Nutritional Status and Dietary Patterns of Adolescent Girls

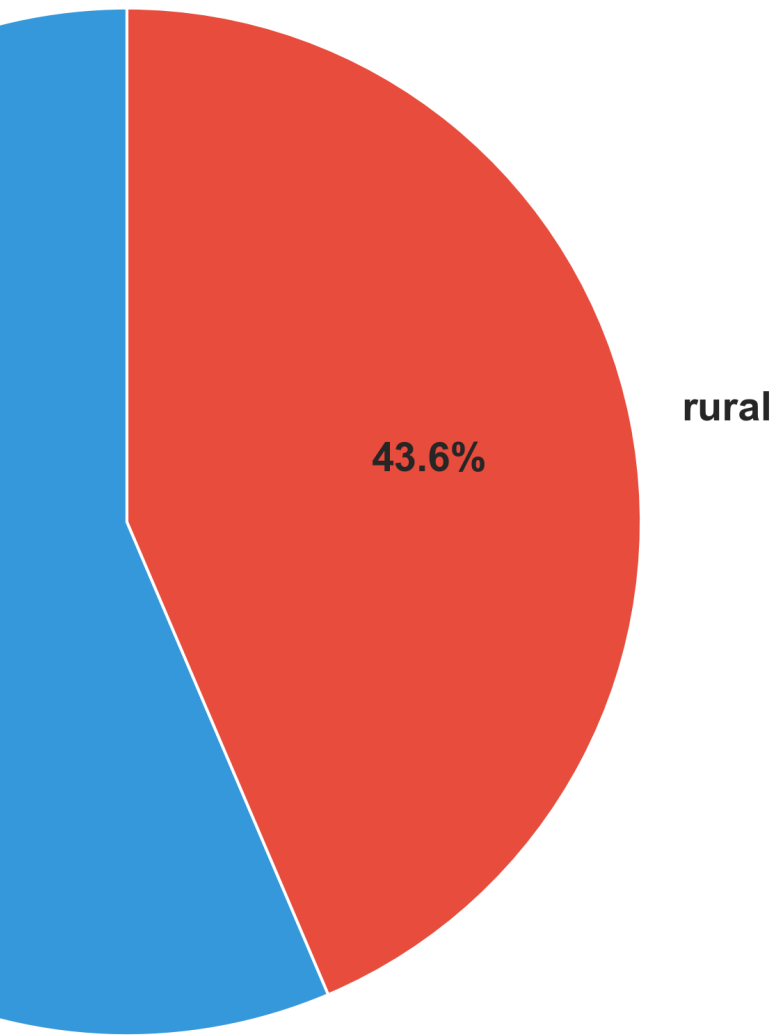**Comparison of Rural vs Urban Areas in Nigeria**

Date: 2025-12-03

Executive Summary

This report presents the findings from a comparative analysis of 367 adolescent girls (Urban vs Rural). The analysis covers socio-demographics, anthropometry, dietary patterns, factors affecting diet, and dietary habits.
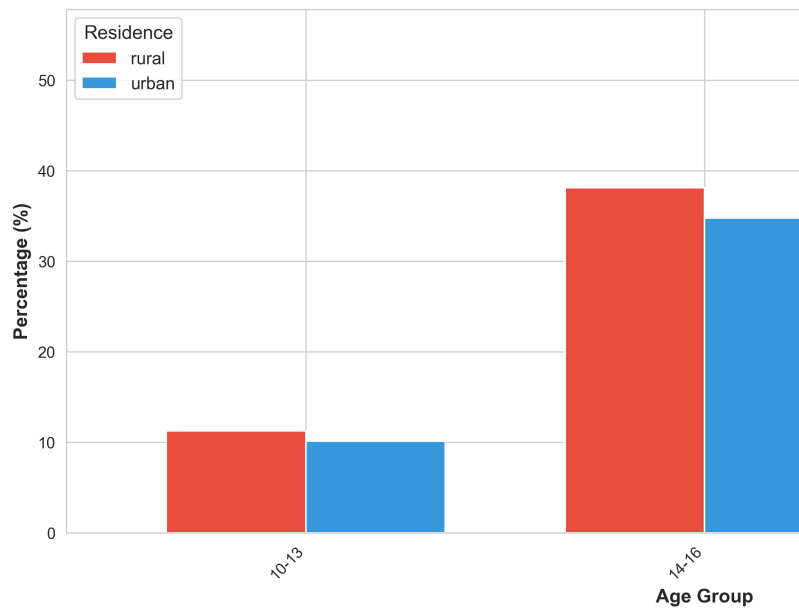
Section A: Socio-Demographic Characteristics

