

Host

Notes

Output Created		12-JUL-2026 15:21:59
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Stepwise Regression\SPSS_Output\sav\stepwise_regression_analysis_data_with_predictions.sav
	Active Dataset	StepwiseRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=["if not exist "D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output " mkdir "D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output "].
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.13

Host

Notes

Output Created		12-JUL-2026 15:21:59
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Stepwise Regression\SPSS_Output\sav\stepwise_regression_analysis_data_with_predictions.sav
	Active Dataset	StepwiseRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=["if not exist "D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\sav" mkdir "D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\sav""].
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.07

Host

Notes

Output Created		12-JUL-2026 15:21:59
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Stepwise Regression\SPSS_Output\sav\stepwise_regression_analysis_data_with_predictions.sav
	Active Dataset	StepwiseRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=["if not exist "D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\spv" mkdir "D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\spv""].
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.07

Host

Notes

Output Created		12-JUL-2026 15:22:00
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Stepwise Regression\SPSS_Output\sav\stepwise_regression_analysis_data_with_predictions.sav
	Active Dataset	StepwiseRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=["if not exist "D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\pdf" mkdir "D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\pdf""].
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.09

Host

Notes

Output Created		12-JUL-2026 15:22:00
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Stepwise Regression\SPSS_Output\ sav\stepwise_regression_ analysis_data_with_predic tions.sav
	Active Dataset	StepwiseRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=['del /Q "D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\ sav*.sav" 2>nul'].
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.07

Host

Notes

Output Created		12-JUL-2026 15:22:00
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Stepwise Regression\SPSS_Output\ sav\stepwise_regression_ analysis_data_with_predic tions.sav
	Active Dataset	StepwiseRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=['del /Q "D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\ spv*.spv" 2>nul'].
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.11

Host

Notes

Output Created		12-JUL-2026 15:22:00
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Stepwise Regression\SPSS_Output\ sav\stepwise_regression_ analysis_data_with_predic tions.sav
	Active Dataset	StepwiseRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=['del /Q "D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\ pdf*.pdf" 2>nul'].
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.14

Tobit Regression

Tobit Regression
Import dataset.csv

Tobit Regression

>Warning # 2004. Command name: SUBTITLE

>The subtitle given exceeds 60 characters in length. The first 60 characters
>will be used.

Tobit Regression
Descriptive statistics, censoring frequency, and correlation

Frequencies

Notes		
Output Created		12-JUL-2026 15:22:01
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\sav\tobit_regression_analysis_data.sav
	Active Dataset	TobitRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data.
Syntax		FREQUENCIES VARIABLES=tobit_censored /ORDER=ANALYSIS.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02

[TobitRegressionData] D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\sav\tobit_regression_analysis_data.sav

Statistics

1 = G3 is left-censored at 0

N	Valid	649
	Missing	0

Tobit Regression
Descriptive statistics, censoring frequency, and correlation

1 = G3 is left-censored at 0

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Uncensored	634	97.7	97.7	97.7
	Left-censored at 0	15	2.3	2.3	100.0
	Total	649	100.0	100.0	

Descriptives

Notes

Output Created		12-JUL-2026 15:22:01
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\ sav\tobit_regression_analy sis_data.sav
	Active Dataset	TobitRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	All non-missing data are used.
Syntax		DESCRIPTIVES VARIABLES=G3 G1 G2 studytime failures absences age Medu Fedu /STATISTICS=MEAN STDDEV MIN MAX SKEWNESS KURTOSIS.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02

Tobit Regression
Descriptive statistics, censoring frequency, and correlation

Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic
Final grade outcome	649	.00	19.00	11.9060	3.23066	-.913
First-period grade predictor	649	.00	19.00	11.3991	2.74527	-.003
Second-period grade predictor	649	.00	19.00	11.5701	2.91364	-.360
Weekly study-time predictor	649	1.00	4.00	1.9307	.82951	.700
Past failures predictor	649	.00	3.00	.2219	.59324	3.093
School absences predictor	649	.00	32.00	3.6595	4.64076	2.021
Student age predictor	649	15.00	22.00	16.7442	1.21814	.417
Mother education predictor	649	.00	4.00	2.5146	1.13455	-.030
Father education predictor	649	.00	4.00	2.3066	1.09993	.215
Valid N (listwise)	649					

