

Demonstration of central limit theorem in action

Obs	y1	y5	y10	y50
1	1	0.4	0.9	0.98
2	2	1.2	0.5	0.84
3	2	1.2	1.3	0.96
4	0	0.6	0.9	0.92
5	1	0.6	1.0	0.86
6	2	1.2	1.2	1.00
7	0	0.2	1.0	0.98
8	1	1.0	0.4	1.08
9	0	0.8	1.3	1.08
10	2	1.4	1.1	0.76
11	0	0.6	0.7	0.98
12	1	0.2	0.6	0.68
13	2	1.0	1.1	0.98
14	0	1.0	1.3	1.04
15	1	0.6	0.5	1.10
16	2	1.4	1.3	1.14
17	0	0.8	0.8	0.98
18	1	1.6	1.6	1.00
19	1	1.6	1.4	1.18
20	0	1.6	1.2	1.02
21	0	0.8	0.3	0.94
22	1	1.6	1.4	1.02
23	0	1.6	1.0	1.14
24	1	1.0	0.7	0.98
25	3	1.6	1.3	1.12

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The UNIVARIATE Procedure
Variable: y1

Moments			
N	100000	Sum Weights	100000
Mean	0.99779	Sum Observations	99779
Std Deviation	0.99700304	Variance	0.99401506
Skewness	0.99141677	Kurtosis	0.93023274
Uncorrected SS	198959	Corrected SS	99400.5116
Coeff Variation	99.9211294	Std Error Mean	0.0031528

Basic Statistical Measures			
Location		Variability	
Mean	0.997790	Std Deviation	0.99700
Median	1.000000	Variance	0.99402
Mode	1.000000	Range	7.00000
		Interquartile Range	2.00000

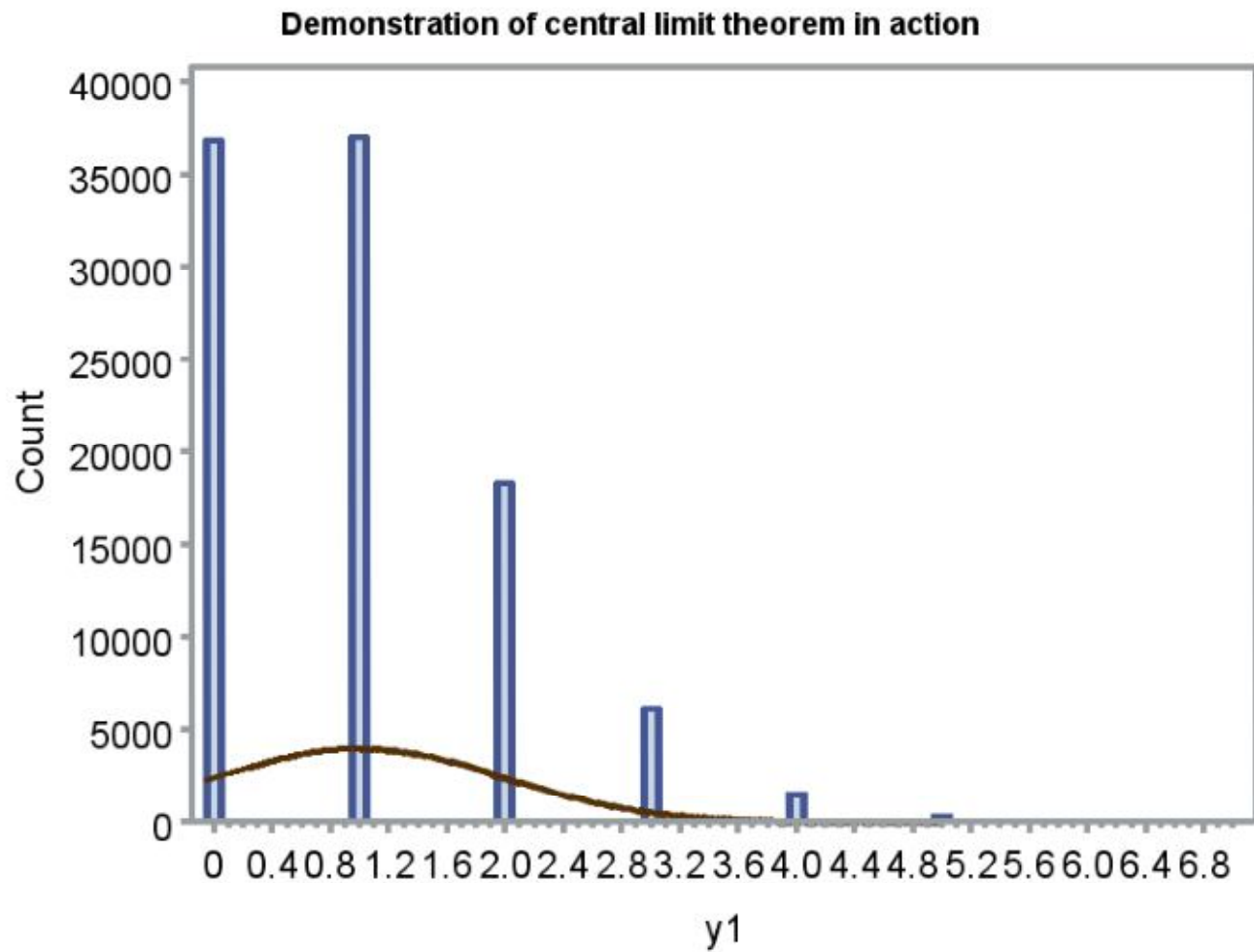
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	316.4774	Pr > t 	<.0001
Sign	M	31613	Pr >= M 	<.0001
Signed Rank	S	9.994E8	Pr >= S 	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	7
99%	4
95%	3
90%	2
75% Q3	2
50% Median	1
25% Q1	0
10%	0
5%	0
1%	0
0% Min	0

