

Host

Notes

Output Created		12-JUL-2026 15:53:03
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Negative Binomial Regression\SPSS_Output\sav\zero_inflated_negative_binomial_regression_analysis_data_with_zero_probability.sav
	Active Dataset	ZINBRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=["if not exist "D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output" mkdir "D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output""].
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.13

Host

Notes

Output Created		12-JUL-2026 15:53:03
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Negative Binomial Regression\SPSS_Output\sav\zero_inflated_negative_binomial_regression_analysis_data_with_zero_probability.sav
	Active Dataset	ZINBRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=["if not exist "D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\sav" mkdir "D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\sav""].
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.09

Host

Notes

Output Created		12-JUL-2026 15:53:03
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Negative Binomial Regression\SPSS_Output\sav\zero_inflated_negative_binomial_regression_analysis_data_with_zero_probability.sav
	Active Dataset	ZINBRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=["if not exist "D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\spv" mkdir "D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\spv""].
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.11

Host

Notes

Output Created		12-JUL-2026 15:53:04
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Negative Binomial Regression\SPSS_Output\sav\zero_inflated_negative_binomial_regression_analysis_data_with_zero_probability.sav
	Active Dataset	ZINBRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=["if not exist "D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\pdf" mkdir "D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\pdf""].
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.11

Host

Notes

Output Created		12-JUL-2026 15:53:04
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Negative Binomial Regression\SPSS_Output\ sav\zero_inflated_negative _binomial_regression_ana lysis_data_with_zero_prob ability.sav
	Active Dataset	ZINBRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=['del /Q "D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\ sav*.sav" 2>nul']. .
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.10

Host

Notes

Output Created		12-JUL-2026 15:53:04
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Negative Binomial Regression\SPSS_Output\ sav\zero_inflated_negative _binomial_regression_ana lysis_data_with_zero_prob ability.sav
	Active Dataset	ZINBRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=['del /Q "D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\ spv*.spv" 2>nul"].
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.14

Host

Notes

Output Created		12-JUL-2026 15:53:04
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Negative Binomial Regression\SPSS_Output\ sav\zero_inflated_negative _binomial_regression_ana lysis_data_with_zero_prob ability.sav
	Active Dataset	ZINBRegressionData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=['del /Q "D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\ pdf*.pdf" 2>nul'].
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.09

Zero Inflated Poisson Regression

Zero Inflated Poisson Regression
Import dataset.csv

Zero Inflated Poisson Regression

Zero Inflated Poisson Regression
Descriptive statistics, zero frequency , and correlations

Frequencies

Notes		
Output Created		12-JUL-2026 15:53:05
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\sav\zero_inflated_poisson_analysis_data.sav
	Active Dataset	ZeroInflatedPoissonData
	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=absences observed_zero /ORDER=ANALYSIS.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.03

[ZeroInflatedPoissonData] D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\sav\zero_inflated_poisson_analysis_data.sav

Zero Inflated Poisson Regression
Descriptive statistics, zero frequency , and correlations

Statistics

		School absences count outcome	1 = observed absence count is zero
N	Valid	649	649
	Missing	0	0

Frequency Table

School absences count outcome

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	244	37.6	37.6	37.6
	1.00	12	1.8	1.8	39.4
	2.00	110	16.9	16.9	56.4
	3.00	7	1.1	1.1	57.5
	4.00	93	14.3	14.3	71.8
	5.00	12	1.8	1.8	73.7
	6.00	49	7.6	7.6	81.2
	7.00	3	.5	.5	81.7
	8.00	42	6.5	6.5	88.1
	9.00	7	1.1	1.1	89.2
	10.00	21	3.2	3.2	92.4
	11.00	5	.8	.8	93.2
	12.00	12	1.8	1.8	95.1
	13.00	1	.2	.2	95.2
	14.00	8	1.2	1.2	96.5
	15.00	2	.3	.3	96.8
	16.00	10	1.5	1.5	98.3
	18.00	3	.5	.5	98.8
	21.00	2	.3	.3	99.1
	22.00	2	.3	.3	99.4
	24.00	1	.2	.2	99.5
	26.00	1	.2	.2	99.7
	30.00	1	.2	.2	99.8

Zero Inflated Poisson Regression
Descriptive statistics, zero frequency , and correlations

School absences count outcome

	Frequency	Percent	Valid Percent	Cumulative Percent
32.00	1	.2	.2	100.0
Total	649	100.0	100.0	

1 = observed absence count is zero

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Positive count	405	62.4	62.4	62.4
	Zero count	244	37.6	37.6	100.0
	Total	649	100.0	100.0	

Descriptives

Notes

Output Created		12-JUL-2026 15:53:05
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\ sav\zero_inflated_poisson _analysis_data.sav
	Active Dataset	ZeroInflatedPoissonData
	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.

