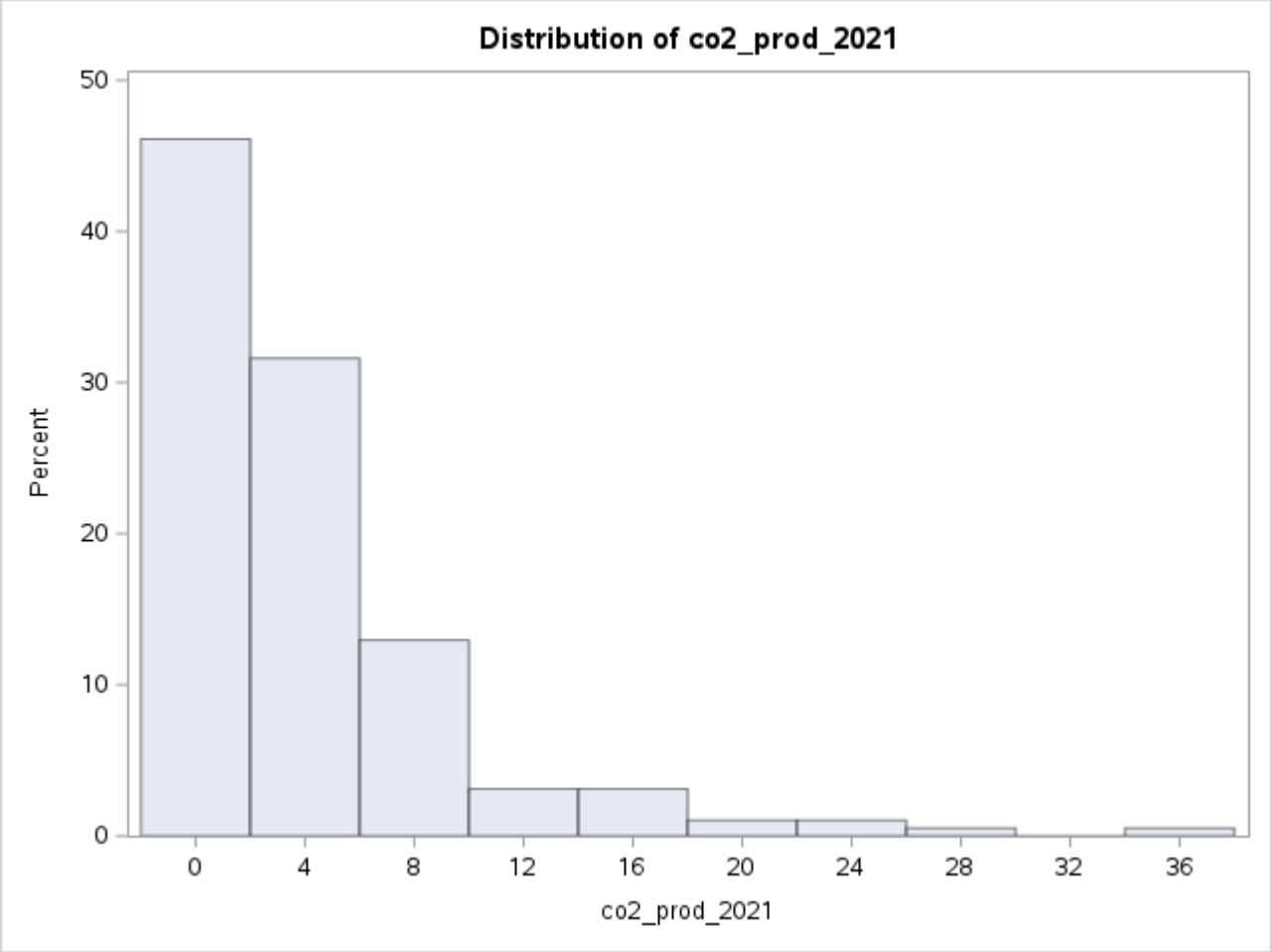
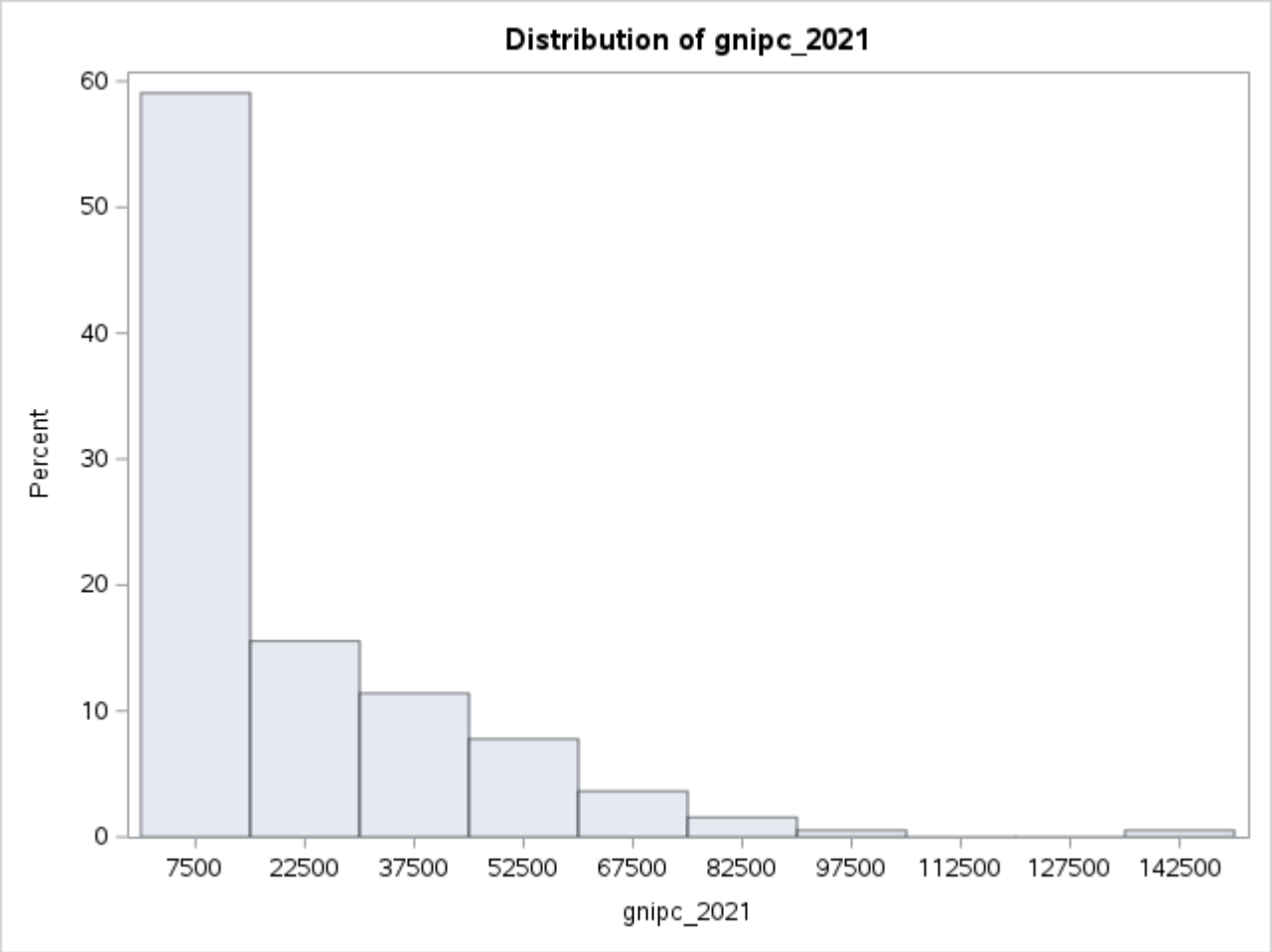
The MEANS Procedure

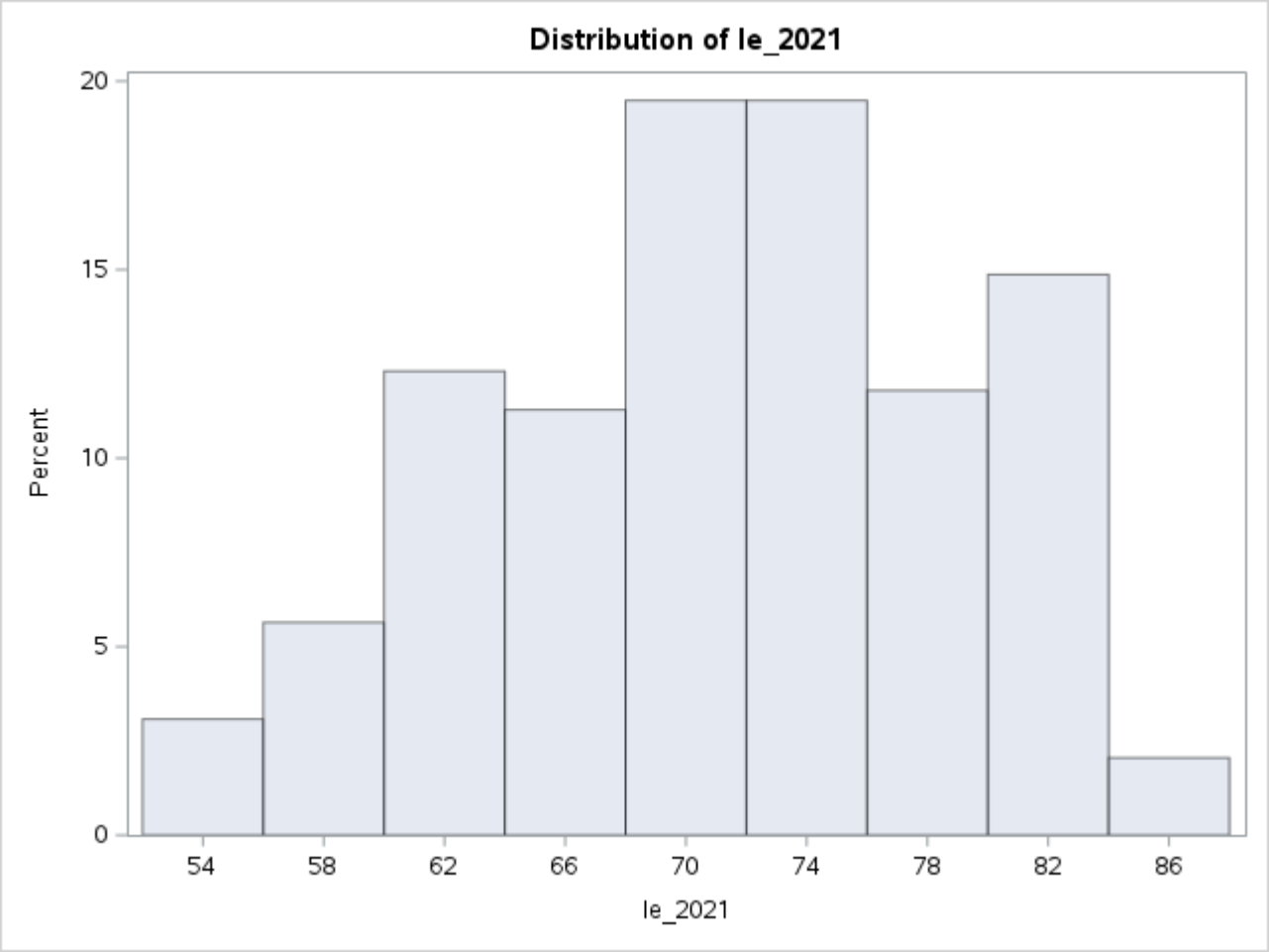
Variable	N	Mean	Median	Std Dev	Minimum	Maximum
co2_prod_2021	193	4.16	2.50	5.35	0.03	37.02
gnipc_2021	193	20136.39	12306.34	21756.09	731.79	146829.70
le_2021	195	71.28	71.69	7.75	52.53	85.95
hdi_2021	191	0.72	0.74	0.15	0.39	0.96