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
0	99998	6	98345
0	99997	7	3672

0	99990	7	11967
0	99989	7	63885
0	99987	7	91310

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The UNIVARIATE Procedure Fitted Normal Distribution for y1

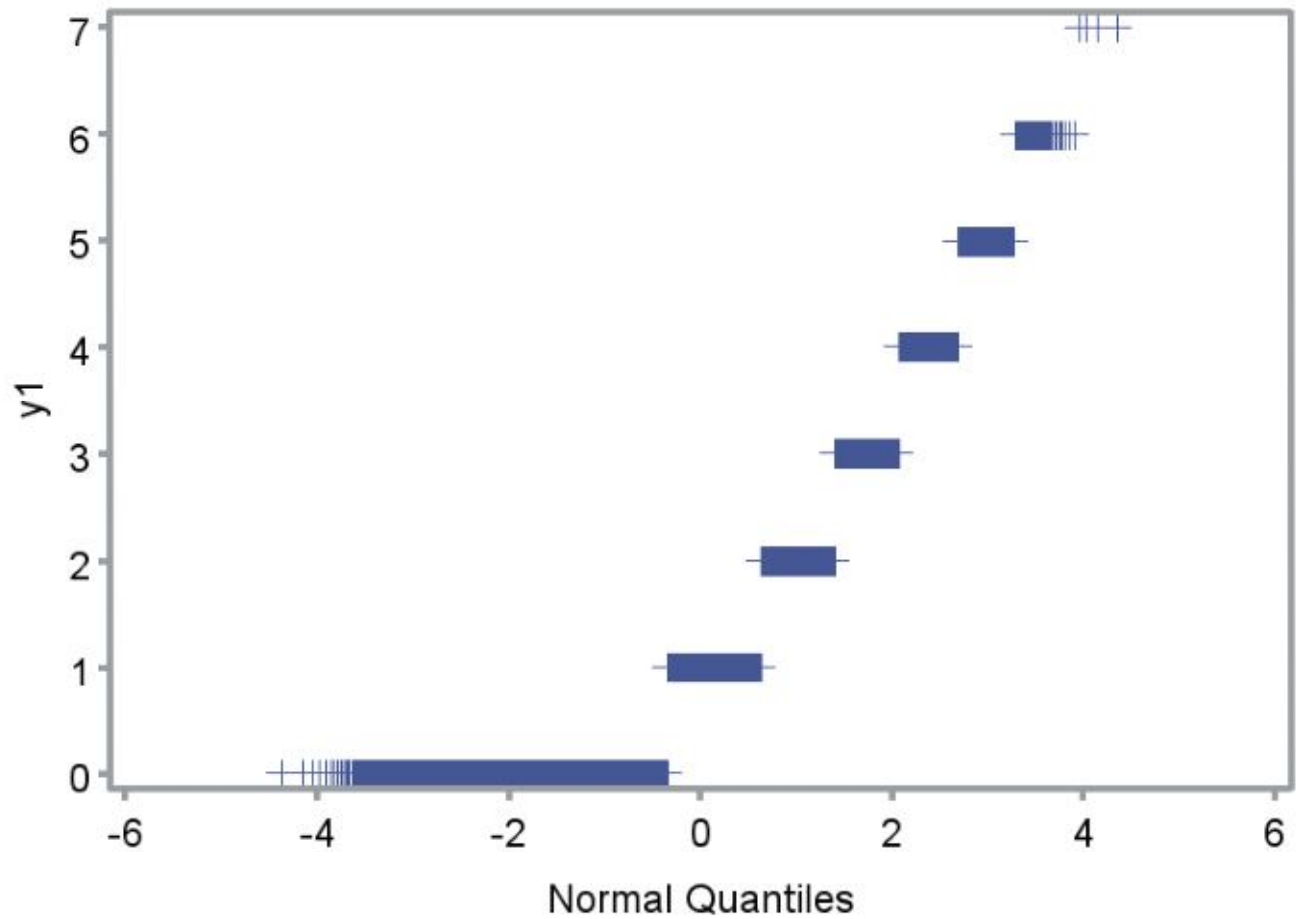
Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	0.99779
Std Dev	Sigma	0.997003