Zero Inflated Poisson Regression
Descriptive statistics, zero frequency , and correlations

Notes

Syntax	DESCRIPTIVES VARIABLES=absences G1 G2 studytime failures age health /STATISTICS=MEAN STDDEV MIN MAX SKEWNESS KURTOSIS.
Resources	Processor Time 00:00:00.02
	Elapsed Time 00:00:00.01

Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic
School absences count outcome	649	.00	32.00	3.6595	4.64076	2.021
First-period grade count predictor	649	.00	19.00	11.3991	2.74527	-.003
Second-period grade count predictor	649	.00	19.00	11.5701	2.91364	-.360
Weekly study-time count predictor	649	1.00	4.00	1.9307	.82951	.700
Past failures count and inflation predictor	649	.00	3.00	.2219	.59324	3.093
Student age count and inflation predictor	649	15.00	22.00	16.7442	1.21814	.417
Student health count and inflation predictor	649	1.00	5.00	3.5362	1.44626	-.501
Valid N (listwise)	649					

Zero Inflated Poisson Regression
Descriptive statistics, zero frequency , and correlations

Descriptive Statistics

	Skewness	Kurtosis	
	Std. Error	Statistic	Std. Error
School absences count outcome	.096	5.781	.192
First-period grade count predictor	.096	.037	.192
Second-period grade count predictor	.096	1.662	.192
Weekly study-time count predictor	.096	.038	.192
Past failures count and inflation predictor	.096	9.824	.192
Student age count and inflation predictor	.096	.072	.192
Student health count and inflation predictor	.096	-1.121	.192
Valid N (listwise)			

Correlations

Zero Inflated Poisson Regression
Descriptive statistics, zero frequency , and correlations

Notes

Output Created		12-JUL-2026 15:53:05
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\ sav\zero_inflated_poisson _analysis_data.sav
	Active Dataset	ZeroInflatedPoissonData
	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=absences G1 G2 studytime failures age health /PRINT=TWOTAIL SIG /MISSING=PAIRWISE.
Resources	Processor Time	00:00:00.08
	Elapsed Time	00:00:00.30

Zero Inflated Poisson Regression
Descriptive statistics, zero frequency , and correlations

Correlations

		School absences count outcome	First-period grade count predictor	Second-period grade count predictor
School absences count outcome	Pearson Correlation	1	-.147	-.125
	Sig. (2-tailed)		.000	.001
	N	649	649	649
First-period grade count predictor	Pearson Correlation	-.147	1	.865
	Sig. (2-tailed)	.000		.000
	N	649	649	649
Second-period grade count predictor	Pearson Correlation	-.125	.865	1
	Sig. (2-tailed)	.001	.000	
	N	649	649	649
Weekly study-time count predictor	Pearson Correlation	-.118	.261	.240
	Sig. (2-tailed)	.003	.000	.000
	N	649	649	649
Past failures count and inflation predictor	Pearson Correlation	.123	-.384	-.386
	Sig. (2-tailed)	.002	.000	.000
	N	649	649	649
Student age count and inflation predictor	Pearson Correlation	.150	-.174	-.107
	Sig. (2-tailed)	.000	.000	.006
	N	649	649	649
Student health count and inflation predictor	Pearson Correlation	-.030	-.052	-.082
	Sig. (2-tailed)	.442	.189	.036
	N	649	649	649

Zero Inflated Poisson Regression
Descriptive statistics, zero frequency , and correlations

Correlations

		Weekly study- time count predictor	Past failures count and inflation predictor	Student age count and inflation predictor
School absences count outcome	Pearson Correlation	-.118	.123	.150
	Sig. (2-tailed)	.003	.002	.000
	N	649	649	649
First-period grade count predictor	Pearson Correlation	.261	-.384	-.174
	Sig. (2-tailed)	.000	.000	.000
	N	649	649	649
Second-period grade count predictor	Pearson Correlation	.240	-.386	-.107
	Sig. (2-tailed)	.000	.000	.006
	N	649	649	649
Weekly study-time count predictor	Pearson Correlation	1	-.147	-.008
	Sig. (2-tailed)		.000	.831
	N	649	649	649
Past failures count and inflation predictor	Pearson Correlation	-.147	1	.320
	Sig. (2-tailed)	.000		.000
	N	649	649	649
Student age count and inflation predictor	Pearson Correlation	-.008	.320	1
	Sig. (2-tailed)	.831	.000	
	N	649	649	649
Student health count and inflation predictor	Pearson Correlation	-.056	.036	-.009
	Sig. (2-tailed)	.151	.365	.824
	N	649	649	649