Descriptive Statistics

	Skewness Std. Error	Kurtosis Statistic	Std. Error
Final grade outcome	.096	2.712	.192
First-period grade predictor	.096	.037	.192
Second-period grade predictor	.096	1.662	.192
Weekly study-time predictor	.096	.038	.192
Past failures predictor	.096	9.824	.192
School absences predictor	.096	5.781	.192
Student age predictor	.096	.072	.192
Mother education predictor	.096	-1.261	.192
Father education predictor	.096	-1.109	.192
Valid N (listwise)			

Tobit Regression
Descriptive statistics, censoring frequency, and correlation

Correlations

Notes

Output Created		12-JUL-2026 15:22:01
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\ sav\tobit_regression_analy sis_data.sav
	Active Dataset	TobitRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each pair of variables are based on all the cases with valid data for that pair.
Syntax		CORRELATIONS /VARIABLES=G3 G1 G2 studytime failures absences age Medu Fedu /PRINT=TWOTAIL SIG /MISSING=PAIRWISE.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.03

Tobit Regression
Descriptive statistics, censoring frequency, and correlation

Correlations

		Final grade outcome	First-period grade predictor	Second-period grade predictor
Final grade outcome	Pearson Correlation	1	.826	.919
	Sig. (2-tailed)		.000	.000
	N	649	649	649
First-period grade predictor	Pearson Correlation	.826	1	.865
	Sig. (2-tailed)	.000		.000
	N	649	649	649
Second-period grade predictor	Pearson Correlation	.919	.865	1
	Sig. (2-tailed)	.000	.000	
	N	649	649	649
Weekly study-time predictor	Pearson Correlation	.250	.261	.240
	Sig. (2-tailed)	.000	.000	.000
	N	649	649	649
Past failures predictor	Pearson Correlation	-.393	-.384	-.386
	Sig. (2-tailed)	.000	.000	.000
	N	649	649	649
School absences predictor	Pearson Correlation	-.091	-.147	-.125
	Sig. (2-tailed)	.020	.000	.001
	N	649	649	649
Student age predictor	Pearson Correlation	-.107	-.174	-.107
	Sig. (2-tailed)	.007	.000	.006
	N	649	649	649
Mother education predictor	Pearson Correlation	.240	.260	.264
	Sig. (2-tailed)	.000	.000	.000
	N	649	649	649
Father education predictor	Pearson Correlation	.212	.218	.225
	Sig. (2-tailed)	.000	.000	.000
	N	649	649	649

Tobit Regression
Descriptive statistics, censoring frequency, and correlation

Correlations

		Weekly study- time predictor	Past failures predictor	School absences predictor
Final grade outcome	Pearson Correlation	.250	-.393	-.091
	Sig. (2-tailed)	.000	.000	.020
	N	649	649	649
First-period grade predictor	Pearson Correlation	.261	-.384	-.147
	Sig. (2-tailed)	.000	.000	.000
	N	649	649	649
Second-period grade predictor	Pearson Correlation	.240	-.386	-.125
	Sig. (2-tailed)	.000	.000	.001
	N	649	649	649
Weekly study-time predictor	Pearson Correlation	1	-.147	-.118
	Sig. (2-tailed)		.000	.003
	N	649	649	649
Past failures predictor	Pearson Correlation	-.147	1	.123
	Sig. (2-tailed)	.000		.002
	N	649	649	649
School absences predictor	Pearson Correlation	-.118	.123	1
	Sig. (2-tailed)	.003	.002	
	N	649	649	649
Student age predictor	Pearson Correlation	-.008	.320	.150
	Sig. (2-tailed)	.831	.000	.000
	N	649	649	649
Mother education predictor	Pearson Correlation	.097	-.172	-.009
	Sig. (2-tailed)	.013	.000	.827
	N	649	649	649
Father education predictor	Pearson Correlation	.050	-.166	.030
	Sig. (2-tailed)	.200	.000	.448
	N	649	649	649