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.23651	Pr > D	<0.010
Cramer-von Mises	W-Sq	1018.64581	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	6056.77634	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	0.00000	-1.32159
5.0	0.00000	-0.64213
10.0	0.00000	-0.27992
25.0	0.00000	0.32532
50.0	1.00000	0.99779
75.0	2.00000	1.67026
90.0	2.00000	2.27550
95.0	3.00000	2.63771
99.0	4.00000	3.31717

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The UNIVARIATE Procedure
Variable: y5

Moments			
N	100000	Sum Weights	100000
Mean	1.00114	Sum Observations	100114
Std Deviation	0.44804275	Variance	0.20074231
Skewness	0.44950065	Kurtosis	0.21120427
Uncorrected SS	120302.16	Corrected SS	20074.03
Coeff Variation	44.7532565	Std Error Mean	0.00141684

Basic Statistical Measures			
Location		Variability	
Mean	1.001140	Std Deviation	0.44804
Median	1.000000	Variance	0.20074
Mode	1.000000	Range	3.40000
		Interquartile Range	0.60000

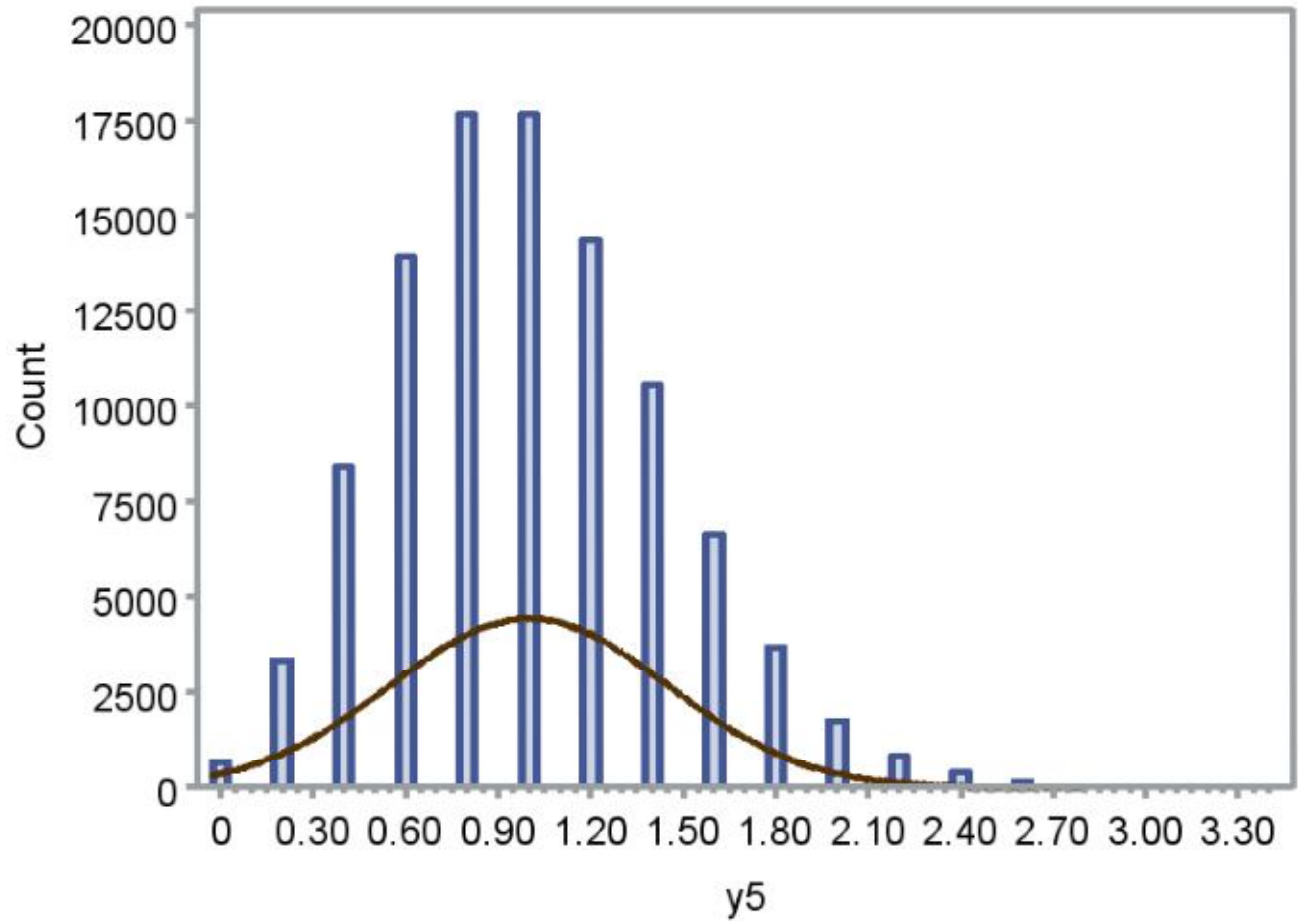
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	706.6028	Pr > t 	<.0001
Sign	M	49653.5	Pr >= M 	<.0001
Signed Rank	S	2.4655E9	Pr >= S 	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	3.4
99%	2.2
95%	1.8
90%	1.6
75% Q3	1.2
50% Median	1.0
25% Q1	0.6
10%	0.4
5%	0.4
1%	0.2
0% Min	0.0

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
0	99972	3.0	91810
0	99825	3.2	57613

0	99752	3.2	66938
0	99740	3.2	94813
0	99224	3.4	43748

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The UNIVARIATE Procedure Fitted Normal Distribution for y5

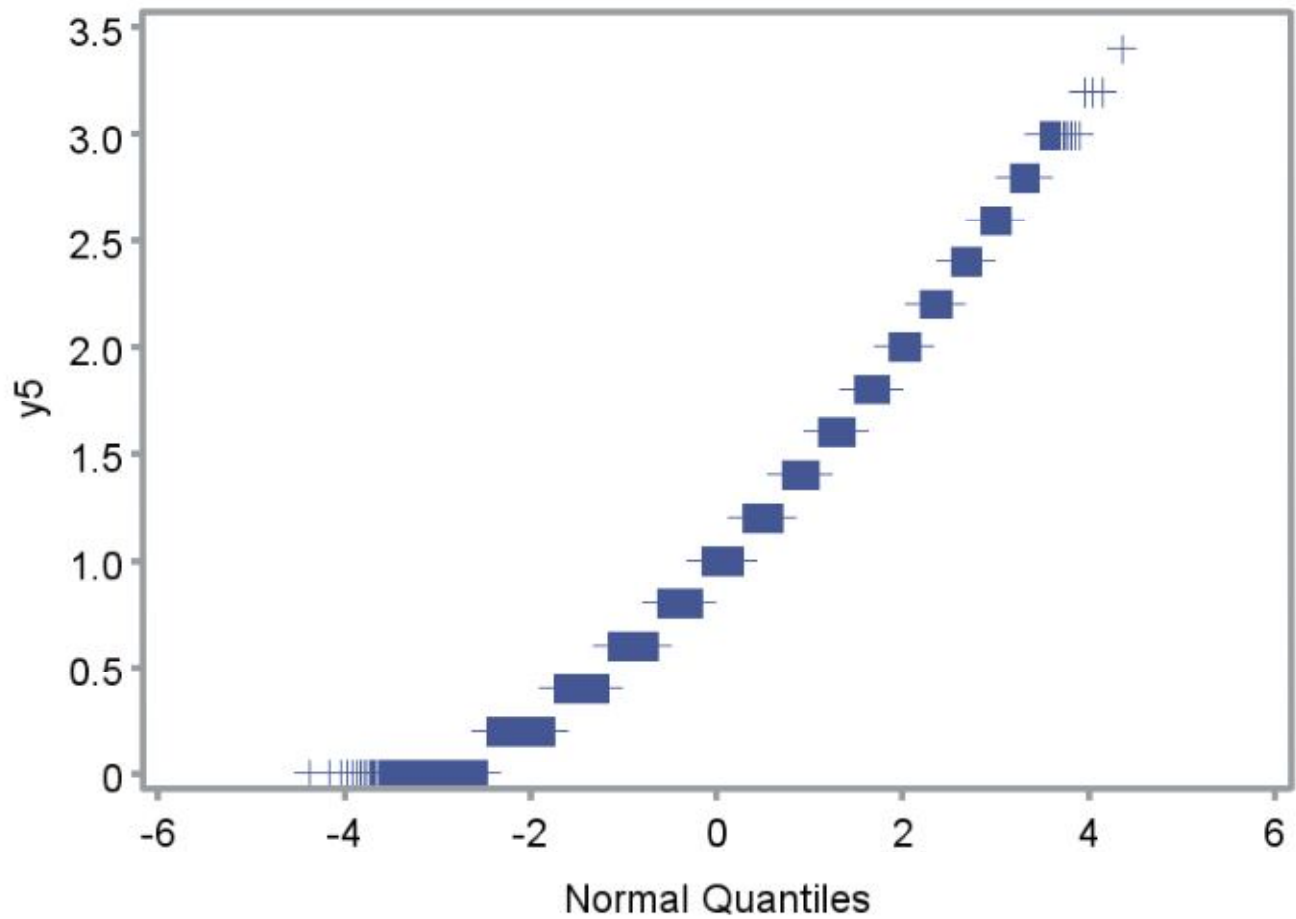
Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	1.00114
Std Dev	Sigma	0.448043

