Regression – No Precipitation, No Avg Temperature, No Beef Production, No Maize

Model Summary: The model summary indicates that the adjusted R-squared is 0.730, which means that approximately 73% of the variability in the Beef_Value_SlaughterMarket can be explained by the model with the given predictor variables (BeefConsumption_US, Barley, Sorghum, and SoyaBeans). The model's standard error of the estimate is 6.36361, which reflects the average distance that the observed values fall from the regression line.

ANOVA: The ANOVA table shows that the model is statistically significant at a <0.001 level. This means that there is a significant relationship between the dependent variable (Beef_Value_SlaughterMarket) and the predictor variables. The F-value of 11.297 indicates that the model is a good fit to the data, as it is significantly different from a model with no predictors.

Coefficients: The coefficients table provides information about the relationship between each predictor variable and the dependent variable (Beef_Value_SlaughterMarket).

BeefConsumption_US: The coefficient is -6.592, with a p-value of <0.001, indicating a significant negative relationship between BeefConsumption_US and Beef_Value_SlaughterMarket. As BeefConsumption_US increases by 1 unit, the Beef_Value_SlaughterMarket decreases by 6.592 units, holding other variables constant.

Barley: The coefficient is -0.001, with a p-value of 0.165, indicating no significant relationship between Barley and Beef_Value_SlaughterMarket.

Sorghum: The coefficient is 0.000, with a p-value of 0.325, indicating no significant relationship between Sorghum and Beef_Value_SlaughterMarket.

SoyaBeans: The coefficient is 0.003, with a p-value of <0.001, indicating a significant positive relationship between SoyaBeans and Beef_Value_SlaughterMarket. As SoyaBeans increases by 1 unit, the Beef_Value_SlaughterMarket increases by 0.003 units, holding other variables constant.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	SoyaBeans, BeefConsumption_US, Sorghum, Barley[b]	.	Enter

a. Dependent Variable: Beef_Value_SlaughterMarket

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.894[a]	.799	.746	6.17739	.799	14.949	4	15	<.001

a. Predictors: (Constant), SoyaBeans, BeefConsumption_US, Sorghum, Barley

b. Dependent Variable: Beef_Value_SlaughterMarket

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2281.896	4	570.474	14.949	<.001[b]
	Residual	572.402	15	38.160		
	Total	2854.298	19			

a. Dependent Variable: Beef_Value_SlaughterMarket

b. Predictors: (Constant), SoyaBeans, BeefConsumption_US, Sorghum, Barley

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)	185.129	49.588		3.733	.002	79.434	290.825		
	BeefConsumption_US	-6.592	1.526	-.596	-4.321	<.001	-9.844	-3.341	.702	1.424
	Barley	-.001	.001	-.268	-1.458	.165	-.002	.000	.396	2.527
	Sorghum	.000	.000	-.185	-1.017	.325	-.001	.000	.404	2.473
	SoyaBeans	.003	.001	.892	4.702	<.001	.002	.005	.372	2.690

a. Dependent Variable: Beef_Value_SlaughterMarket

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	BeefConsumption_US	Barley	Sorghum	SoyaBeans
1	1	4.977	1.000	.00	.00	.00	.00	.00
	2	.014	18.883	.01	.03	.01	.14	.03
	3	.006	29.908	.00	.02	.36	.48	.01
	4	.003	40.638	.00	.00	.25	.28	.95
	5	.000	105.131	.99	.96	.38	.10	.00

a. Dependent Variable: Beef_Value_SlaughterMarket

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	41.3134	76.6485	58.8900	10.95901	20
Residual	-11.04016	10.86065	.00000	5.48875	20
Std. Predicted Value	-1.604	1.620	.000	1.000	20
Std. Residual	-1.787	1.758	.000	.889	20

