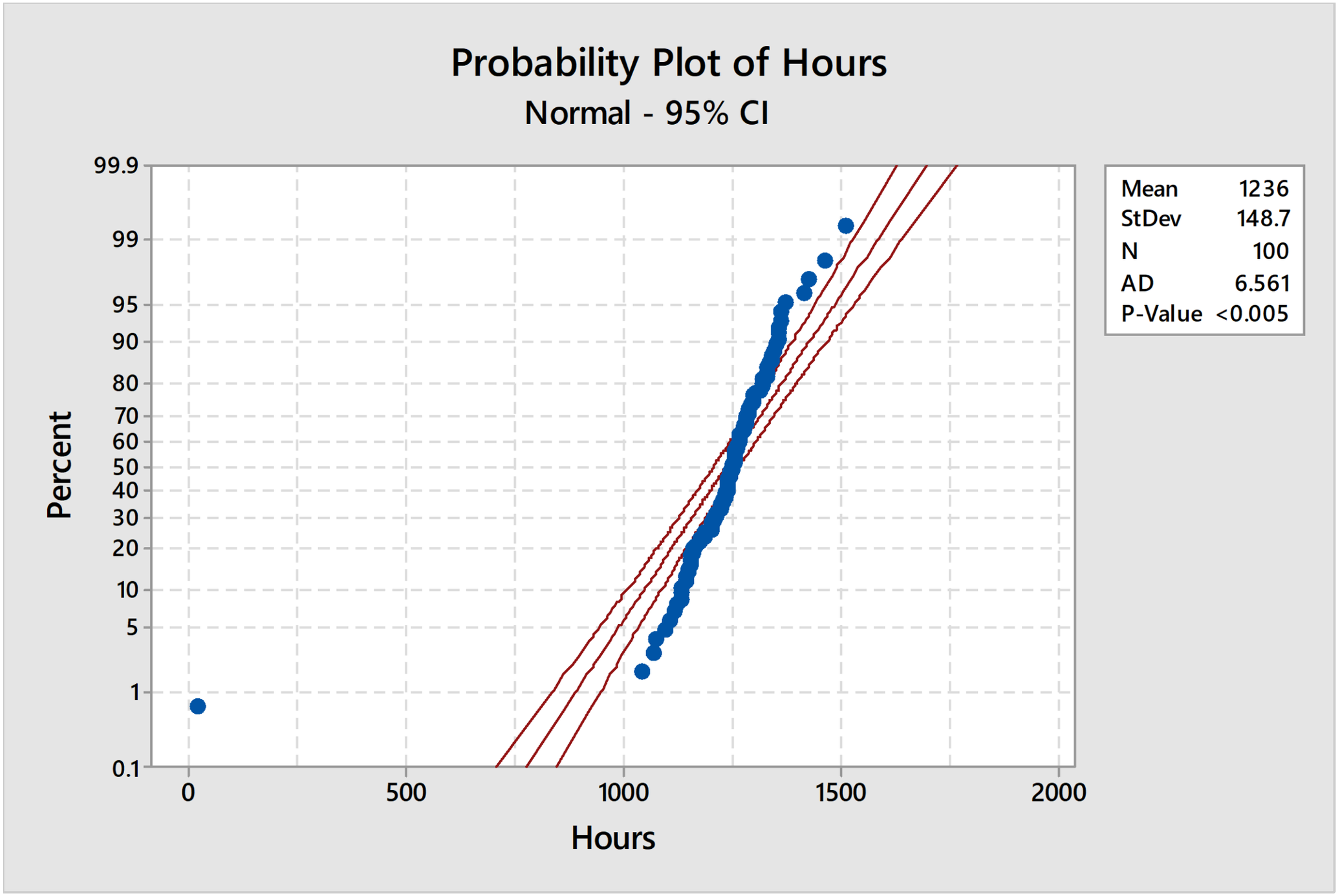

Pareto Chart of Flaws
Count
Percent
40
30
20
10
0
100
80
60
40
20
0
Flaws Peel Scratch Other Smudge
Count 15 13 6 6
Percent 37.5 32.5 15.0 15.0
Cum % 37.5 70.0 85.0 100.0