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.11747	Pr > D	<0.010
Cramer-von Mises	W-Sq	190.45577	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	1041.48961	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	0.20000	-0.04116
5.0	0.40000	0.26418
10.0	0.40000	0.42695
25.0	0.60000	0.69894
50.0	1.00000	1.00114
75.0	1.20000	1.30334
90.0	1.60000	1.57533
95.0	1.80000	1.73810
99.0	2.20000	2.04344

The UNIVARIATE Procedure

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The UNIVARIATE Procedure Variable: y10

Moments			
N	100000	Sum Weights	100000
Mean	0.999998	Sum Observations	99999.8
Std Deviation	0.31631061	Variance	0.1000524
Skewness	0.32787636	Kurtosis	0.14354935
Uncorrected SS	110004.74	Corrected SS	10005.14
Coeff Variation	31.631124	Std Error Mean	0.00100026

Basic Statistical Measures			
Location		Variability	
Mean	0.999998	Std Deviation	0.31631
Median	1.000000	Variance	0.10005
Mode	1.000000	Range	2.70000
		Interquartile Range	0.40000

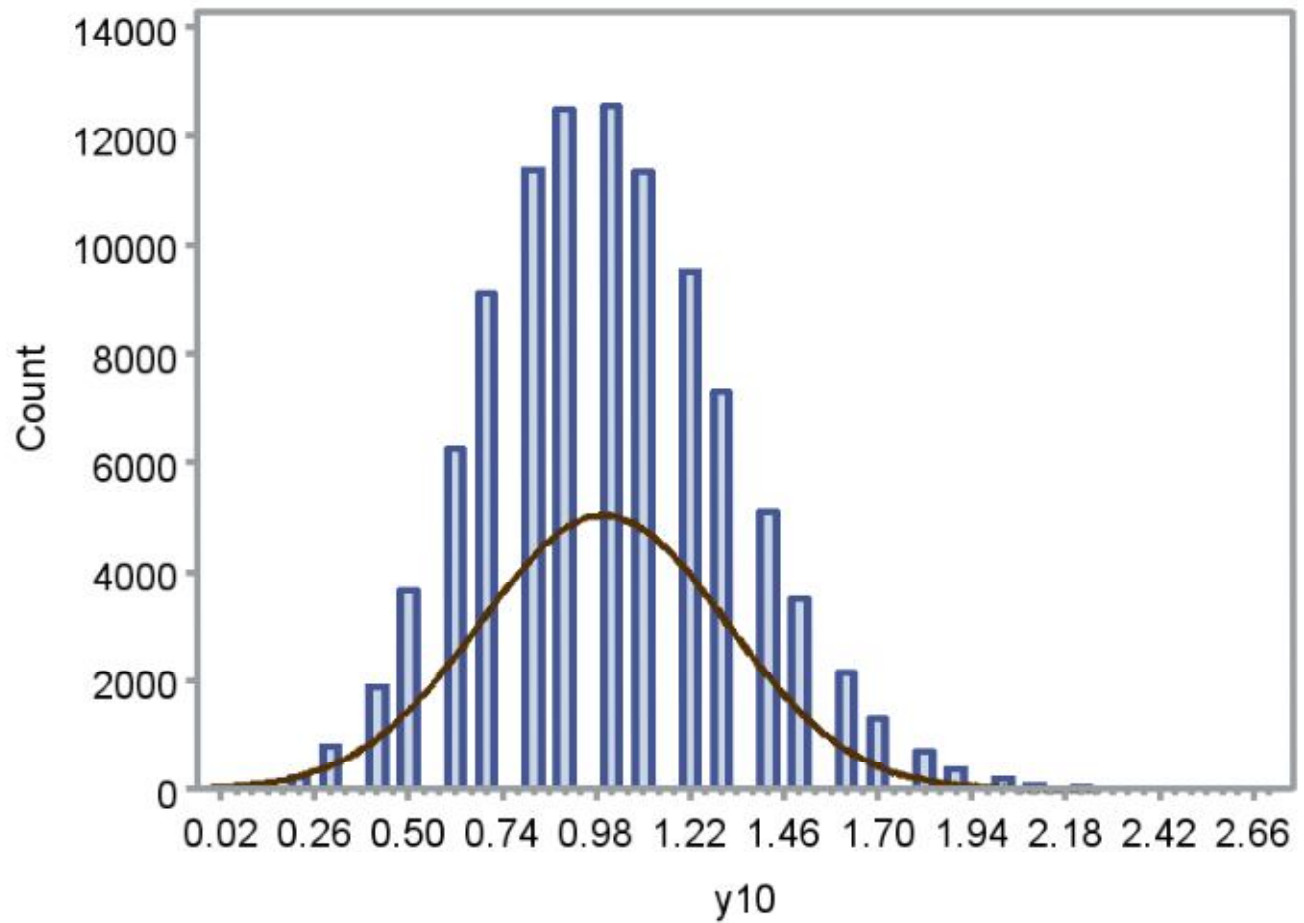
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	999.7361	Pr > t 	<.0001
Sign	M	49999	Pr >= M 	<.0001
Signed Rank	S	2.4999E9	Pr >= S 	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	2.7
99%	1.8
95%	1.5
90%	1.4
75% Q3	1.2
50% Median	1.0
25% Q1	0.8
10%	0.6
5%	0.5
1%	0.3
0% Min	0.0

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
0.0	89350	2.5	93483
0.0	52083	2.6	29826

