
Program Summary - adhoc and normality for SUCCESS VARIABLES (OUTPUT) var.sas

Execution Environment

Author: u64136608
File: /home/u64136608/STAT 520 PROJECT/adhoc and normality for SUCCESS VARIABLES (OUTPUT) var.sas
SAS Platform: Linux LIN X64 5.14.0-284.30.1.el9_2.x86_64
SAS Host: ODAWS01-USW2.ODA.SAS.COM
SAS Version: 9.04.01M8P02222023
SAS Locale: en_US
Submission Time: 10/19/2025, 11:52:50 AM
Browser Host: 104-63-252-32.LIGHTSPEED.SNDGCA.SBCGLOBAL.NET
User Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/141.0.0.0 Safari/537.36
Application Server: ODAMID00-USW2.ODA.SAS.COM

Code: adhoc and normality for SUCCESS VARIABLES (OUTPUT) var.sas

```
ods noproctitle;

/** Analyze numeric variables */
title "Descriptive Statistics for Numeric Variables";

proc means data=STPROJ.RCHERI n nmiss min mean median max std;
    var COLLGPA SLFCHG01 SLFCHG02 SLFCHG03 SLFCHG04 SATIS13;
run;

title;

proc univariate data=STPROJ.RCHERI noprint;
    histogram COLLGPA SLFCHG01 SLFCHG02 SLFCHG03 SLFCHG04 SATIS13;
run;

title;

/* ----- HISTOGRAMS ----- */
title "Histograms for Selected Variables";
proc univariate data=STPROJ.RCHERI;
    var COLLGPA SLFCHG01 SLFCHG02 SLFCHG03 SLFCHG04 SATIS13;
    histogram / normal; /* includes normal curve */
run;
/** Histograms & Normality Tests */
title "Histograms and Normality Tests";

proc univariate data=STPROJ.RCHERI normal;
    var COLLGPA SLFCHG01 SLFCHG02 SLFCHG03 SLFCHG04 SATIS13;
    histogram / normal; /* Shows distribution with normal curve */
    inset n mean std skewness kurtosis / position=ne;
run;

title;

/** Optional: Correlations Between Variables */
title "Correlation Matrix (Ad-Hoc Association Check)";
proc corr data=STPROJ.RCHERI pearson spearman;
    var COLLGPA SLFCHG01 SLFCHG02 SLFCHG03 SLFCHG04 SATIS13;
run;
```

Log: adhoc and normality for SUCCESS VARIABLES (OUTPUT) var.sas

Notes (7)

```

1      OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
NOTE: ODS statements in the SAS Studio environment may disable some output features.
69
70      ods noproctitle;
71
72      /*** Analyze numeric variables ***/
73      title "Descriptive Statistics for Numeric Variables";
74
75      proc means data=STPROJ.RCHERI n nmiss min mean median max std;
76      var COLLGPA SLFCHG01 SLFCHG02 SLFCHG03 SLFCHG04 SATIS13;
77      run;

```

NOTE: There were 5000 observations read from the data set STPROJ.RCHERI.

NOTE: PROCEDURE MEANS used (Total process time):

real time	0.06 seconds
user cpu time	0.03 seconds
system cpu time	0.01 seconds
memory	8724.43k
OS Memory	32960.00k
Timestamp	10/19/2025 06:52:45 PM
Step Count	41
Page Faults	0
Page Reclaims	2016
Page Swaps	0
Voluntary Context Switches	394
Involuntary Context Switches	3
Block Input Operations	0
Block Output Operations	8

```

78
79      title;
80
81      proc univariate data=STPROJ.RCHERI noprint;
82      histogram COLLGPA SLFCHG01 SLFCHG02 SLFCHG03 SLFCHG04 SATIS13;
83      run;

```

NOTE: PROCEDURE UNIVARIATE used (Total process time):

real time	2.67 seconds
user cpu time	0.47 seconds
system cpu time	0.03 seconds
memory	30255.10k
OS Memory	55564.00k
Timestamp	10/19/2025 06:52:48 PM
Step Count	42
Page Faults	0
Page Reclaims	9417
Page Swaps	0
Voluntary Context Switches	764
Involuntary Context Switches	14
Block Input Operations	0
Block Output Operations	1184

```

84
85      title;
86
87      /* ----- HISTOGRAMS ----- */
88      title "Histograms for Selected Variables";
89      proc univariate data=STPROJ.RCHERI;
90      var COLLGPA SLFCHG01 SLFCHG02 SLFCHG03 SLFCHG04 SATIS13;
91      histogram / normal; /* includes normal curve */
92      run;

```

NOTE: PROCEDURE UNIVARIATE used (Total process time):

real time	0.94 seconds
user cpu time	0.53 seconds
system cpu time	0.03 seconds

```

memory          8900.10k
OS Memory       50700.00k
Timestamp       10/19/2025 06:52:49 PM
Step Count      43   Switch Count  4
Page Faults     0
Page Reclaims   2658
Page Swaps      0
Voluntary Context Switches  4576
Involuntary Context Switches 20
Block Input Operations  0
Block Output Operations 1632

```

```

93      /*** Histograms & Normality Tests ***/
94      title "Histograms and Normality Tests";
95
96      proc univariate data=STPROJ.RCHERI normal;
97          var COLLGPA SLFCHG01 SLFCHG02 SLFCHG03 SLFCHG04 SATIS13;
98          histogram / normal; /* Shows distribution with normal curve */
99          inset n mean std skewness kurtosis / position=ne;
100      run;

```

NOTE: PROCEDURE UNIVARIATE used (Total process time):

```

real time      1.02 seconds
user cpu time   0.54 seconds
system cpu time 0.04 seconds
memory         8888.90k
OS Memory       50700.00k
Timestamp       10/19/2025 06:52:50 PM
Step Count     44   Switch Count  4
Page Faults    0
Page Reclaims  2530
Page Swaps     0
Voluntary Context Switches  4589
Involuntary Context Switches 20
Block Input Operations  0
Block Output Operations 2768

```

```

101
102      title;
103
104      /*** Optional: Correlations Between Variables ***/
105      title "Correlation Matrix (Ad-Hoc Association Check)";
106      proc corr data=STPROJ.RCHERI pearson spearman;
107          var COLLGPA SLFCHG01 SLFCHG02 SLFCHG03 SLFCHG04 SATIS13;
108      run;

```

NOTE: PROCEDURE CORR used (Total process time):

```

real time      0.09 seconds
user cpu time   0.09 seconds
system cpu time 0.00 seconds
memory         2840.28k
OS Memory       49328.00k
Timestamp       10/19/2025 06:52:50 PM
Step Count     45   Switch Count  4
Page Faults    0
Page Reclaims  252
Page Swaps     0
Voluntary Context Switches  20
Involuntary Context Switches 1
Block Input Operations  0
Block Output Operations 32