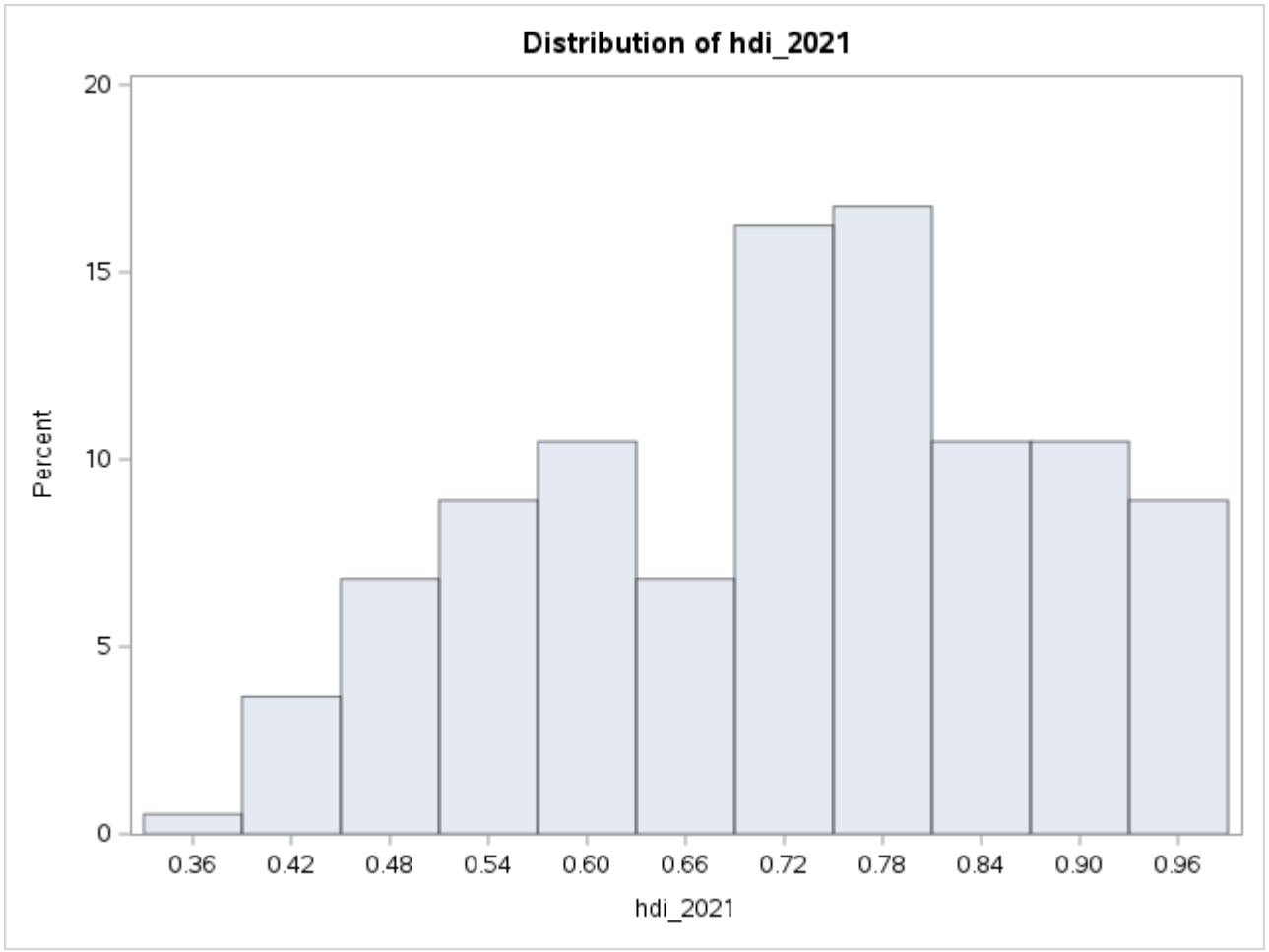
The UNIVARIATE Procedure

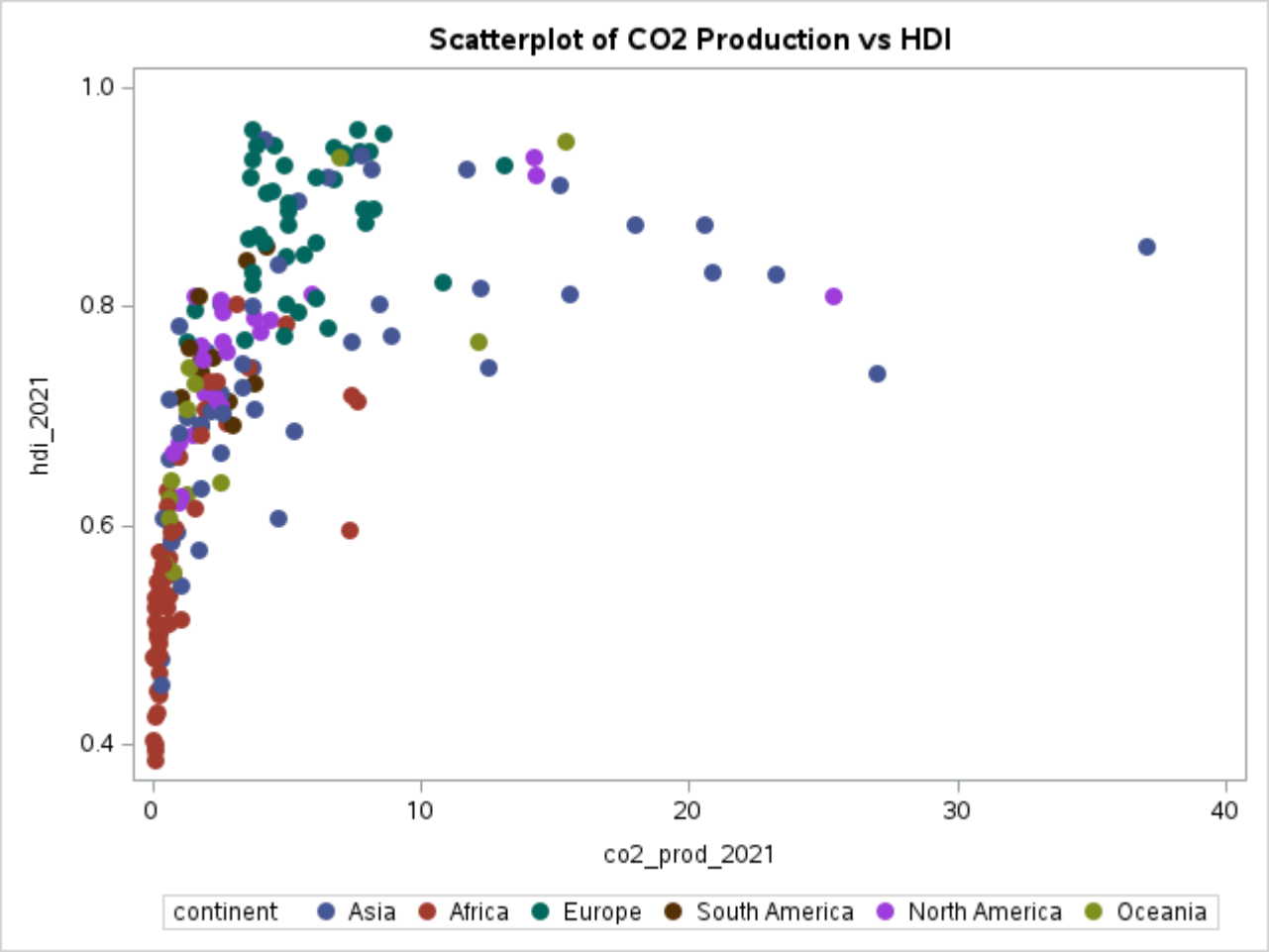


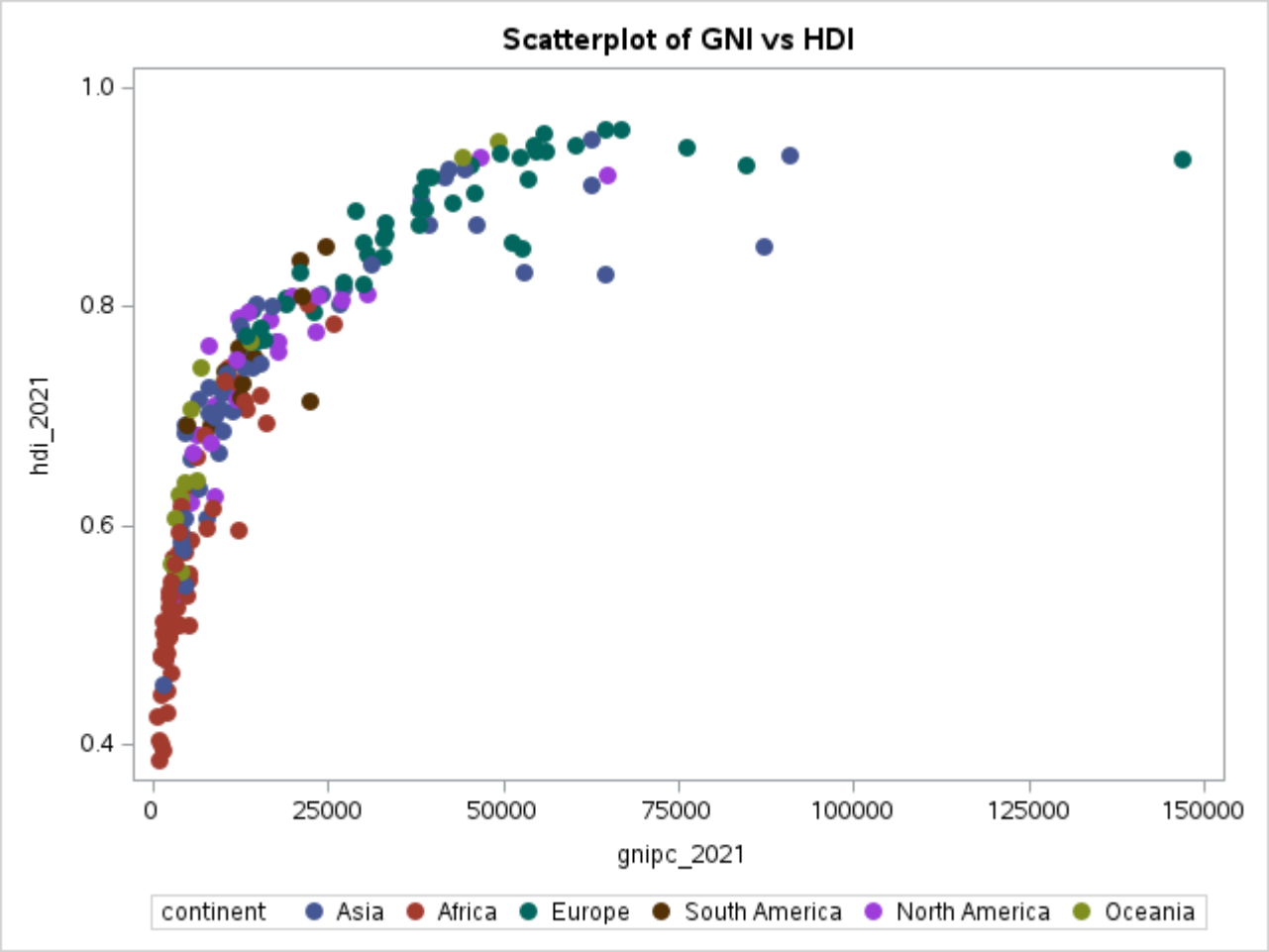
The UNIVARIATE Procedure

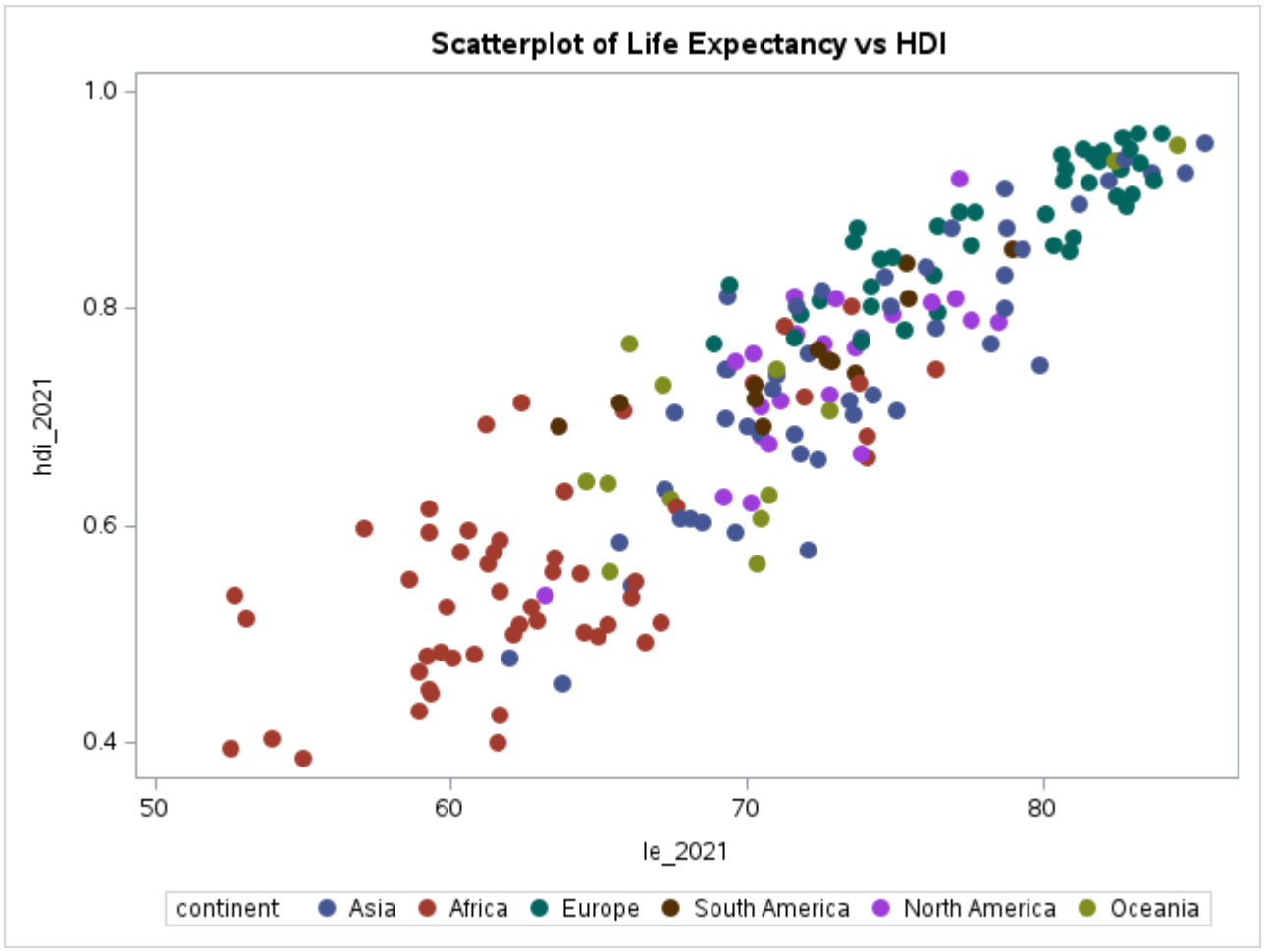

Distribution of gnipc_2021
Percent
60
50
40
30
20
10
0
7500
22500
37500
52500
67500
82500
97500
112500
127500
142500
gnipc_2021


Distribution of le_2021
Percent
20
15
10
5
0
54
58
62
66
70
74
78
82
86
le_2021


Distribution of hdi_2021
Percent
20
15
10
5
0
0.36
0.42
0.48
0.54
0.60
0.66
0.72
0.78
0.84
0.90
0.96
hdi_2021


Scatterplot of CO2 Production vs HDI
1.0
0.8
0.6
0.4
hdi_2021
0
10
20
30
40
co2_prod_2021
continent
Asia
Africa
Europe
South America
North America
Oceania


Scatterplot of GNI vs HDI
1.0
0.8
0.6
0.4
hdi_2021
0
25000
50000
75000
100000
125000
150000
gnipc_2021
continent
Asia
Africa
Europe
South America
North America
Oceania