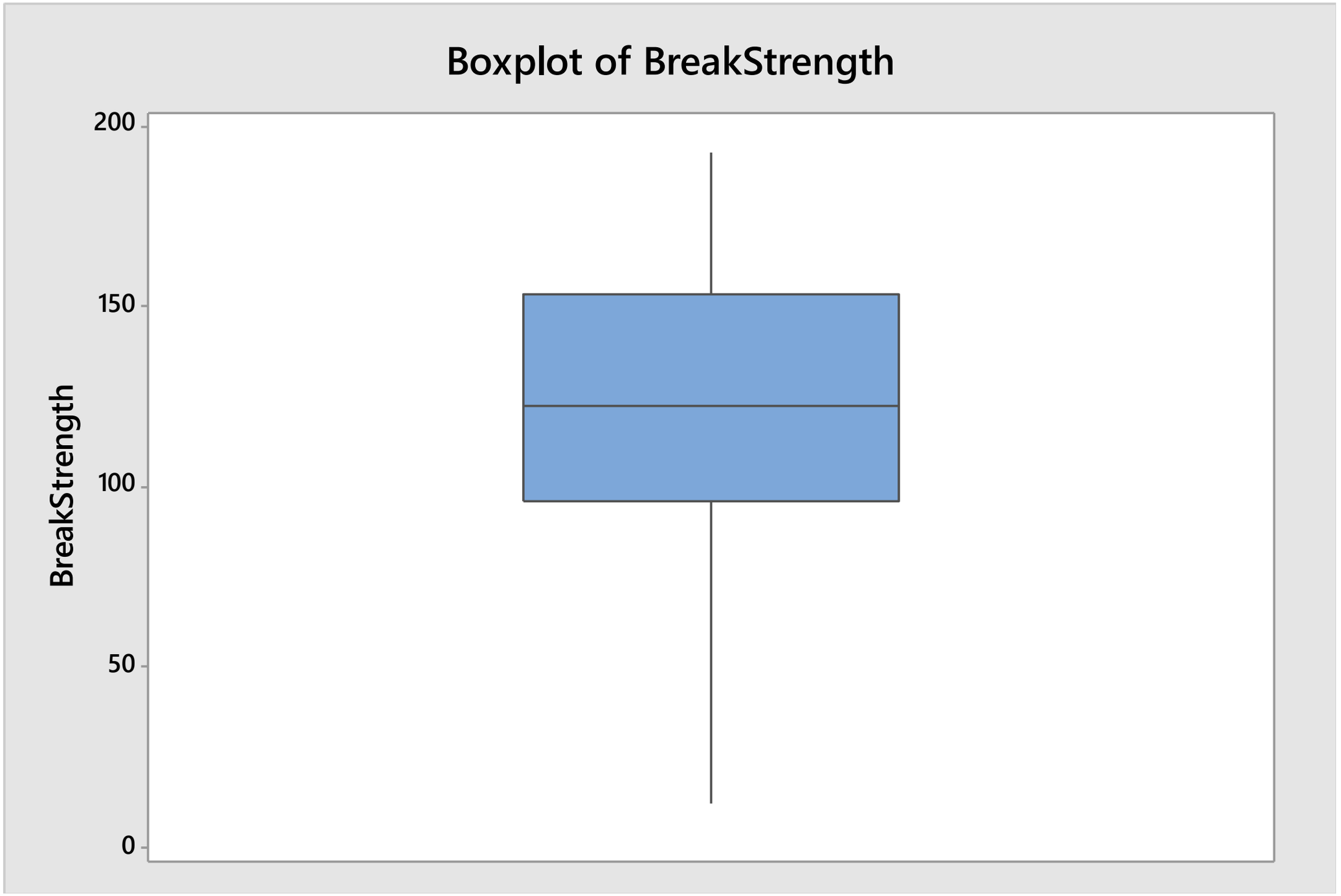

Cause-and-Effect Diagram
Measurements
Material
Personnel
Micrometers
Microscopes
Inspectors
Alloys
Lubricants
Suppliers
Shifts
Supervisors
Training
Operators
Condensation
Moisture%
Brake
Engager
Angle
Speed
Lathes
Bits
Sockets
Environment
Methods
Machines

