The multi-dimensional deprivation index (MDDI)

Data4Decision team - data source : Forced Displacement Survey 2023- South Sudan

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## Food Consumption Score (FCS)

| Covariates | **Refugees**, N = 2,0681 | **Host community North**, N = 9901 | **p-value**2 |
| --- | --- | --- | --- |
| Food Consumption Score | 16(0,84) | 17(0,107) | >0.9 |
| FCS Categories: 21/35 thresholds |  |  | 0.003 |
| Poor | 69 | 73 |  |
| Borderline | 21 | 16 |  |
| Acceptable | 10.0 | 11 |  |
| FCS Categories: 28/42 thresholds |  |  | 0.003 |
| Poor | 82 | 84 |  |
| Borderline | 13 | 9.5 |  |
| Acceptable | 5.1 | 6.6 |  |
| 1Mean(Minimum,Maximum); % | | | |
| 2Wilcoxon rank sum test; Pearson's Chi-squared test | | | |

# Livelihood coping stategies index

| Covariates | **Refugees**, N = 2,0681 | **Host community North**, N = 9901 | **p-value**2 |
| --- | --- | --- | --- |
| Summary of asset depletion |  |  | <0.001 |
| HH not adopting coping strategies | 52 | 67 |  |
| Stress coping strategies | 35 | 18 |  |
| Crisis coping strategies | 8.5 | 9.2 |  |
| Emergencies coping strategies | 4.9 | 5.5 |  |
| 1% | | | |
| 2Pearson's Chi-squared test | | | |

## Reduced Consumption Strategies Index (rCSI)

| Covariates | **Refugees**, N = 2,0681 | **Host community North**, N = 9901 | **p-value**2 |
| --- | --- | --- | --- |
| Reduced coping strategies index (rCSI) | 25(0,32) | 21(0,32) | <0.001 |
| 1Mean(Minimum,Maximum) | | | |
| 2Wilcoxon rank sum test | | | |

# Multi-dimensional deprivation index (MDDI) is a composite score of poverty or deprivation

## FOOD DIMENSION

### Food Consumption Score

### Reduced Consumption Strategies Index

## EDUCATION DIMENSION

### At least one school age children (6-17) (adjust to country context) not attending school in the last 6 months

## HEALTH DIMENSION

### Medical treatment - Did household members being chronically or acutely ill receive medical attention while sick?

### Number of sick or disabled people > 1 or >50% of household members

## SHELTER DIMENSION

### Source of energy for cooking - HH uses solid fuels for cooking

### Source of energy for lighting - HH has no electricity

### Crowding Index - (Number of HH members/Number of rooms (excluding kitchen, corridors))>3

## WASH DIMENSION

### Toilet Type (not-improved facility)

### Water source (not-improved source)

## SAFETY DIMENSION

### Safety: HH felt unsafe or suffered violence

### Displaced by forced in the last 12 months

| Covariates | **Refugees**, N = 2,0681 | **Host community North**, N = 9901 | **p-value**2 |
| --- | --- | --- | --- |
| HH with unacceptable food consumption | 94 | 93 | 0.12 |
| HH with high level of consumption coping strategies | 79 | 65 | <0.001 |
| HH with at least one school-age children not attending school | 0 | 0 |  |
| HH with more than half members or more than one member sick or disabled | 42 | 31 | <0.001 |
| HH with no improved energy source for cooking | 89 | 86 | 0.016 |
| HH with not improved source of energy for lighting | 15 | 20 | 0.002 |
| HH with at least 3 HH members sharing one room to sleep | 45 | 52 | <0.001 |
| HH with not improved toilet facility | 22 | 78 | <0.001 |
| HH with not improved drinking water source | 7.8 | 12 | <0.001 |
| HH with one or more members who felt unsafe or suffered violence | 22 | 20 | 0.2 |
| 1% | | | |
| 2Pearson's Chi-squared test | | | |

## Calculate deprivation score of each dimension

For each indicator, a positive answer was coded as 1 and a negative answer as 0. Each answer was then multiplied by the indicator weight. Summed together, each household gets a score out of 1, where any value greater than or equal to 0.3 equates to ‘multidimensional poverty’, i.e. deprivation across multiple sectors (‘MD Poor’).

A household is considered deprived in any one dimension for which at least 50% of the indicators are coded as positive answers.

| Covariates | **Refugees**, N = 2,0681 | **Host community North**, N = 9901 | **p-value**2 |
| --- | --- | --- | --- |
| Deprivation score for food dimension |  |  | <0.001 |
| 0 | 1.9 | 3.1 |  |
| 0.5 | 23 | 36 |  |
| 1 | 75 | 61 |  |
| Deprivation score for education dimension | 0 | 0 |  |
| Deprivation score for health dimension | 42 | 31 | <0.001 |
| Deprivation score for shelter dimension |  |  | <0.001 |
| 0 | 4.9 | 6.6 |  |
| 0.333333333333333 | 47 | 39 |  |
| 0.666666666666667 | 42 | 46 |  |
| 1 | 5.9 | 9.0 |  |
| Deprivation score for WASH dimension |  |  | <0.001 |
| 0 | 71 | 22 |  |
| 0.5 | 27 | 66 |  |
| 1 | 1.6 | 12 |  |
| Deprivation score for safety and displacement dimension | 22 | 20 | 0.2 |
| MDDI score | 0.36(0.00,0.83) | 0.38(0.00,0.83) | 0.002 |
| 1%; Mean(Minimum,Maximum) | | | |
| 2Pearson's Chi-squared test; Wilcoxon rank sum test | | | |

# Calculate MDDI-related measures

| MDDI | **Refugees**, N = 2,0681 | **Host community North**, N = 9901 | **p-value**2 |
| --- | --- | --- | --- |
| MDDI Incidence (thresholds = 0.33) |  |  | <0.001 |
| HH is not deprived | 38 | 30 |  |
| HH is deprived | 62 | 70 |  |
| MDDI Incidence – severe deprivation (thresholds = 0.50) |  |  | 0.008 |
| HH is not deprived | 83 | 79 |  |
| HH is deprived | 17 | 21 |  |
| MDDI score | 0.36(0.00,0.83) | 0.38(0.00,0.83) | 0.002 |
| 1%; Mean(Minimum,Maximum) | | | |
| 2Pearson's Chi-squared test; Wilcoxon rank sum test | | | |