The CORR Procedure

4 Variables:	co2_prod_2021 gnipc_2021 le_2021 hdi_2021

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

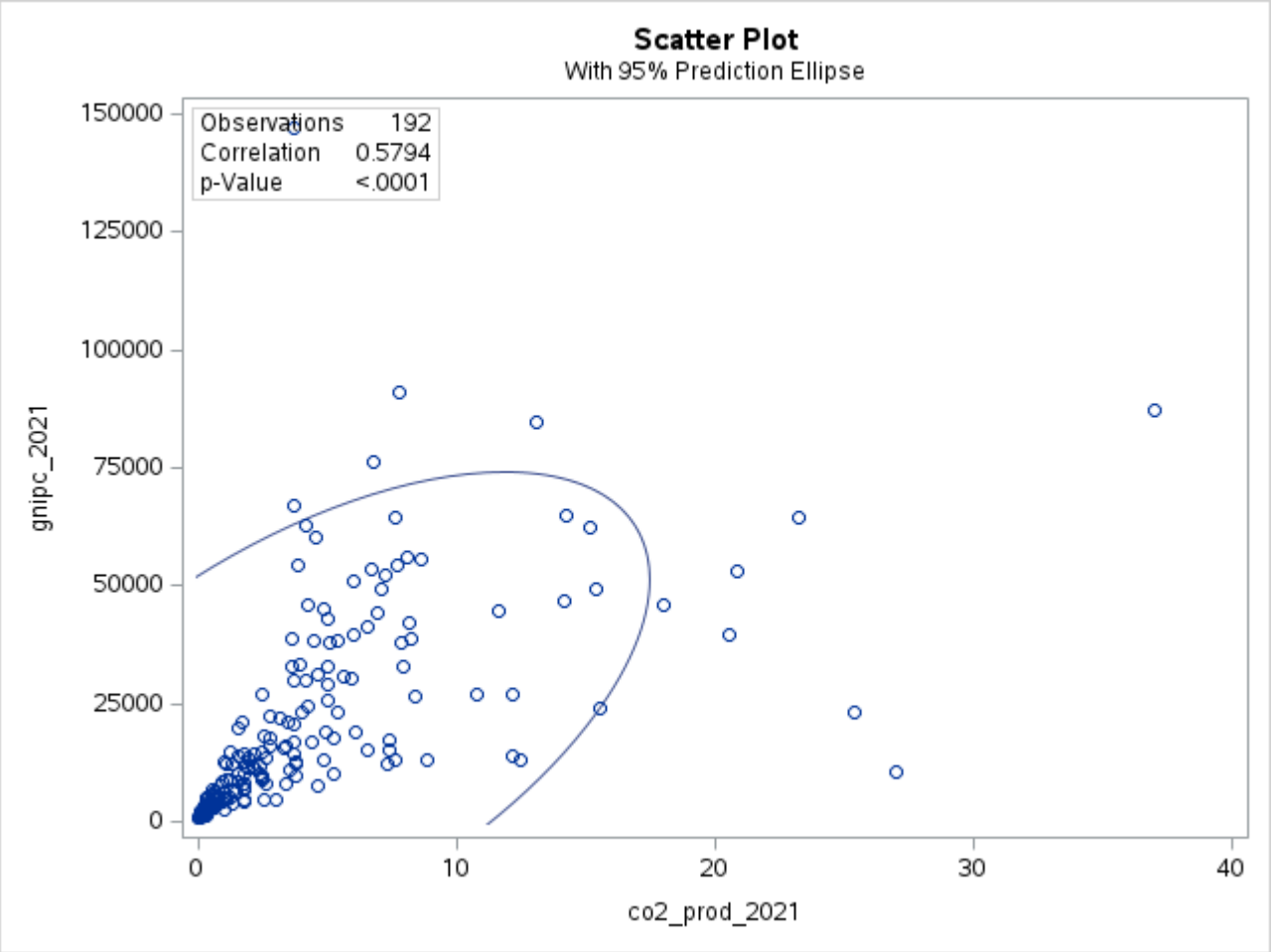
	co2_prod_2021	gnipc_2021	le_2021	hdi_2021
co2_prod_2021	1.00000 193	0.57935 <.0001 192	0.45635 <.0001 193	0.54788 <.0001 190
gnipc_2021	0.57935 <.0001 192	1.00000 193	0.73381 <.0001 193	0.78804 <.0001 191
le_2021	0.45635 <.0001 193	0.73381 <.0001 193	1.00000 195	0.90596 <.0001 191
hdi_2021	0.54788 <.0001 190	0.78804 <.0001 191	0.90596 <.0001 191	1.00000 191

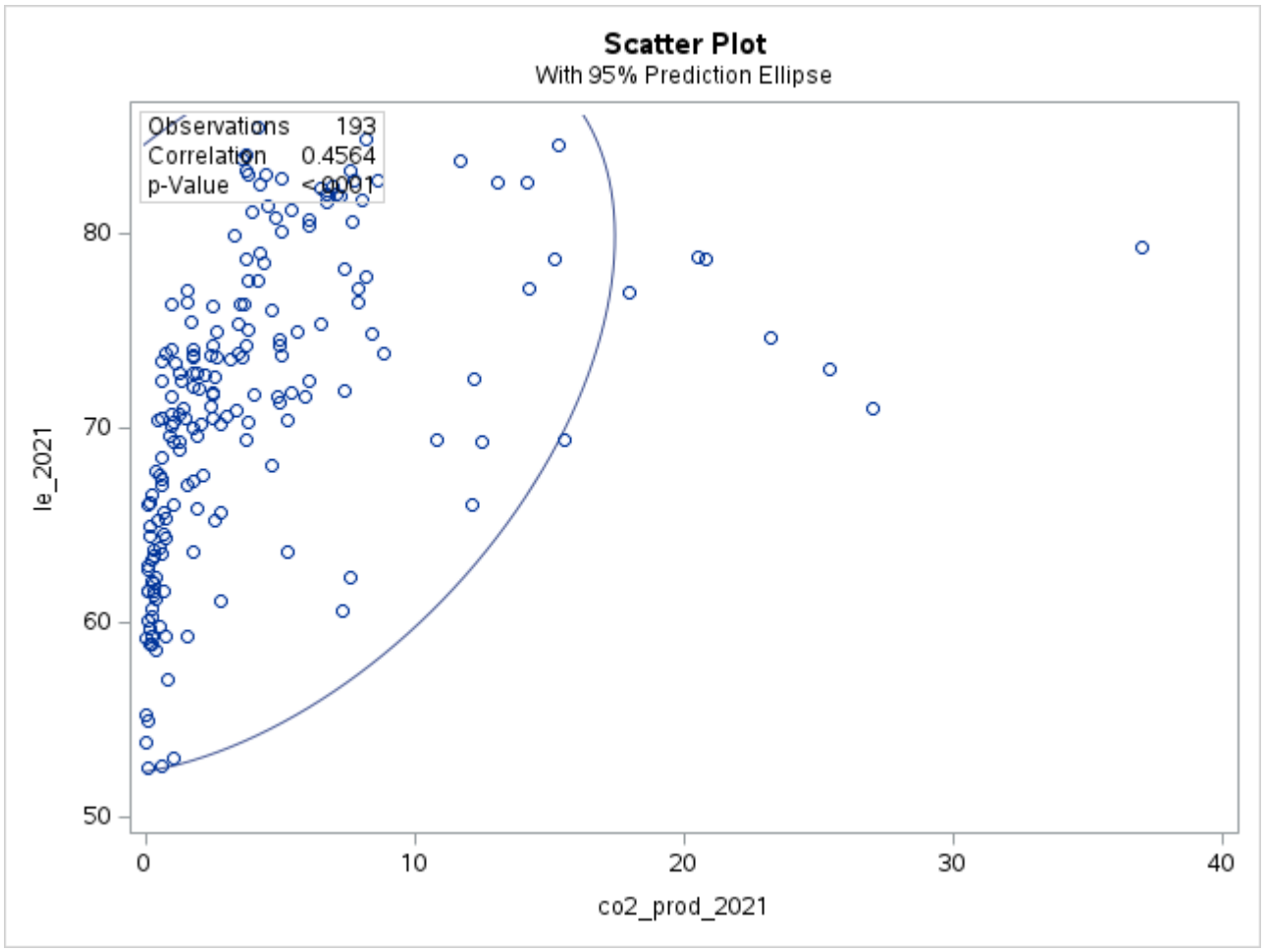
Spearman Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

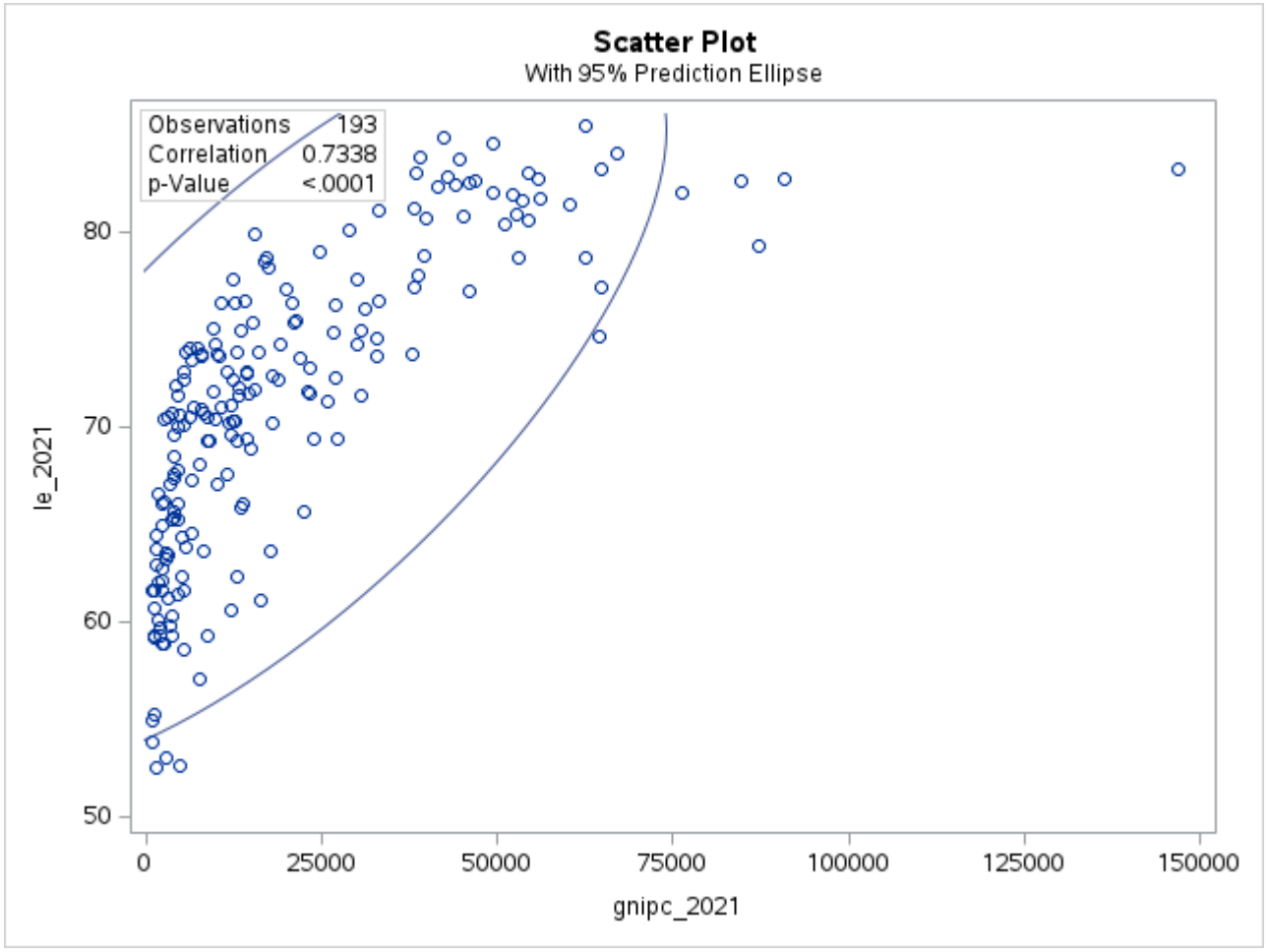
	co2_prod_2021	gnipc_2021	le_2021	hdi_2021
co2_prod_2021	1.00000 193	0.88266 <.0001 192	0.72366 <.0001 193	0.85375 <.0001 190
gnipc_2021	0.88266 <.0001	1.00000	0.84683 <.0001	0.96783 <.0001

