Configuration Manual

MSc Research Project
Fintech

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MSc Project Submission Sheet

School of Computing

Student Name: ……. Michael Ebuka Okafor……

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Lecturer: ……Victor Del Rosal……

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1. Introduction

The setup manual is provided as a supplementary document accompanying the research paper, which is a component of the MSC Fintech module. The methodologies used to carry out the investigation are elucidated in this manual. In order to facilitate the replication of the study's conclusions, the paper also provides a comprehensive description of the technology and hardware setup used in the course of the research.

2. System Configuration

This section discusses the system configuration required for executing the analysis

2.1. Hardware Requirements

- Device Name: LAPTOP-4I6TFH8U
- Windows Operating System Version 10 – 64bit
- Intel(R) Core(TM) i7-1065G7 CPU @ 1.30GHz 1.50 GHz
- RAM: 16GB

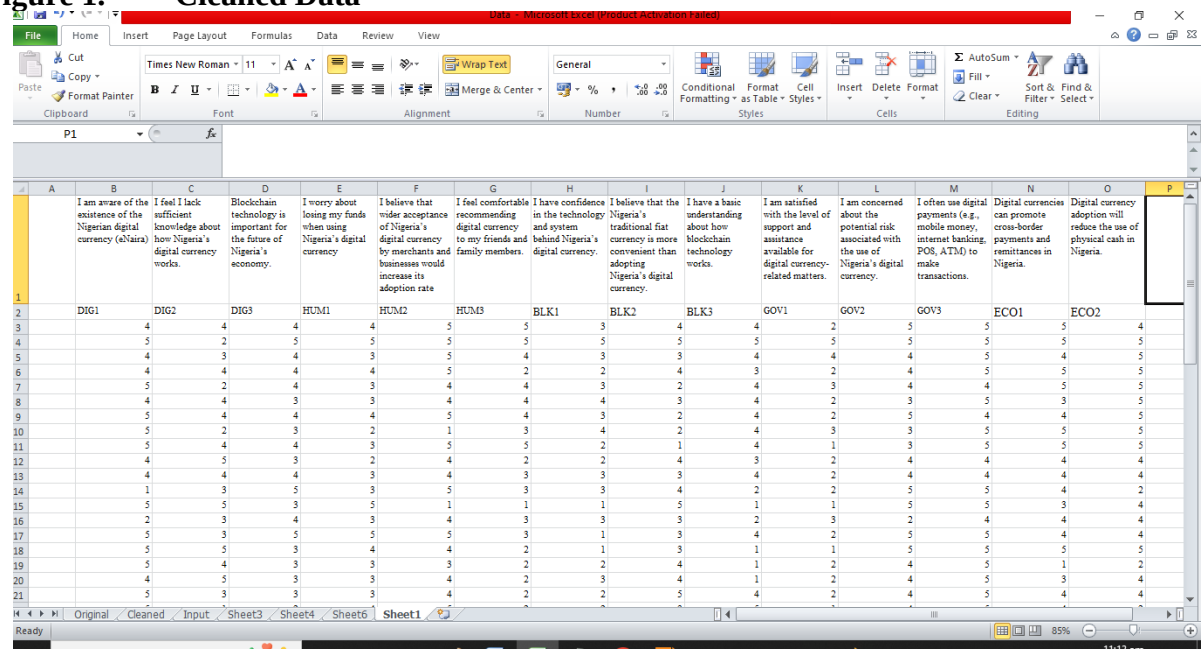
2.2. Software

- **IBM SPSS STATISTICS 23:** The data analysis and methodologies applied in this study were performed using IBM SPSS Statistics 23 software.

- **Google Forms:** Google Forms was used as the survey instrument for the purpose of distributing the questions and gathering data.

- **Microsoft Excel:** Microsoft Excel was used to extract the data and replies from the Google Forms in the form of an xlsx file. The data was cleaned and prepared for analysis by converting the responses to binary format. Each question (item from the questionnaire) was given a code for easy input to SPSS

