## Gender gap in health outcomes among the rural working-age: Does weather effects play a role?



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## Presentation Outline

$\checkmark$ Introduction and pathways
$\checkmark$ Research questions
$\checkmark$ Methodology - Study area, data sources, empirical framework
$\checkmark$ Results
$\checkmark$ Conclusion

## Introduction - Gender and Health

$\checkmark$ Health and gender equality - fundamental human rights in the sustainable development goals.

Health
O An asset for economic growth and development (Bloom et al., 2001, 2019; Schultz, 2010).

O Ability to cope with the effects resulting from natural disasters (WHO, 2014).

Gender equality
O A key determinant of health (WHO Commission on Social Determinants of Health, 2008)
O Facilitates economic growth and development - 'smart economics' (World Bank, 2012).

O Improved food and nutrition security (Agarwal, 2018; Meinzen-Dick et al., 2012)
O Lowers fertility and child mortality (Shannon et al., 2019).
O Peaceful societies

## Pathways through which gender is translated into health risks

- Differential susceptibility and exposures to injuries, diseases and disabilities.
- Differences in health behaviors and health care access.
- Biases in health system and health research.

Source; (Gupta et al., 2019; Manandhar et al., 2018; Shannon et al., 2019)

O Gender roles - determine how and where women and men spend most of their times. A major determinant of the different exposure and intensity patterns to infectious agents of diseases (Rancourt, 2013; WHO, 2007).

O Multiple roles, caregiving, breadwinner roles, risk taking roles and masculinity are all sources of health risks in either men or women (Shannon et al., 2019).

O Both gender and sex matter; women live longer today than men in most countries (Zarulli et al., 2018). What about quality of life and morbidity rates?

## Pathways of climate related health risks (gender perspective)

Climate/weather extremes - a gender-based health inequality risk-multiplier (Sorensen et al., 2018; WHO, 2014).

$\checkmark$ Weakness in health care

## Research questions

- What is the effect of temperature and rainfall variabilities on the health of men and women in the working age group?
- What is the association between healthcare services and health outcomes of men and women?
- What is the gender gap in health outcomes among the working age individuals? Do weather effects play a role in explaining the gender health gap?
- What is the contribution of the health care services in explaining the gender gap?


## Methodology - Study area (Uganda)


$\checkmark$ Total population in 2019:44 million (World Bank, n.d).
$\checkmark$ At least $75 \%$ of the inhabitants reside in rural areas (Ibid).
$\checkmark 50.7 \%$ of the total population were female (Ibid).
$\checkmark 51.5 \%(22.8 \mathrm{M})$ of population in the working age (15-64 years) as of 2019 (lbid)
$\checkmark$ Proportion of working age projected to increase until 2070 (UNICEF 2019).
$\checkmark$ Achievement of gender parity - ranked position 65/I53 countries with a score of 0.717 towards (World Economic Forum, 2020).

## Uganda - Health indicators



Figure I: Life expectancy, infant and adult mortality rates in Uganda Source, adapted from the World bank data

## Data sources

## I). Uganda National Panel Survey (UNPS) -LSMS (2009-20I4).

O Pooled sample of rural individuals in 4 waves was 49,644 with $\mathbf{2 2 , 7 4 6}$ individuals in the working age category.

O Individual as well as household factors - health, healthcare access, labor force, education and marital status at individual level.

O Locations geo-referenced.
2) Weather data

O Climate Hazards group Infrared Precipitation with Stations (CHIRPS) data version 2, (Funk et al., 2015).. (1981 to 2009/2014)

O Moderate Resolution Imaging Spectroradiometer-MODIS (Hooker et al., 2018; Wan et al. 2015)

## Data variables (LSMS data) illness prevalence



Illness captured interms of symptoms

## Outcome variables

$\checkmark$ Number of sick days (illness or injury) in last 30 days.
$\checkmark$ Number of work day lost due to illness
$\checkmark$ Dummy variable (Yes/No)- if suffered any illness or injury.

Figure 2: Proportion of men and women who suffered from different illness in the study areas

## Independent variables (LSMS data)

$\checkmark$ Places individuals consulted first when ill (pharmacy/drug shop, private hospital etc).
$\checkmark$ Distance to the health care facility
$\checkmark$ Use of (treated) mosquito net.