```

```

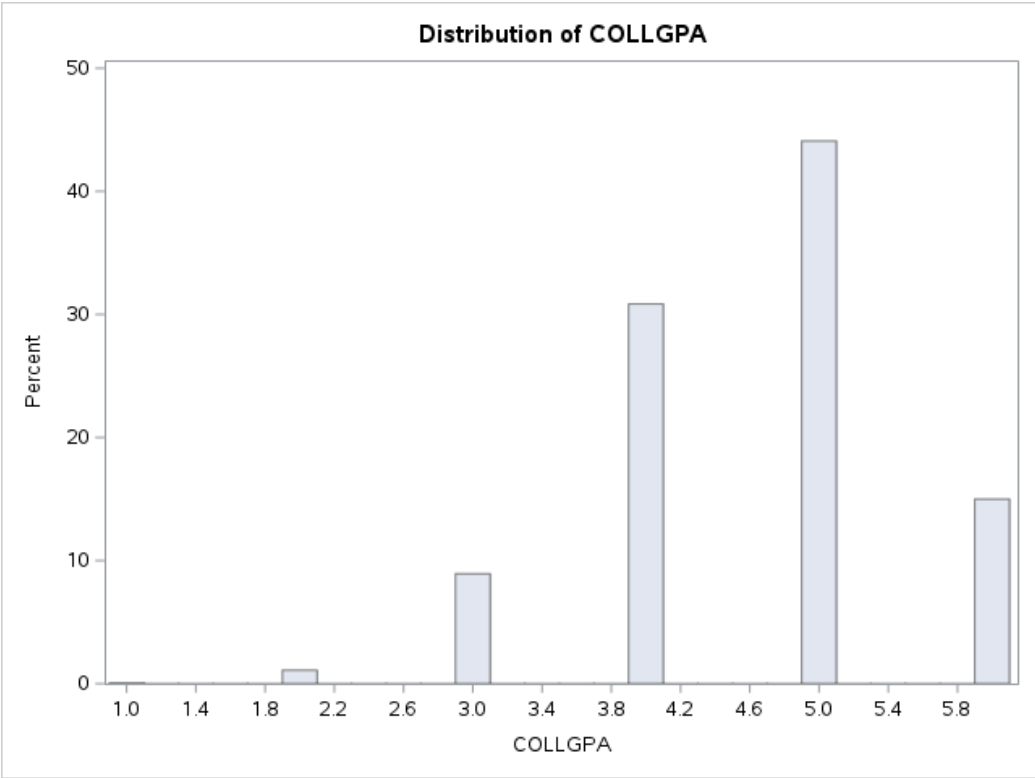
109
110
111      OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
121

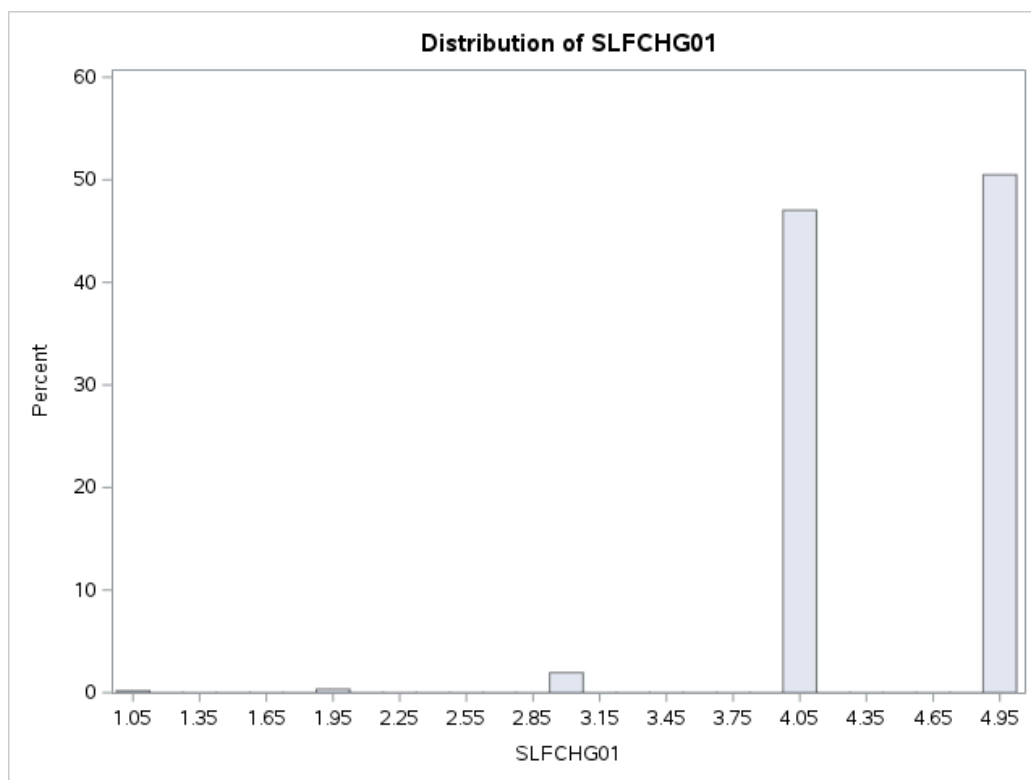
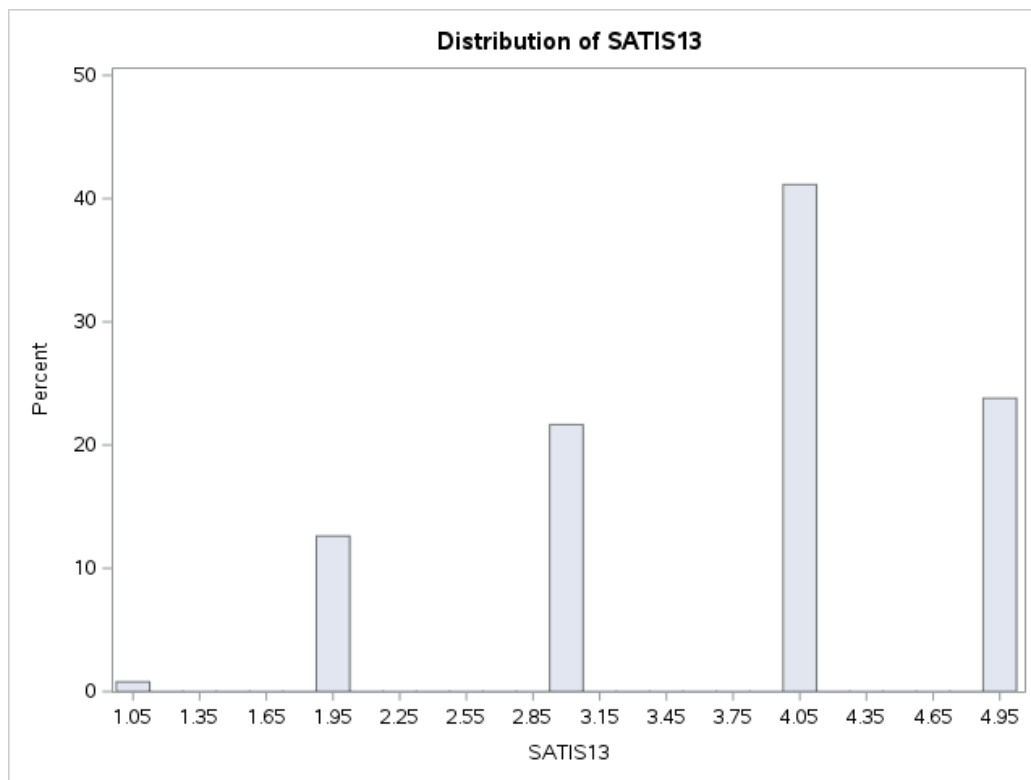
```

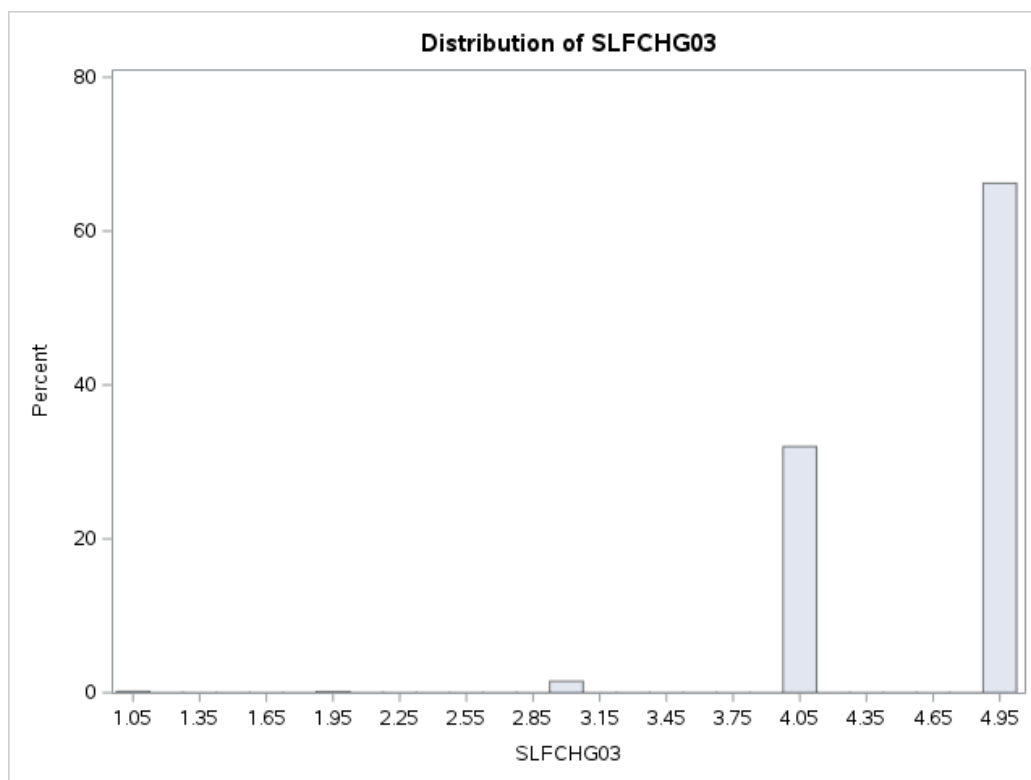
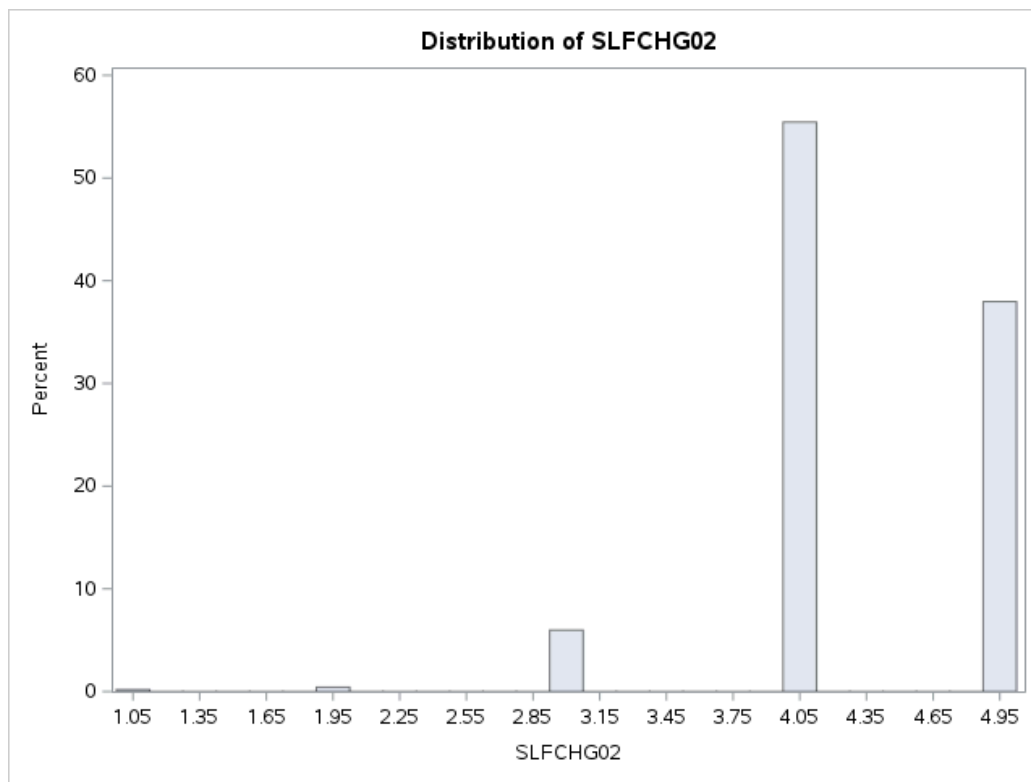
Results: adhoc and normality for SUCCESS VARIABLES (OUTPUT) var.sas