Figure 1. Cleaned Data

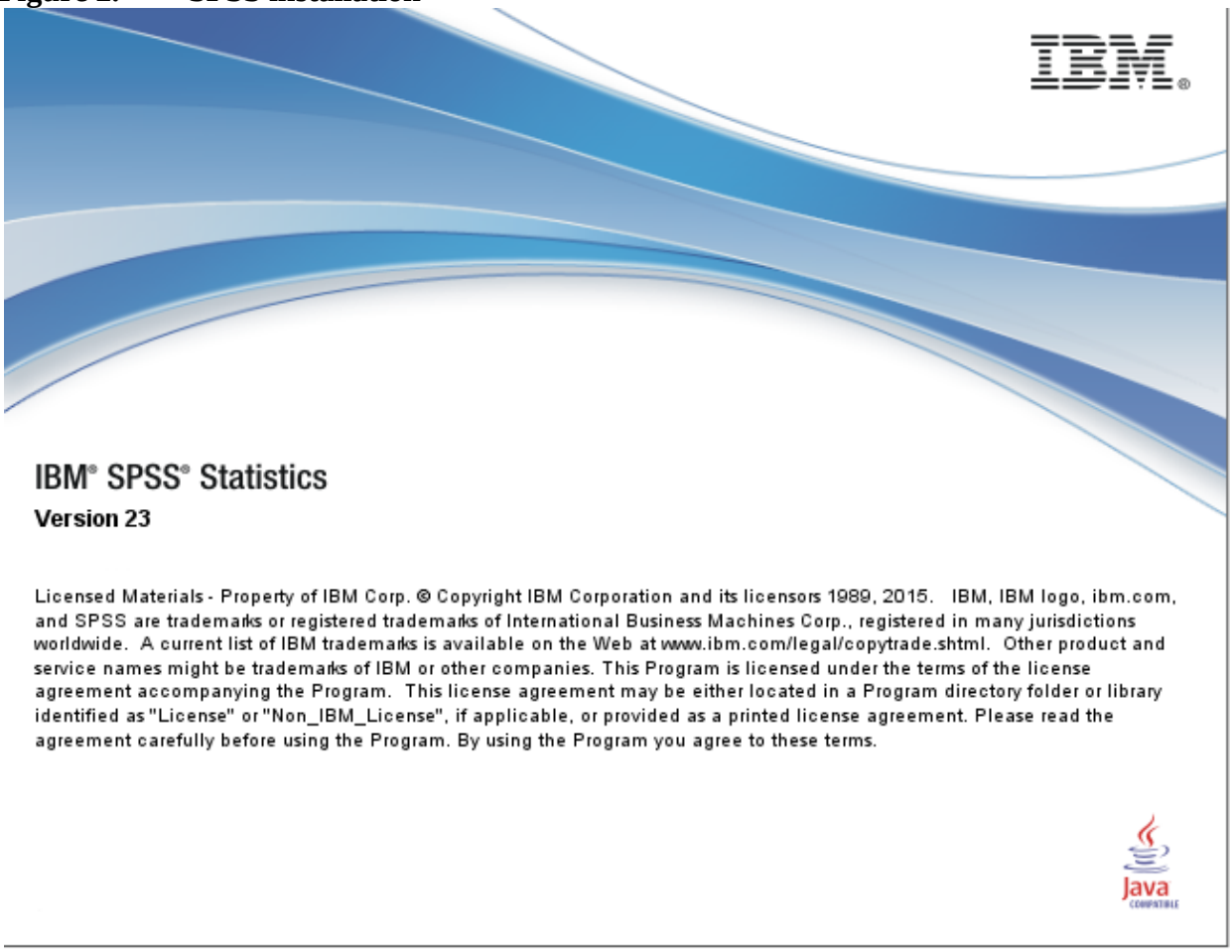


	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1		I am aware of the existence of the Nigerian digital currency (eNaira)	I feel I lack sufficient knowledge about how Nigeria's digital currency works.	Blockchain technology is important for the future of Nigeria's economy.	I worry about losing my funds when using Nigeria's digital currency	I believe that wider acceptance of Nigeria's digital currency by merchants and businesses would increase its adoption rate	I feel comfortable recommending digital currency to my friends and family members.	I have confidence in the technology and system behind Nigeria's digital currency.	I believe that the Nigeria's traditional fiat currency is more convenient than adopting Nigeria's digital currency.	I have a basic understanding about how blockchain technology works.	I am satisfied with the level of support and assistance available for digital currency-related matters.	I am concerned about the potential risk associated with the use of Nigeria's digital currency.	I often use digital payments (e.g., mobile money, internet banking, POS, ATM) to make transactions.	Digital currencies can promote cross-border payments and remittances in Nigeria.	Digital currency adoption will reduce the use of physical cash in Nigeria.	
2		DIG1	DIG2	DIG3	HUM1	HUM2	HUM3	BLK1	BLK2	BLK3	GOV1	GOV2	GOV3	ECO1	ECO2	
3		4	4	4	4	5	5	3	4	4	2	5	5	5	4	
4		5	2	5	5	5	5	5	5	5	5	5	5	5	5	
5		4	3	4	3	5	4	3	3	4	4	4	5	4	5	
6		4	4	4	4	5	2	2	4	3	2	4	5	5	5	
7		5	2	4	3	4	4	3	2	4	3	4	4	5	5	
8		4	4	3	3	4	4	4	3	4	2	3	5	3	5	
9		5	4	4	4	5	4	3	2	4	2	5	4	4	5	
10		5	2	3	2	1	3	4	2	4	3	3	5	5	5	
11		5	4	4	3	5	5	2	1	4	1	3	5	5	5	
12		4	5	3	2	4	2	2	4	3	2	4	4	4	4	
13		4	4	4	3	4	3	3	3	4	2	4	4	4	4	
14		1	3	5	3	5	3	3	4	2	2	5	5	4	2	
15		5	5	3	5	1	1	1	5	1	1	5	5	3	4	
16		2	3	4	3	4	3	3	3	2	3	2	4	4	4	
17		5	3	5	5	5	3	1	3	4	2	5	5	4	4	
18		5	5	3	4	4	2	1	3	1	1	5	5	5	5	
19		5	4	3	3	3	2	2	4	1	2	4	5	1	2	
20		4	5	3	3	4	2	3	4	1	2	4	5	3	4	
21		5	3	3	3	4	2	2	5	4	2	4	5	4	4	

2.3. Installation of SPSS Software

The SPSS program was installed in order to facilitate the analysis of the data and implementation of the statistical methods used in this investigation.

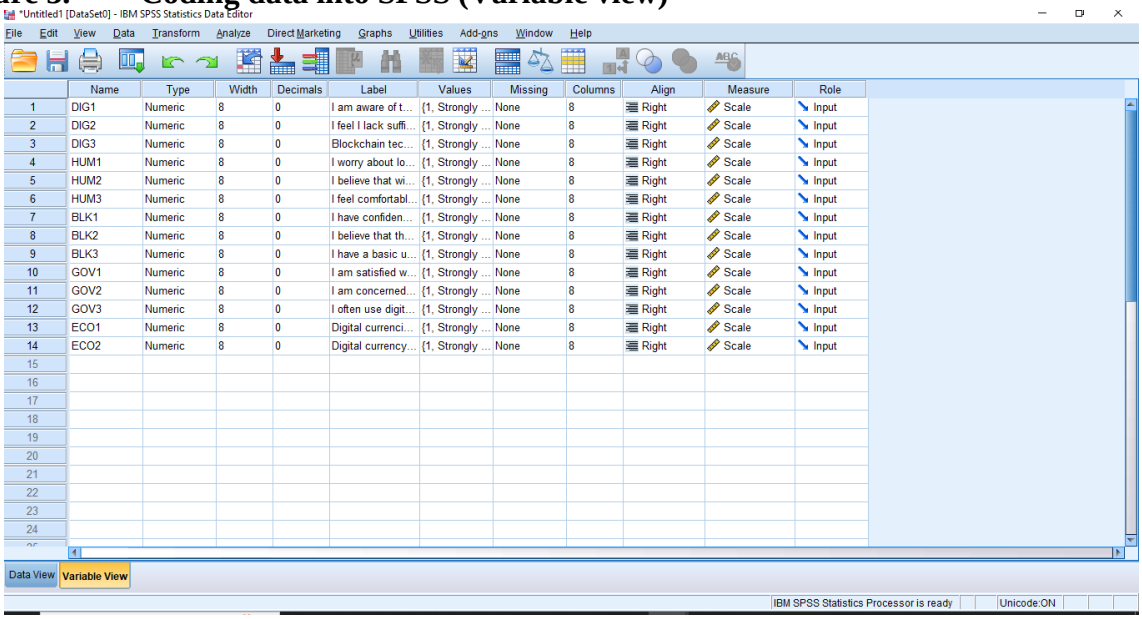
Figure 2. SPSS installation



2.4. Importing the Data

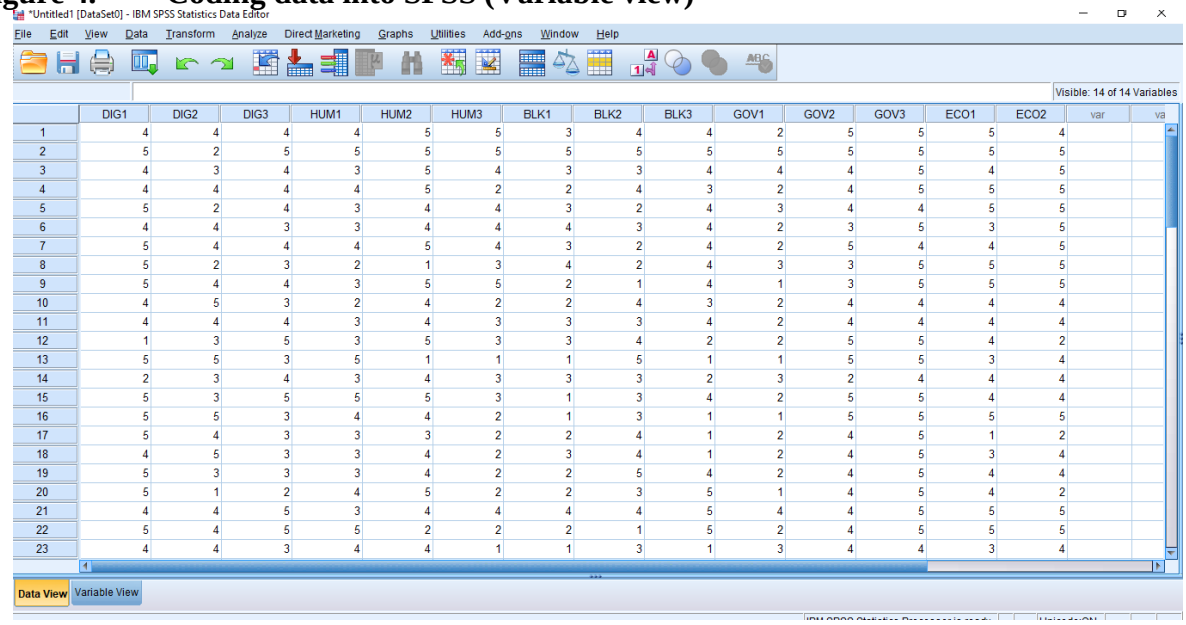
The cleaned data was then imported into SPSS. Each measurement variable item from the questionnaire was coded in SPSS to enable for analysis

Figure 3. Coding data into SPSS (Variable view)



The variable view can been seen in the figure above and the data view in the figure below.

Figure 4. Coding data into SPSS (Variable view)



5. Techniques used for analysis

Following the importation of the data into the Statistical Package for the Social Sciences (SPSS), the subsequent execution of the methodologies outlined below took place.