## Data Variables (independent) - Weather data

I). Temperature in the month prior to the interview (0C).

O Rainfall in the month prior to the interview (log).
O Negative rainfall deviation
O Positive temperature deviations



Figure 3: Distribution of annual rainfall (a) and temperature (b) deviations from the mean.

## Summary statistics

| Variable (Socio- economic) | Total Sample) $(N=22,746)$ | $\begin{gathered} \text { Women } \\ (N=1 I, 7 I I) \end{gathered}$ | $\begin{gathered} \text { Men } \\ \mathrm{N}=(11,035) \\ \hline \end{gathered}$ | Difference |
| :---: | :---: | :---: | :---: | :---: |
|  | 1 | 2 | 3 | 4 |
| Age (years) | 31.33 | 31.90 | 30.72 | 1.181*** |
| Education (years) | 5.786 | 5.065 | 6.551 | -1.486*** |
| Occupation |  |  |  |  |
| Salaried/wage ( $\mathrm{I}=$ yes) | 0.218 | 0.161 | 0.278 | -0.117*** |
| Business ( $1=$ yes) | 0.177 | 0.172 | 0.183 | -0.010** |
| Farming ( $\mathrm{I}=$ yes) | 0.834 | 0.865 | 0.801 | 0.064*** |
| Income categories |  |  |  |  |
| No personal income ( $1=$ yes) | 0.826 | 0.879 | 0.771 | 0.107*** |
| Income (I<=250000 UGX) | 0.141 | 0.107 | 0.177 | -0.069*** |
| Income (>250000-750000) | 0.027 | 0.012 | 0.042 | -0.031*** |
| Income ( $>750000$ ) | 0.005 | 0.002 | 0.009 | -0.007 |
| Marital status |  |  |  |  |
| Married monogamous ( $1=$ yes) | 0.401 | 0.410 | 0.392 | 0.018*** |
| Married polygamous ( $1=$ yes) | 0.130 | 0.151 | 0.108 | 0.042*** |
| Divorced / Separated (I = yes) | 0.057 | 0.078 | 0.034 | 0.045*** |
| Widow/Widower ( 1 = yes) | 0.039 | 0.068 | 0.006 | 0.064*** |
| Never married ( $1=$ yes) | 0.372 | 0.290 | 0.459 | -0.169*** |
| HH Asset Index | -0.466 | -0.479 | -0.452 | -0.027 |
| WASH index | -0.370 | -0.377 | -0.362 | -0.015 |
| Dependency ratio | 125.75 | 134.91 | 116.03 | 18.88*** |
| HDDS | 7.770 | 7.749 | 7.792 | -0.042 |

## Summary statistics

| Variable <br> ( Health care) | Total Sample) | Women | Men | Difference |
| :--- | :---: | :---: | :---: | :---: |
|  | $\mathbf{I}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ |
| Mosquito net use (I=Yes) | 0.483 | $0.5 I 4$ | 0.450 | $0.064^{* * *}$ |
| Treated mosquito nets (I=Yes) | 0.394 | 0.42 I | 0.365 | $0.056^{* * *}$ |
| Illness consulted (I=Yes) | 0.879 | 0.88 I | 0.876 | 0.005 |
| Distance to health facility (Km) | 4.598 | 4.794 | 4.310 | $0.483^{* *}$ |
| Government hospital (I=Yes) | 0.338 | 0.368 | 0.294 | $0.073^{* * *}$ |
| Private hospital/doctor (I=Yes) | 0.355 | 0.34 I | 0.375 | $-0.034^{* * *}$ |
| Pharmacy or shop (I=Yes) | 0.249 | 0.230 | 0.275 | $-0.044^{* * *}$ |
| Other healthcare (I=Yes) | 0.050 | 0.053 | 0.046 | 0.007 |


| Weather variables | Total Sample | Women | Men | Difference |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Negative rain deviation (I=yes) | 0.382 | 0.377 | 0.386 | 4 |
| Positive temperature deviation (I=Yes) | 0.410 | 0.409 | 0.413 | -0.008 |
| Rainfall (month mm) | 107.65 | 107.02 | 108.34 | -0.003 |
| Temperature (month oC) | 29.16 | 29.21 | 29.11 | -1.318 |