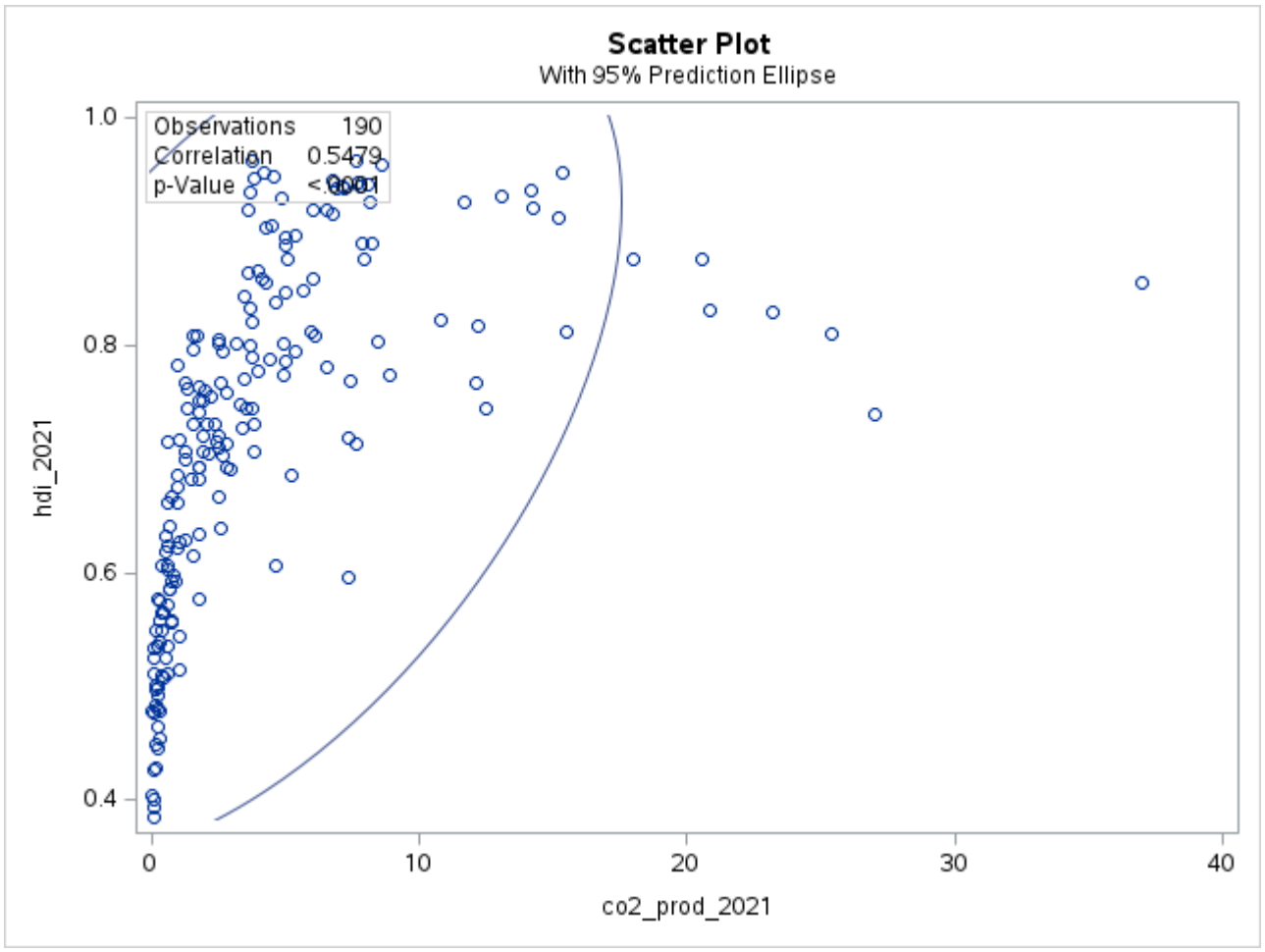
Spearman Correlation Coefficients Prob > |r| under H0: Rho=0 Number of Observations				
	co2_prod_2021	gnipc_2021	le_2021	hdi_2021
	192	193	193	191
le_2021	0.72366 <.0001 193	0.84683 <.0001 193	1.00000 195	0.90694 <.0001 191
hdi_2021	0.85375 <.0001 190	0.96783 <.0001 191	0.90694 <.0001 191	1.00000 191

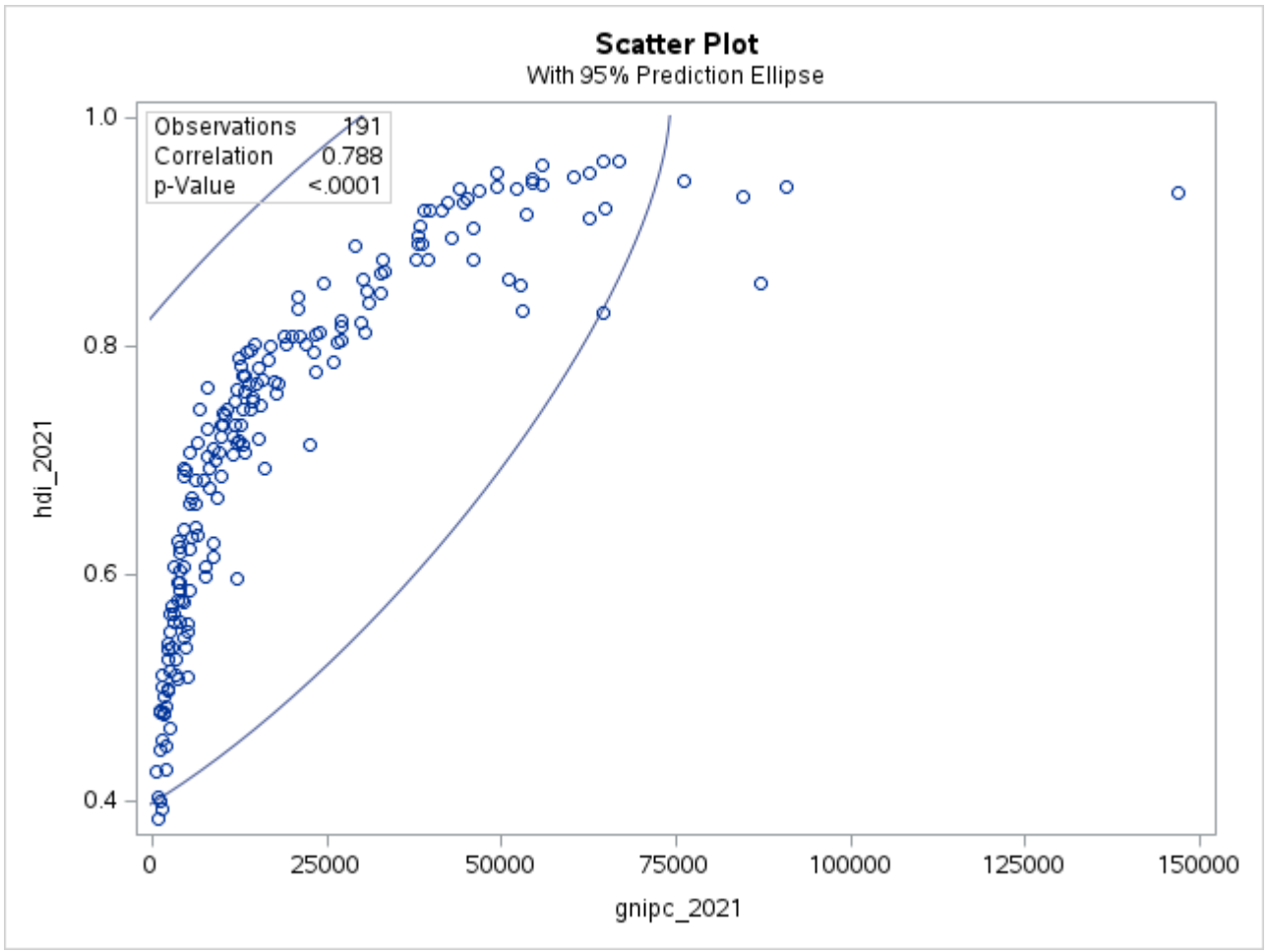
The CORR Procedure

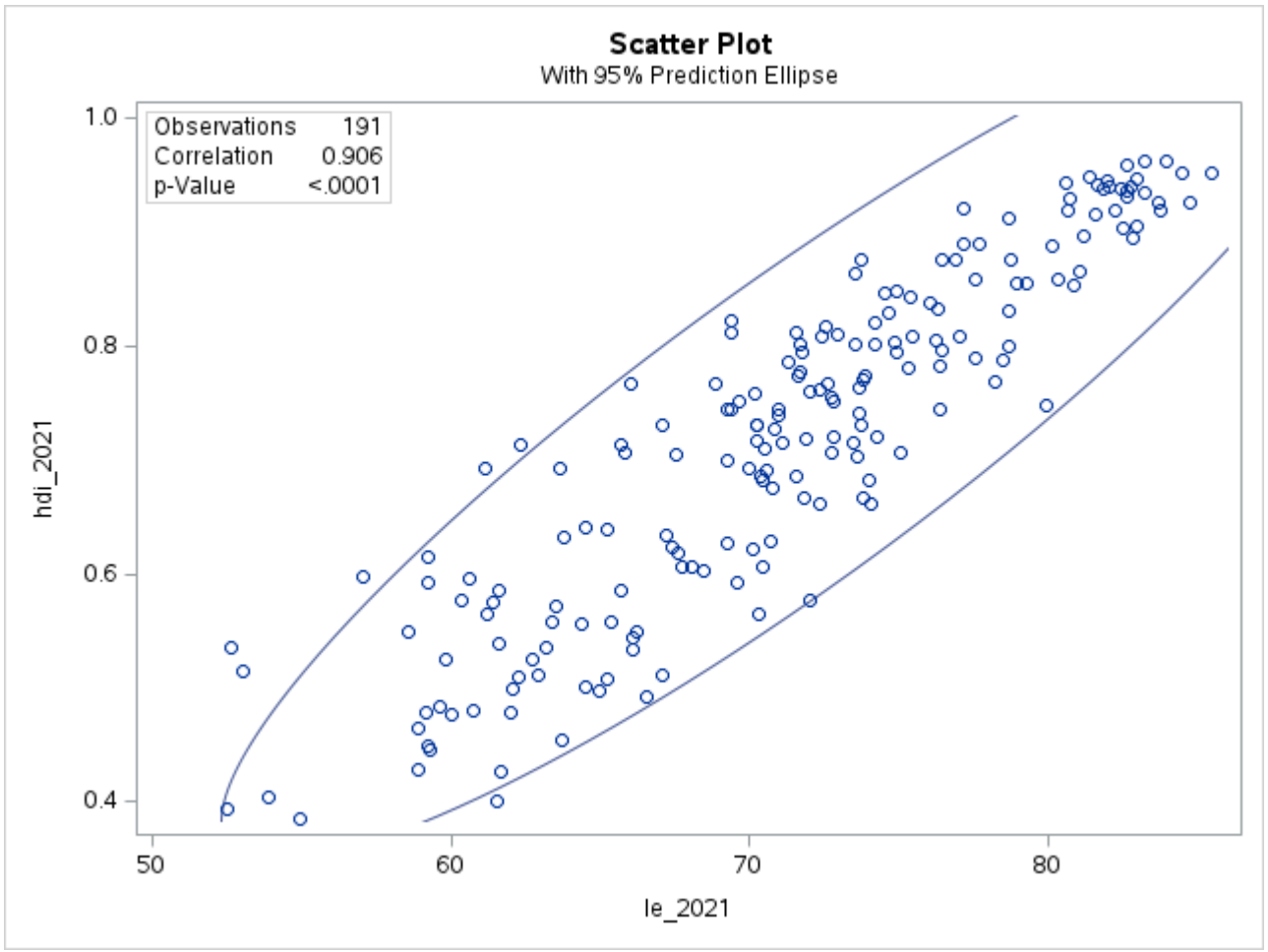


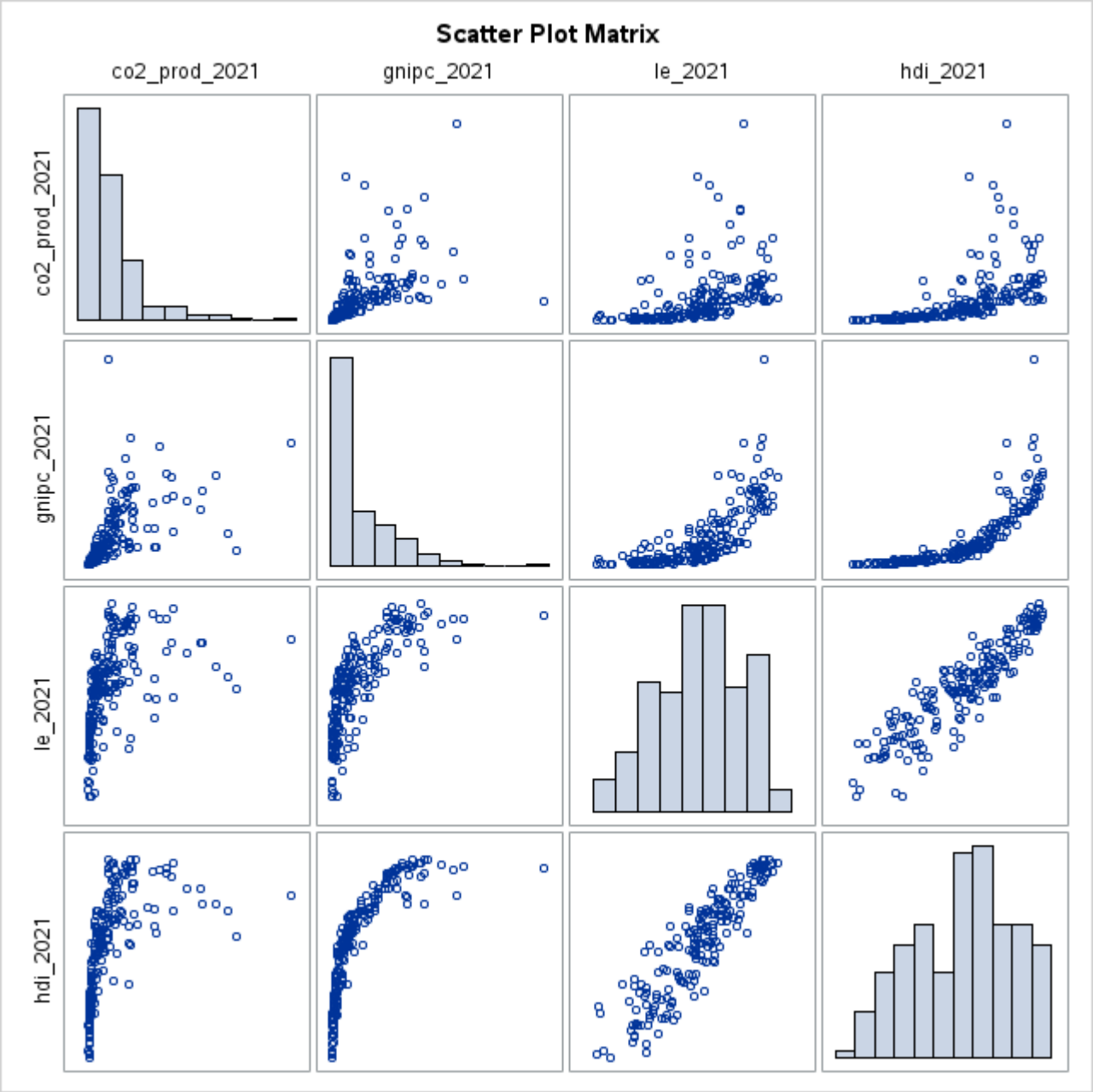

Scatter Plot
With 95% Prediction Ellipse
Observations 193
Correlation 0.4564
p-Value <.0001
le_2021
co2_prod_2021
50
60
70
80
0
10
20
30
40


Scatter Plot
With 95% Prediction Ellipse
Observations 193
Correlation 0.7338
p-Value <.0001
le_2021
gnipc_2021
50
60
70
80
0
25000
50000
75000
100000
125000
150000


Scatter Plot
With 95% Prediction Ellipse
Observations 190
Correlation 0.5479
p-Value <.0001
hdi_2021
co2_prod_2021
1.0
0.8
0.6
0.4
0
10
20
30
40


Scatter Plot
With 95% Prediction Ellipse
Observations 191
Correlation 0.788
p-Value <.0001
hdi_2021
gnipc_2021
1.0
0.8
0.6
0.4
0
25000
50000
75000
100000
125000
150000


Scatter Plot
With 95% Prediction Ellipse
Observations 191
Correlation 0.906
p-Value <.0001
hdi_2021
1.0
0.8
0.6
0.4
50
60
70
80
le_2021



The UNIVARIATE Procedure
Variable: hdi_2021
continent = Africa

Moments			
N	53	**Sum Weights**	53
Mean	0.55898113	**Sum Observations**	29.626
Std Deviation	0.10441679	**Variance**	0.01090287
Skewness	0.53436744	**Kurtosis**	-0.3567835
Uncorrected SS	17.127324	**Corrected SS**	0.56694898
Coeff Variation	18.6798407	**Std Error Mean**	0.01434275

Basic Statistical Measures			
Location		**Variability**	
Mean	0.558981	**Std Deviation**	0.10442
Median	0.539000	**Variance**	0.01090
Mode	0.525000	**Range**	0.41700

Basic Statistical Measures			
Location		Variability	
		Interquartile Range	0.12300

Note: The mode displayed is the smallest of 2 modes with a count of 2.