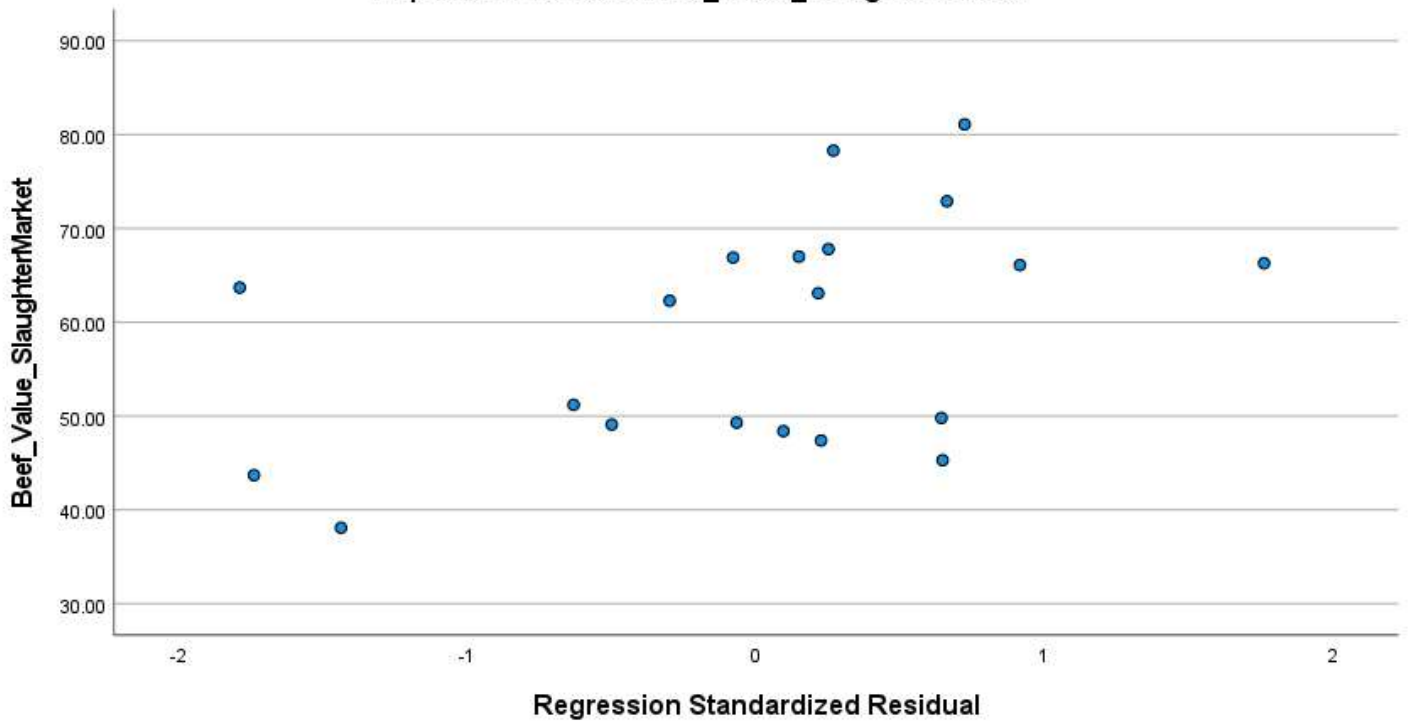a. Dependent Variable: Beef_Value_SlaughterMarket

Normal P-P Plot of Regression Standardized Residual

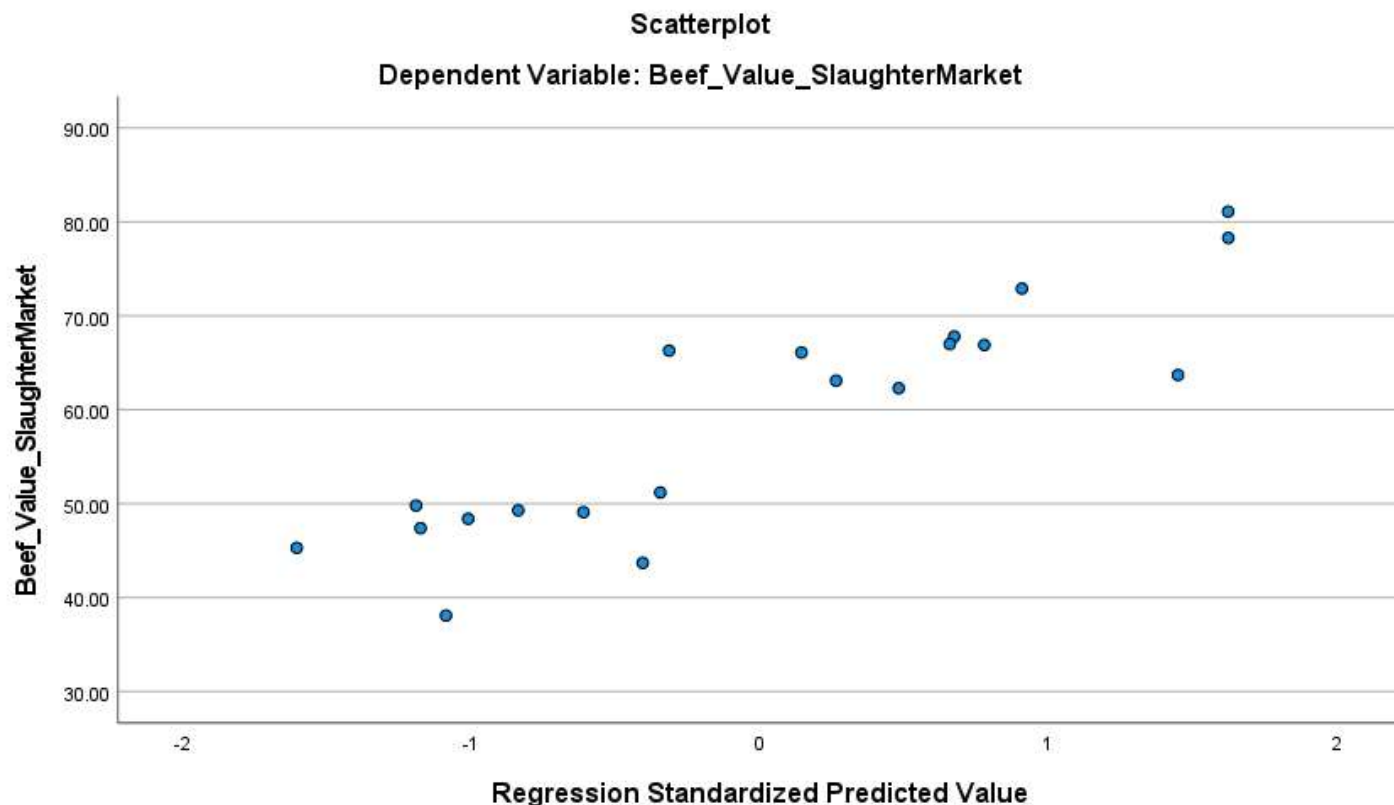### Dependent Variable: Beef_Value_SlaughterMarket