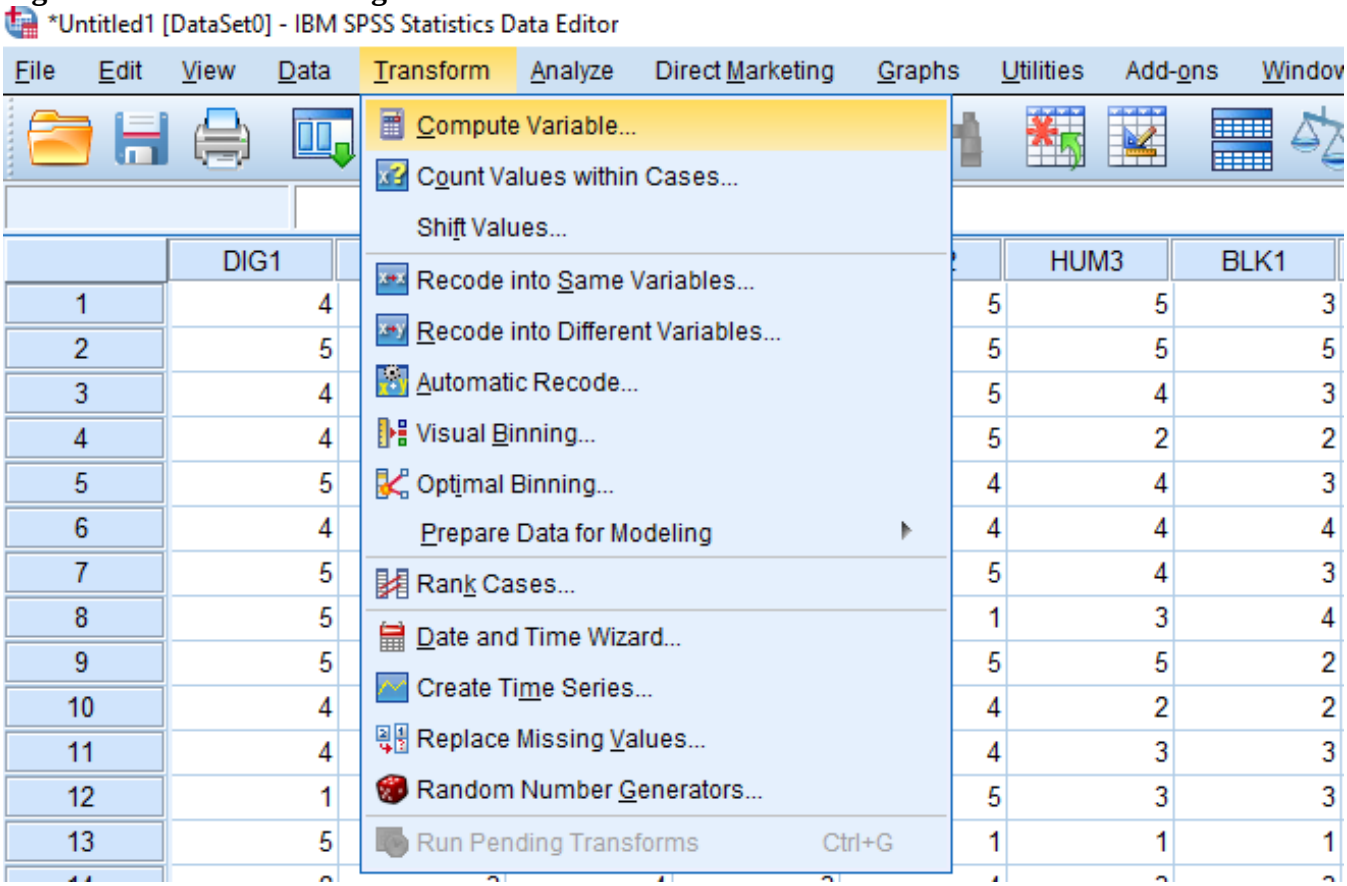
5.1. Transform Variables

Each item of the questionnaire was transformed into **"mean"** to enable the dependent and independent variable for regression analysis.

Step 1

Transform – compute variable

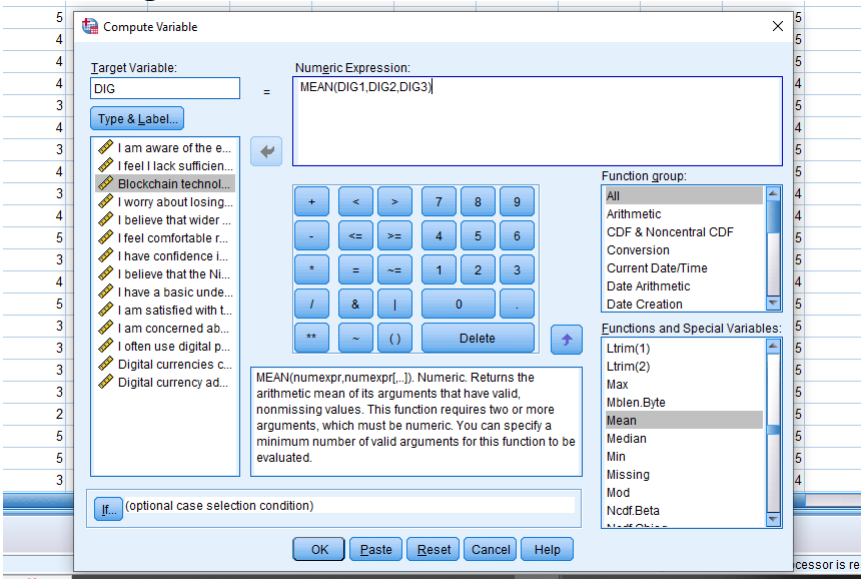
Figure 5. Transforming variable



Step 2

Rename the variable, Select "All" under the function group section, Select "mean" under functions and special variables. Do same for all variables “DIG, HUM, BLK, GOV, ECO”

Figure 6. Calculating mean of variables



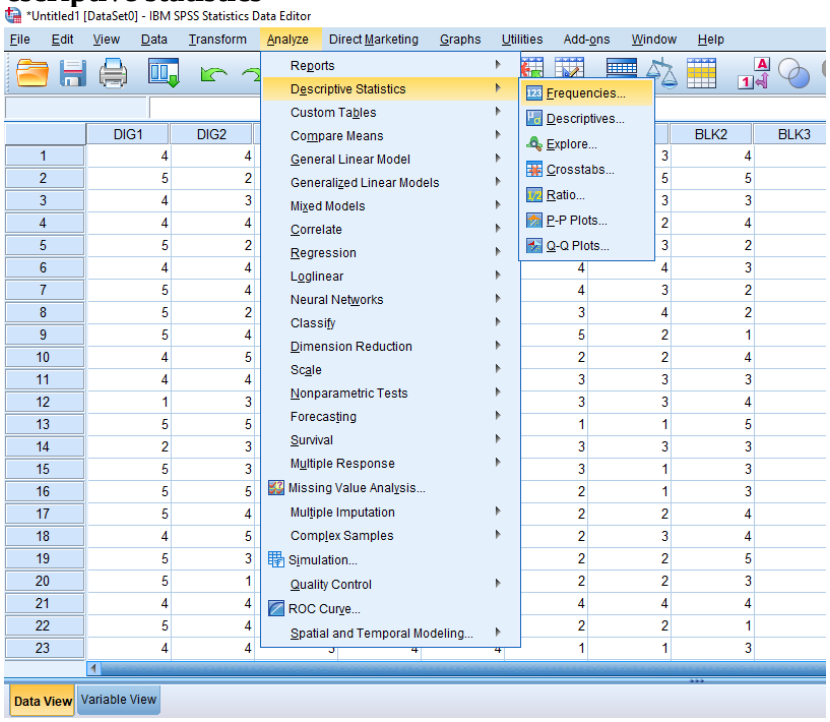
5.2. Descriptive Analysis

Descriptive statistics were used to describe and identify the characteristics of a data set.

Step 1

After inputting the data, we used descriptive analysis. From the diagram below, Select Analyze on the top menu bar, click "Descriptive statistics," and then Select "Frequencies.