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	38.97308	Pr > |t|	<.0001
Sign	M	26.5	Pr >= |M|	<.0001
Signed Rank	S	715.5	Pr >= |S|	<.0001

Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.957675	Pr < W	0.0580
Kolmogorov-Smirnov	D	0.095641	Pr > D	>0.1500
Cramer-von Mises	W-Sq	0.12739	Pr > W-Sq	0.0471
Anderson-Darling	A-Sq	0.759804	Pr > A-Sq	0.0460

Quantiles (Definition 5)	
Level	Quantile
100% Max	0.802
99%	0.802
95%	0.745
90%	0.718
75% Q3	0.615
50% Median	0.539
25% Q1	0.492
10%	0.428
5%	0.400
1%	0.385
0% Min	0.385

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
0.385	161	0.731	52
0.394	170	0.731	178
0.400	127	0.745	50
0.404	29	0.785	168
0.426	12	0.802	123

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	1	1.85	100.00

Moments			
N	48	Sum Weights	48
Mean	0.74389583	Sum Observations	35.707
Std Deviation	0.12140196	Variance	0.01473844
Skewness	-0.2856698	Kurtosis	-0.3495072
Uncorrected SS	27.254995	Corrected SS	0.69270648
Coeff Variation	16.3197526	Std Error Mean	0.01752286

Basic Statistical Measures			
Location		Variability	
Mean	0.743896	Std Deviation	0.12140
Median	0.745000	Variance	0.01474
Mode	0.607000	Range	0.49700
		Interquartile Range	0.15450

Note: The mode displayed is the smallest of 4 modes with a count of 2.

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	42.45287	Pr > |t|	<.0001
Sign	M	24	Pr >= |M|	<.0001
Signed Rank	S	588	Pr >= |S|	<.0001

Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.978366	Pr < W	0.5126
Kolmogorov-Smirnov	D	0.063792	Pr > D	>0.1500
Cramer-von Mises	W-Sq	0.024231	Pr > W-Sq	>0.2500
Anderson-Darling	A-Sq	0.2192	Pr > A-Sq	>0.2500

Quantiles (Definition 5)	
Level	Quantile
100% Max	0.9520
99%	0.9520
95%	0.9250
90%	0.9190
75% Q3	0.8300
50% Median	0.7450
25% Q1	0.6755
10%	0.5850
5%	0.5440
1%	0.4550
0% Min	0.4550

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
0.455	192	0.919	84
0.478	1	0.925	88
0.544	136	0.925	95
0.577	169	0.939	154

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
0.585	118	0.952	73

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	1	2.04	100.00

The UNIVARIATE Procedure
Variable: hdi_2021
continent = Europe

Moments			
N	42	Sum Weights	42
Mean	0.87871429	Sum Observations	36.906
Std Deviation	0.05974469	Variance	0.00356943
Skewness	-0.3831053	Kurtosis	-1.0446428
Uncorrected SS	32.576176	Corrected SS	0.14634657
Coeff Variation	6.79910363	Std Error Mean	0.00921881

Basic Statistical Measures			
Location		Variability	
Mean	0.878714	Std Deviation	0.05974
Median	0.888000	Variance	0.00357
Mode	0.858000	Range	0.19500
		Interquartile Range	0.10300

Note: The mode displayed is the smallest of 2 modes with a count of 2.

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	95.31757	Pr > |t|	<.0001
Sign	M	21	Pr >= |M|	<.0001
Signed Rank	S	451.5	Pr >= |S|	<.0001

Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.935307	Pr < W	0.0196
Kolmogorov-Smirnov	D	0.114666	Pr > D	>0.1500
Cramer-von Mises	W-Sq	0.104369	Pr > W-Sq	0.0963
Anderson-Darling	A-Sq	0.757269	Pr > A-Sq	0.0459

Quantiles (Definition 5)	
Level	Quantile
100% Max	0.962
99%	0.962
95%	0.959
90%	0.947
75% Q3	0.935

Quantiles (Definition 5)	
Level	Quantile
50% Median	0.888
25% Q1	0.832
10%	0.795
5%	0.773
1%	0.767
0% Min	0.767

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
0.767	110	0.947	166
0.770	115	0.948	48
0.773	183	0.959	83
0.780	20	0.961	131
0.795	17	0.962	31

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	1	2.33	100.00

The UNIVARIATE Procedure
Variable: hdi_2021
continent = North America

Moments			
N	23	Sum Weights	23
Mean	0.74934783	Sum Observations	17.235
Std Deviation	0.09118643	Variance	0.00831496
Skewness	-0.1656082	Kurtosis	0.73376746
Uncorrected SS	13.097939	Corrected SS	0.18292922
Coeff Variation	12.1687718	Std Error Mean	0.01901368

Basic Statistical Measures			
Location		Variability	
Mean	0.749348	Std Deviation	0.09119
Median	0.764000	Variance	0.00831
Mode	.	Range	0.40100
		Interquartile Range	0.12200

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	39.41097	Pr > |t|	<.0001
Sign	M	11.5	Pr >= |M|	<.0001
Signed Rank	S	138	Pr >= |S|	<.0001

Tests for Normality		
Test	Statistic	p Value

Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.962274	Pr < W	0.5108
Kolmogorov-Smirnov	D	0.15906	Pr > D	0.1336
Cramer-von Mises	W-Sq	0.06686	Pr > W-Sq	>0.2500
Anderson-Darling	A-Sq	0.414151	Pr > A-Sq	>0.2500

Quantiles (Definition 5)	
Level	Quantile
100% Max	0.936
99%	0.936
95%	0.921
90%	0.812
75% Q3	0.805
50% Median	0.764
25% Q1	0.683
10%	0.627
5%	0.621
1%	0.535
0% Min	0.535

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
0.535	76	0.809	41
0.621	74	0.810	177
0.627	71	0.812	19
0.667	129	0.921	185
0.675	157	0.936	30

The UNIVARIATE Procedure
Variable: hdi_2021
continent = Oceania

Moments			
N	13	Sum Weights	13
Mean	0.69984615	Sum Observations	9.098
Std Deviation	0.12652526	Variance	0.01600864
Skewness	1.07968866	Kurtosis	0.41578277
Uncorrected SS	6.559304	Corrected SS	0.19210369
Coeff Variation	18.0790103	Std Error Mean	0.03509179

Basic Statistical Measures			
Location		Variability	
Mean	0.699846	Std Deviation	0.12653
Median	0.641000	Variance	0.01601
Mode	.	Range	0.39300
		Interquartile Range	0.12100

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	19.9433	Pr > |t|	<.0001
Sign	M	6.5	Pr >= |M|	0.0002
Signed Rank	S	45.5	Pr >= |S|	0.0002

Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.869808	Pr < W	0.0520
Kolmogorov-Smirnov	D	0.21753	Pr > D	0.0905
Cramer-von Mises	W-Sq	0.098085	Pr > W-Sq	0.1082
Anderson-Darling	A-Sq	0.660046	Pr > A-Sq	0.0686

Quantiles (Definition 5)	
Level	Quantile
100% Max	0.951
99%	0.951
95%	0.951
90%	0.937
75% Q3	0.745
50% Median	0.641
25% Q1	0.624
10%	0.564
5%	0.558
1%	0.558
0% Min	0.558

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
0.558	141	0.730	58
0.564	155	0.745	176
0.607	190	0.767	140
0.624	93	0.937	134
0.628	60	0.951	9

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	1	7.14	100.00

The UNIVARIATE Procedure
Variable: hdi_2021
continent = South America

Moments			
N	12	Sum Weights	12
Mean	0.75483333	Sum Observations	9.058
Std Deviation	0.05442565	Variance	0.00296215
Skewness	0.7968411	Kurtosis	-0.3615471

Moments			
Uncorrected SS	6.869864	Corrected SS	0.03258367
Coeff Variation	7.21028721	Std Error Mean	0.01571133

Basic Statistical Measures			
Location		Variability	
Mean	0.754833	Std Deviation	0.05443
Median	0.746000	Variance	0.00296
Mode	.	Range	0.16400
		Interquartile Range	0.07000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	48.04388	Pr > |t|	<.0001
Sign	M	6	Pr >= |M|	0.0005
Signed Rank	S	39	Pr >= |S|	0.0005

Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.904546	Pr < W	0.1815
Kolmogorov-Smirnov	D	0.197619	Pr > D	>0.1500
Cramer-von Mises	W-Sq	0.075506	Pr > W-Sq	0.2226
Anderson-Darling	A-Sq	0.463263	Pr > A-Sq	0.2176

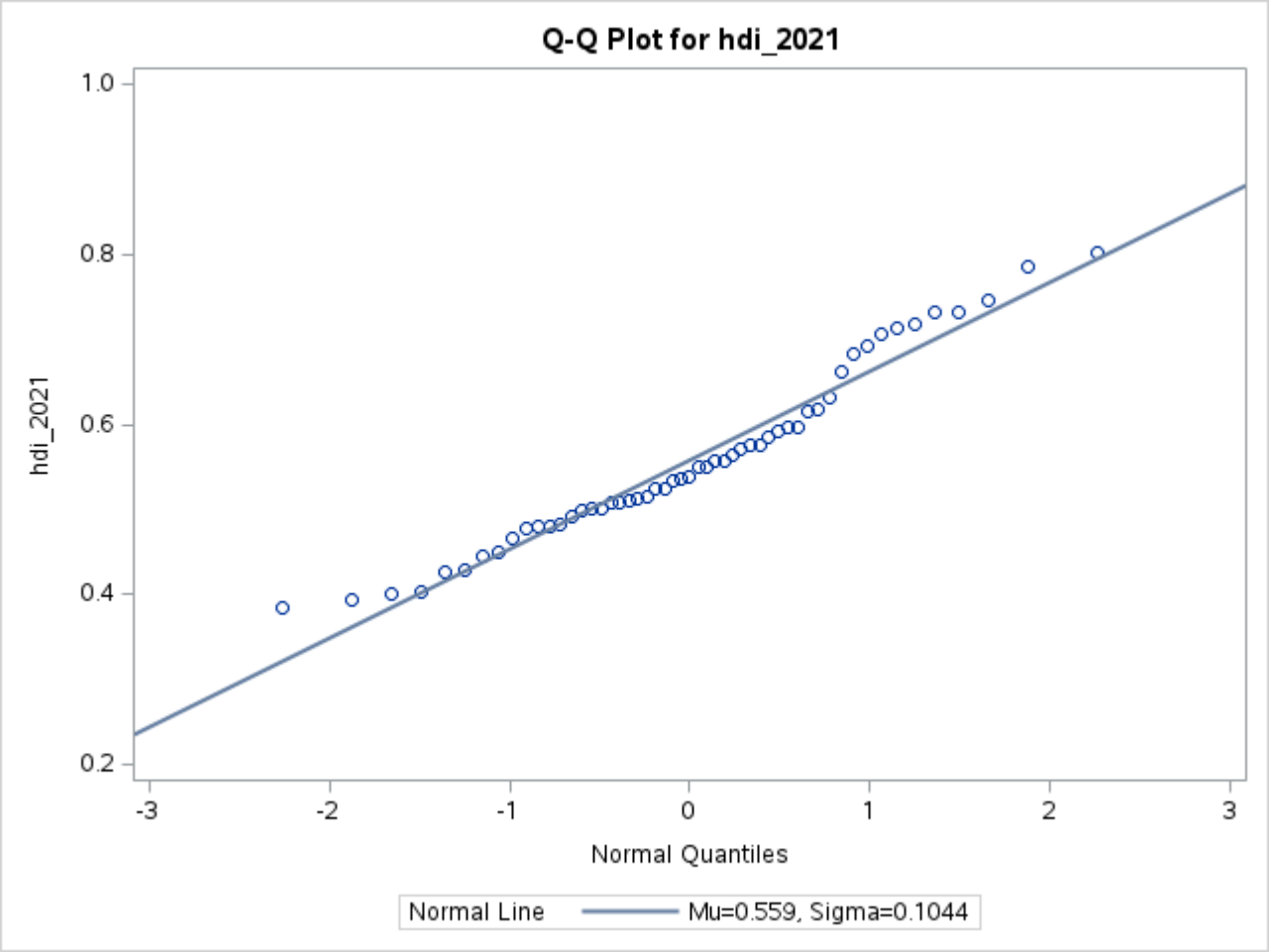
Quantiles (Definition 5)	
Level	Quantile
100% Max	0.8550
99%	0.8550
95%	0.8550
90%	0.8420
75% Q3	0.7855
50% Median	0.7460
25% Q1	0.7155
10%	0.6920
5%	0.6910
1%	0.6910
0% Min	0.6910

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
0.691	188	0.754	24
0.692	23	0.762	138
0.714	72	0.809	184
0.717	145	0.842	6
0.730	163	0.855	32