Comparison of socio-demographic variables between rural and urban participants.

Participants by Residence

rural

43.6%

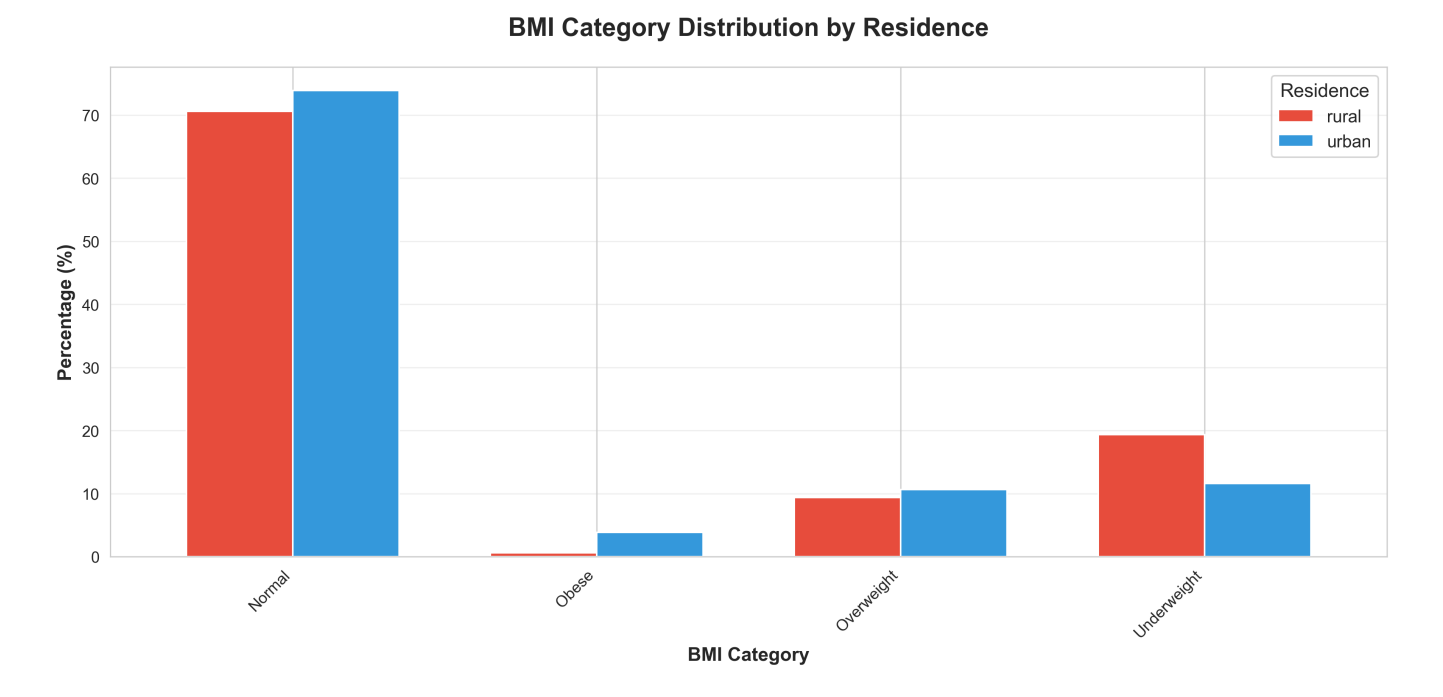## Age Group Distribution by

Statistical Comparison (Chi-Square Tests)