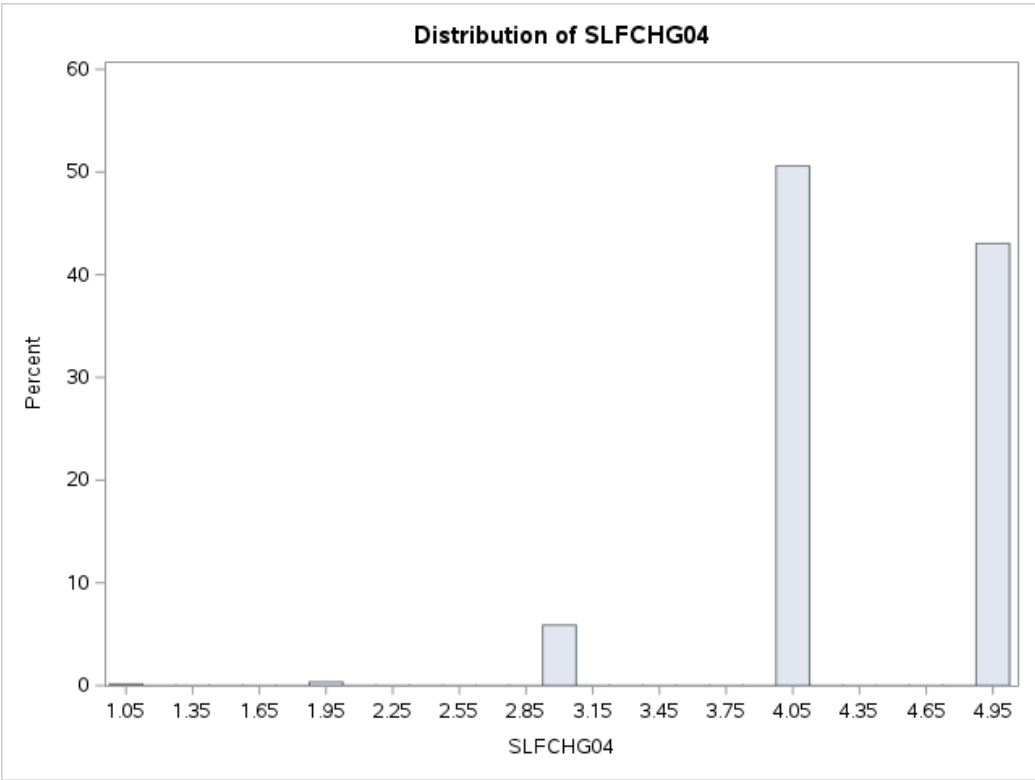
Descriptive Statistics for Numeric Variables

Variable	N	N Miss	Minimum	Mean	Median	Maximum	Std Dev
COLLGPA	4961	39	1.0000000	4.6278976	5.0000000	6.0000000	0.8859453
SLFCHG01	4937	63	1.0000000	4.4731618	5.0000000	5.0000000	0.5751284
SLFCHG02	4931	69	1.0000000	4.3058203	4.0000000	5.0000000	0.6160173
SLFCHG03	4930	70	1.0000000	4.6397566	5.0000000	5.0000000	0.5367802
SLFCHG04	4930	70	1.0000000	4.3604462	4.0000000	5.0000000	0.6212715
SATIS13	4954	46	1.0000000	3.7454582	4.0000000	5.0000000	0.9825885









Histograms for Selected Variables

Variable: COLLGPA

Moments			
N	4961	Sum Weights	4961
Mean	4.6278976	Sum Observations	22959
Std Deviation	0.88594525	Variance	0.78489899
Skewness	-0.3998362	Kurtosis	-0.0126654
Uncorrected SS	110145	Corrected SS	3893.09897
Coeff Variation	19.1435794	Std Error Mean	0.01257831

Basic Statistical Measures			
Location		Variability	
Mean	4.627898	Std Deviation	0.88595
Median	5.000000	Variance	0.78490
Mode	5.000000	Range	5.00000
		Interquartile Range	1.00000

Tests for Location: Mu0=0			
Test	Statistic		p Value
Student's t	t	367.9268	Pr > t <.0001
Sign	M	2480.5	Pr >= M <.0001
Signed Rank	S	6154121	Pr >= S <.0001

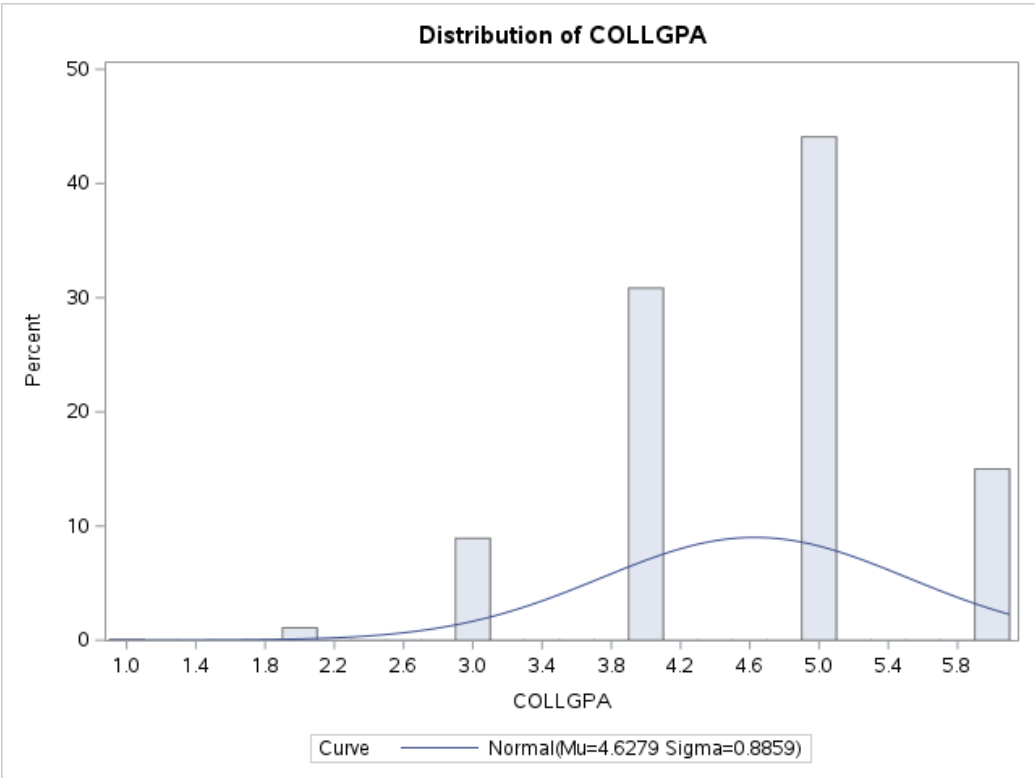
Quantiles (Definition 5)	
Level	Quantile
100% Max	6
99%	6
95%	6
90%	6
75% Q3	5
50% Median	5
25% Q1	4
10%	3
5%	3
1%	2

Quantiles (Definition 5)	
Level	Quantile
0% Min	1

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
1	4756	6	4980
1	1041	6	4986
1	597	6	4987
2	4973	6	4989
2	4944	6	4991

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	39	0.78	100.00

Histograms for Selected Variables



Histograms for Selected Variables

Fitted Normal Distribution for COLLGPA

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	4.627898
Std Dev	Sigma	0.885945

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.253568	Pr > D	<0.010
Cramer-von Mises	W-Sq	52.405137	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	273.050259	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	2.00000	2.56688
5.0	3.00000	3.17065
10.0	3.00000	3.49251
25.0	4.00000	4.03034
50.0	5.00000	4.62790
75.0	5.00000	5.22546
90.0	6.00000	5.76328
95.0	6.00000	6.08515
99.0	6.00000	6.68891

Histograms for Selected Variables

Variable: SLFCHG01

Moments			
N	4937	Sum Weights	4937
Mean	4.47316184	Sum Observations	22084
Std Deviation	0.5751284	Variance	0.33077268
Skewness	-0.8763576	Kurtosis	2.0152801
Uncorrected SS	100418	Corrected SS	1632.69394
Coeff Variation	12.8573126	Std Error Mean	0.00818527

Basic Statistical Measures			
Location		Variability	
Mean	4.473162	Std Deviation	0.57513
Median	5.000000	Variance	0.33077
Mode	5.000000	Range	4.00000
		Interquartile Range	1.00000

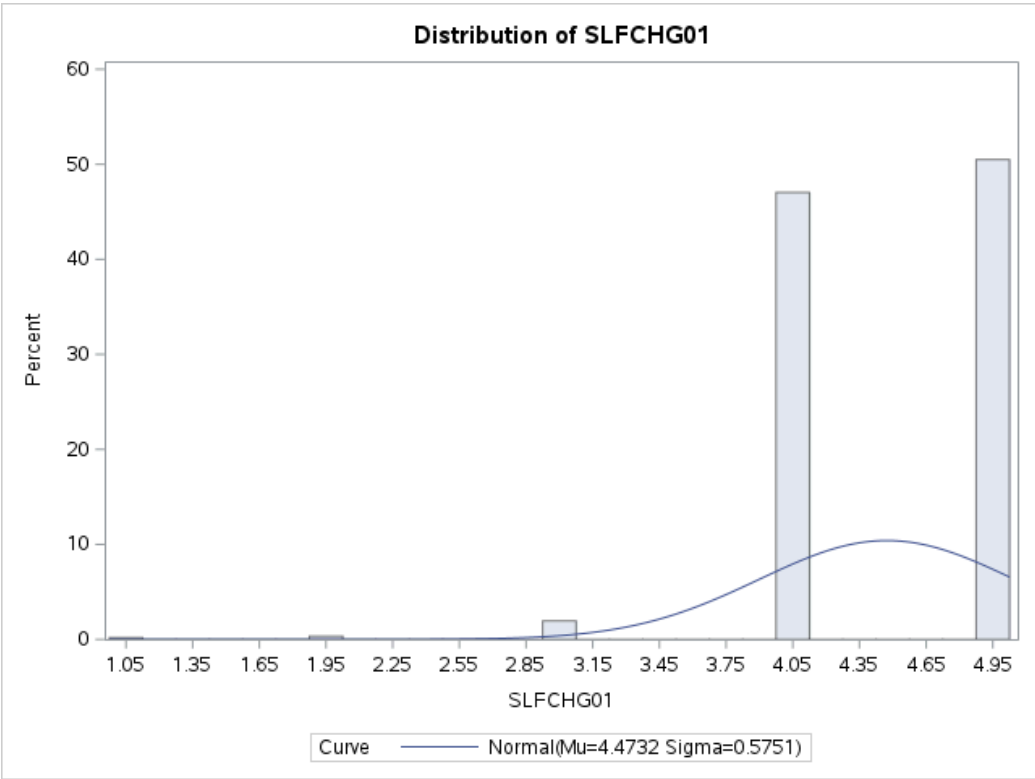
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	546.4889	Pr > t	<.0001
Sign	M	2468.5	Pr >= M	<.0001
Signed Rank	S	6094727	Pr >= S	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	5
99%	5
95%	5
90%	5
75% Q3	5
50% Median	5
25% Q1	4
10%	4
5%	4
1%	3
0% Min	1