Zero Inflated Poisson Regression
Descriptive statistics, zero frequency , and correlations

Correlations

		Student health count and inflation predictor
School absences count outcome	Pearson Correlation	-.030
	Sig. (2-tailed)	.442
	N	649
First-period grade count predictor	Pearson Correlation	-.052
	Sig. (2-tailed)	.189
	N	649
Second-period grade count predictor	Pearson Correlation	-.082
	Sig. (2-tailed)	.036
	N	649
Weekly study-time count predictor	Pearson Correlation	-.056
	Sig. (2-tailed)	.151
	N	649
Past failures count and inflation predictor	Pearson Correlation	.036
	Sig. (2-tailed)	.365
	N	649
Student age count and inflation predictor	Pearson Correlation	-.009
	Sig. (2-tailed)	.824
	N	649
Student health count and inflation predictor	Pearson Correlation	1
	Sig. (2-tailed)	
	N	649

Zero Inflated Poisson Regression

Zero Inflated Poisson Regression
Native SPSS standard Poisson comparison model

Generalized Linear Models

Notes

Output Created		12-JUL-2026 15:53:05
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\ sav\zero_inflated_poisson _analysis_data.sav
	Active Dataset	ZeroInflatedPoissonData
	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 for factor, subject and within-subject variables are treated as missing.
	Cases Used	Statistics are based on cases with valid data for all variables in the model.
Weight Handling		not applicable

Zero Inflated Poisson Regression
Native SPSS standard Poisson comparison model

Notes

Syntax		GENLIN absences WITH G1 G2 studytime failures age health /MODEL G1 G2 studytime failures age health INTERCEPT=YES DISTRIBUTION=POISSO N LINK=LOG /CRITERIA METHOD=FISHER(1) SCALE=1 COVB=MODEL MAXITERATIONS=100 PCONVERGE=1E-006 (ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3 (WALD) /PRINT CPS DESCRIPTIVES MODELINFO FIT ...
Resources	Processor Time	00:00:00.23
	Elapsed Time	00:00:00.33

Model Information

Dependent Variable	School absences count outcome
Probability Distribution	Poisson
Link Function	Log

Case Processing Summary

	N	Percent
Included	649	100.0%
Excluded	0	0.0%
Total	649	100.0%

Zero Inflated Poisson Regression
Native SPSS standard Poisson comparison model

Continuous Variable Information

		N	Minimum	Maximum	Mean
Dependent Variable	School absences count outcome	649	.00	32.00	3.6595
Covariate	First-period grade count predictor	649	.00	19.00	11.3991
	Second-period grade count predictor	649	.00	19.00	11.5701
	Weekly study-time count predictor	649	1.00	4.00	1.9307
	Past failures count and inflation predictor	649	.00	3.00	.2219
	Student age count and inflation predictor	649	15.00	22.00	16.7442
	Student health count and inflation predictor	649	1.00	5.00	3.5362

Continuous Variable Information

		Std. Deviation
Dependent Variable	School absences count outcome	4.64076
Covariate	First-period grade count predictor	2.74527
	Second-period grade count predictor	2.91364
	Weekly study-time count predictor	.82951
	Past failures count and inflation predictor	.59324
	Student age count and inflation predictor	1.21814
	Student health count and inflation predictor	1.44626

Zero Inflated Poisson Regression
Native SPSS standard Poisson comparison model

Goodness of Fit^a

	Value	df	Value/df
Deviance	3287.623	642	5.121
Scaled Deviance	3287.623	642	
Pearson Chi-Square	3547.362	642	5.525
Scaled Pearson Chi-Square	3547.362	642	
Log Likelihood ^b	-2330.378		
Akaike's Information Criterion (AIC)	4674.756		
Finite Sample Corrected AIC (AICC)	4674.931		
Bayesian Information Criterion (BIC)	4706.084		
Consistent AIC (CAIC)	4713.084		

Dependent Variable: School absences count outcome

Model: (Intercept), First-period grade count predictor, Second-period grade count predictor, Weekly study-time count predictor, Past failures count and inflation predictor, Student age count and inflation predictor, Student health count and inflation predictor

a. Information criteria are in smaller-is-better form.

b. The full log likelihood function is displayed and used in computing information criteria.