## Summary statistics (outcome variables)

| N | Variable | All individuals | Women | Men | Difference |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (1) | (2) | (3) | (4) |
| 22,746 | Suffered illness ( $\mathrm{I}=$ Yes) | 0.309 (0.462) | 0.356 (0.438) | 0.259 (0.478) | 0.097*** |
| 22,746 | Days illness | 3.164 (6.517) | 3.726 (6.921) | 2.568 (6.001) | 1.157*** |
| 7,028 | Days of illness if $>0$ | 10.220 (8.074) | 10.437 (8.024) | 9.905 (8.138) | 0.532*** |
| 22,746 | Stopped working ( $1=Y$ es) | 0.225 (0.417) | 0.261 (0.439) | 0.188 (0.391) | 0.073*** |
| 22,746 | Days stopped working | 1.482 (4.087) | 1.673 (4.149) | 1.282 (4.009) | 0.391*** |
| 5,129 | Days stopped working if $>0$ | 6.576 (6.37I) | 6.411 (5.970) | 6.819 (6.914) | -0.408** |



## Empirical strategies

I) Two parts model (Belotti et al., 2015).

Separate estimations at extensive margin (if any day of illness or workday lost).
Intensive margins (intensity of days/how much - number of days) of those ill.
Overall effect of the outcome variable - total sample.

O Logit model in the first part - the probability that an individual has any illness \& factors
O GLM model in the second part - conditional (No. of days, if any).
O Log link function and gamma as the distribution family.

$$
E\left(Y_{i}\right)=\operatorname{Pr}\left(Y_{i}>0\right) * E\left(Y_{i} \mid Y_{i}>0\right)
$$

O Hurdle negative binomial model (HNBM) - for robustness check.
2) Single index model (GLM, NBM): Health care services on days of illness/workday lost: -

## Empirical strategies : decomposition

Multivariate decomposition methods for non-linear models (Powers et al. (201I).

O Explain sources of differences in women-men illness.
O Quantify inequalities in health to be eliminated or narrowed down, if both groups had same resources or if women had male covariates.

- Overall and detailed decomposition.

$$
\bar{Y}_{w}-\bar{Y}_{m}=\left[F\left(\bar{X}_{w} \hat{\beta}_{w}\right)-\left(\bar{X}_{m} \hat{\beta}_{w}\right)\right]-\left[F\left(\bar{X}_{m} \hat{\beta}_{w}\right)-\left(\bar{X}_{m} \hat{\beta}_{m}\right)\right]
$$

O Logit and count data decomposition approaches.

## Results: weather and days of illness (AME)

| Variables | Total Sample |  |  | Women |  |  | Men |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Logit | GLM | Overall | Logit | GLM | Overall | Logit | GLM | Overall |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| Negative rain deviation | 0.075*** | -0.198 | 0.688*** | 0.083*** | 0.557 | 1.043*** | 0.067*** | -1.228** | 0.337* |
|  | (0.009) | (0.319) | (0.137) | (0.014) | (0.418) | (0.203) | (0.013) | (0.475) | (0.179) |
| Log monthly rain | -0.044* | -0.095 | -0.473 | -0.021 | -0.262 | -0.306 | -0.064* | 0.323 | -0.545 |
|  | (0.025) | (0.779) | (0.345) | (0.036) | (0.997) | (0.502) | (0.034) | (1.215) | (0.462) |
| Log rainfall squared | 0.007** | 0.009 | 0.073* | 0.005 | 0.030 | 0.059 | 0.009** | -0.046 | 0.075 |
|  | (0.003) | (0.100) | (0.044) | (0.005) | (0.129) | (0.065) | (0.004) | (0.156) | (0.059) |
| Positive temperature | 0.023*** | 0.016 | 0.232** | 0.021** | -0.031 | 0.198 | 0.024** | 0.145 | 0.268** |
| deviation | (0.007) | (0.217) | (0.095) | (0.009) | (0.284) | (0.142) | (0.009) | (0.335) | (0.125) |
| Monthly temperature | 0.044*** | -0.041 | 0.423*** | 0.039*** | 0.246 | 0.493*** | 0.049*** | -0.373 | 0.377** |
|  | (0.009) | (0.297) | (0.128) | (0.012) | (0.359) | (0.182) | (0.013) | (0.499) | (0.179) |
| Temperature squared | -0.001*** | 0.000 | -0.006*** | -0.001*** | -0.004 | -0.007** | -0.001*** | 0.006 | -0.006** |
|  | (0.000) | (0.005) | (0.002) | (0.000) | (0.006) | (0.003) | (0.000) | (0.008) | (0.003) |
| Other variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 22,468 | 6,970 | 22,468 | 11,567 | 4,134 | 11,567 | 10,901 | 2,836 | 10,901 |