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
1	4756	5	4996
1	4647	5	4997
1	4605	5	4998
1	4577	5	4999
1	3158	5	5000

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	63	1.26	100.00

Histograms for Selected Variables



Histograms for Selected Variables

Fitted Normal Distribution for SLFCHG01

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	4.473162
Std Dev	Sigma	0.575128

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.325138	Pr > D	<0.010
Cramer-von Mises	W-Sq	115.856495	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	680.223105	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	3.00000	3.13521
5.0	4.00000	3.52716
10.0	4.00000	3.73611
25.0	4.00000	4.08524
50.0	5.00000	4.47316
75.0	5.00000	4.86108
90.0	5.00000	5.21022
95.0	5.00000	5.41916
99.0	5.00000	5.81111

Histograms for Selected Variables

Variable: SLFCHG02

Moments			
N	4931	Sum Weights	4931
Mean	4.30582032	Sum Observations	21232
Std Deviation	0.61601727	Variance	0.37947727
Skewness	-0.6002164	Kurtosis	1.20772844
Uncorrected SS	93292	Corrected SS	1870.82296
Coeff Variation	14.306618	Std Error Mean	0.00877254

Basic Statistical Measures			
Location		Variability	
Mean	4.305820	Std Deviation	0.61602
Median	4.000000	Variance	0.37948
Mode	4.000000	Range	4.00000
		Interquartile Range	1.00000

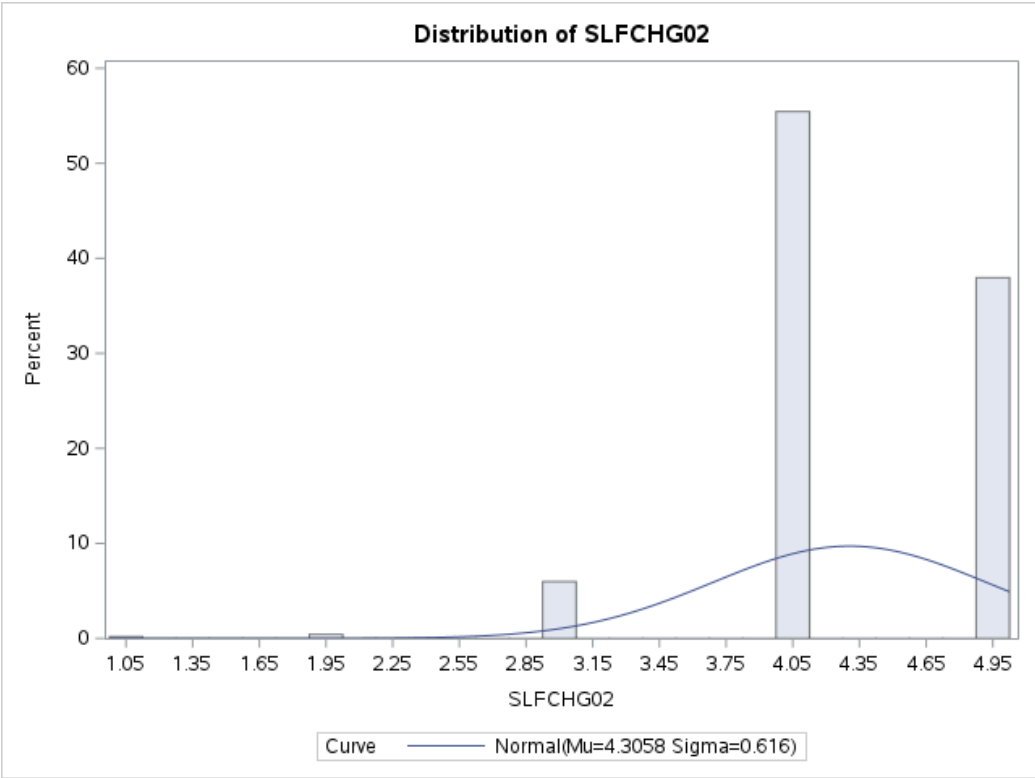
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	490.8293	Pr > t	<.0001
Sign	M	2465.5	Pr >= M	<.0001
Signed Rank	S	6079923	Pr >= S	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	5
99%	5
95%	5
90%	5
75% Q3	5
50% Median	4
25% Q1	4
10%	4
5%	3
1%	3
0% Min	1

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
1	4756	5	4993
1	4647	5	4994
1	4605	5	4996
1	4577	5	4998
1	3158	5	4999

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	69	1.38	100.00

Histograms for Selected Variables



Histograms for Selected Variables

Fitted Normal Distribution for SLFCHG02

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	4.30582
Std Dev	Sigma	0.616017

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.310572	Pr > D	<0.010
Cramer-von Mises	W-Sq	102.480120	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	570.083566	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	3.00000	2.87275
5.0	3.00000	3.29256
10.0	4.00000	3.51636
25.0	4.00000	3.89032
50.0	4.00000	4.30582
75.0	5.00000	4.72132
90.0	5.00000	5.09528
95.0	5.00000	5.31908
99.0	5.00000	5.73889

Histograms for Selected Variables

Variable: SLFCHG03

Moments			
N	4930	Sum Weights	4930
Mean	4.63975659	Sum Observations	22874
Std Deviation	0.53678024	Variance	0.28813303
Skewness	-1.4391263	Kurtosis	3.33729558

Moments			
Uncorrected SS	107550	Corrected SS	1420.20771
Coeff Variation	11.5691466	Std Error Mean	0.00764492

Basic Statistical Measures			
Location		Variability	
Mean	4.639757	Std Deviation	0.53678
Median	5.000000	Variance	0.28813
Mode	5.000000	Range	4.00000
		Interquartile Range	1.00000

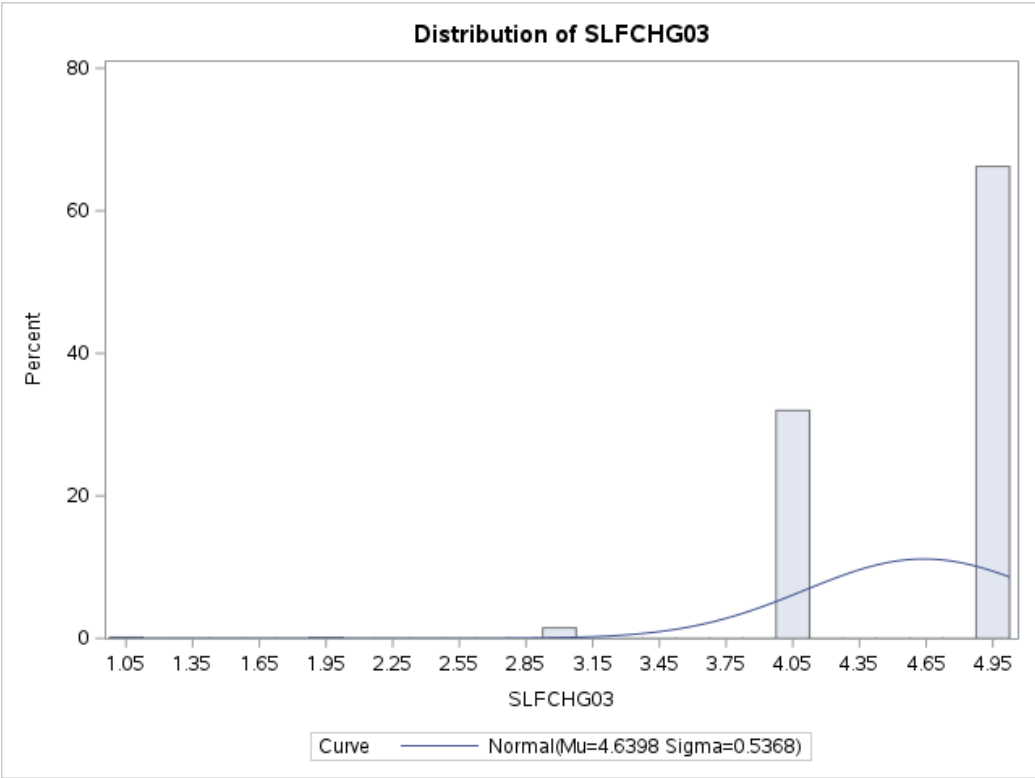
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	606.907	Pr > t	<.0001
Sign	M	2465	Pr >= M	<.0001
Signed Rank	S	6077458	Pr >= S	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	5
99%	5
95%	5
90%	5
75% Q3	5
50% Median	5
25% Q1	4
10%	4
5%	4
1%	3
0% Min	1

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
1	4756	5	4996
1	4647	5	4997
1	4605	5	4998
1	4577	5	4999
1	4061	5	5000

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	70	1.40	100.00

Histograms for Selected Variables



Histograms for Selected Variables

Fitted Normal Distribution for SLFCHG03

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	4.639757
Std Dev	Sigma	0.53678

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.411199	Pr > D	<0.010
Cramer-von Mises	W-Sq	159.613096	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	858.873695	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	3.00000	3.39102
5.0	4.00000	3.75683
10.0	4.00000	3.95185
25.0	4.00000	4.27770
50.0	5.00000	4.63976
75.0	5.00000	5.00181
90.0	5.00000	5.32767
95.0	5.00000	5.52268
99.0	5.00000	5.88849