Zero Inflated Poisson Regression
Native SPSS standard Poisson comparison model

Omnibus Test^a

Likelihood Ratio Chi-Square	df	Sig.
177.101	6	.000

Dependent Variable: School absences
count outcome

Model: (Intercept), First-period grade
count predictor, Second-period grade
count predictor, Weekly study-time
count predictor, Past failures count and
inflation predictor, Student age count
and inflation predictor, Student health
count and inflation predictor

a. Compares the fitted model against the intercept-only model.

Tests of Model Effects

Source	Wald Chi-Square	Type III	
		df	Sig.
(Intercept)	.126	1	.722
First-period grade count predictor	7.528	1	.006
Second-period grade count predictor	.043	1	.836
Weekly study-time count predictor	30.358	1	.000
Past failures count and inflation predictor	1.576	1	.209
Student age count and inflation predictor	47.650	1	.000
Student health count and inflation predictor	6.001	1	.014

Dependent Variable: School absences count outcome

Model: (Intercept), First-period grade count predictor, Second-period grade count predictor, Weekly study-time count predictor, Past failures count and inflation predictor, Student age count and inflation predictor, Student health count and inflation predictor

Zero Inflated Poisson Regression
Native SPSS standard Poisson comparison model

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test
			Lower	Upper	Wald Chi-Square
(Intercept)	.114	.3196	-.513	.740	.126
First-period grade count predictor	-.039	.0141	-.066	-.011	7.528
Second-period grade count predictor	-.003	.0129	-.028	.023	.043
Weekly study-time count predictor	-.151	.0275	-.205	-.097	30.358
Past failures count and inflation predictor	.043	.0342	-.024	.110	1.576
Student age count and inflation predictor	.121	.0175	.087	.155	47.650
Student health count and inflation predictor	-.035	.0141	-.062	-.007	6.001
(Scale)	1 ^a				

Parameter Estimates

Parameter	Hypothesis Test	
	df	Sig.
(Intercept)	1	.722
First-period grade count predictor	1	.006
Second-period grade count predictor	1	.836
Weekly study-time count predictor	1	.000
Past failures count and inflation predictor	1	.209
Student age count and inflation predictor	1	.000
Student health count and inflation predictor	1	.014
(Scale)		

Zero Inflated Poisson Regression
Native SPSS standard Poisson comparison model

Dependent Variable: School absences count outcome

Model: (Intercept), First-period grade count predictor, Second-period grade count predictor, Weekly study-time count predictor, Past failures count and inflation predictor, Student age count and inflation predictor, Student health count and inflation predictor

a. Fixed at the displayed value.

Zero Inflated Poisson Regression

Zero Inflated Poisson Regression
Maximum-likelihood ZIP model using SPSS Python integration

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

Zero Inflated Poisson Regression

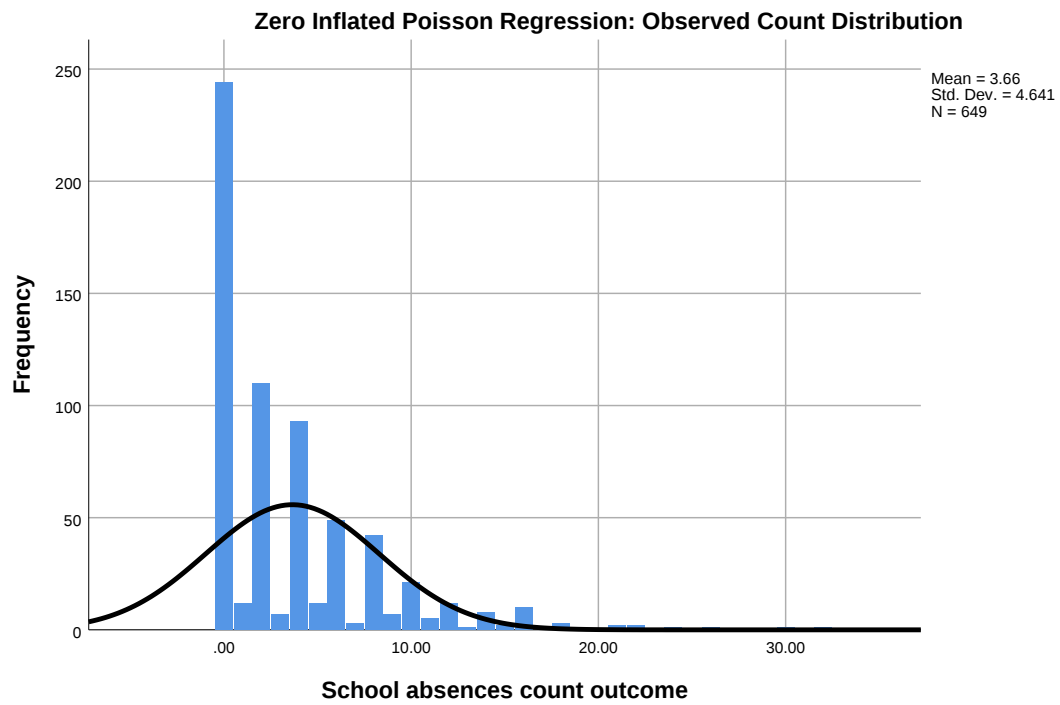
Zero Inflated Poisson Regression Diagnostic charts