Variable	Chi-square	df	p-value	Significance	Interpretation
Age Group	0.718	2	0.6984	ns	No significant difference

Living Arrangement	21.413	5	0.0007	***	Significant difference
Family Size	15.521	12	0.2142	ns	No significant difference
Guardian Education	9.994	3	0.0186	*	Significant difference
Father Occupation	43.783	4	0.0000	***	Significant difference
Mother Occupation	12.346	4	0.0150	*	Significant difference
Parental Marital Status	5.783	4	0.2159	ns	No significant difference
Monthly Income	21.511	2	0.0000	***	Significant difference
Religion	1.659	2	0.4362	ns	No significant difference
Ethnicity	9.298	5	0.0977	ns	No significant difference

Section B: Anthropometric Status

Analysis of Weight, Height, and BMI.

BMI Category Distribution by Residence

BMI Category Comparison

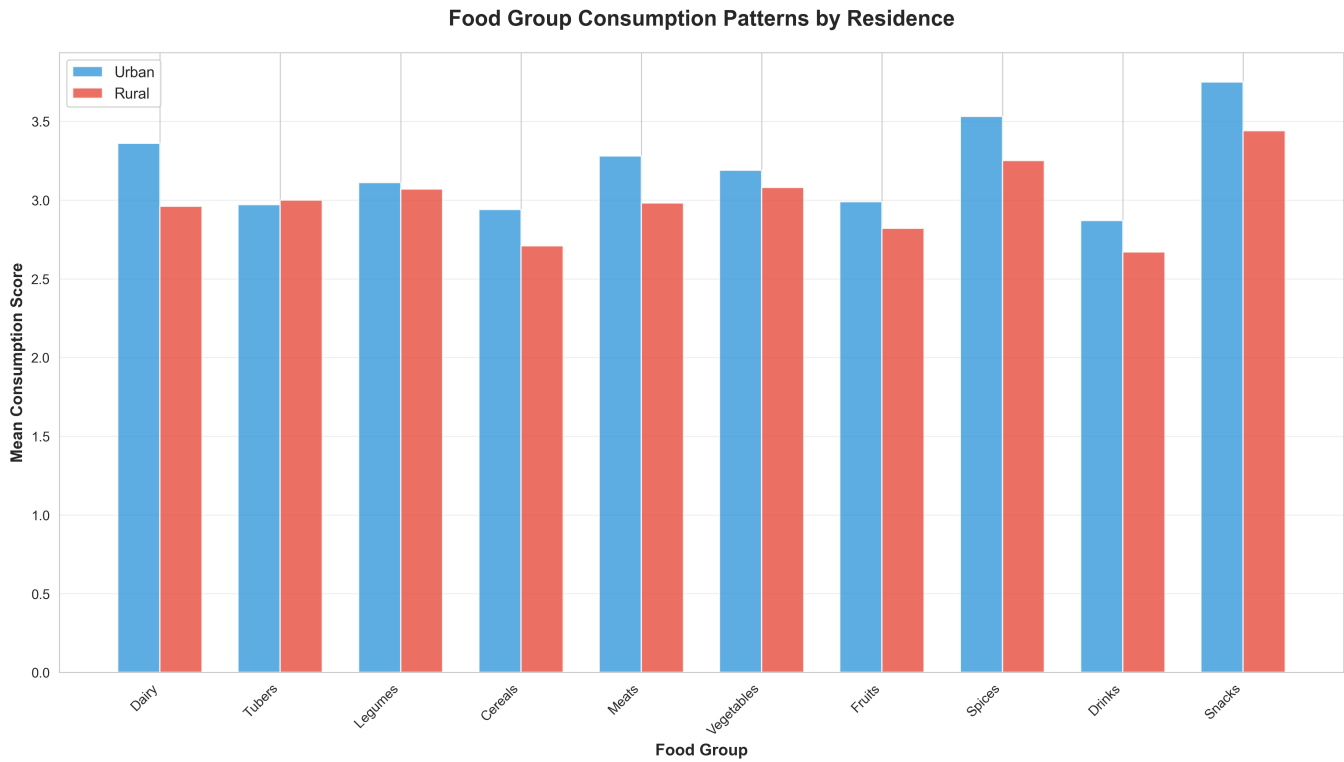| Test	Chi-square	df	p-value	Significance	Interpretation
BMI Category Distribution	7.783	3	0.0507	ns	No significant difference