Tobit Regression
Descriptive statistics, censoring frequency, and correlation

Correlations

		Student age predictor	Mother education predictor	Father education predictor
Final grade outcome	Pearson Correlation	-.107	.240	.212
	Sig. (2-tailed)	.007	.000	.000
	N	649	649	649
First-period grade predictor	Pearson Correlation	-.174	.260	.218
	Sig. (2-tailed)	.000	.000	.000
	N	649	649	649
Second-period grade predictor	Pearson Correlation	-.107	.264	.225
	Sig. (2-tailed)	.006	.000	.000
	N	649	649	649
Weekly study-time predictor	Pearson Correlation	-.008	.097	.050
	Sig. (2-tailed)	.831	.013	.200
	N	649	649	649
Past failures predictor	Pearson Correlation	.320	-.172	-.166
	Sig. (2-tailed)	.000	.000	.000
	N	649	649	649
School absences predictor	Pearson Correlation	.150	-.009	.030
	Sig. (2-tailed)	.000	.827	.448
	N	649	649	649
Student age predictor	Pearson Correlation	1	-.108	-.121
	Sig. (2-tailed)		.006	.002
	N	649	649	649
Mother education predictor	Pearson Correlation	-.108	1	.647
	Sig. (2-tailed)	.006		.000
	N	649	649	649
Father education predictor	Pearson Correlation	-.121	.647	1
	Sig. (2-tailed)	.002	.000	
	N	649	649	649

Tobit Regression

Tobit Regression
OLS comparison model

Regression

Notes

Output Created		12-JUL-2026 15:22:01
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\ sav\tobit_regression_analy sis_data.sav
	Active Dataset	TobitRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA CHANGE CI(95) COLLIN TOL ZPP /CRITERIA=PIN(.05) POUT(.10) TOLERANCE(. 0001) /NOORIGIN /DEPENDENT G3 /METHOD=ENTER G1 G2 studytime failures absences age Medu Fedu /SAVE PRED(ols_pred) RESID(ols_resid) ZPRED (ols_zpred) ZRESID...
Resources	Processor Time	00:00:00.06
	Elapsed Time	00:00:00.05

Tobit Regression
OLS comparison model

Notes

	Memory Required	8432 bytes
	Additional Memory Required for Residual Plots	0 bytes
Variables Created or Modified	ols_pred	Unstandardized Predicted Value
	ols_resid	Unstandardized Residual
	ols_zpred	Standardized Predicted Value
	ols_zresid	Standardized Residual

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Father education predictor, School absences predictor, Weekly study-time predictor, Student age predictor, Second-period grade predictor, Past failures predictor, Mother education predictor, First-period grade predictor ^b	.	Enter

a. Dependent Variable: Final grade outcome

b. All requested variables entered.

Tobit Regression
OLS comparison model

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.922 ^a	.851	.849	1.25576	.851	456.111	8

Model Summary^b

Model	Change Statistics	
	df2	Sig. F Change
1	640	.000

- a. Predictors: (Constant), Father education predictor, School absences predictor, Weekly study-time predictor, Student age predictor, Second-period grade predictor, Past failures predictor, Mother education predictor, First-period grade predictor

- b. Dependent Variable: Final grade outcome

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5754.033	8	719.254	456.111	.000 ^b
	Residual	1009.234	640	1.577		
	Total	6763.267	648			

- a. Dependent Variable: Final grade outcome

- b. Predictors: (Constant), Father education predictor, School absences predictor, Weekly study-time predictor, Student age predictor, Second-period grade predictor, Past failures predictor, Mother education predictor, First-period grade predictor

Tobit Regression
OLS comparison model

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.501	.774		-.648	.518
	First-period grade predictor	.143	.037	.122	3.910	.000
	Second-period grade predictor	.885	.034	.798	25.744	.000
	Weekly study-time predictor	.097	.062	.025	1.556	.120
	Past failures predictor	-.235	.095	-.043	-2.471	.014
	School absences predictor	.023	.011	.033	2.085	.038
	Student age predictor	.023	.044	.009	.520	.604
	Mother education predictor	-.045	.058	-.016	-.776	.438
	Father education predictor	.022	.059	.007	.371	.711

Coefficients^a

Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	-2.021	1.019			
	First-period grade predictor	.071	.215	.826	.153	.060
	Second-period grade predictor	.817	.952	.919	.713	.393
	Weekly study-time predictor	-.025	.219	.250	.061	.024
	Past failures predictor	-.422	-.048	-.393	-.097	-.038
	School absences predictor	.001	.044	-.091	.082	.032
	Student age predictor	-.063	.108	-.107	.021	.008
	Mother education predictor	-.159	.069	.240	-.031	-.012
	Father education predictor	-.094	.139	.212	.015	.006