Graph

Notes

Output Created		12-JUL-2026 15:53:06
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\ sav\zero_inflated_poisson _analysis_data.sav
	Active Dataset	ZeroInflatedPoissonData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /HISTOGRAM(NORMAL) =absences /TITLE='Zero Inflated Poisson Regression: Observed Count Distribution'.
Resources	Processor Time	00:00:00.50
	Elapsed Time	00:00:00.58

Zero Inflated Poisson Regression Diagnostic charts



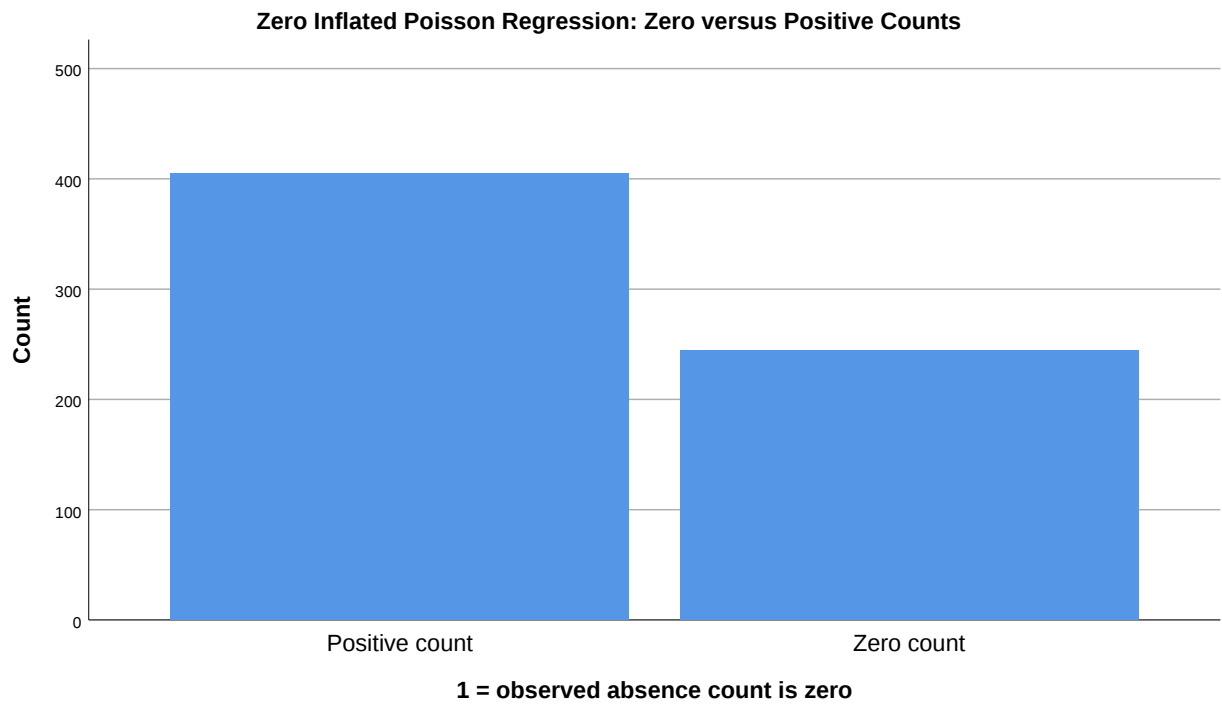
Graph

Zero Inflated Poisson Regression Diagnostic charts

Notes

Output Created		12-JUL-2026 15:53:06
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\ sav\zero_inflated_poisson _analysis_data.sav
	Active Dataset	ZeroinflatedPoissonData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /BAR(SIMPLE)=COUNT BY observed_zero /TITLE='Zero Inflated Poisson Regression: Zero versus Positive Counts'.
Resources	Processor Time	00:00:00.34
	Elapsed Time	00:00:00.36