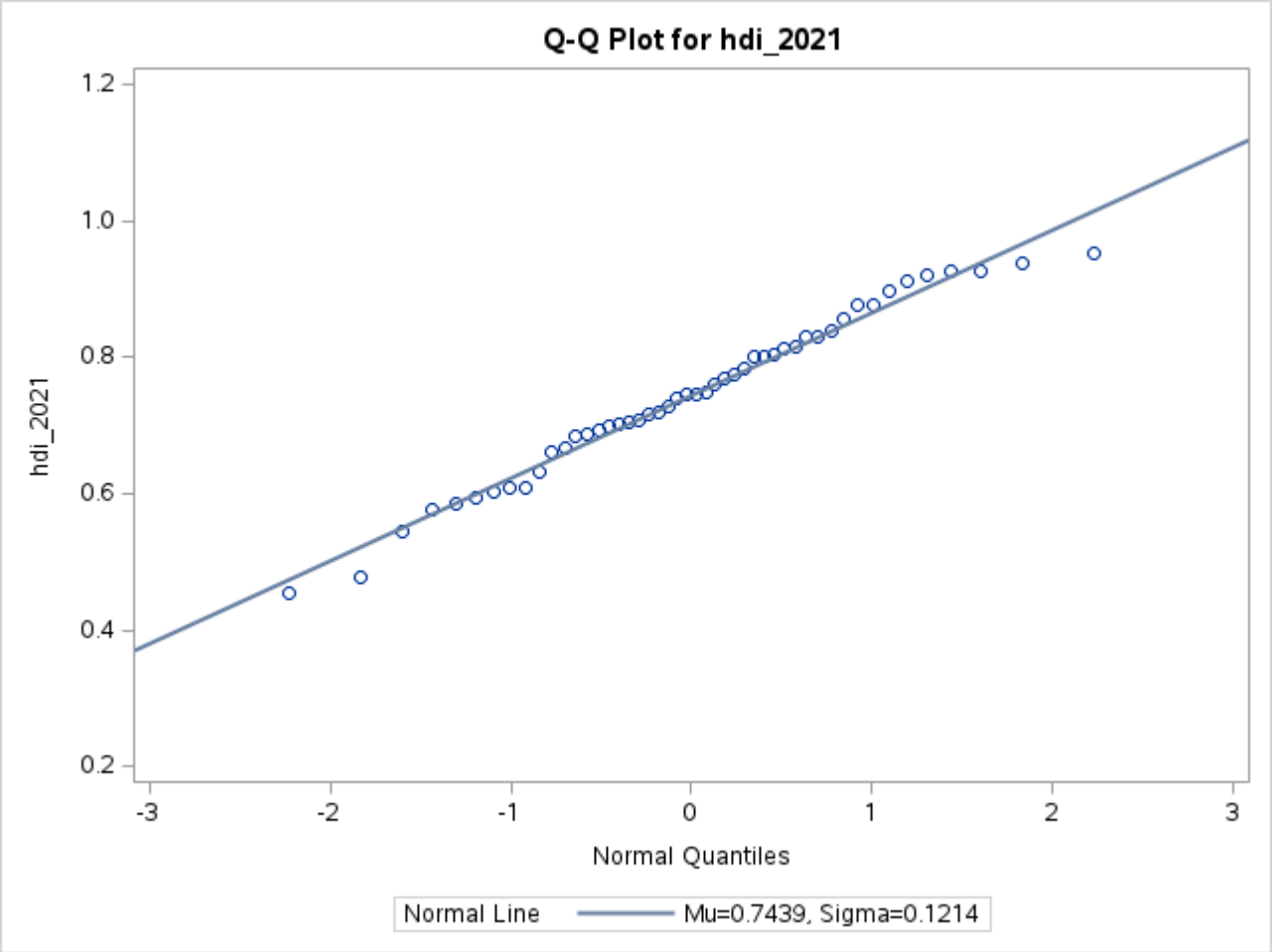
Obs	continent	mean	std

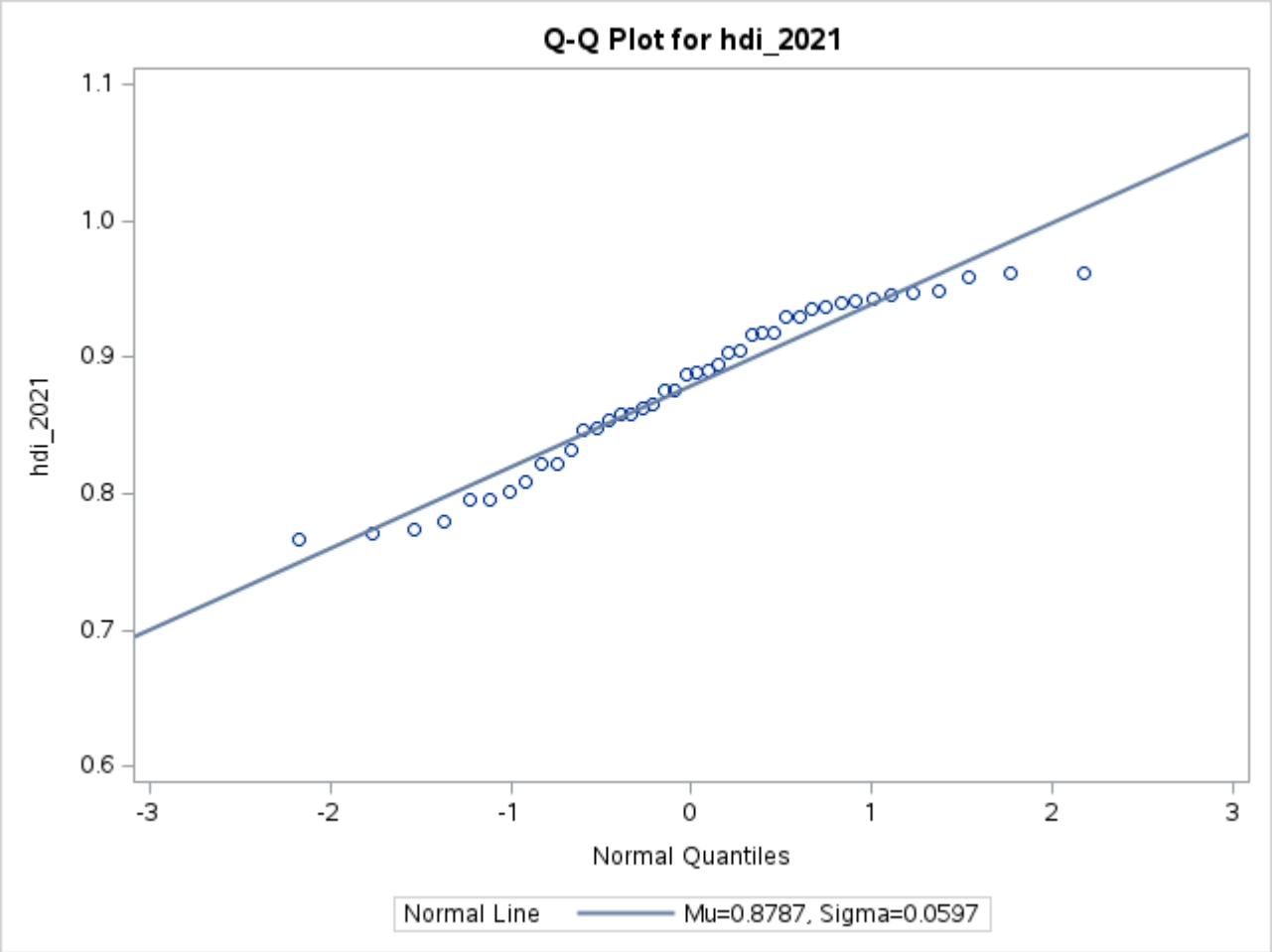
Obs	continent	mean	std
1	Africa	0.55898	0.10442
2	Asia	0.74390	0.12140
3	Europe	0.87871	0.05974
4	North America	0.74935	0.09119
5	Oceania	0.69985	0.12653
6	South America	0.75483	0.05443