Tobit Regression
OLS comparison model

Coefficients^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	First-period grade predictor	.240	4.165
	Second-period grade predictor	.243	4.121
	Weekly study-time predictor	.917	1.090
	Past failures predictor	.762	1.312
	School absences predictor	.948	1.055
	Student age predictor	.860	1.163
	Mother education predictor	.563	1.776
	Father education predictor	.572	1.749

a. Dependent Variable: Final grade outcome

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	(Constant)	Variance Proportions	
					First-period grade predictor	Second-period grade predictor
1	1	7.051	1.000	.00	.00	.00
	2	.945	2.731	.00	.00	.00
	3	.570	3.518	.00	.00	.00
	4	.211	5.777	.00	.00	.00
	5	.108	8.064	.00	.01	.01
	6	.062	10.680	.00	.00	.00
	7	.043	12.869	.02	.06	.08
	8	.008	30.135	.00	.87	.88
	9	.002	56.814	.97	.06	.02

Tobit Regression
OLS comparison model

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions				
		Weekly study-time predictor	Past failures predictor	School absences predictor	Student age predictor	Mother education predictor
1	1	.00	.00	.01	.00	.00
	2	.00	.61	.05	.00	.00
	3	.00	.12	.88	.00	.00
	4	.15	.01	.00	.00	.13
	5	.83	.00	.02	.00	.02
	6	.00	.00	.00	.00	.84
	7	.01	.21	.04	.03	.00
	8	.00	.00	.00	.00	.00
	9	.00	.04	.01	.96	.00

Collinearity Diagnostics^a

Model	Dimension	Variance ...
		Father education predictor
1	1	.00
	2	.00
	3	.00
	4	.19
	5	.02
	6	.76
	7	.01
	8	.00
	9	.01

a. Dependent Variable: Final grade outcome

Tobit Regression
OLS comparison model

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.2512	19.5507	11.9060	2.97988	649
Residual	-9.05080	5.78244	.00000	1.24798	649
Std. Predicted Value	-3.911	2.565	.000	1.000	649
Std. Residual	-7.207	4.605	.000	.994	649

a. Dependent Variable: Final grade outcome

Tobit Regression

Tobit Regression
Maximum-likelihood Tobit model using SPSS Python integration

Tobit maximum-likelihood section could not run.
Install/enable SPSS Python Essentials with NumPy, pandas, and SciPy.
Error: No module named 'numpy'