Anthropometric Measures (T-Tests)

Variable	Urban Mean	Rural Mean	Mean Difference	95% CI Lower	95% CI Upper	t-statistic	p-value	Significance	Interpretation
Weight (kg)	55.47	53.56	1.91	-0.08	3.91	1.859	0.0639	ns	No significant difference
Height (m)	1.58	1.59	-0.01	-0.03	0.01	-0.905	0.3662	ns	No significant difference

BMI	22.30	21.16	1.14	0.38	1.91	2.771	0.0059	**	Significant difference

Section C: Dietary Patterns

Food frequency analysis and Dietary Diversity Score (DDS).

Food Group Consumption Patterns by Residence

Dietary Diversity Score (DDS) Comparison

Comparison	Urban Mean	Rural Mean	Mean Difference	95% CI Lower	95% CI Upper	t-statistic	p-value	Significance	Interpretation
Urban vs Rural DDS	9.78	9.44	0.33	0.15	0.52	3.751	0.0002	***	Significant difference

Dietary Diversity Score Analysis

Dietary Diversity Score by Residence — box plot comparing Urban and Rural DDS (0-10).

DDS Distribution — histogram of Dietary Diversity Score frequency for Urban and Rural.
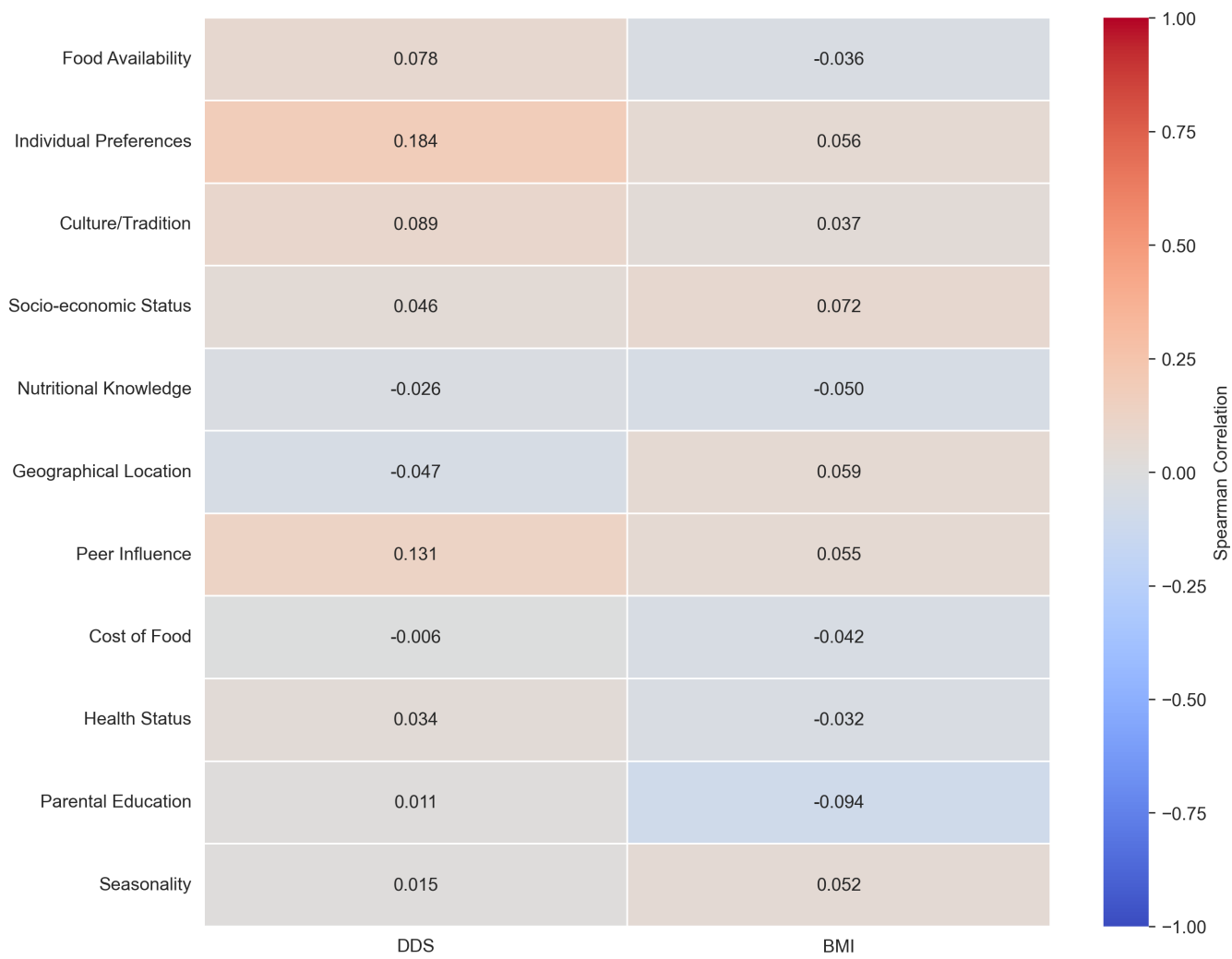
Section D: Factors Affecting Diet

Analysis of factors influencing dietary choices.
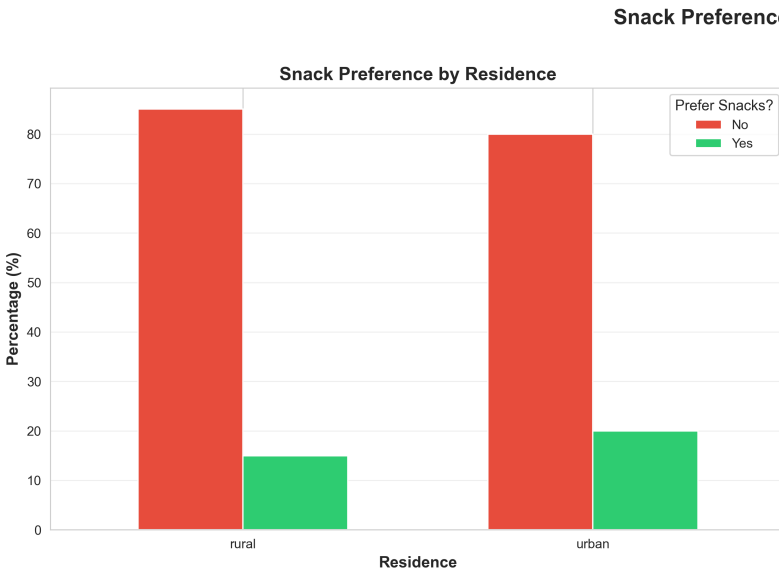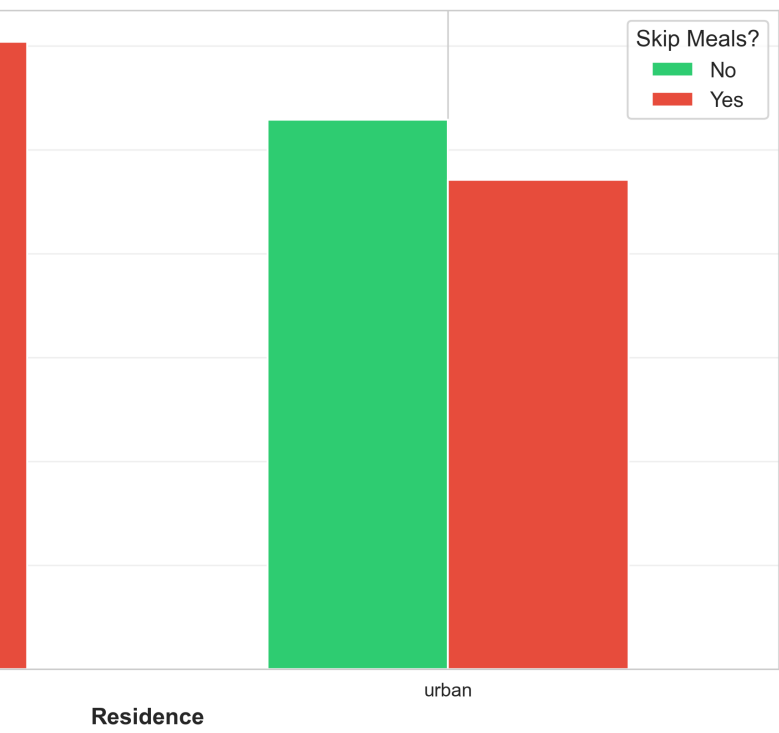
Correlation of Factors with DDS and BMI