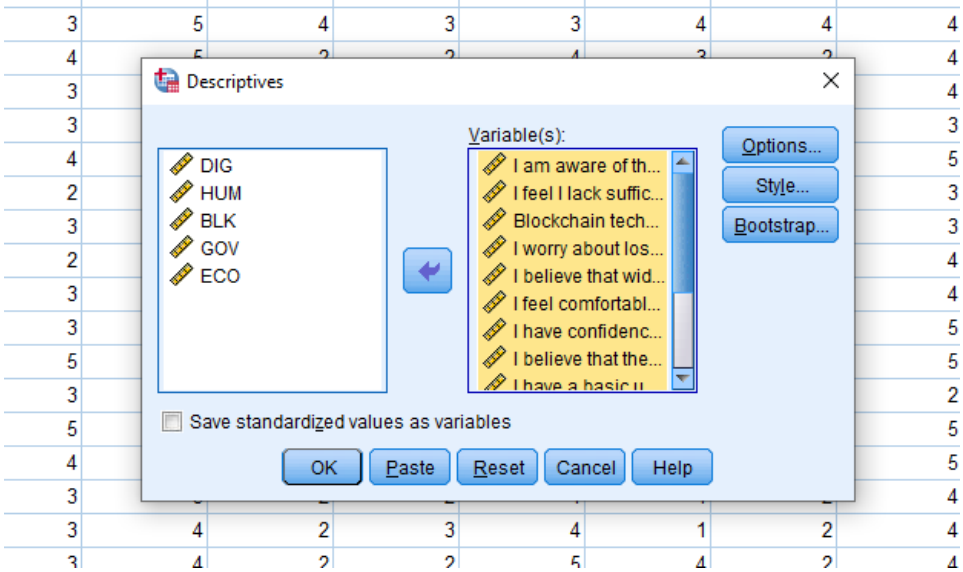
Figure 7. Descriptive statistics



Step 2

Once Frequencies have been selected, Move all of the 14 items from the Frequency table to the box titled "Variables" and Select the dialog box labeled "Statistics"

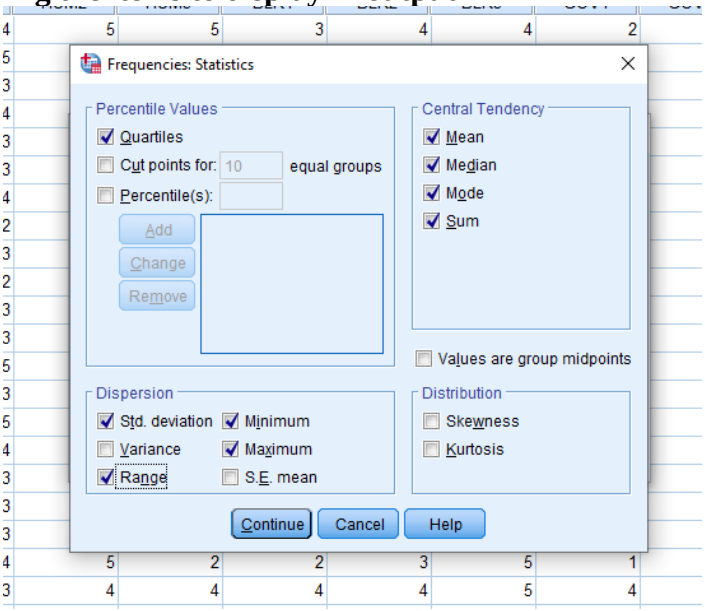
Figure 8. Selecting Variables



Step 3

Once the Statistics dialog box has been activated check Quartiles under the Percentile Values, "Mean, Median, Mode, and Sum" under Central tendency and Standard deviation under Dispersion. And then click continue.

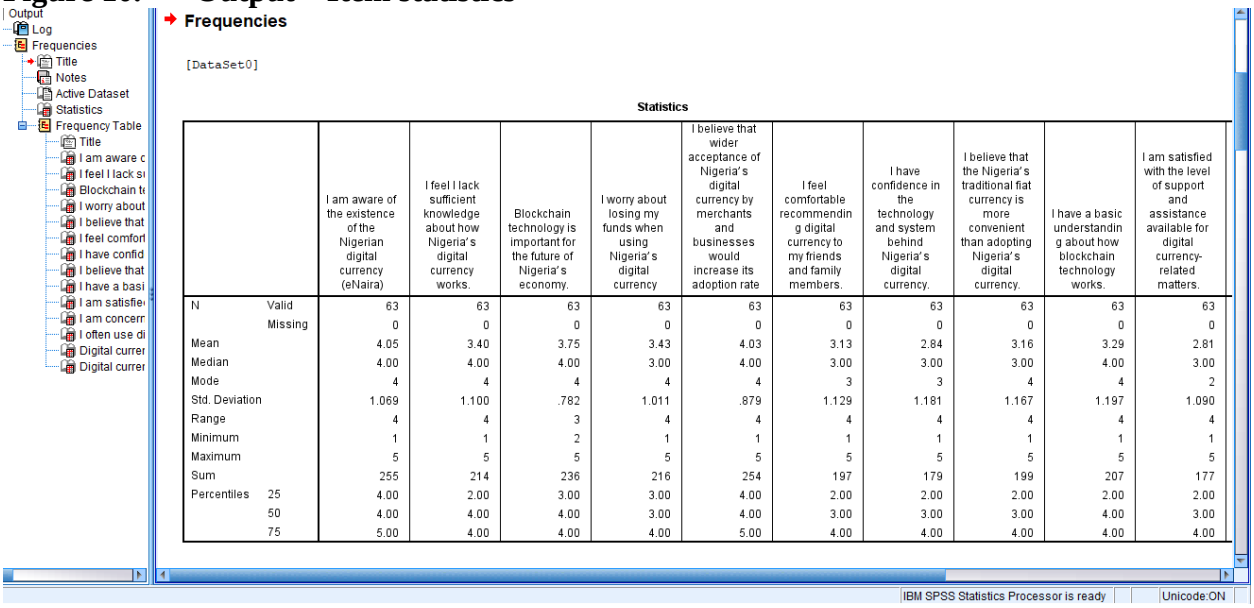
Figure 9. Checking the items to display in output



Step 4

The result is displayed in the diagram below. More information on the results of the descriptive statistics can be found in Table 4.1 to 4.6 and Appendix 1 & 2 in the final report.