Tobit Regression

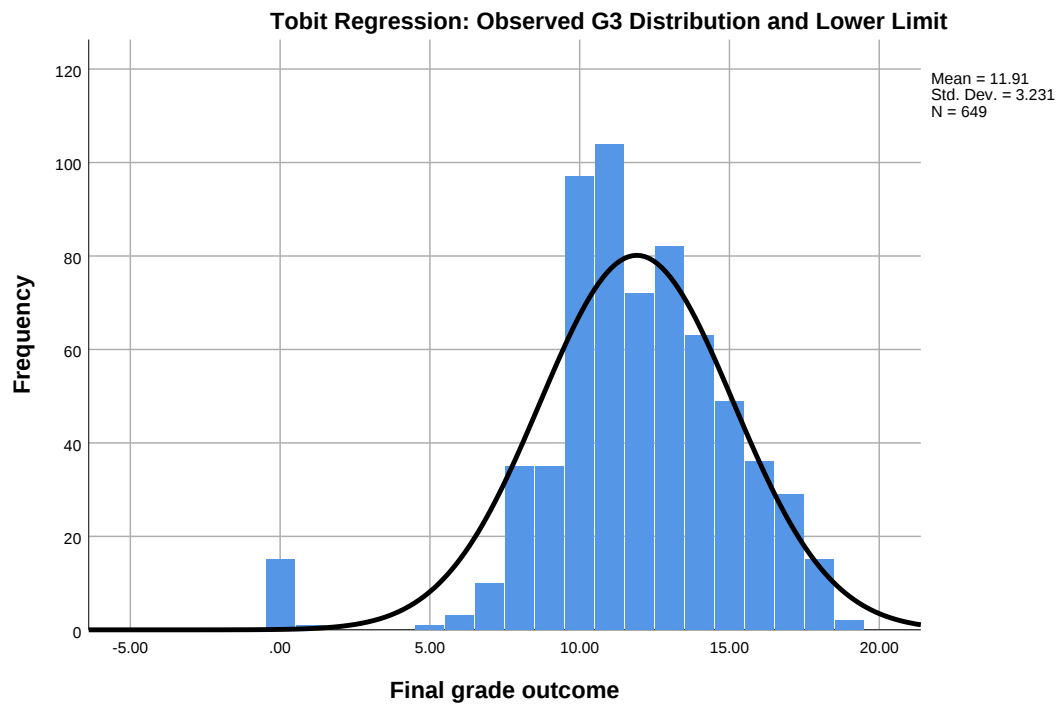
Tobit Regression
Diagnostic charts

Graph

Notes

Output Created		12-JUL-2026 15:22:11
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\ sav\tobit_regression_analy sis_data.sav
	Active Dataset	TobitRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /HISTOGRAM(NORMAL) =G3 /TITLE='Tobit Regression: Observed G3 Distribution and Lower Limit'.
Resources	Processor Time	00:00:00.83
	Elapsed Time	00:00:01.47

Tobit Regression Diagnostic charts



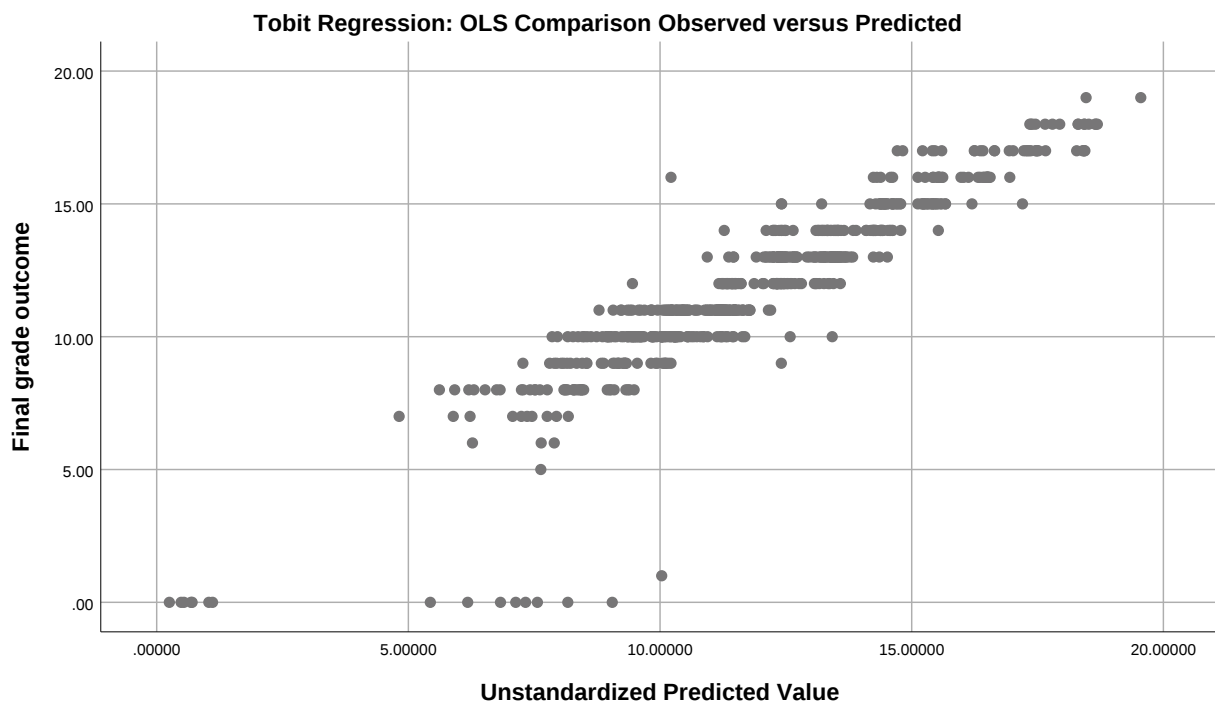
Graph

Tobit Regression
Diagnostic charts

Notes

Output Created		12-JUL-2026 15:22:13
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\ sav\tobit_regression_analy sis_data.sav
	Active Dataset	TobitRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /SCATTERPLOT(BIVAR) =ols_pred WITH G3 /TITLE='Tobit Regression: OLS Comparison Observed versus Predicted'.
Resources	Processor Time	00:00:00.48
	Elapsed Time	00:00:01.36