	DDS	BMI
Food Availability	0.078	-0.036
Individual Preferences	0.184	0.056
Culture/Tradition	0.089	0.037
Socio-economic Status	0.046	0.072
Nutritional Knowledge	-0.026	-0.050
Geographical Location	-0.047	0.059
Peer Influence	0.131	0.055
Cost of Food	-0.006	-0.042
Health Status	0.034	-0.032
Parental Education	0.011	-0.094
Seasonality	0.015	0.052

Significant Factors (Chi-Square Tests)

Factor	Chi-square	df	p-value	Significance	Interpretation
Peer Influence	10.581	4	0.0317	*	Significant difference
Health Status	10.979	3	0.0118	*	Significant difference

Section E: Dietary Habits

Meal skipping, eating out, and snacking habits.
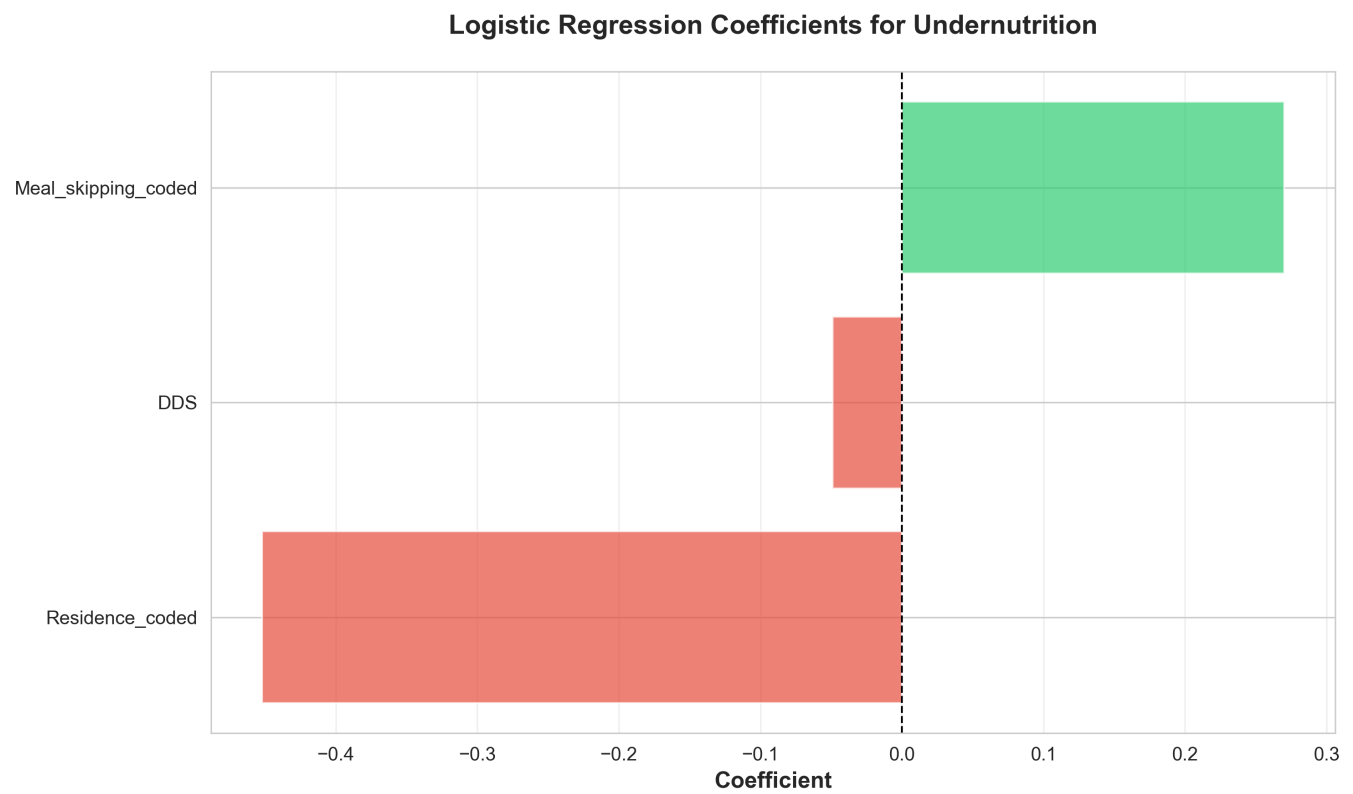
ping Prevalence by Residence

Snack Preference

Snack Preference by Residence

Habit Comparisons

Variable	Chi-square	df	p-value	Significance	Interpretation
Meals per Day	22.264	9	0.0081	**	Significant difference
Meal Skipping	5.734	1	0.0166	*	Significant difference
Meal Skipped	116.982	8	0.0000	***	Significant difference