Scatterplot

Dependent Variable: Beef_Value_SlaughterMarket
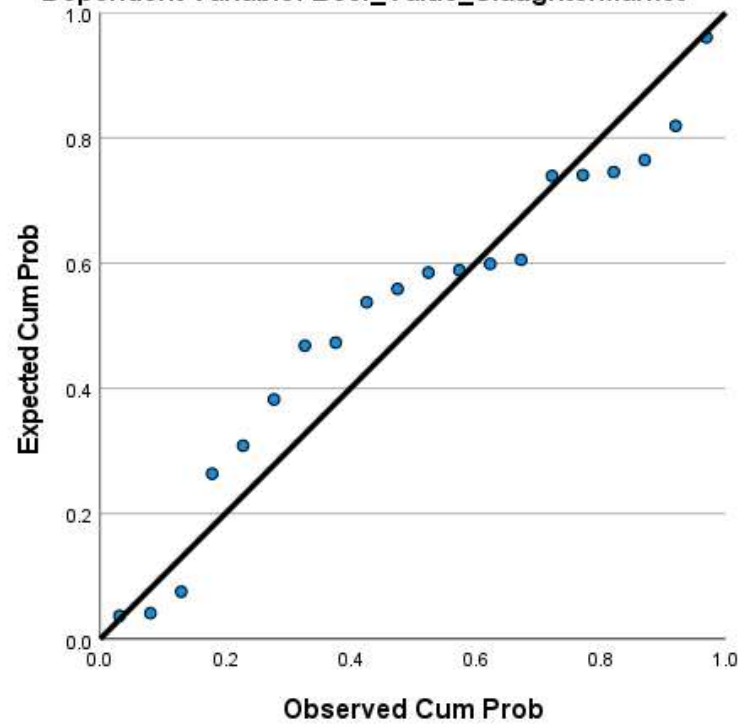
Scatterplot

Dependent Variable: Beef_Value_SlaughterMarket

Regression – No Precipitation, No Avg Temperature, No Beef Production, No Maize, No Sorghum

Model Summary: The model summary indicates that the adjusted R-squared is 0.745, which means that approximately 74.5% of the variability in the Beef_Value_SlaughterMarket can be explained by the model with the given predictor variables (BeefConsumption_US, Barley, and SoyaBeans). The model's standard error of the estimate is 6.18394, which reflects the average distance that the observed values fall from the regression line.

ANOVA: The ANOVA table shows that the model is statistically significant at a <0.001 level. This means that there is a significant relationship between the dependent variable (Beef_Value_SlaughterMarket) and the predictor variables. The F-value of 19.547 indicates that the model is a good fit to the data, as it is significantly different from a model with no predictors.

Coefficients: The coefficients table provides information about the relationship between each predictor variable and the dependent variable (Beef_Value_SlaughterMarket).

BeefConsumption_US: The coefficient is -7.055, with a p-value of <0.001, indicating a significant negative relationship between BeefConsumption_US and Beef_Value_SlaughterMarket. As BeefConsumption_US increases by 1 unit, the Beef_Value_SlaughterMarket decreases by 7.055 units, holding other variables constant.
Barley: The coefficient is -0.001, with a p-value of 0.082, indicating no significant relationship between Barley and Beef_Value_SlaughterMarket.