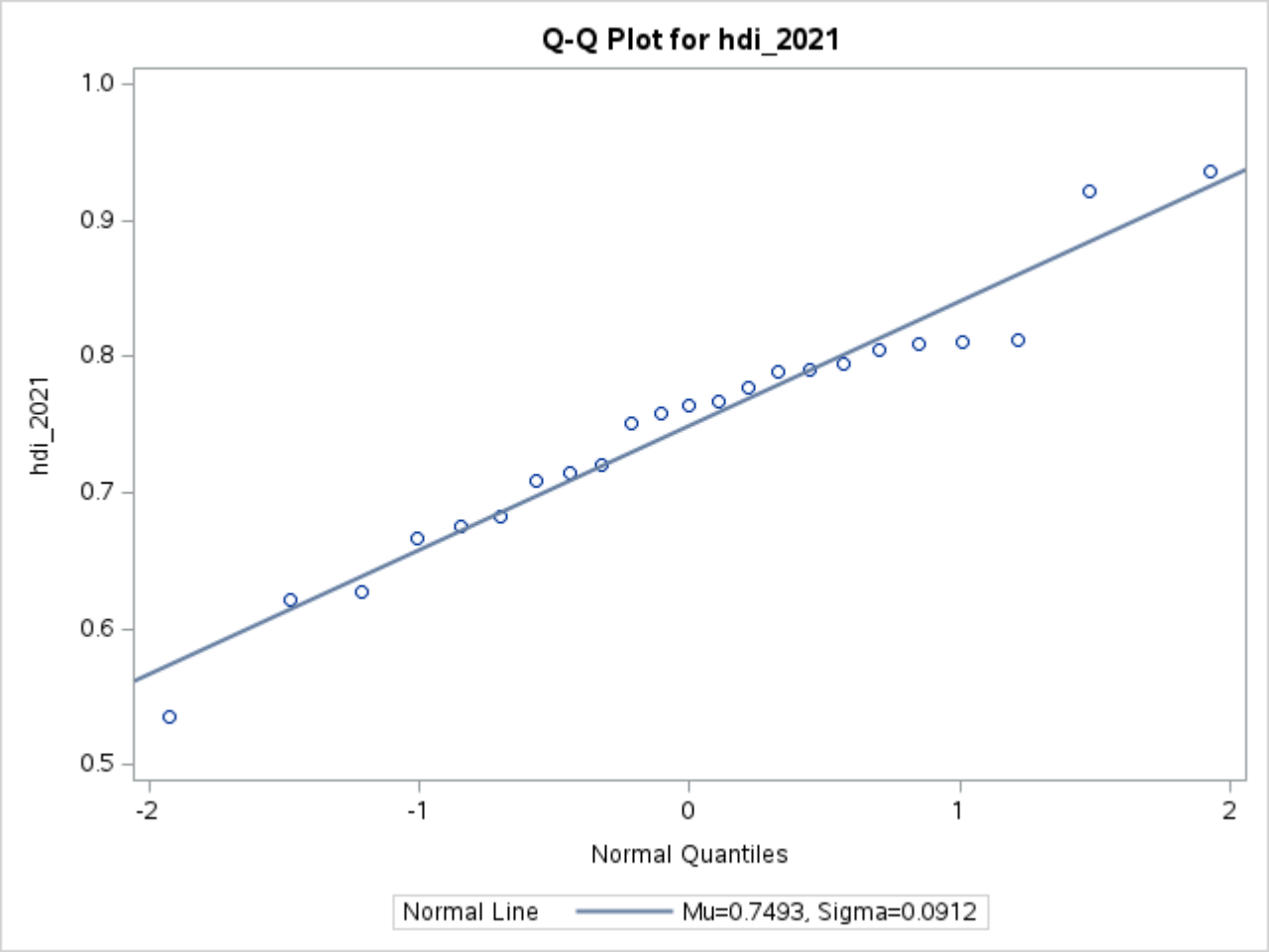
The UNIVARIATE Procedure

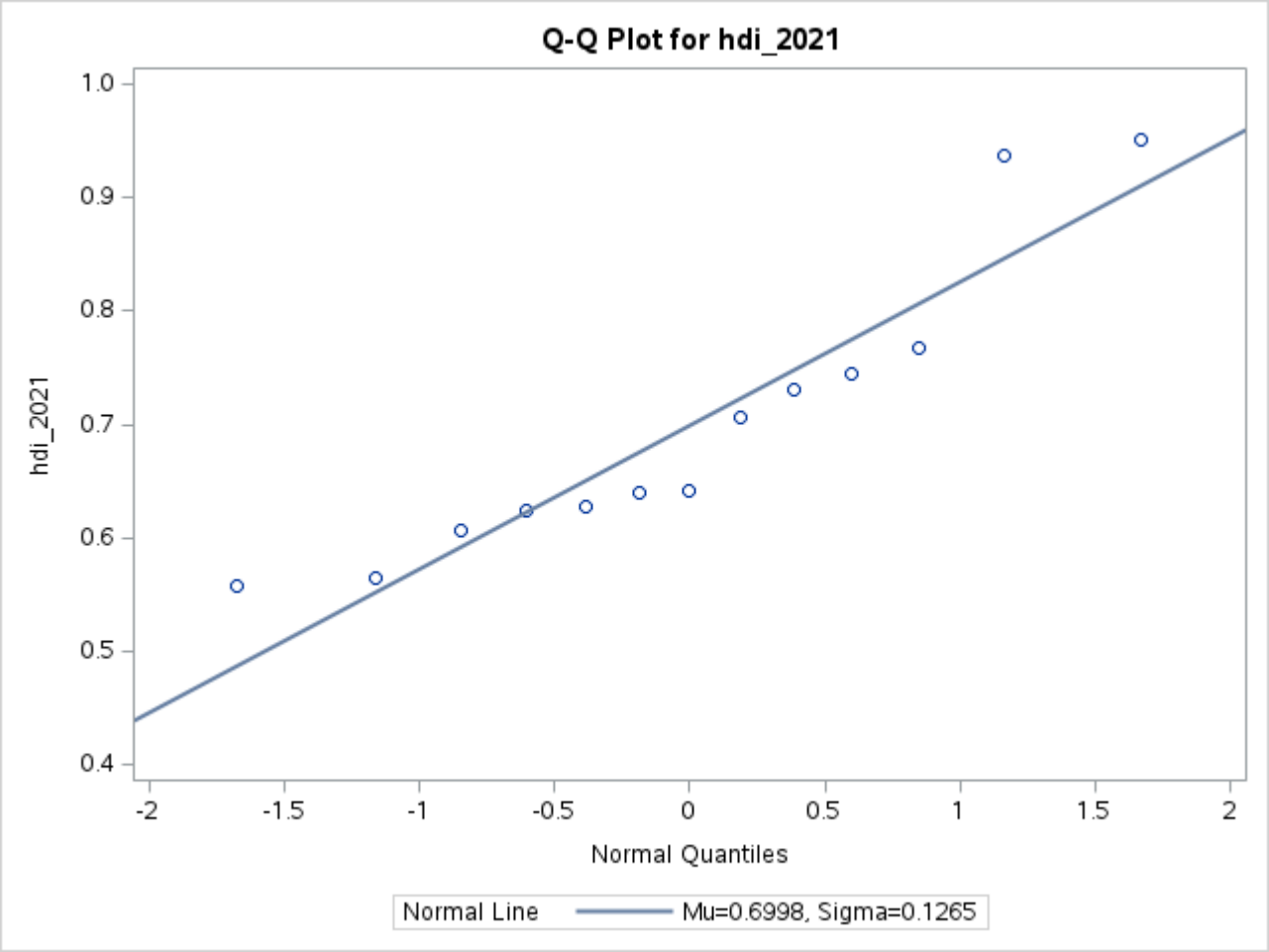


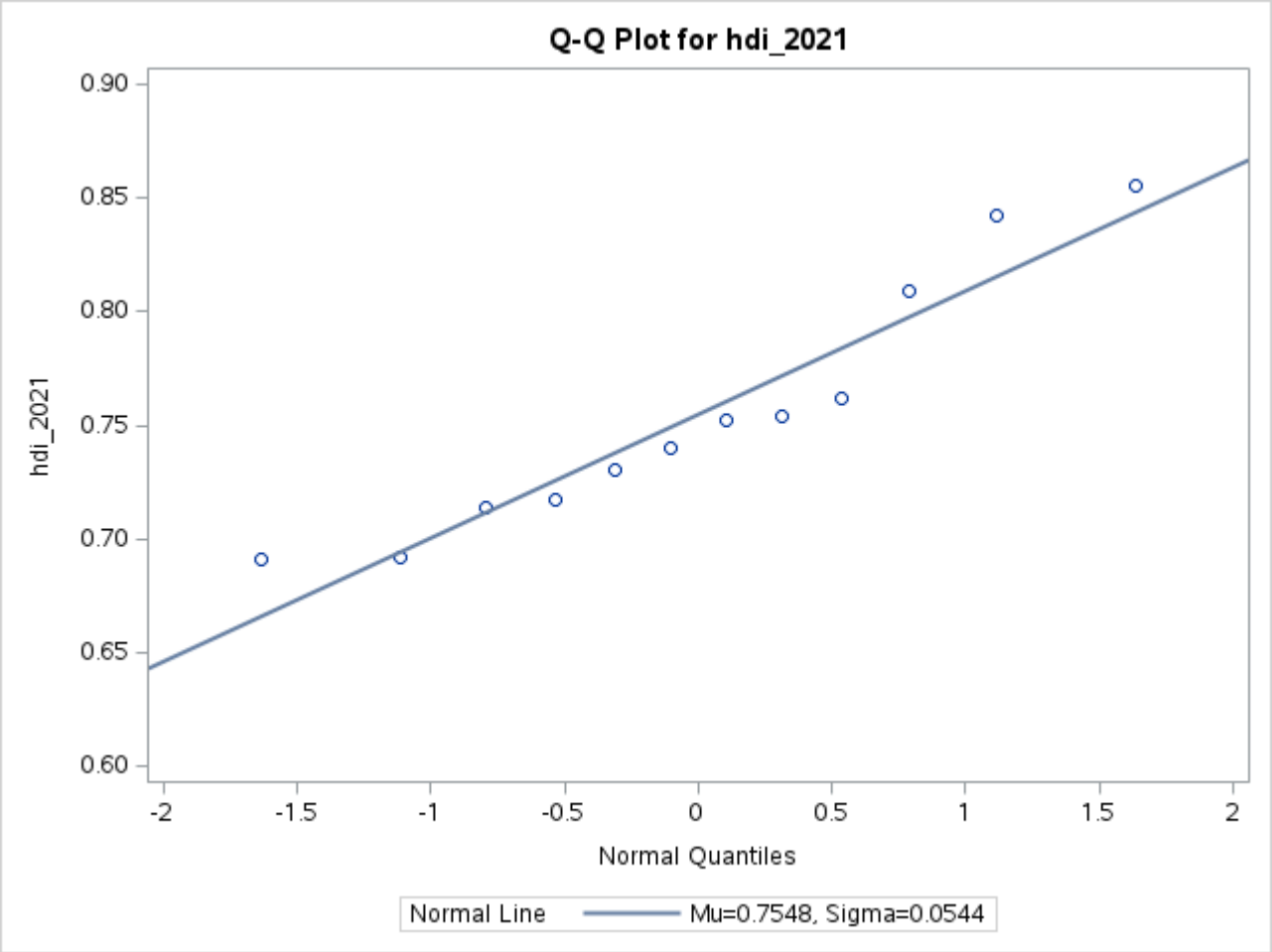
The UNIVARIATE Procedure


Q-Q Plot for hdi_2021
hdi_2021
1.2
1.0
0.8
0.6
0.4
0.2
-3
-2
-1
0
1
2
3
Normal Quantiles
Normal Line
Mu=0.7439, Sigma=0.1214


Q-Q Plot for hdi_2021
hdi_2021
1.1
1.0
0.9
0.8
0.7
0.6
-3
-2
-1
0
1
2
3
Normal Quantiles
Normal Line
Mu=0.8787, Sigma=0.0597


Q-Q Plot for hdi_2021
hdi_2021
1.0
0.9
0.8
0.7
0.6
0.5
-2
-1
0
1
2
Normal Quantiles
Normal Line
Mu=0.7493, Sigma=0.0912


Q-Q Plot for hdi_2021
hdi_2021
1.0
0.9
0.8
0.7
0.6
0.5
0.4
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
Normal Quantiles
Normal Line
Mu=0.6998, Sigma=0.1265



The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
continent	6	Africa Asia Europe North America Oceania South America

Number of Observations Read	195
Number of Observations Used	191

The GLM Procedure

Dependent Variable: hdi_2021

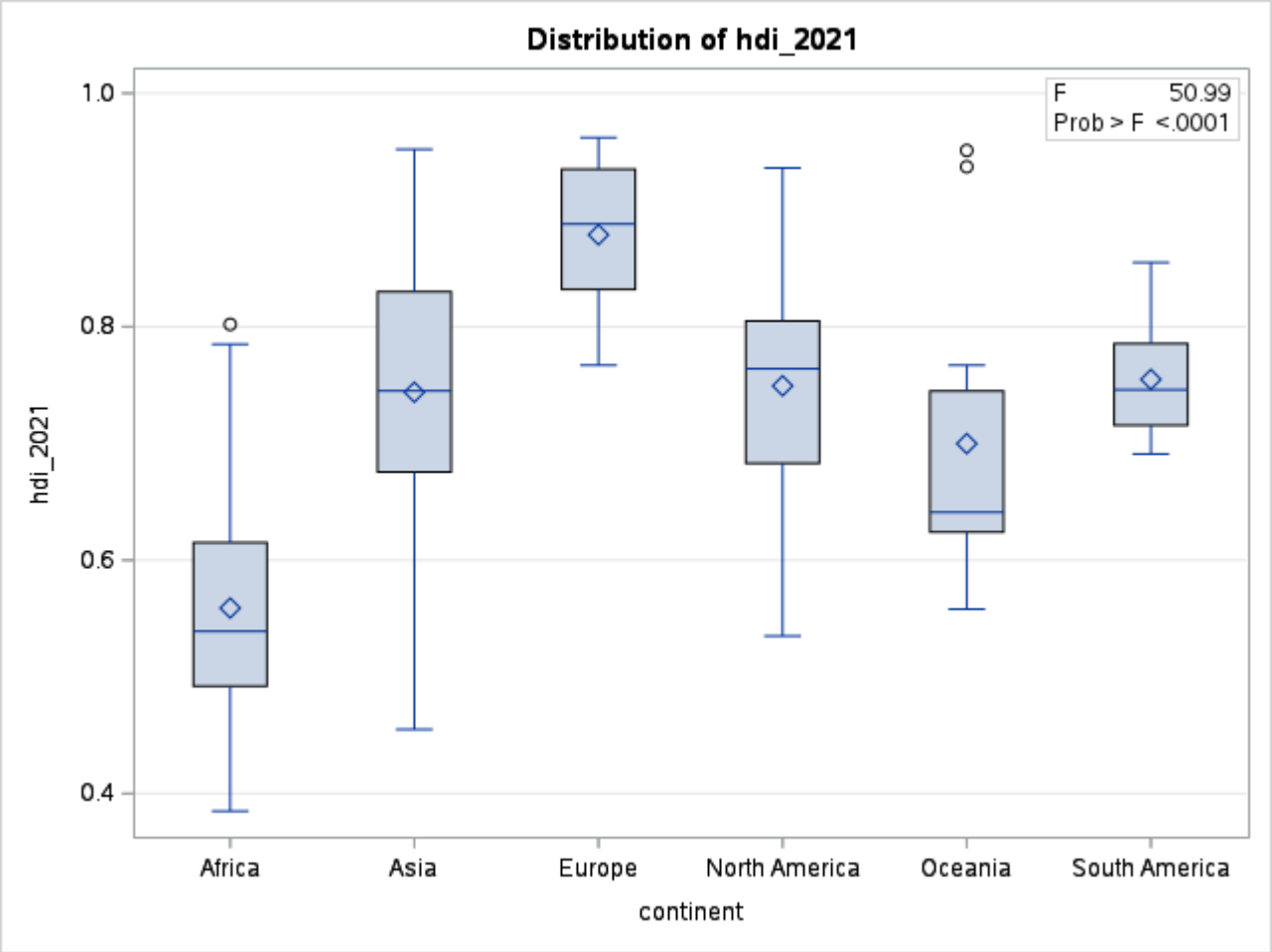
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	2.49912004	0.49982401	50.99	<.0001
Error	185	1.81361861	0.00980334		
Corrected Total	190	4.31273865			

R-Square	Coeff Var	Root MSE	hdi_2021 Mean
0.579474	13.74065	0.099012	0.720576

Source	DF	Type I SS	Mean Square	F Value	Pr > F

Source	DF	Type I SS	Mean Square	F Value	Pr > F
continent	5	2.49912004	0.49982401	50.99	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
continent	5	2.49912004	0.49982401	50.99	<.0001

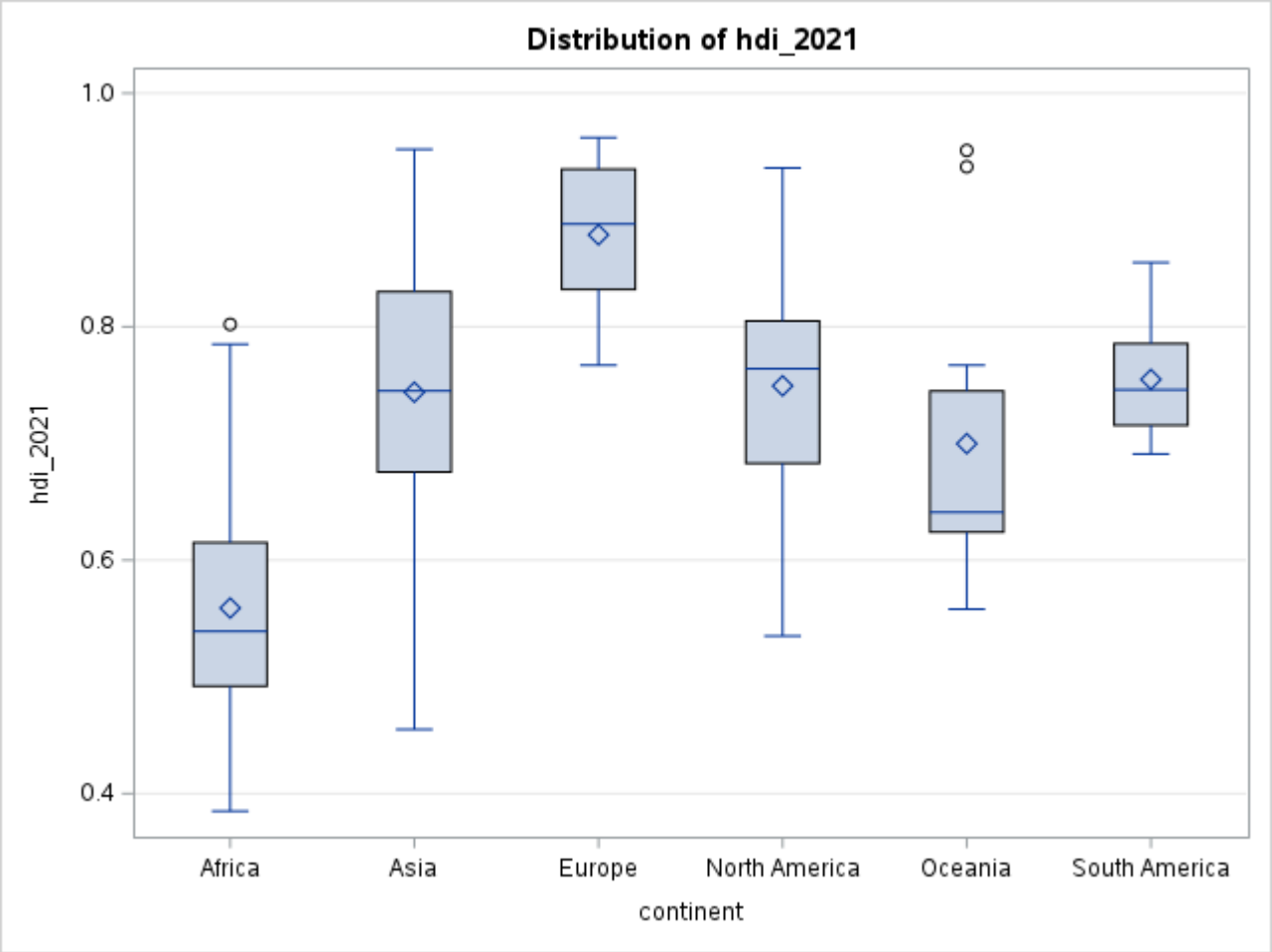


The GLM Procedure

Levene's Test for Homogeneity of hdi_2021 Variance ANOVA of Squared Deviations from Group Means					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
continent	5	0.00373	0.000747	4.02	0.0017
Error	185	0.0343	0.000186		