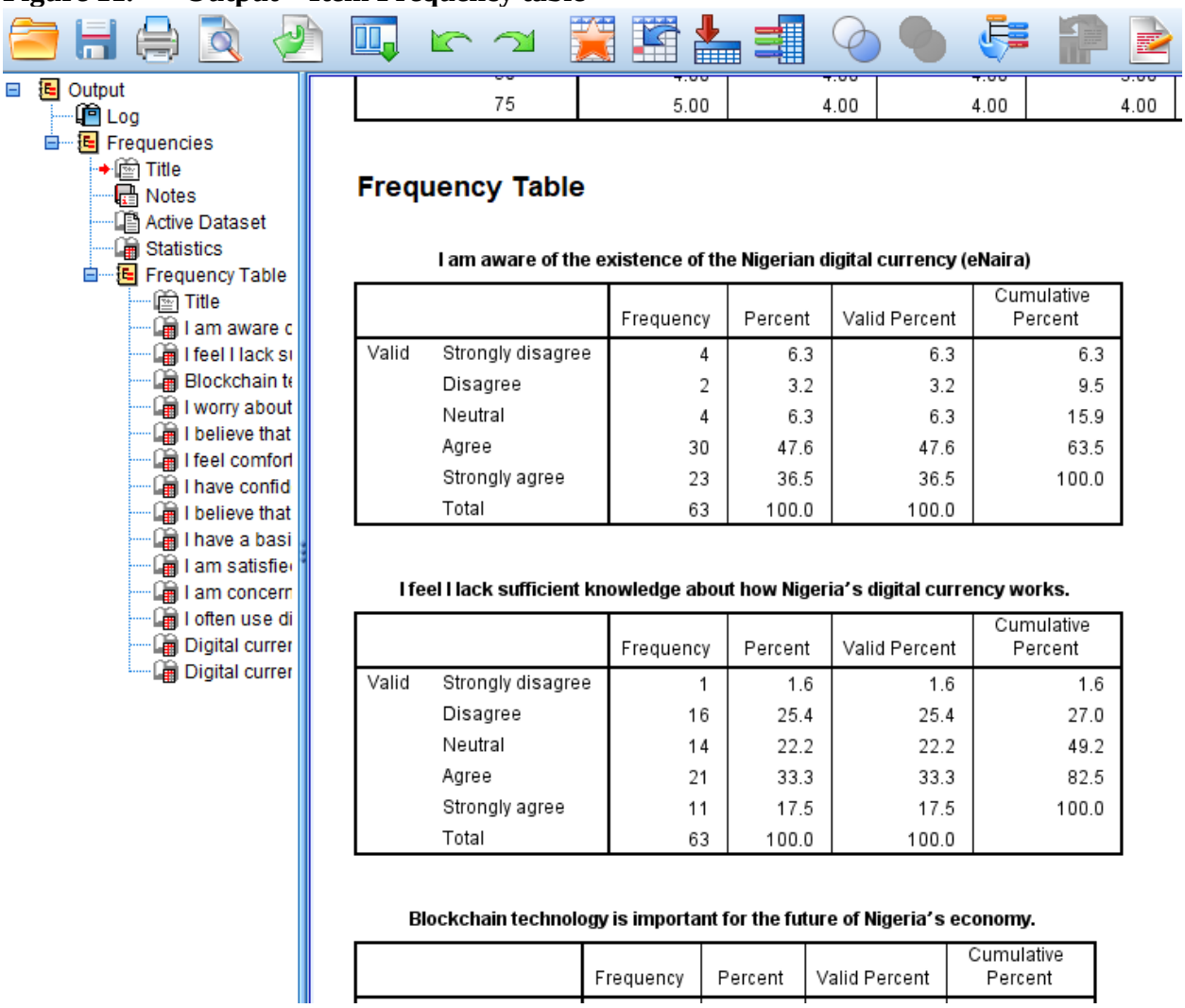
Figure 10. Output – Item statistics



Statistics

		I am aware of the existence of the Nigerian digital currency (eNaira)	I feel I lack sufficient knowledge about how Nigeria's digital currency works.	Blockchain technology is important for the future of Nigeria's economy.	I worry about losing my funds when using Nigeria's digital currency	I believe that wider acceptance of Nigeria's digital currency by merchants and businesses would increase its adoption rate	I feel comfortable recommending digital currency to my friends and family members.	I have confidence in the technology and system behind Nigeria's digital currency.	I believe that the Nigeria's traditional fiat currency is more convenient than adopting Nigeria's digital currency.	I have a basic understanding about how blockchain technology works.	I am satisfied with the level of support and assistance available for digital currency-related matters.
N	Valid	63	63	63	63	63	63	63	63	63	63
	Missing	0	0	0	0	0	0	0	0	0	0
Mean		4.05	3.40	3.75	3.43	4.03	3.13	2.84	3.16	3.29	2.81
Median		4.00	4.00	4.00	3.00	4.00	3.00	3.00	3.00	4.00	3.00
Mode		4	4	4	4	4	3	3	4	4	2
Std. Deviation		1.069	1.100	.782	1.011	.879	1.129	1.181	1.167	1.197	1.090
Range		4	4	3	4	4	4	4	4	4	4
Minimum		1	1	2	1	1	1	1	1	1	1
Maximum		5	5	5	5	5	5	5	5	5	5
Sum		255	214	236	216	254	197	179	199	207	177
Percentiles	25	4.00	2.00	3.00	3.00	4.00	2.00	2.00	2.00	2.00	2.00
	50	4.00	4.00	4.00	3.00	4.00	3.00	3.00	3.00	4.00	3.00
	75	5.00	4.00	4.00	4.00	5.00	4.00	4.00	4.00	4.00	4.00

Figure 11. Output – Item Frequency table



75	5.00	4.00	4.00	4.00

Frequency Table

I am aware of the existence of the Nigerian digital currency (eNaira)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	6.3	6.3	6.3
	Disagree	2	3.2	3.2	9.5
	Neutral	4	6.3	6.3	15.9
	Agree	30	47.6	47.6	63.5
	Strongly agree	23	36.5	36.5	100.0
	Total	63	100.0	100.0	

I feel I lack sufficient knowledge about how Nigeria's digital currency works.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	1	1.6	1.6	1.6
	Disagree	16	25.4	25.4	27.0
	Neutral	14	22.2	22.2	49.2
	Agree	21	33.3	33.3	82.5
	Strongly agree	11	17.5	17.5	100.0
	Total	63	100.0	100.0	

Blockchain technology is important for the future of Nigeria's economy.

	Frequency	Percent	Valid Percent	Cumulative Percent

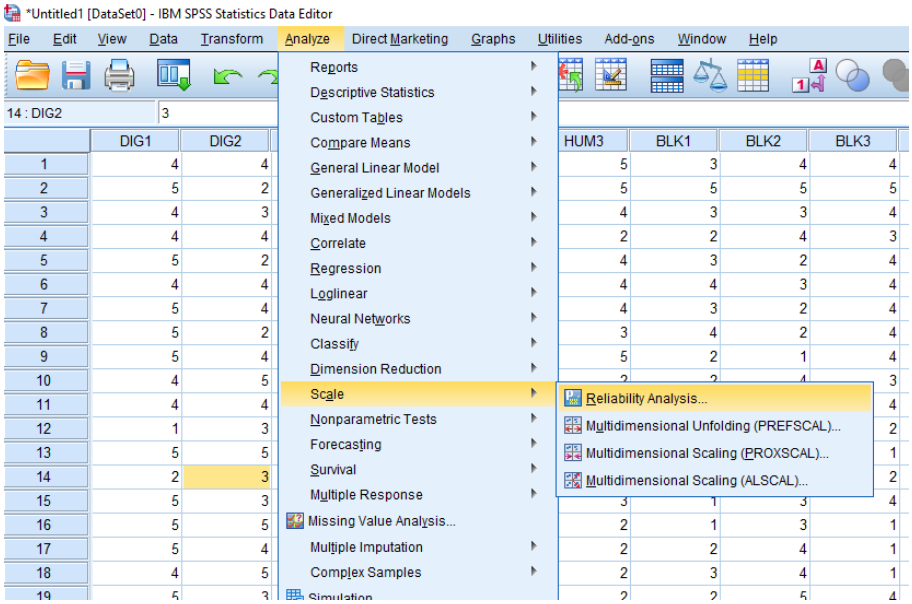
5.3. Cronbach Alpha Test

The Cronbach alpha test was used to check for the reliability and validity of the constructs and variables.

Step 1

Click on the Analyze tab, Scroll down and click "Scale," and then Select Reliability Analysis

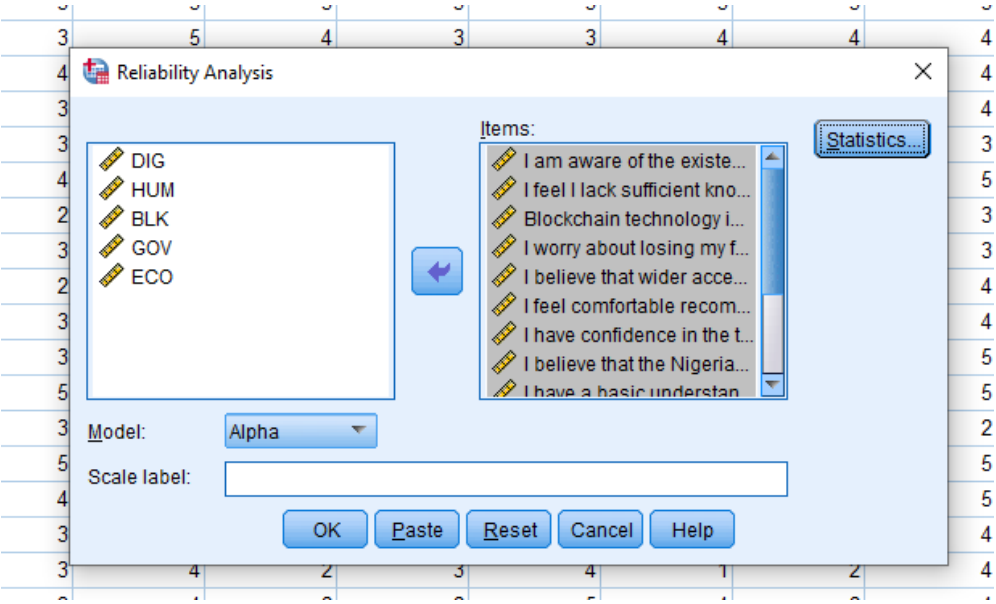
Figure 12. Selecting Cronbach alpha test Reliability Analysis



Step 2

Once the reliability analysis box has been opened, move all variables into the "Items" box and ensure that Model is on 'Alpha"