Tobit Regression
Diagnostic charts



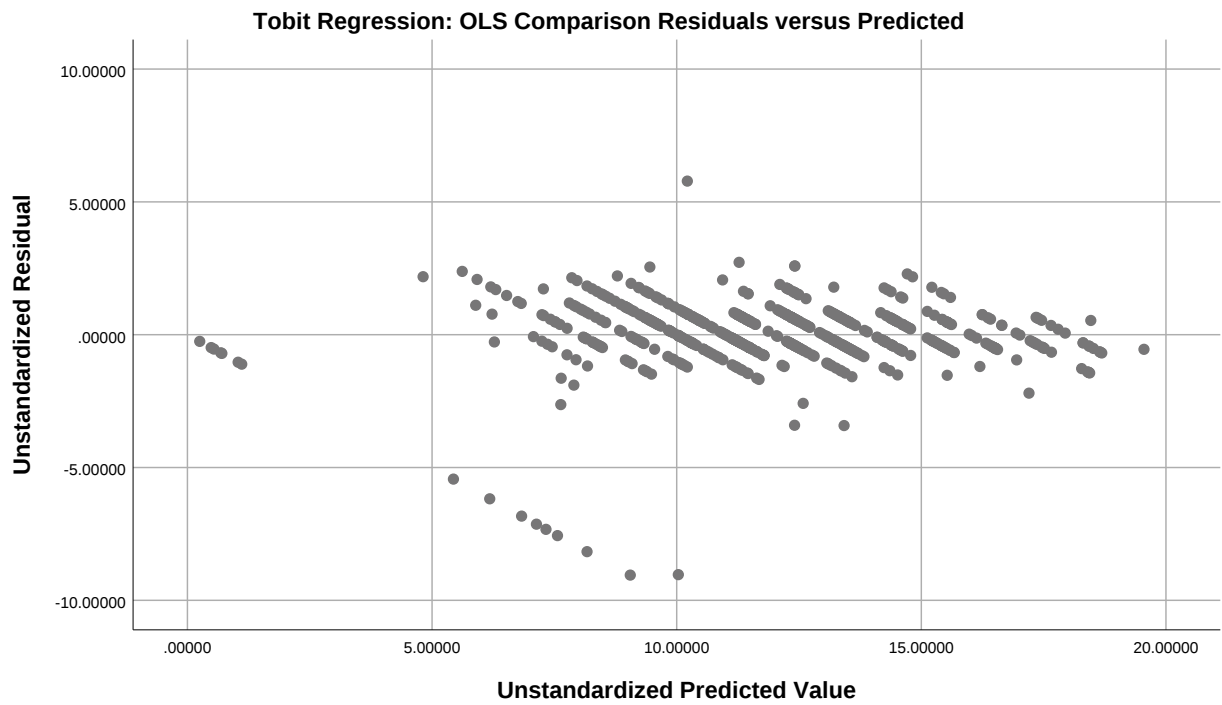
Graph

Tobit Regression
Diagnostic charts

Notes

Output Created		12-JUL-2026 15:22:14
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\ sav\tobit_regression_analy sis_data.sav
	Active Dataset	TobitRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /SCATTERPLOT(BIVAR) =ols_pred WITH ols_resid /TITLE='Tobit Regression: OLS Comparison Residuals versus Predicted'.
Resources	Processor Time	00:00:00.41
	Elapsed Time	00:00:00.85

Tobit Regression
Diagnostic charts



Graph

Tobit Regression
Diagnostic charts

Notes

Output Created		12-JUL-2026 15:22:15
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Tobit Regression\SPSS_Output\ sav\tobit_regression_analy sis_data.sav
	Active Dataset	TobitRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /HISTOGRAM(NORMAL) =ols_resid /TITLE='Tobit Regression: OLS Comparison Residual Distribution'.
Resources	Processor Time	00:00:00.45
	Elapsed Time	00:00:00.67

Tobit Regression Diagnostic charts