0.1	97372	2.6	67122
0.1	97190	2.6	92989
0.1	95982	2.7	79195

The UNIVARIATE Procedure

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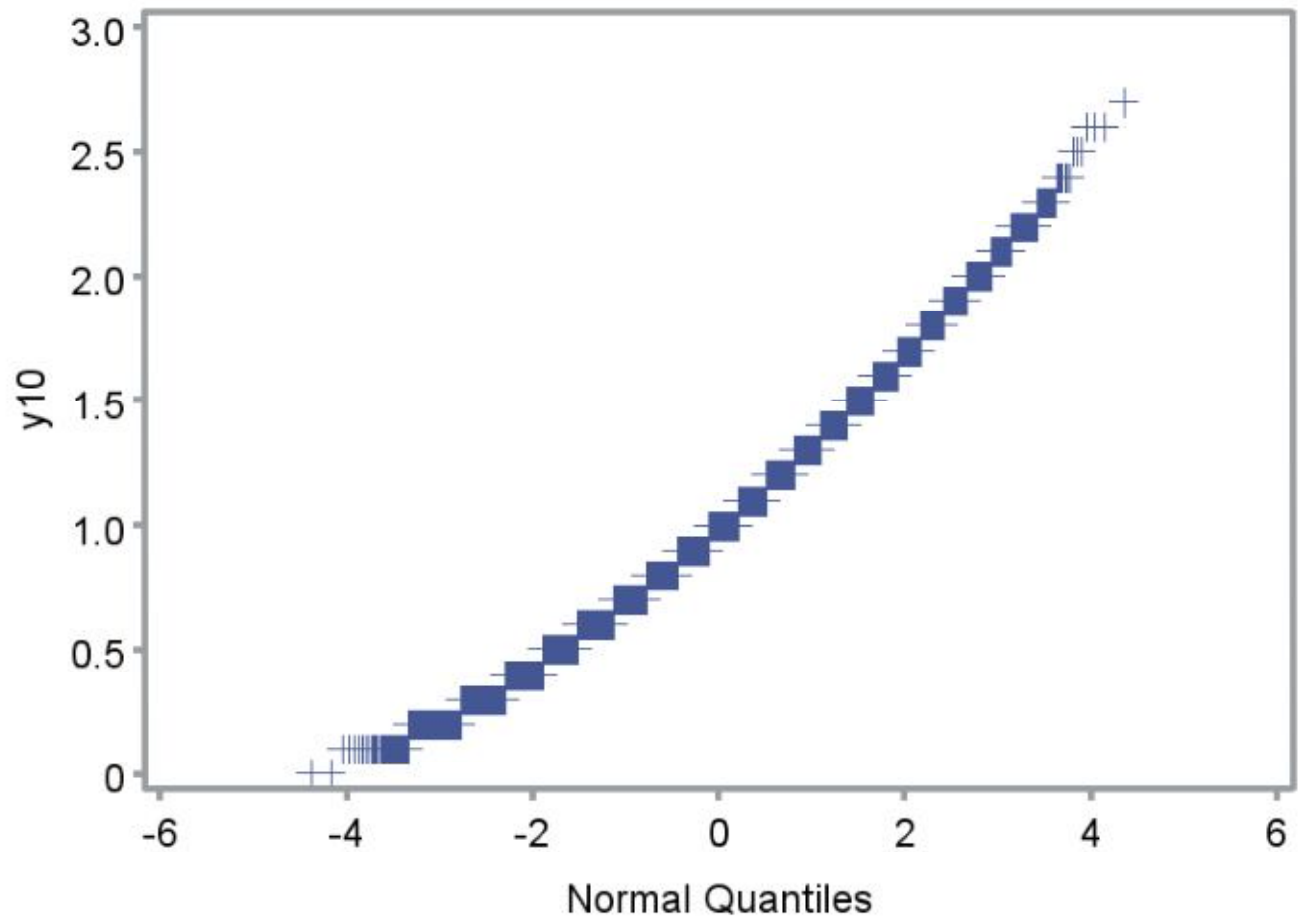
The UNIVARIATE Procedure Fitted Normal Distribution for y10

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	0.999998
Std Dev	Sigma	0.316311

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.083907	Pr > D	<0.010
Cramer-von Mises	W-Sq	95.652459	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	521.053593	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	0.30000	0.26415
5.0	0.50000	0.47971
10.0	0.60000	0.59463
25.0	0.80000	0.78665
50.0	1.00000	1.00000
75.0	1.20000	1.21335
90.0	1.40000	1.40537
95.0	1.50000	1.52028
99.0	1.80000	1.73585

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The UNIVARIATE Procedure Variable: y50

Moments			
N	100000	Sum Weights	100000
Mean	0.9995624	Sum Observations	99956.24
Std Deviation	0.14124138	Variance	0.01994913
Skewness	0.13832504	Kurtosis	0.01614428
Uncorrected SS	101907.392	Corrected SS	1994.89285
Coeff Variation	14.1303216	Std Error Mean	0.00044664

Basic Statistical Measures			
Location		Variability	
Mean	0.999562	Std Deviation	0.14124
Median	1.000000	Variance	0.01995
Mode	0.980000	Range	1.22000
		Interquartile Range	0.20000