Reason for Skipping	119.661	27	0.0000	***	Significant difference

Food Source	124.645	12	0.0000	***	Significant difference
Eating Out Frequency	83.033	15	0.0000	***	Significant difference
Snack Preference	1.214	1	0.2706	ns	No significant difference
Reason for Snack Preference	46.858	18	0.0002	***	Significant difference

Advanced Analysis

1. Logistic Regression: Predicting Undernutrition

Model Accuracy: **0.85**

Logistic Regression Coefficients for Undernutrition

Predictor	Coefficient	Odds Ratio	Log Odds
Residence_coded	-0.452	0.637	-0.452
DDS	-0.049	0.953	-0.049
Meal_skipping_coded	0.270	1.310	0.270

2. Cluster Analysis: Dietary Patterns

Identified 3 distinct dietary patterns.

Dietary Pattern Clusters

Cluster	N	Percentage	Dairy	Tubers	Legumes	Cereals	Meats	Vegetables	Fruits	Snacks	Urban_%	Rural_%
Cluster 1	62	17.3%	4.29	3.68	3.44	3.74	3.67	3.80	3.52	4.35	80.6%	19.4%

Cluster 2	78	21.7%	2.57	2.30	2.50	2.41	2.68	2.60	2.44	3.18	41.0%	59.0%
Cluster 3	219	61.0%	3.10	3.03	3.21	2.88	3.17	3.23	2.92	3.67	56.6%	43.4%