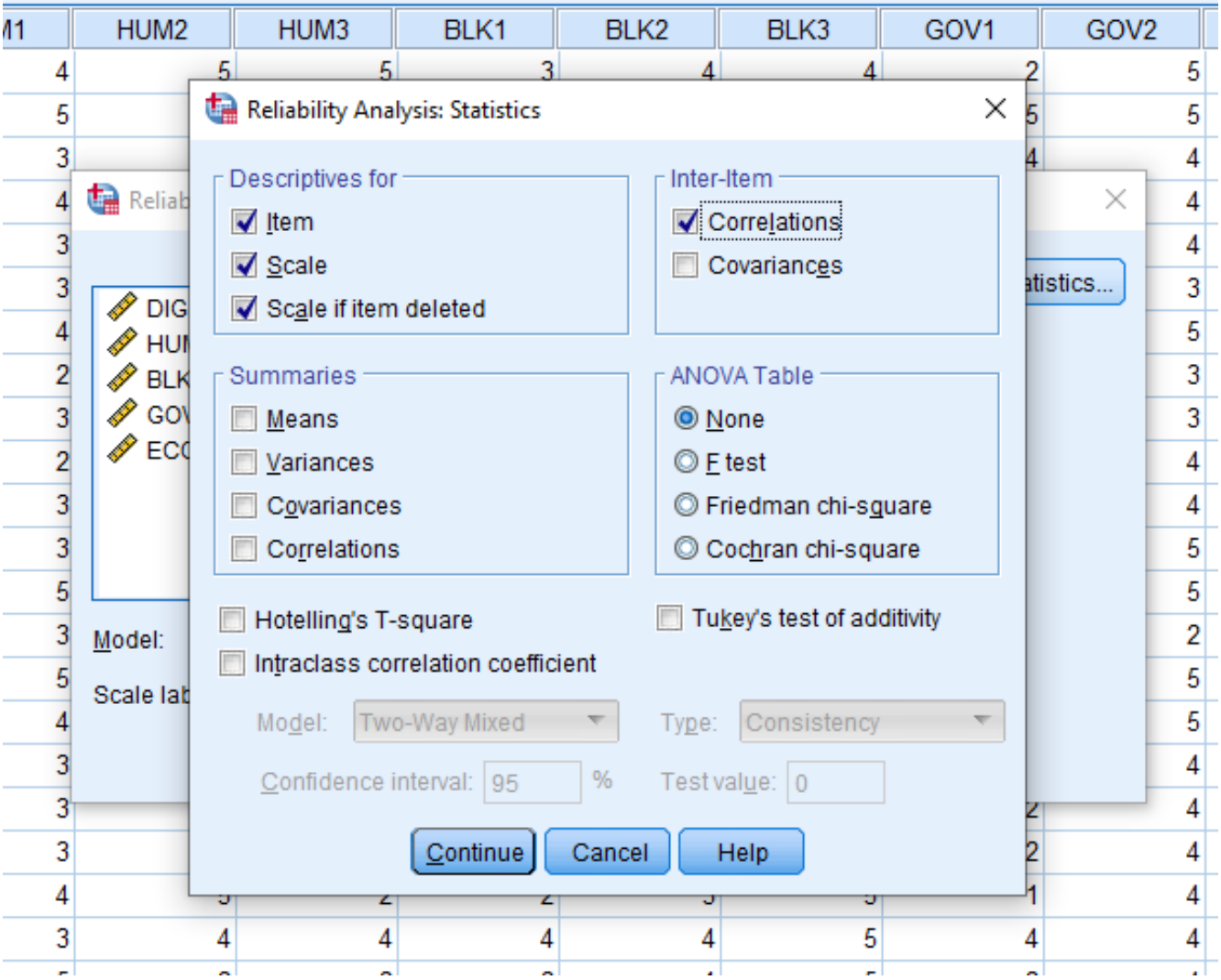
Figure 13. Selecting all relevant variables



Step 3

Select the Statistics box and ensure that "item," "Scale," and Scale if item deleted and then tick Correlations under the Inter-item box

Figure 14. Check the items to display in output



5.4 Normality Test

The Kolmogorov-Smirnov and Shapiro-Wilk Statistics test was used to identify the differences or relationship between the demographic variables of the users and the variables used in the study

Step 1

Descriptive statistic - Explore

Figure 15. Normality Test

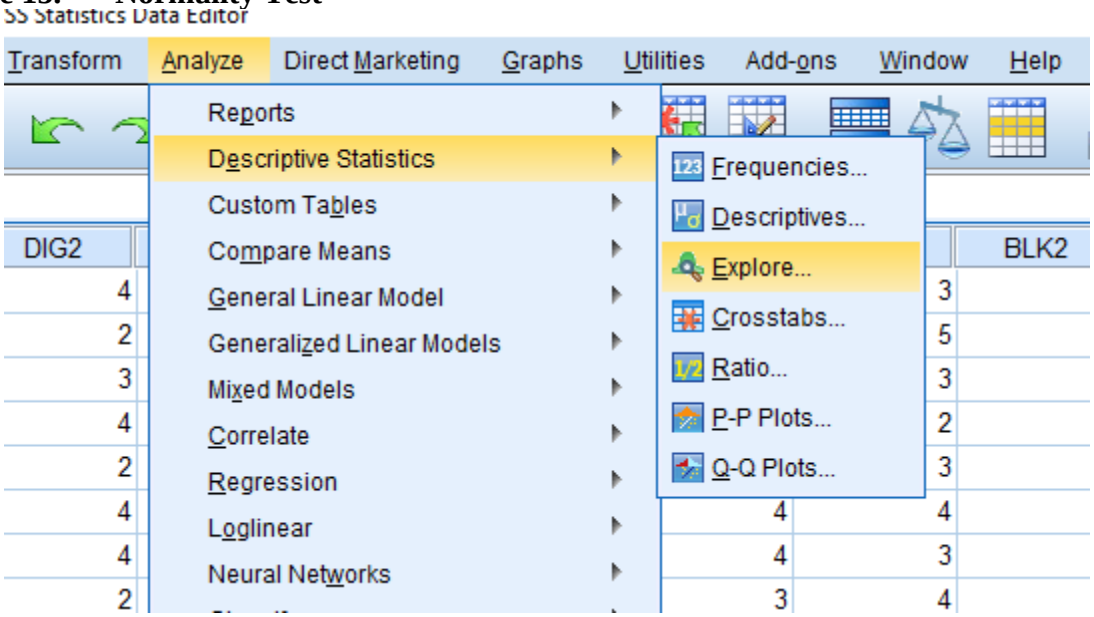
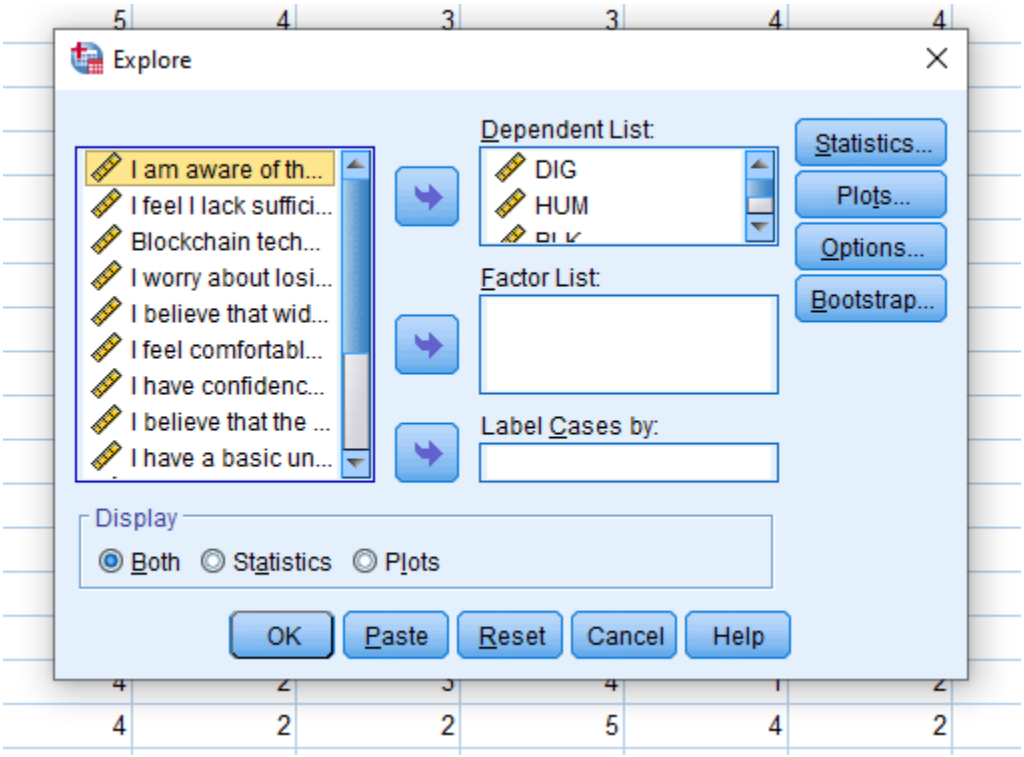