Histograms for Selected Variables

Variable: SLFCHG04

Moments			
N	4930	Sum Weights	4930
Mean	4.36044625	Sum Observations	21497
Std Deviation	0.62127152	Variance	0.3859783
Skewness	-0.661122	Kurtosis	0.83076906

Moments			
Uncorrected SS	95639	Corrected SS	1902.48702
Coeff Variation	14.2478884	Std Error Mean	0.00884826

Basic Statistical Measures			
Location		Variability	
Mean	4.360446	Std Deviation	0.62127
Median	4.000000	Variance	0.38598
Mode	4.000000	Range	4.00000
		Interquartile Range	1.00000

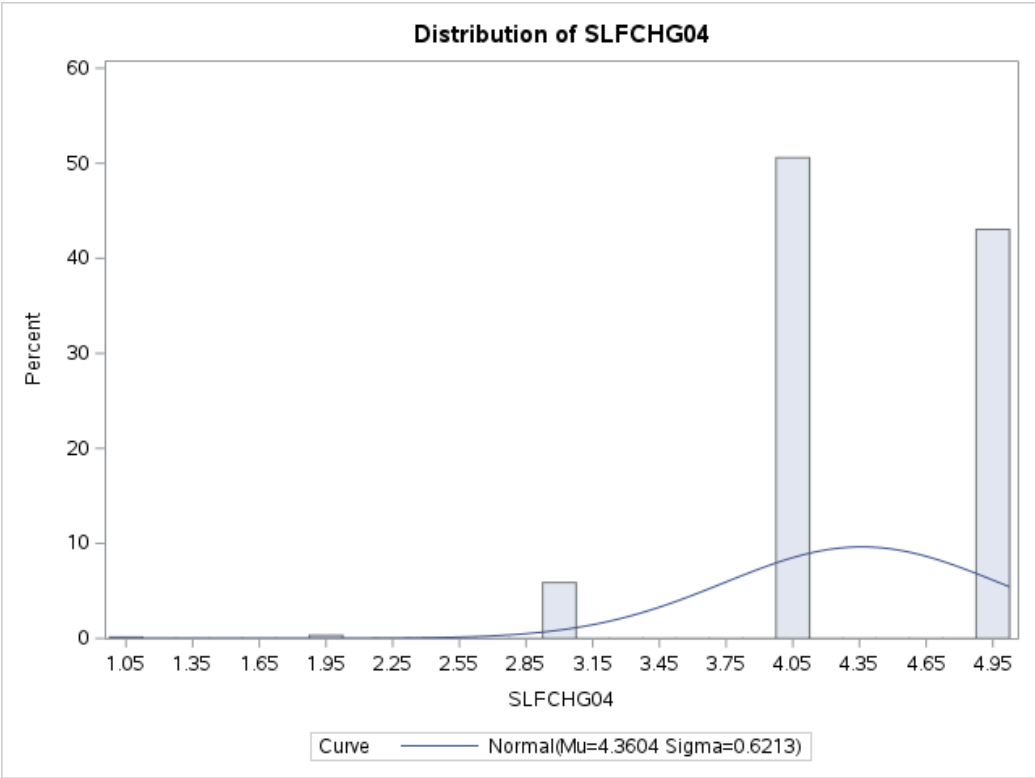
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	492.8026	Pr > t	<.0001
Sign	M	2465	Pr >= M	<.0001
Signed Rank	S	6077458	Pr >= S	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	5
99%	5
95%	5
90%	5
75% Q3	5
50% Median	4
25% Q1	4
10%	4
5%	3
1%	3
0% Min	1

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
1	4756	5	4989
1	4647	5	4993
1	4605	5	4996
1	4577	5	4998
1	3158	5	4999

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	70	1.40	100.00

Histograms for Selected Variables



Histograms for Selected Variables

Fitted Normal Distribution for SLFCHG04

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	4.360446
Std Dev	Sigma	0.621272

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.288676	Pr > D	<0.010
Cramer-von Mises	W-Sq	97.910272	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	563.713245	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	3.00000	2.91515
5.0	3.00000	3.33855
10.0	4.00000	3.56425
25.0	4.00000	3.94140
50.0	4.00000	4.36045
75.0	5.00000	4.77949
90.0	5.00000	5.15664
95.0	5.00000	5.38235
99.0	5.00000	5.80574

Histograms for Selected Variables

Variable: SATIS13

Moments			
N	4954	Sum Weights	4954
Mean	3.74545822	Sum Observations	18555
Std Deviation	0.98258846	Variance	0.96548007
Skewness	-0.4712984	Kurtosis	-0.5562571

Moments			
Uncorrected SS	74279	Corrected SS	4782.02281
Coeff Variation	26.2341321	Std Error Mean	0.01396026

Basic Statistical Measures			
Location		Variability	
Mean	3.745458	Std Deviation	0.98259
Median	4.000000	Variance	0.96548
Mode	4.000000	Range	4.00000
		Interquartile Range	1.00000

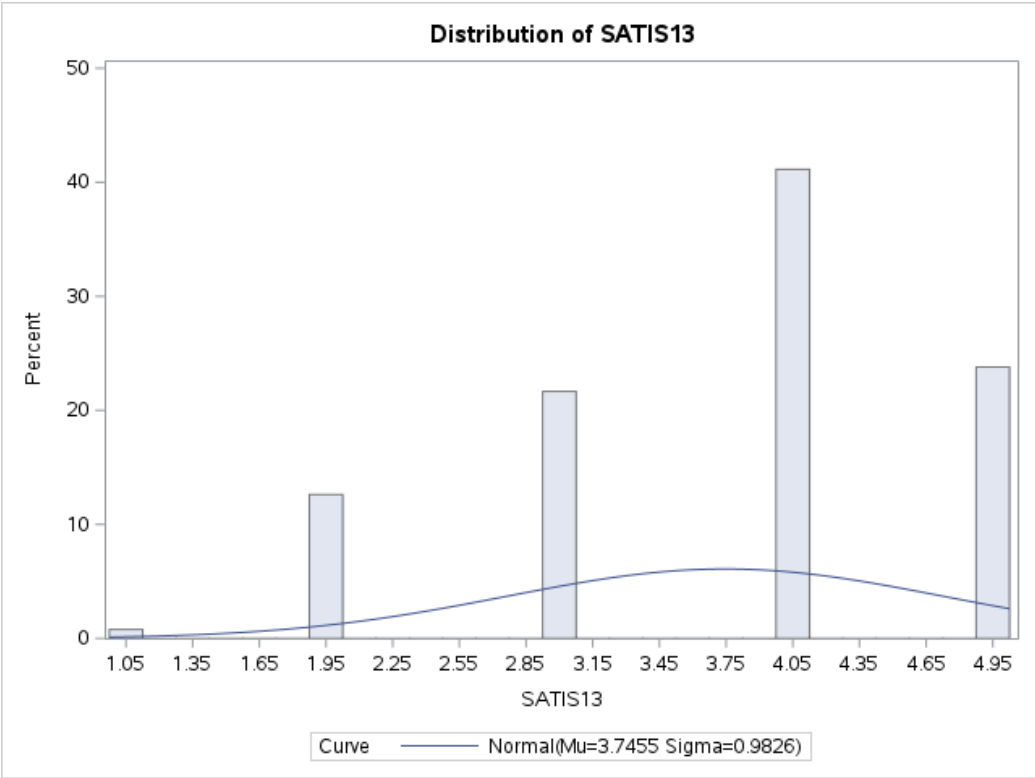
Tests for Location: Mu0=0			
Test	Statistic		p Value
Student's t	t	268.2942	Pr > t <.0001
Sign	M	2477	Pr >= M <.0001
Signed Rank	S	6136768	Pr >= S <.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	5
99%	5
95%	5
90%	5
75% Q3	4
50% Median	4
25% Q1	3
10%	2
5%	2
1%	2
0% Min	1

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
1	4984	5	4983
1	4950	5	4991
1	4756	5	4992
1	4682	5	4998
1	4662	5	4999

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	46	0.92	100.00

Histograms for Selected Variables



Histograms for Selected Variables

Fitted Normal Distribution for SATIS13

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	3.745458
Std Dev	Sigma	0.982588

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.251577	Pr > D	<0.010
Cramer-von Mises	W-Sq	45.055238	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	255.233882	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	2.00000	1.45962
5.0	2.00000	2.12924
10.0	2.00000	2.48622
25.0	3.00000	3.08271
50.0	4.00000	3.74546
75.0	4.00000	4.40820
90.0	5.00000	5.00470
95.0	5.00000	5.36167
99.0	5.00000	6.03130

Histograms and Normality Tests

Variable: COLLGPA

Moments			
N	4961	Sum Weights	4961
Mean	4.6278976	Sum Observations	22959
Std Deviation	0.88594525	Variance	0.78489899
Skewness	-0.3998362	Kurtosis	-0.0126654

Moments			
Uncorrected SS	110145	Corrected SS	3893.09897
Coeff Variation	19.1435794	Std Error Mean	0.01257831

Basic Statistical Measures			
Location		Variability	
Mean	4.627898	Std Deviation	0.88595
Median	5.000000	Variance	0.78490
Mode	5.000000	Range	5.00000
		Interquartile Range	1.00000

Tests for Location: Mu0=0			
Test	Statistic		p Value
Student's t	t	367.9268	Pr > t <.0001
Sign	M	2480.5	Pr >= M <.0001
Signed Rank	S	6154121	Pr >= S <.0001