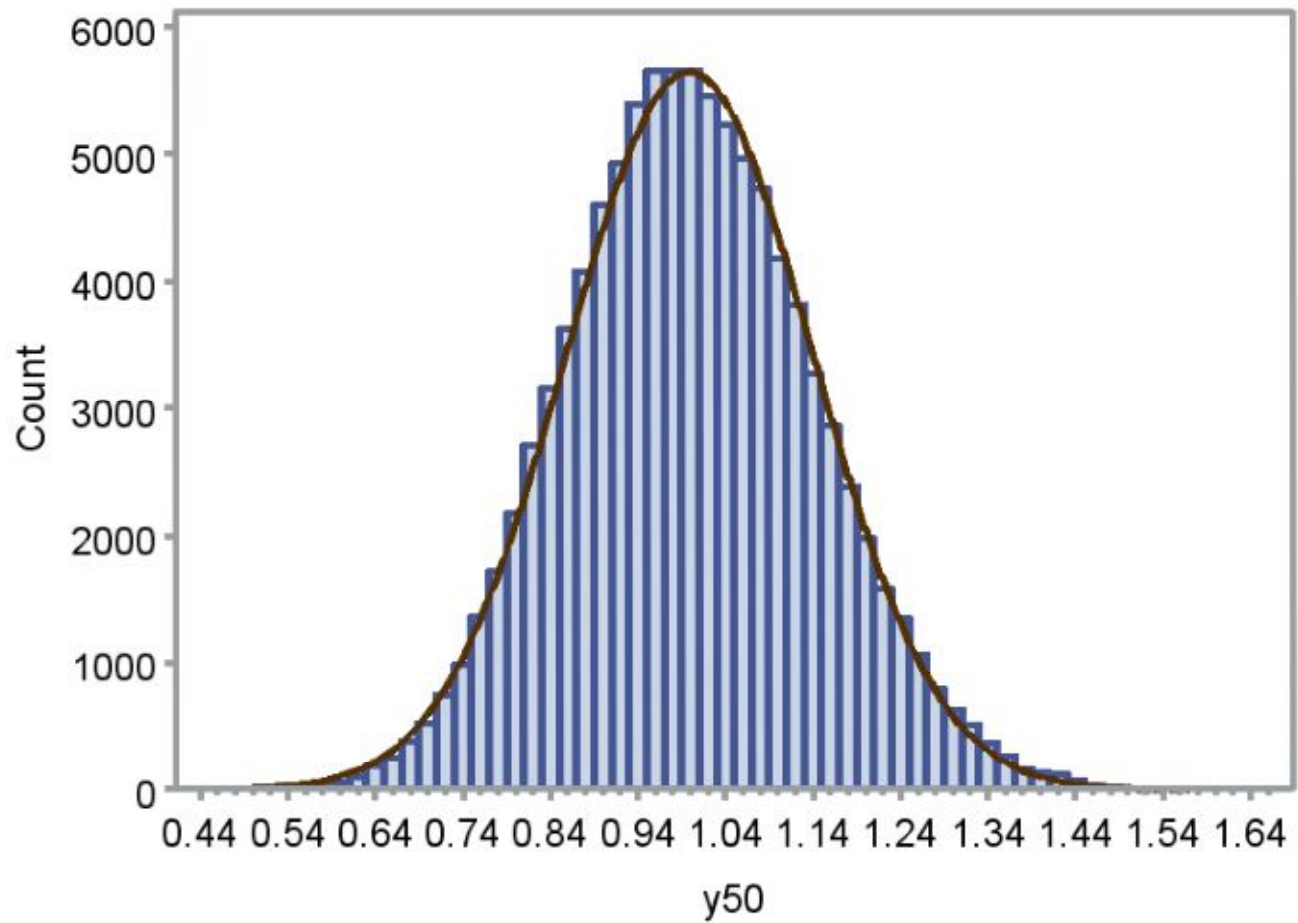
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	2237.937	Pr > t 	<.0001
Sign	M	50000	Pr >= M 	<.0001
Signed Rank	S	2.5E9	Pr >= S 	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	1.66
99%	1.34
95%	1.24
90%	1.18
75% Q3	1.10
50% Median	1.00
25% Q1	0.90
10%	0.82
5%	0.78
1%	0.68
0% Min	0.44

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
0.44	22211	1.60	2800
0.48	8414	1.60	67648

0.50	97429	1.62	51345
0.52	66166	1.64	69443
0.52	63154	1.66	96093

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The UNIVARIATE Procedure Fitted Normal Distribution for y50

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	0.999562
Std Dev	Sigma	0.141241

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.038794	Pr > D	<0.010
Cramer-von Mises	W-Sq	19.049837	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	103.711994	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	0.68000	0.67099
5.0	0.78000	0.76724
10.0	0.82000	0.81855
25.0	0.90000	0.90430
50.0	1.00000	0.99956
75.0	1.10000	1.09483
90.0	1.18000	1.18057
95.0	1.24000	1.23188
99.0	1.34000	1.32814

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