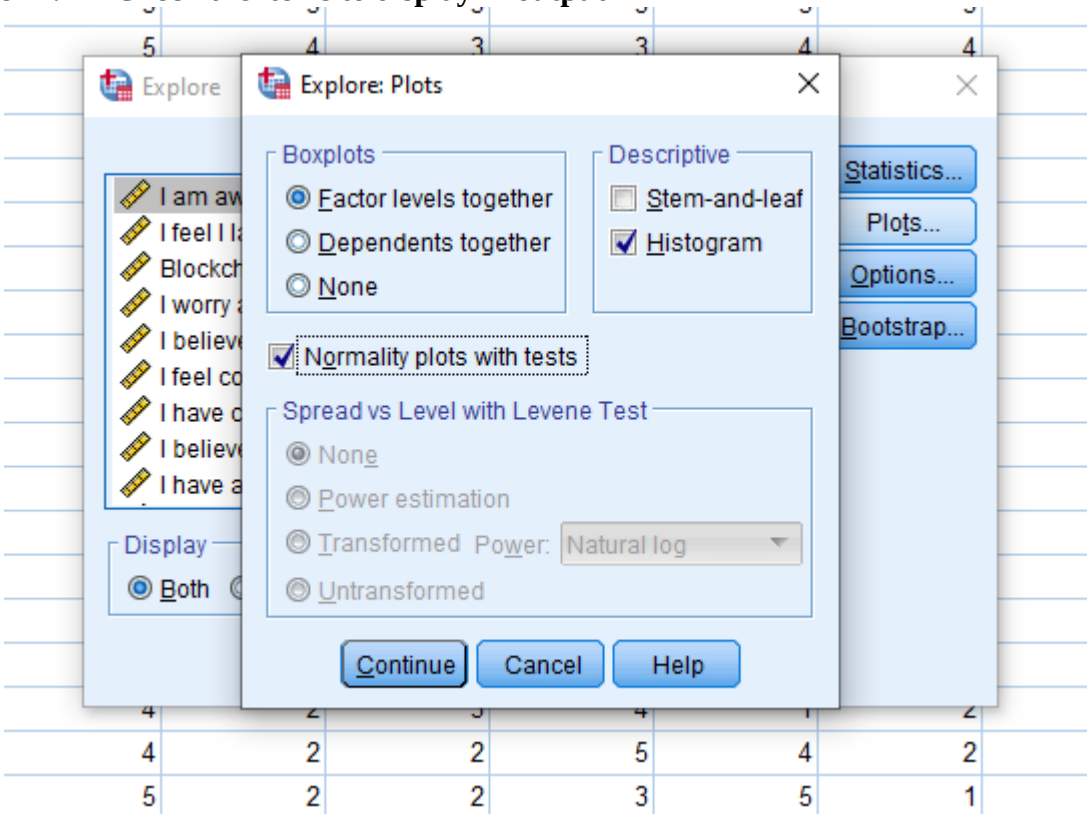
Figure 16. Selecting all relevant variables



Step 2

Click on plots, uncheck Stem-and-leaf then check normality plots with test and click continue.

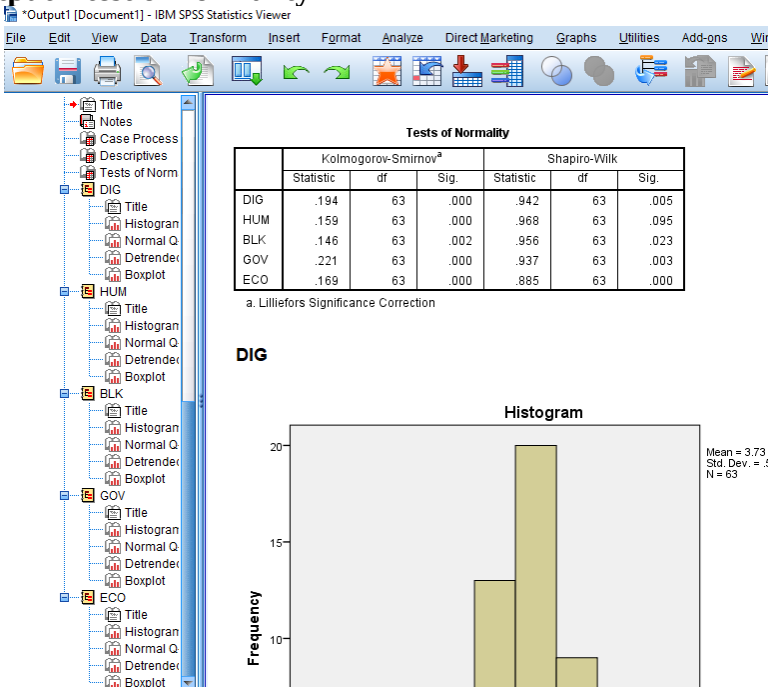
Figure 17. Check the items to display in output



Step 3

The Kolmogorov-Smirnov and Shapiro-Wilk Statistics normally test as shown in table 4.7.

Figure 18. Output – test of normality

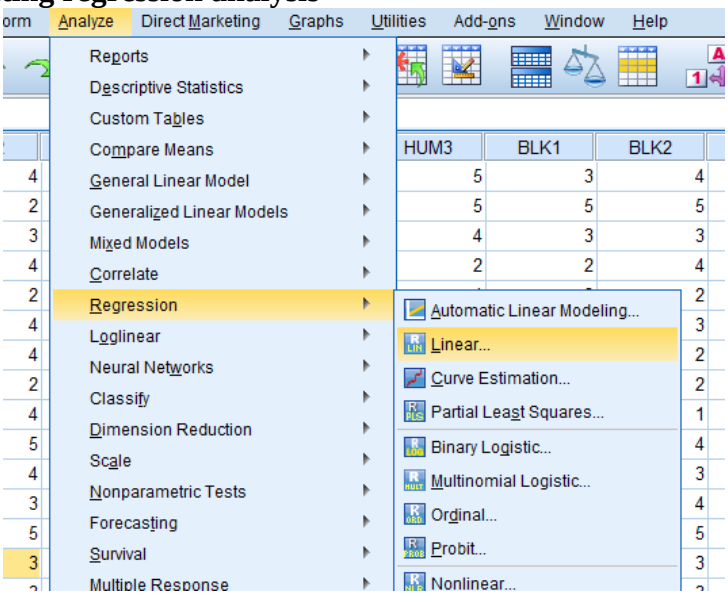


5.5. Regression Analysis

Step 1

To carry out the Regression Analysis, go to analyze, regression and linear.