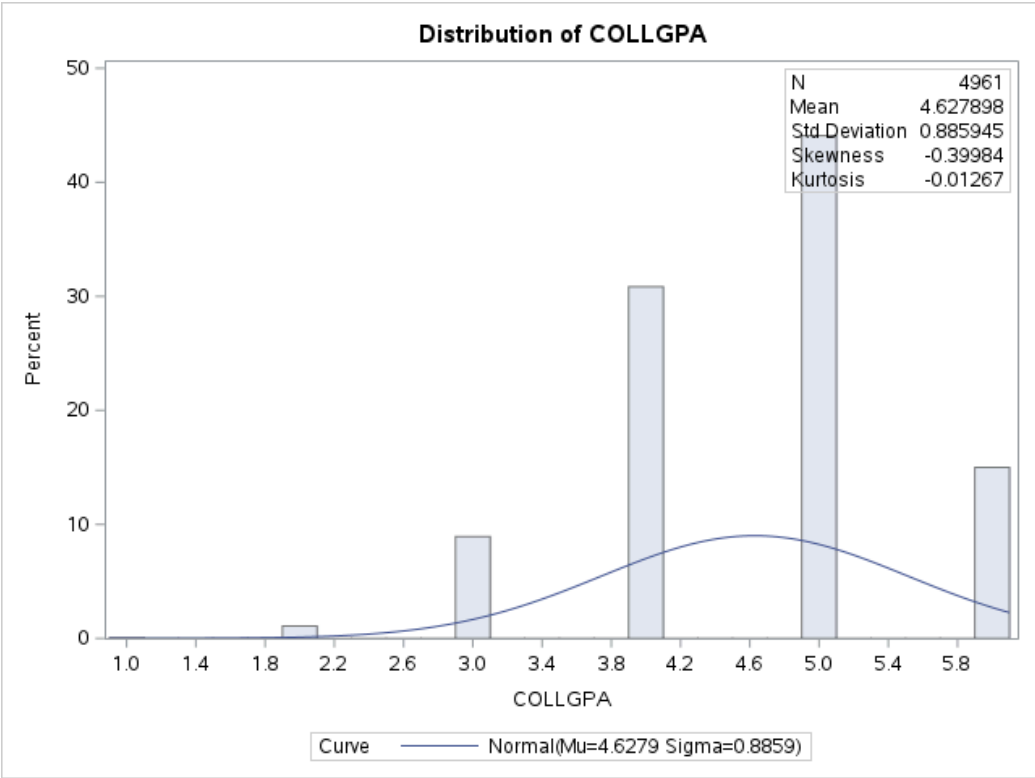
Tests for Normality				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.253568	Pr > D	<0.0100
Cramer-von Mises	W-Sq	52.40514	Pr > W-Sq	<0.0050
Anderson-Darling	A-Sq	273.0503	Pr > A-Sq	<0.0050

Quantiles (Definition 5)	
Level	Quantile
100% Max	6
99%	6
95%	6
90%	6
75% Q3	5
50% Median	5
25% Q1	4
10%	3
5%	3
1%	2
0% Min	1

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
1	4756	6	4980
1	1041	6	4986
1	597	6	4987
2	4973	6	4989
2	4944	6	4991

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	39	0.78	100.00

Histograms and Normality Tests



Histograms and Normality Tests

Fitted Normal Distribution for COLLGPA

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	4.627898
Std Dev	Sigma	0.885945

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.253568	Pr > D	<0.010
Cramer-von Mises	W-Sq	52.405137	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	273.050259	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	2.00000	2.56688
5.0	3.00000	3.17065
10.0	3.00000	3.49251
25.0	4.00000	4.03034
50.0	5.00000	4.62790
75.0	5.00000	5.22546
90.0	6.00000	5.76328
95.0	6.00000	6.08515
99.0	6.00000	6.68891

Histograms and Normality Tests

Variable: SLFCHG01

Moments			
N	4937	Sum Weights	4937
Mean	4.47316184	Sum Observations	22084
Std Deviation	0.5751284	Variance	0.33077268
Skewness	-0.8763576	Kurtosis	2.0152801

Moments			
Uncorrected SS	100418	Corrected SS	1632.69394
Coeff Variation	12.8573126	Std Error Mean	0.00818527

Basic Statistical Measures			
Location		Variability	
Mean	4.473162	Std Deviation	0.57513
Median	5.000000	Variance	0.33077
Mode	5.000000	Range	4.00000
		Interquartile Range	1.00000

Tests for Location: Mu0=0			
Test	Statistic		p Value
Student's t	t	546.4889	Pr > t <.0001
Sign	M	2468.5	Pr >= M <.0001
Signed Rank	S	6094727	Pr >= S <.0001

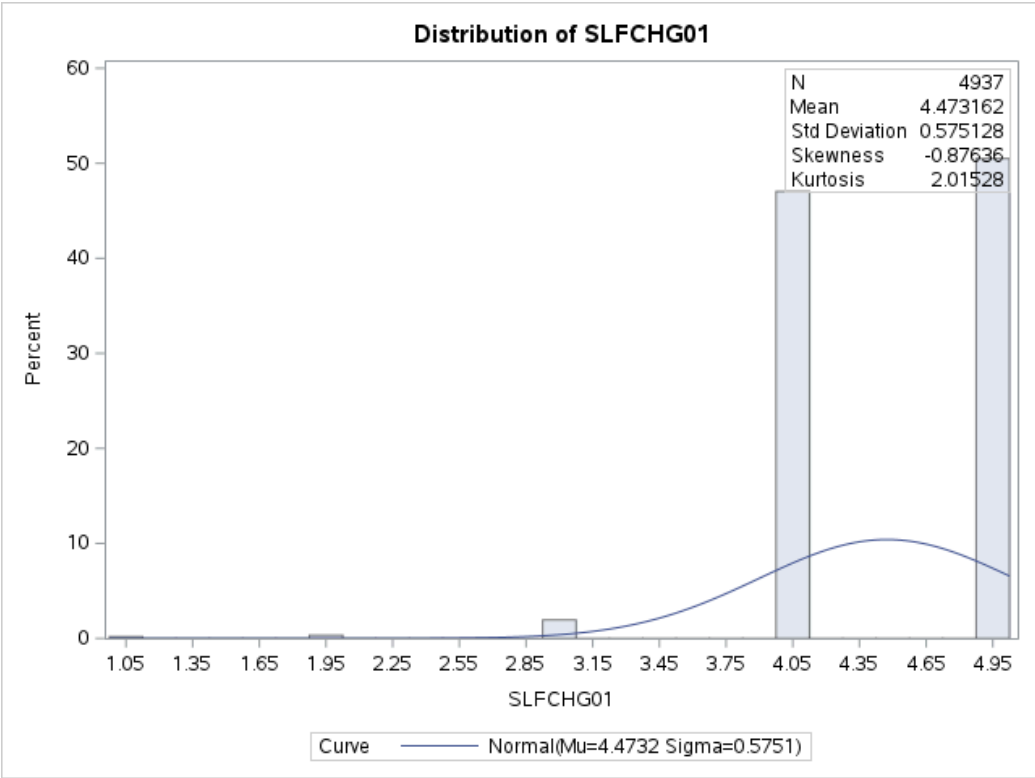
Tests for Normality				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.325138	Pr > D	<0.0100
Cramer-von Mises	W-Sq	115.8565	Pr > W-Sq	<0.0050
Anderson-Darling	A-Sq	680.2231	Pr > A-Sq	<0.0050

Quantiles (Definition 5)	
Level	Quantile
100% Max	5
99%	5
95%	5
90%	5
75% Q3	5
50% Median	5
25% Q1	4
10%	4
5%	4
1%	3
0% Min	1

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
1	4756	5	4996
1	4647	5	4997
1	4605	5	4998
1	4577	5	4999
1	3158	5	5000

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	63	1.26	100.00

Histograms and Normality Tests



Histograms and Normality Tests

Fitted Normal Distribution for SLFCHG01

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	4.473162
Std Dev	Sigma	0.575128

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.325138	Pr > D	<0.010
Cramer-von Mises	W-Sq	115.856495	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	680.223105	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	3.00000	3.13521
5.0	4.00000	3.52716
10.0	4.00000	3.73611
25.0	4.00000	4.08524
50.0	5.00000	4.47316
75.0	5.00000	4.86108
90.0	5.00000	5.21022
95.0	5.00000	5.41916
99.0	5.00000	5.81111

Histograms and Normality Tests

Variable: SLFCHG02

Moments			
N	4931	Sum Weights	4931
Mean	4.30582032	Sum Observations	21232
Std Deviation	0.61601727	Variance	0.37947727
Skewness	-0.6002164	Kurtosis	1.20772844

Moments			
Uncorrected SS	93292	Corrected SS	1870.82296
Coeff Variation	14.306618	Std Error Mean	0.00877254

Basic Statistical Measures			
Location		Variability	
Mean	4.305820	Std Deviation	0.61602
Median	4.000000	Variance	0.37948
Mode	4.000000	Range	4.00000
		Interquartile Range	1.00000

Tests for Location: Mu0=0			
Test	Statistic		p Value
Student's t	t	490.8293	Pr > t <.0001
Sign	M	2465.5	Pr >= M <.0001
Signed Rank	S	6079923	Pr >= S <.0001