Welch's ANOVA for hdi_2021			
Source	DF	F Value	Pr > F
continent	5.0000	69.30	<.0001
Error	53.2887		

The GLM Procedure



Level of continent	N	hdi_2021	
		Mean	Std Dev
Africa	53	0.55898113	0.10441679
Asia	48	0.74389583	0.12140196
Europe	42	0.87871429	0.05974469
North America	23	0.74934783	0.09118643
Oceania	13	0.69984615	0.12652526
South America	12	0.75483333	0.05442565

The ANOVA Procedure

Class Level Information		
Class	Levels	Values
continent	6	Africa Asia Europe North America Oceania South America

Number of Observations Read	195
Number of Observations Used	191

The ANOVA Procedure

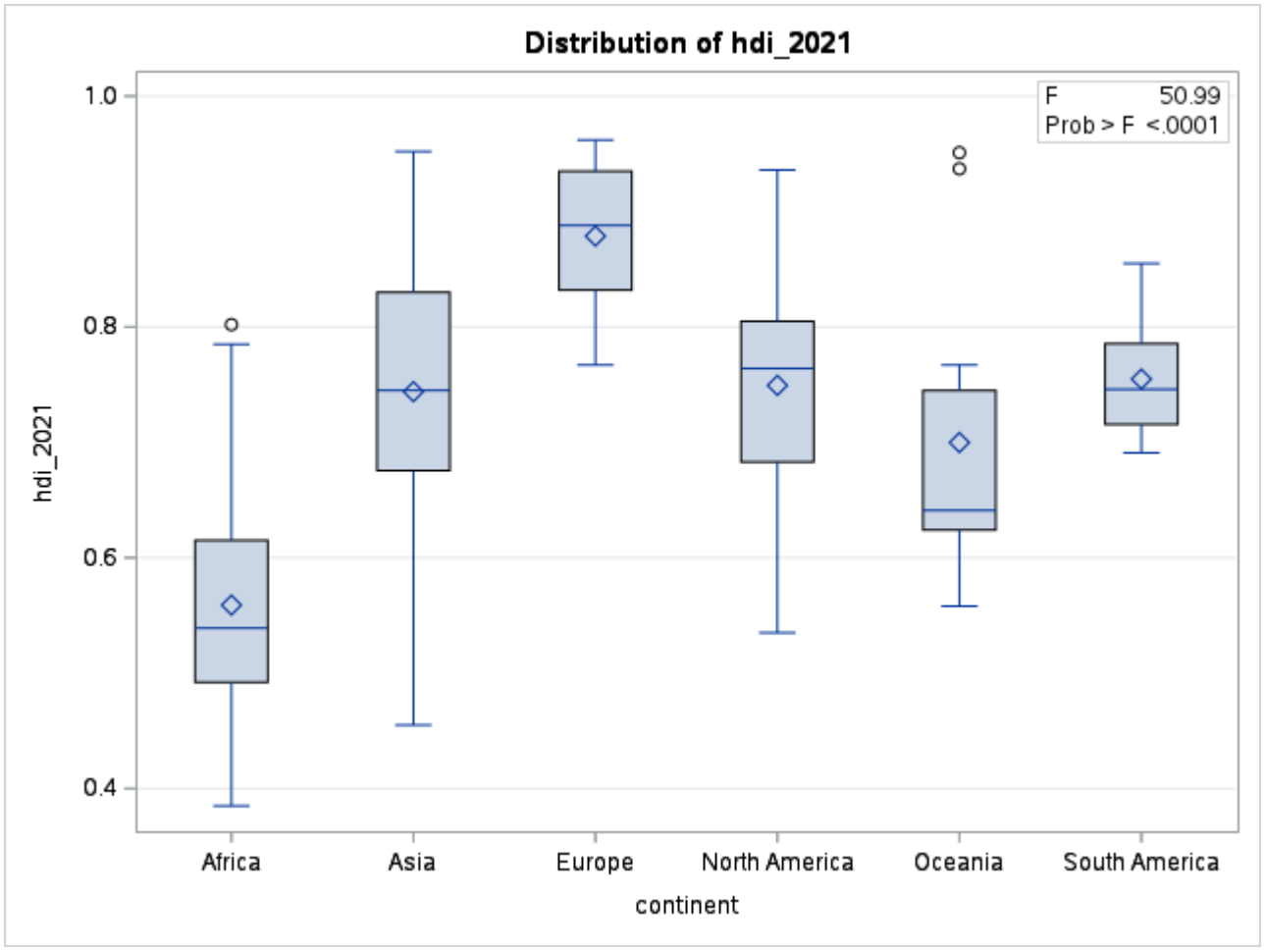
Dependent Variable: hdi_2021

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F

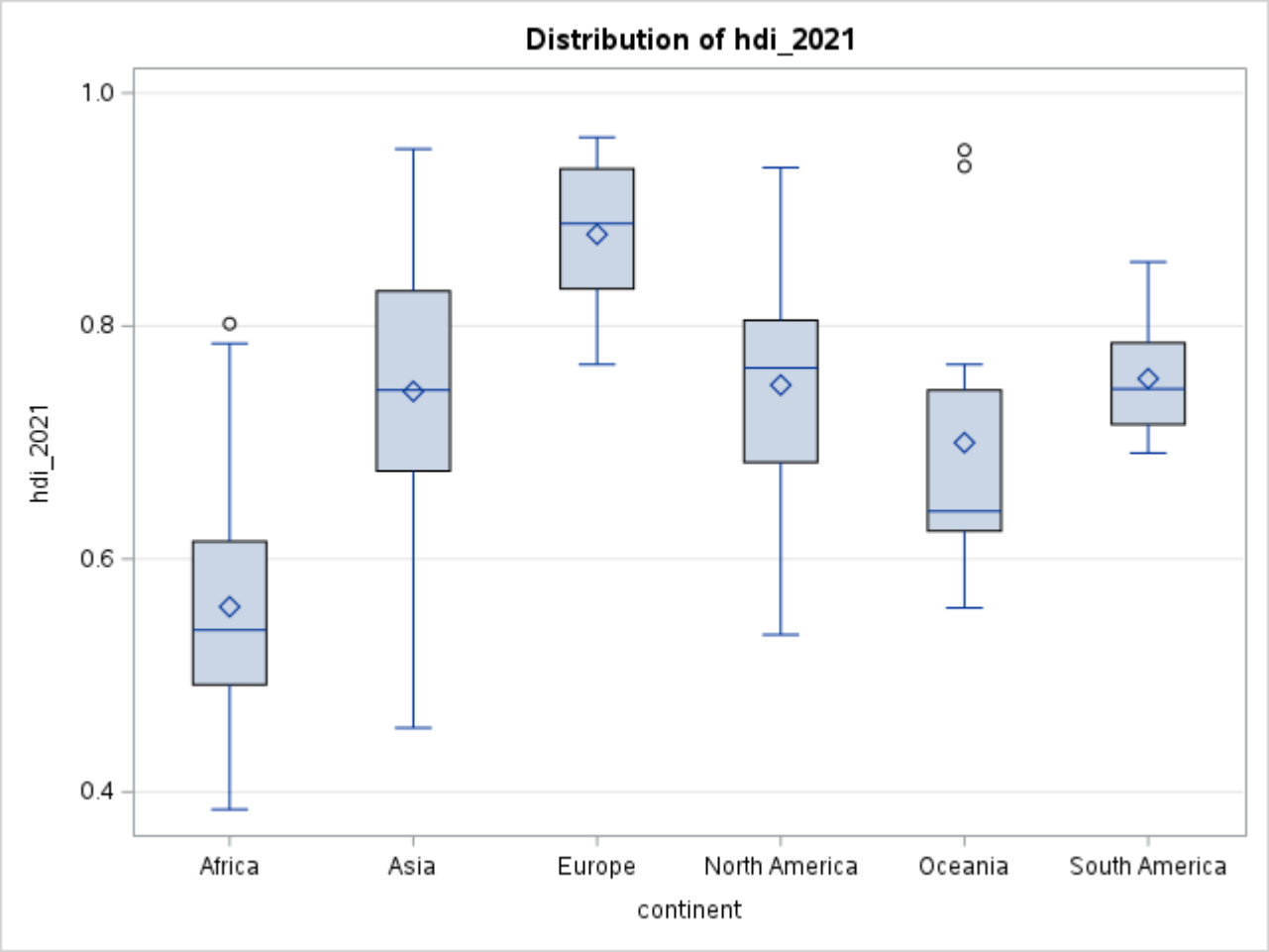
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	2.49912004	0.49982401	50.99	<.0001
Error	185	1.81361861	0.00980334		
Corrected Total	190	4.31273865			

R-Square	Coeff Var	Root MSE	hdi_2021 Mean
0.579474	13.74065	0.099012	0.720576

Source	DF	Anova SS	Mean Square	F Value	Pr > F
continent	5	2.49912004	0.49982401	50.99	<.0001



The ANOVA Procedure



The ANOVA Procedure

Tukey's Studentized Range (HSD) Test for hdi_2021

Note: This test controls the Type I experimentwise error rate.

Alpha	0.05
Error Degrees of Freedom	185
Error Mean Square	0.009803
Critical Value of Studentized Range	4.07269

Comparisons significant at the 0.05 level are indicated by *.**

continent Comparison	Difference Between Means	Simultaneous 95% Confidence Limits		
Europe - South America	0.12388	0.03055	0.21721	***
Europe - North America	0.12937	0.05540	0.20333	***
Europe - Asia	0.13482	0.07457	0.19506	***
Europe - Oceania	0.17887	0.08837	0.26937	***
Europe - Africa	0.31973	0.26083	0.37864	***
South America - Europe	-0.12388	-0.21721	-0.03055	***
South America - North America	0.00549	-0.09605	0.10702	
South America - Asia	0.01094	-0.08109	0.10297	
South America - Oceania	0.05499	-0.05916	0.16913	
South America - Africa	0.19585	0.10470	0.28701	***
North America - Europe	-0.12937	-0.20333	-0.05540	***

Comparisons significant at the 0.05 level are indicated by ***.				
continent Comparison	Difference Between Means	Simultaneous 95% Confidence Limits		
North America - South America	-0.00549	-0.10702	0.09605	
North America - Asia	0.00545	-0.06686	0.07776	
North America - Oceania	0.04950	-0.04944	0.14844	
North America - Africa	0.19037	0.11917	0.26156	***
Asia - Europe	-0.13482	-0.19506	-0.07457	***
Asia - South America	-0.01094	-0.10297	0.08109	
Asia - North America	-0.00545	-0.07776	0.06686	
Asia - Oceania	0.04405	-0.04510	0.13320	
Asia - Africa	0.18491	0.12810	0.24173	***
Oceania - Europe	-0.17887	-0.26937	-0.08837	***
Oceania - South America	-0.05499	-0.16913	0.05916	
Oceania - North America	-0.04950	-0.14844	0.04944	
Oceania - Asia	-0.04405	-0.13320	0.04510	
Oceania - Africa	0.14087	0.05261	0.22912	***
Africa - Europe	-0.31973	-0.37864	-0.26083	***
Africa - South America	-0.19585	-0.28701	-0.10470	***
Africa - North America	-0.19037	-0.26156	-0.11917	***
Africa - Asia	-0.18491	-0.24173	-0.12810	***
Africa - Oceania	-0.14087	-0.22912	-0.05261	***

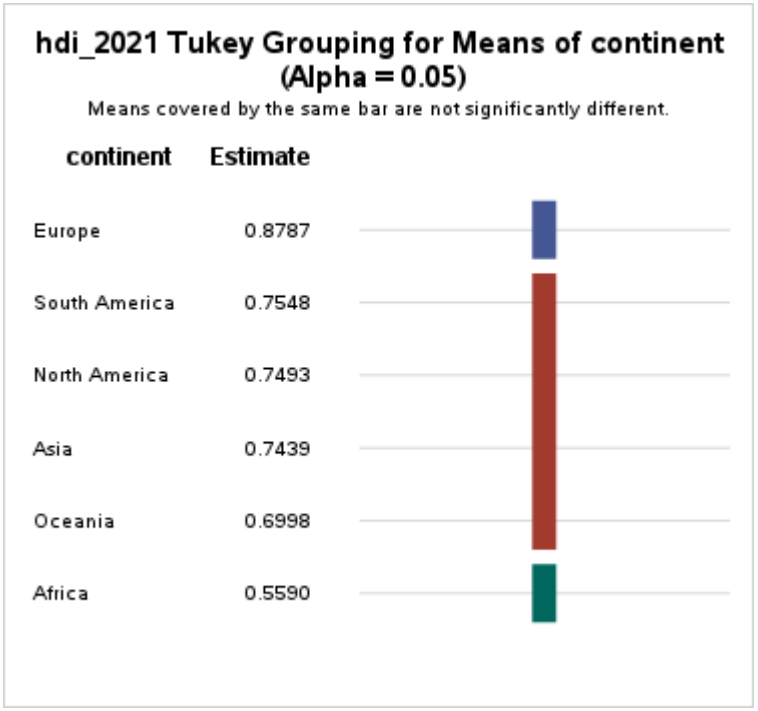
The ANOVA Procedure

Tukey's Studentized Range (HSD) Test for hdi_2021

Note: This test controls the Type I experimentwise error rate, but it generally has a higher Type II error rate than REGWQ.

Alpha	0.05
Error Degrees of Freedom	185
Error Mean Square	0.009803
Critical Value of Studentized Range	4.07269
Minimum Significant Difference	0.0851
Harmonic Mean of Cell Sizes	22.45127

Note: Cell sizes are not equal.


hdi_2021 Tukey Grouping for Means of continent (Alpha = 0.05)
Means covered by the same bar are not significantly different.
continent
Estimate
Europe
0.8787
South America
0.7548
North America
0.7493
Asia
0.7439
Oceania
0.6998
Africa
0.5590