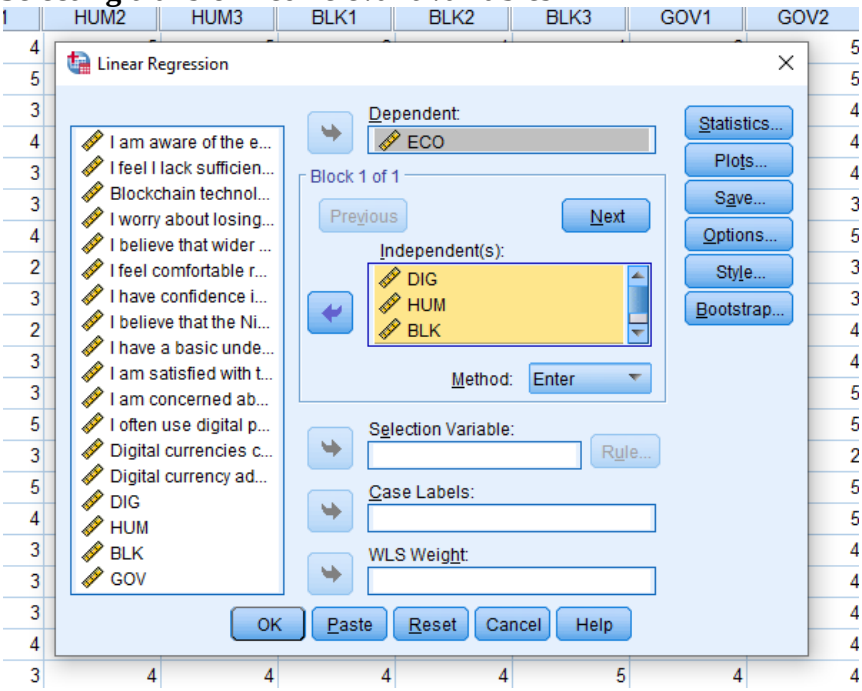
Figure 19. Selecting regression analysis



Step 2

The dependent variable "ECO" was moved to "Dependent variable" and "DIG, HUM, BLK, GOV" was subsequently moved to "independent variable"

Figure 20. Selecting transformed relevant variables

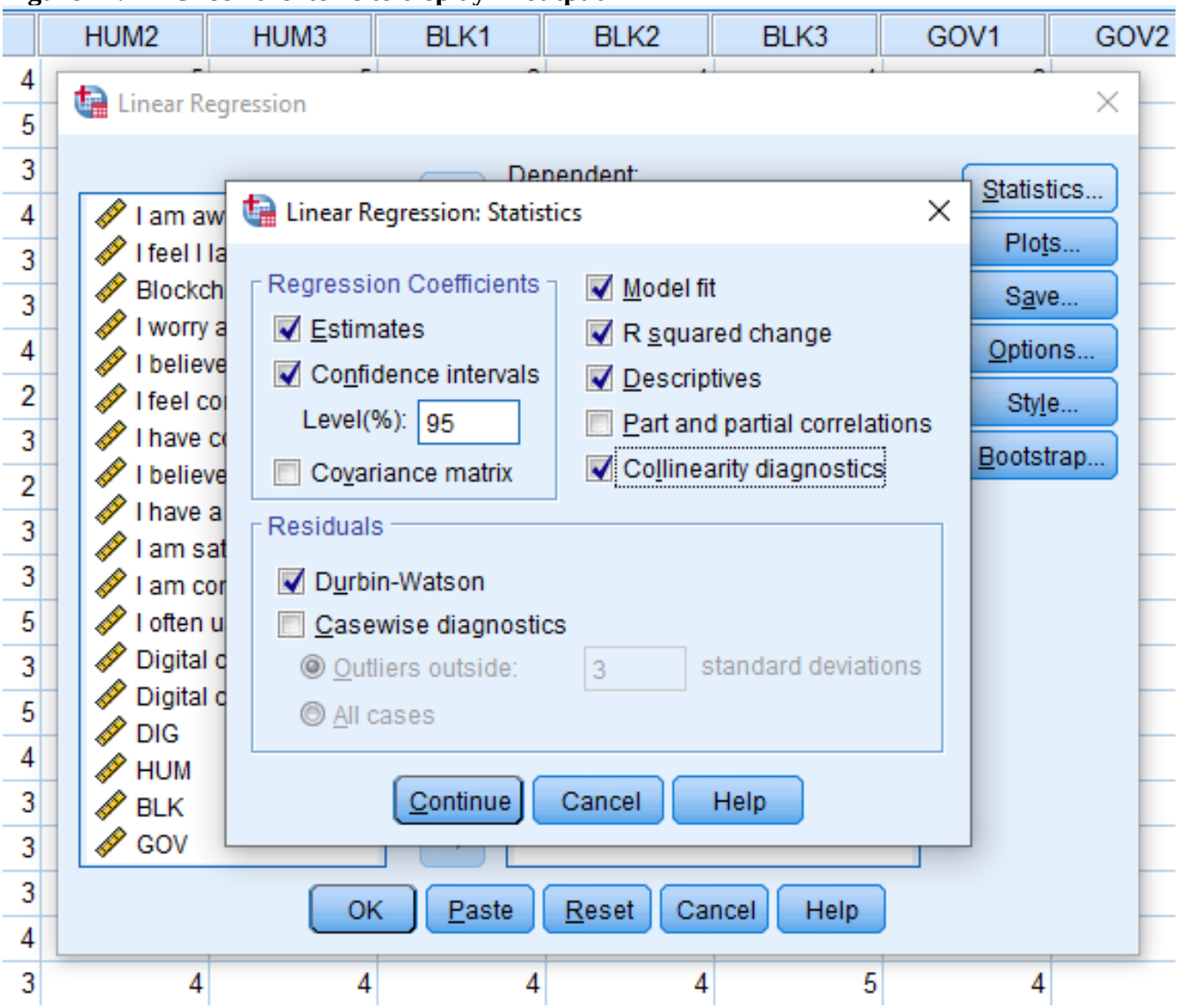


Step 3

Go to statistics and check the following:

- Estimates
- Confidence intervals
- Model fit
- R Squared Change
- Descriptive
- Durbin-Watson
- Collinearity diagnostics

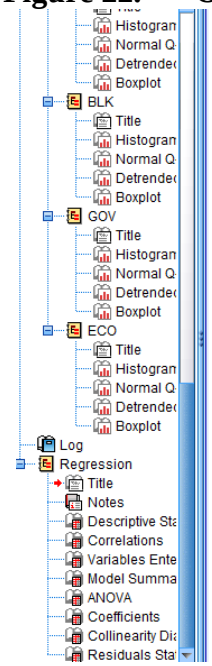
Figure 21. Check the items to display in output



Step 4

Output of regression analysis as shown in appendix 5

Figure 22. Output – Model Summary, Coefficients



b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.501[a]	.251	.199	.65990	.251	4.855	4	58	.002	2.253

a. Predictors: (Constant), GOV, DIG, HUM, BLK

b. Dependent Variable: ECO

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.457	4	2.114	4.855	.002[b]
	Residual	25.257	58	.435		
	Total	33.714	62			

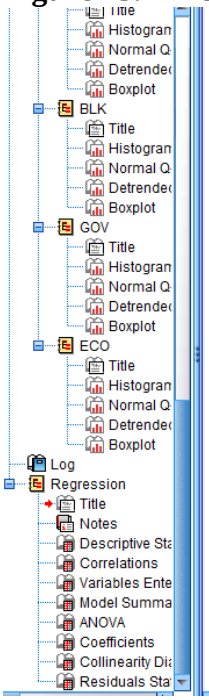
a. Dependent Variable: ECO

b. Predictors: (Constant), GOV, DIG, HUM, BLK

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.587	.853		.688	.494	-1.121	2.295		
	DIG	.389	.154	.295	2.524	.014	.081	.698	.948	1.055
	HUM	.325	.152	.275	2.136	.037	.021	.630	.778	1.285
	BLK	.094	.137	.090	.687	.495	-.180	.368	.749	1.335

Figure 23. Output



Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.587	.853		.688	.494	-1.121	2.295		
	DIG	.389	.154	.295	2.524	.014	.081	.698	.948	1.055
	HUM	.325	.152	.275	2.136	.037	.021	.630	.778	1.285
	BLK	.094	.137	.090	.687	.495	-.180	.368	.749	1.335
	GOV	.176	.185	.121	.950	.346	-.195	.547	.794	1.260

a. Dependent Variable: ECO

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	DIG	HUM	BLK	GOV
1	1	4.919	1.000	.00	.00	.00	.00	.00
	2	.042	10.872	.01	.17	.01	.51	.00
	3	.019	16.053	.01	.10	.90	.30	.00
	4	.013	19.554	.02	.37	.08	.18	.69
	5	.007	26.469	.97	.36	.01	.01	.31

a. Dependent Variable: ECO

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.4939	5.3486	4.1429	.36933	63
Residual	-2.37624	1.50611	.00000	.63826	63
Std. Predicted Value	-1.757	3.265	.000	1.000	63