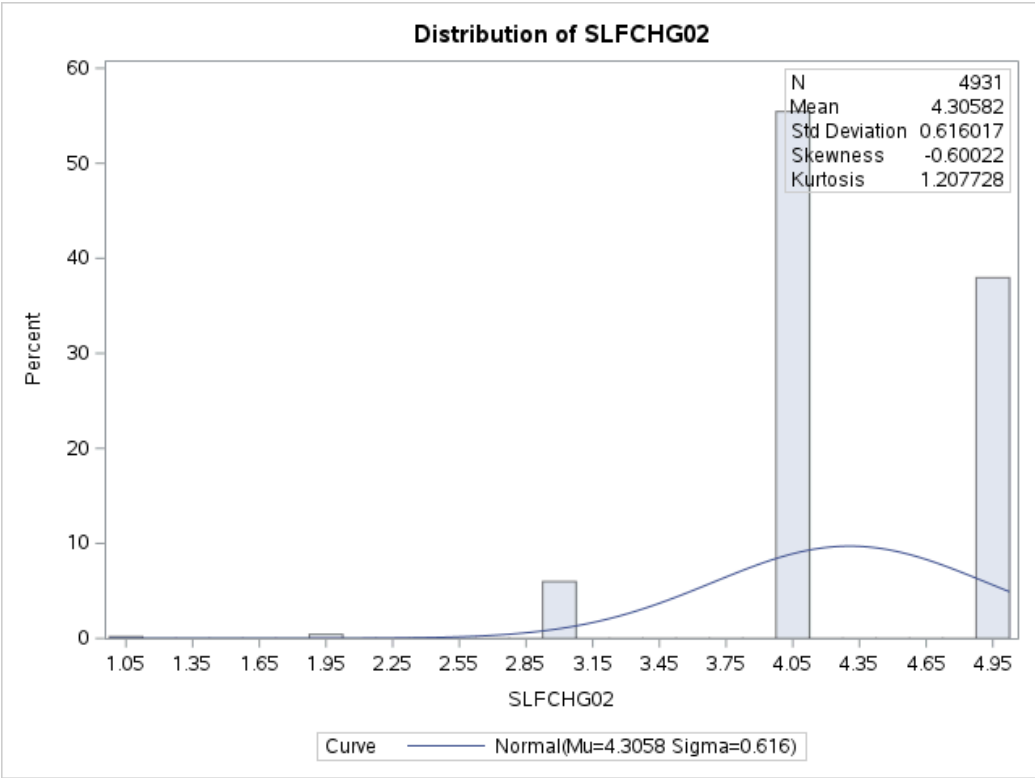
Tests for Normality				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.310572	Pr > D	<0.0100
Cramer-von Mises	W-Sq	102.4801	Pr > W-Sq	<0.0050
Anderson-Darling	A-Sq	570.0836	Pr > A-Sq	<0.0050

Quantiles (Definition 5)	
Level	Quantile
100% Max	5
99%	5
95%	5
90%	5
75% Q3	5
50% Median	4
25% Q1	4
10%	4
5%	3
1%	3
0% Min	1

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
1	4756	5	4993
1	4647	5	4994
1	4605	5	4996
1	4577	5	4998
1	3158	5	4999

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	69	1.38	100.00

Histograms and Normality Tests



Histograms and Normality Tests

Fitted Normal Distribution for SLFCHG02

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	4.30582
Std Dev	Sigma	0.616017

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.310572	Pr > D	<0.010
Cramer-von Mises	W-Sq	102.480120	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	570.083566	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	3.00000	2.87275
5.0	3.00000	3.29256
10.0	4.00000	3.51636
25.0	4.00000	3.89032
50.0	4.00000	4.30582
75.0	5.00000	4.72132
90.0	5.00000	5.09528
95.0	5.00000	5.31908
99.0	5.00000	5.73889

Histograms and Normality Tests

Variable: SLFCHG03

Moments			
N	4930	Sum Weights	4930
Mean	4.63975659	Sum Observations	22874
Std Deviation	0.53678024	Variance	0.28813303
Skewness	-1.4391263	Kurtosis	3.33729558

Moments			
Uncorrected SS	107550	Corrected SS	1420.20771
Coeff Variation	11.5691466	Std Error Mean	0.00764492

Basic Statistical Measures			
Location		Variability	
Mean	4.639757	Std Deviation	0.53678
Median	5.000000	Variance	0.28813
Mode	5.000000	Range	4.00000
		Interquartile Range	1.00000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	606.907	Pr > t	<.0001
Sign	M	2465	Pr >= M	<.0001
Signed Rank	S	6077458	Pr >= S	<.0001

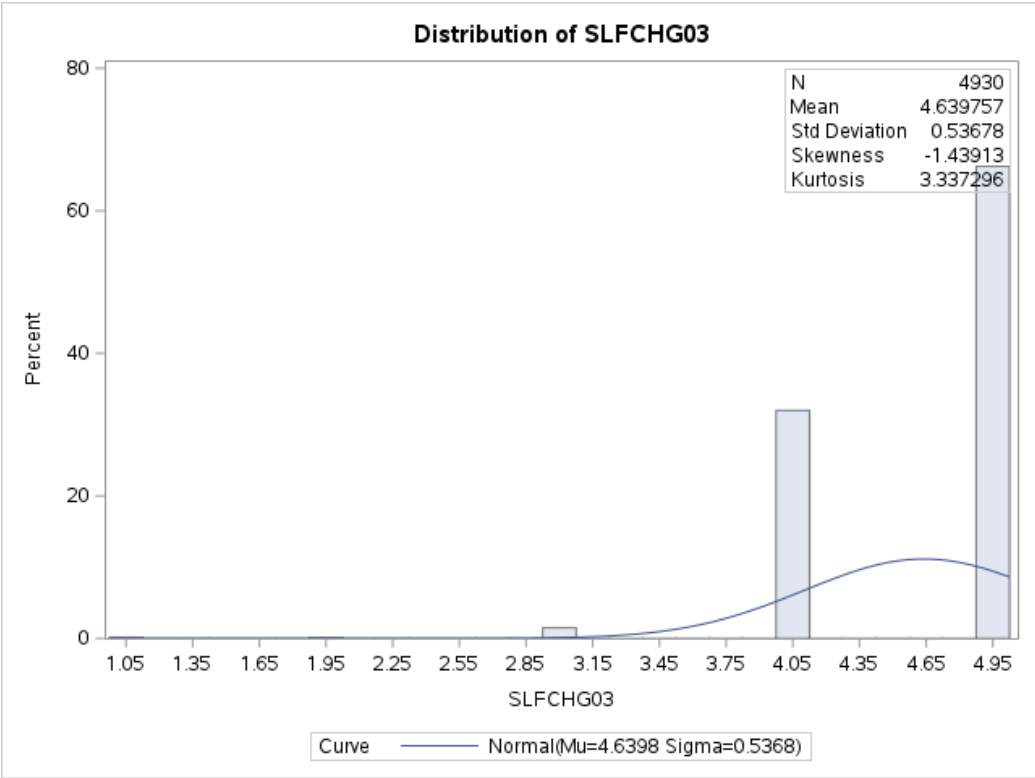
Tests for Normality				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.411199	Pr > D	<0.0100
Cramer-von Mises	W-Sq	159.6131	Pr > W-Sq	<0.0050
Anderson-Darling	A-Sq	858.8737	Pr > A-Sq	<0.0050

Quantiles (Definition 5)	
Level	Quantile
100% Max	5
99%	5
95%	5
90%	5
75% Q3	5
50% Median	5
25% Q1	4
10%	4
5%	4
1%	3
0% Min	1

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
1	4756	5	4996
1	4647	5	4997
1	4605	5	4998
1	4577	5	4999
1	4061	5	5000

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	70	1.40	100.00

Histograms and Normality Tests



Histograms and Normality Tests

Fitted Normal Distribution for SLFCHG03

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	4.639757
Std Dev	Sigma	0.53678

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.411199	Pr > D	<0.010
Cramer-von Mises	W-Sq	159.613096	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	858.873695	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	3.00000	3.39102
5.0	4.00000	3.75683
10.0	4.00000	3.95185
25.0	4.00000	4.27770
50.0	5.00000	4.63976
75.0	5.00000	5.00181
90.0	5.00000	5.32767
95.0	5.00000	5.52268
99.0	5.00000	5.88849

Histograms and Normality Tests

Variable: SLFCHG04

Moments			
N	4930	Sum Weights	4930
Mean	4.36044625	Sum Observations	21497
Std Deviation	0.62127152	Variance	0.3859783
Skewness	-0.661122	Kurtosis	0.83076906

Moments			
Uncorrected SS	95639	Corrected SS	1902.48702
Coeff Variation	14.2478884	Std Error Mean	0.00884826

Basic Statistical Measures			
Location		Variability	
Mean	4.360446	Std Deviation	0.62127
Median	4.000000	Variance	0.38598
Mode	4.000000	Range	4.00000
		Interquartile Range	1.00000

Tests for Location: Mu0=0			
Test	Statistic		p Value
Student's t	t	492.8026	Pr > t <.0001
Sign	M	2465	Pr >= M <.0001
Signed Rank	S	6077458	Pr >= S <.0001

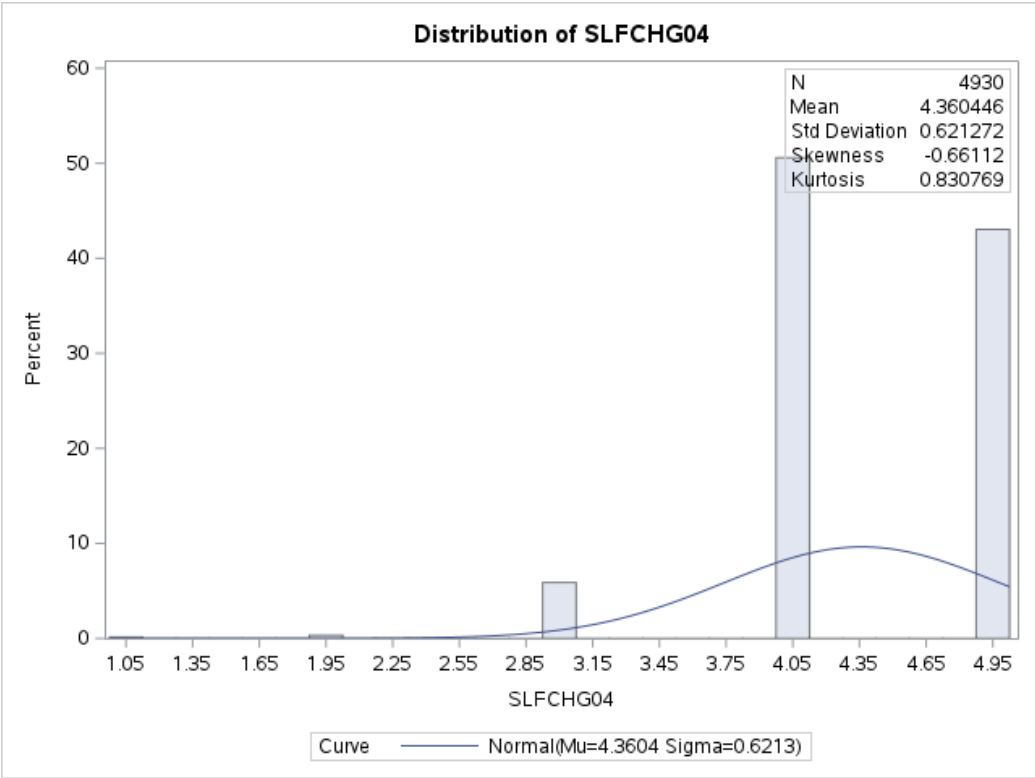
Tests for Normality				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.288676	Pr > D	<0.0100
Cramer-von Mises	W-Sq	97.91027	Pr > W-Sq	<0.0050
Anderson-Darling	A-Sq	563.7132	Pr > A-Sq	<0.0050