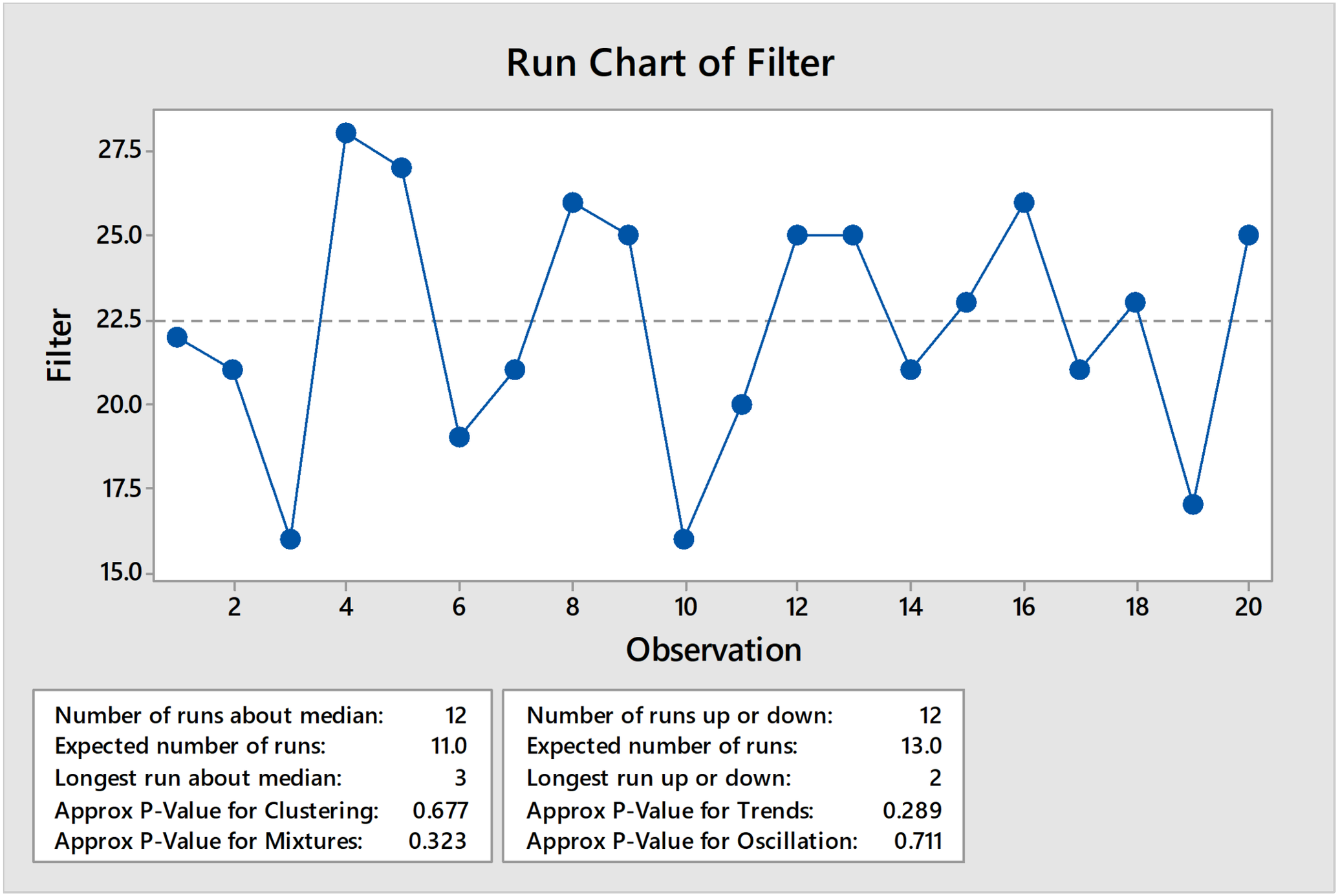

Scatterplot of Hydrogen vs Porosity
Hydrogen
25
20
15
10
5
0
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
Porosity


Histogram of Torque
Frequency
0
2
4
6
8
10
12
14
12
16
20
24
28
32
36
Torque


Dotplot of Torque
12
16
20
24
28
32
36
Torque


Probability Plot of Hours
Normal - 95% CI
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0
500
1000
1500
2000
Hours
Mean 1236
StDev 148.7
N 100
AD 6.561
P-Value <0.005


Boxplot of BreakStrength
200
150
100
50
0
BreakStrength



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