Zero Inflated Poisson Regression
Diagnostic charts



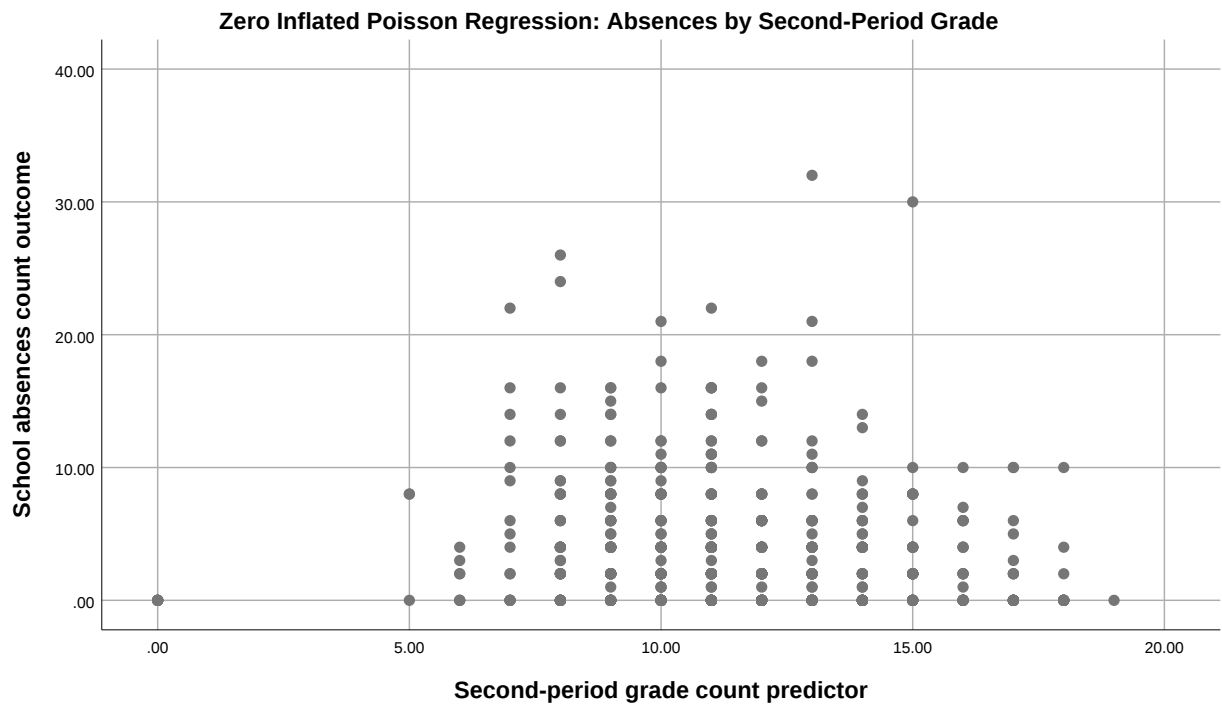
Graph

Zero Inflated Poisson Regression Diagnostic charts

Notes

Output Created		12-JUL-2026 15:53:07
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\ sav\zero_inflated_poisson _analysis_data.sav
	Active Dataset	ZeroinflatedPoissonData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /SCATTERPLOT(BIVAR) =G2 WITH absences /TITLE='Zero Inflated Poisson Regression: Absences by Second- Period Grade'.
Resources	Processor Time	00:00:00.37
	Elapsed Time	00:00:00.39

Zero Inflated Poisson Regression
Diagnostic charts



Graph

Zero Inflated Poisson Regression Diagnostic charts

Notes

Output Created		12-JUL-2026 15:53:07
Comments		
Input	Data	D:\DATA ANALYSIS\H Regression Tests and Models\Zero Inflated Poisson Regression\SPSS_Output\ sav\zero_inflated_poisson _analysis_data.sav
	Active Dataset	ZeroinflatedPoissonData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /SCATTERPLOT(BIVAR) =failures WITH absences /TITLE='Zero Inflated Poisson Regression: Absences by Past Failures'.
Resources	Processor Time	00:00:00.52
	Elapsed Time	00:00:00.53

Zero Inflated Poisson Regression
Diagnostic charts