Quantiles (Definition 5)	
Level	Quantile
100% Max	5
99%	5
95%	5
90%	5
75% Q3	5
50% Median	4
25% Q1	4
10%	4
5%	3
1%	3
0% Min	1

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
1	4756	5	4989
1	4647	5	4993
1	4605	5	4996
1	4577	5	4998
1	3158	5	4999

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	70	1.40	100.00

Histograms and Normality Tests



Histograms and Normality Tests

Fitted Normal Distribution for SLFCHG04

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	4.360446
Std Dev	Sigma	0.621272

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.288676	Pr > D	<0.010
Cramer-von Mises	W-Sq	97.910272	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	563.713245	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	3.00000	2.91515
5.0	3.00000	3.33855
10.0	4.00000	3.56425
25.0	4.00000	3.94140
50.0	4.00000	4.36045
75.0	5.00000	4.77949
90.0	5.00000	5.15664
95.0	5.00000	5.38235
99.0	5.00000	5.80574

Histograms and Normality Tests

Variable: SATIS13

Moments			
N	4954	Sum Weights	4954
Mean	3.74545822	Sum Observations	18555
Std Deviation	0.98258846	Variance	0.96548007
Skewness	-0.4712984	Kurtosis	-0.5562571

Moments			
Uncorrected SS	74279	Corrected SS	4782.02281
Coeff Variation	26.2341321	Std Error Mean	0.01396026

Basic Statistical Measures			
Location		Variability	
Mean	3.745458	Std Deviation	0.98259
Median	4.000000	Variance	0.96548
Mode	4.000000	Range	4.00000
		Interquartile Range	1.00000

Tests for Location: Mu0=0			
Test	Statistic		p Value
Student's t	t	268.2942	Pr > t <.0001
Sign	M	2477	Pr >= M <.0001
Signed Rank	S	6136768	Pr >= S <.0001

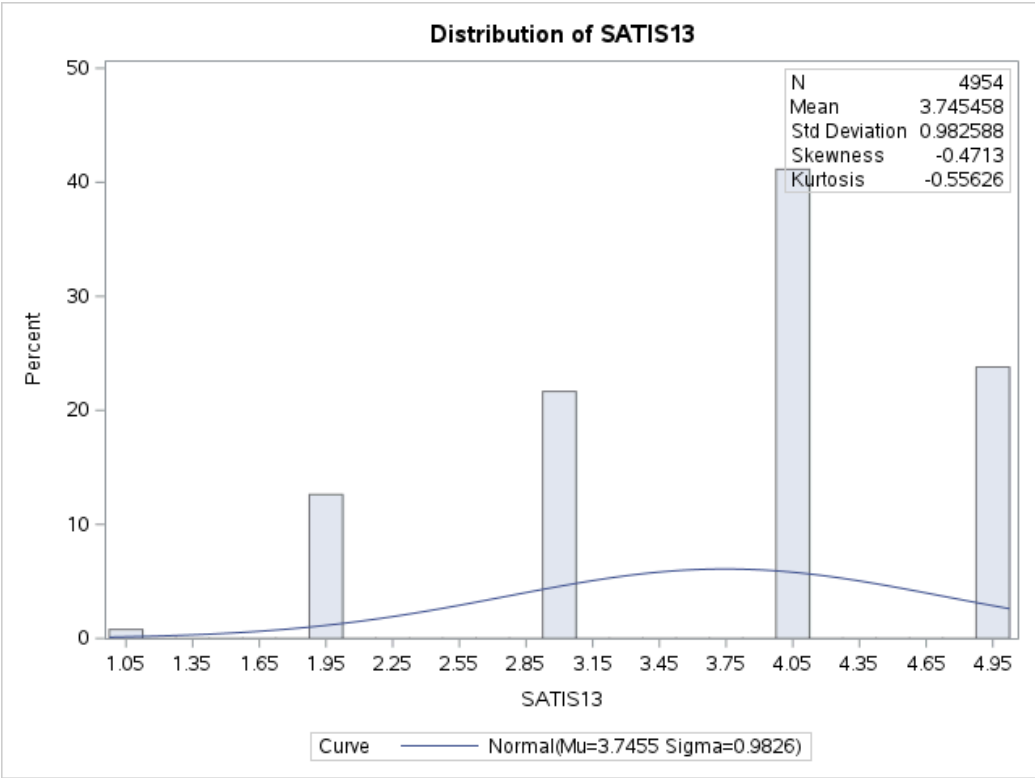
Tests for Normality				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.251577	Pr > D	<0.0100
Cramer-von Mises	W-Sq	45.05524	Pr > W-Sq	<0.0050
Anderson-Darling	A-Sq	255.2339	Pr > A-Sq	<0.0050

Quantiles (Definition 5)	
Level	Quantile
100% Max	5
99%	5
95%	5
90%	5
75% Q3	4
50% Median	4
25% Q1	3
10%	2
5%	2
1%	2
0% Min	1

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
1	4984	5	4983
1	4950	5	4991
1	4756	5	4992
1	4682	5	4998
1	4662	5	4999

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	46	0.92	100.00

Histograms and Normality Tests



Histograms and Normality Tests

Fitted Normal Distribution for SATIS13

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	3.745458
Std Dev	Sigma	0.982588

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.251577	Pr > D	<0.010
Cramer-von Mises	W-Sq	45.055238	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	255.233882	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	2.00000	1.45962
5.0	2.00000	2.12924
10.0	2.00000	2.48622
25.0	3.00000	3.08271
50.0	4.00000	3.74546
75.0	4.00000	4.40820
90.0	5.00000	5.00470
95.0	5.00000	5.36167
99.0	5.00000	6.03130

Correlation Matrix (Ad-Hoc Association Check)

6 Variables:	COLLGPA SLFCHG01 SLFCHG02 SLFCHG03 SLFCHG04 SATIS13
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Simple Statistics						
Variable	N	Mean	Std Dev	Median	Minimum	Maximum
COLLGPA	4961	4.62790	0.88595	5.00000	1.00000	6.00000

Simple Statistics						
Variable	N	Mean	Std Dev	Median	Minimum	Maximum
SLFCHG01	4937	4.47316	0.57513	5.00000	1.00000	5.00000
SLFCHG02	4931	4.30582	0.61602	4.00000	1.00000	5.00000
SLFCHG03	4930	4.63976	0.53678	5.00000	1.00000	5.00000
SLFCHG04	4930	4.36045	0.62127	4.00000	1.00000	5.00000
SATIS13	4954	3.74546	0.98259	4.00000	1.00000	5.00000

Pearson Correlation Coefficients Prob > r under H0: Rho=0 Number of Observations						
	COLLGPA	SLFCHG01	SLFCHG02	SLFCHG03	SLFCHG04	SATIS13
COLLGPA	1.00000 4961	0.04101 0.0040 4923	0.05897 <.0001 4918	0.15316 <.0001 4917	0.06784 <.0001 4917	0.07664 <.0001 4942
SLFCHG01	0.04101 0.0040 4923	1.00000 4937	0.55576 <.0001 4930	0.44344 <.0001 4929	0.52254 <.0001 4929	0.16578 <.0001 4921
SLFCHG02	0.05897 <.0001 4918	0.55576 <.0001 4930	1.00000 4931	0.44455 <.0001 4929	0.64608 <.0001 4928	0.14751 <.0001 4917
SLFCHG03	0.15316 <.0001 4917	0.44344 <.0001 4929	0.44455 <.0001 4929	1.00000 4930	0.48739 <.0001 4927	0.17352 <.0001 4916
SLFCHG04	0.06784 <.0001 4917	0.52254 <.0001 4929	0.64608 <.0001 4928	0.48739 <.0001 4927	1.00000 4930	0.16111 <.0001 4916
SATIS13	0.07664 <.0001 4942	0.16578 <.0001 4921	0.14751 <.0001 4917	0.17352 <.0001 4916	0.16111 <.0001 4916	1.00000 4954

Spearman Correlation Coefficients Prob > r under H0: Rho=0 Number of Observations						
	COLLGPA	SLFCHG01	SLFCHG02	SLFCHG03	SLFCHG04	SATIS13
COLLGPA	1.00000 4961	0.03332 0.0194 4923	0.05636 <.0001 4918	0.15029 <.0001 4917	0.05770 <.0001 4917	0.07393 <.0001 4942
SLFCHG01	0.03332 0.0194 4923	1.00000 4937	0.53843 <.0001 4930	0.41491 <.0001 4929	0.52045 <.0001 4929	0.16662 <.0001 4921
SLFCHG02	0.05636 <.0001 4918	0.53843 <.0001 4930	1.00000 4931	0.42300 <.0001 4929	0.64591 <.0001 4928	0.14874 <.0001 4917
SLFCHG03	0.15029 <.0001 4917	0.41491 <.0001 4929	0.42300 <.0001 4929	1.00000 4930	0.46571 <.0001 4927	0.16906 <.0001 4916
SLFCHG04	0.05770 <.0001 4917	0.52045 <.0001 4929	0.64591 <.0001 4928	0.46571 <.0001 4927	1.00000 4930	0.16910 <.0001 4916
SATIS13	0.07393 <.0001 4942	0.16662 <.0001 4921	0.14874 <.0001 4917	0.16906 <.0001 4916	0.16910 <.0001 4916	1.00000 4954