Standard errors in parentheses $* * * p<0.01, * * p<0.05,{ }^{*} p<0.1$
Other variables include; age, years of schooling, asset index, WASH index, treated net use, occupation, marital status, dependency ratio, survey years

## Weather and days of work lost

|  | Total Sample |  |  | Women |  |  | Men |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Logit | GLM | Total | Logit | GLM | Total | Logit | GLM | Total |
| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| Negative rainfall | 0.068*** | -0.787*** | 0.262*** | 0.080*** | -0.772** | 0.303** | 0.056*** | -0.762* | 0.226** |
| deviation | (0.009) | (0.282) | (0.084) | (0.013) | (0.365) | (0.123) | (0.012) | (0.423) | (0.113) |
| Log month rainfall | 0.018 | 0.499 | 0.226 | 0.036 | I.466* | 0.607** | 0.000 | -1.293 | -0.243 |
|  | (0.024) | (0.662) | (0.215) | (0.034) | (0.801) | (0.304) | (0.032) | (1.141) | (0.303) |
| Log rain squared | -0.001 | -0.059 | -0.022 | -0.003 | -0.184* | -0.069* | 0.001 | 0.162 | 0.034 |
|  | (0.003) | (0.086) | (0.028) | (0.004) | (0.104) | (0.039) | (0.004) | (0.146) | (0.039) |
| Positive temperature | 0.012** | 0.034 | 0.088 | 0.015* | 0.017 | 0.101 | 0.008 | 0.094 | 0.074 |
| deviation | (0.006) | (0.192) | (0.059) | (0.009) | (0.239) | (0.085) | (0.008) | (0.312) | (0.081) |
| Month temperature | 0.027*** | -0.111 | 0.150* | 0.019 | -0.142 | 0.082 | 0.038*** | 0.044 | 0.264** |
|  | (0.008) | (0.250) | (0.078) | (0.012) | (0.290) | (0.106) | (0.012) | (0.444) | (0.116) |
| Temperature squared | $0.000^{* * *}$ | 0.002 | -0.002* | -0.000 |  | $-0.001$ | -0.001*** | -0.001 | -0.004** |
|  | (0.000) | (0.004) | (0.00I) | (0.000) | $(0.005)$ | (0.002) | (0.000) | (0.007) | (0.002) |
| Other variables \& year | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 22468 | 5083 | 22468 | II, 568 | 3028 | 11568 | 10901 | 2056 | 10901 |

Standard errors in parentheses ${ }^{* * *} \mathrm{p}<0.01,{ }^{* *} \mathrm{p}<0.05,{ }^{*} \mathrm{p}<0.1$
Other variables include; age, years of schooling, asset index, WASH index, treated net use, occupation, marital status, dependency ratio, survey years

## Health care services on days of illness

|  | Total sample |  |  | Women |  |  | Men |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Variables | GLM (1) | Truncated NB (2) | Negative <br> Binomial (3) | GLM (4) | Truncated NB (5) | Negative <br> Binomial (6) | GLM (5) | Truncated <br> NB <br> (8) | Negative <br> Binomial (9) |
| Distance to health facility | $\begin{aligned} & \hline 0.125^{* * *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & \hline 0.123^{* * *} \\ & (0.01 \mathrm{I}) \end{aligned}$ | $\begin{aligned} & \hline 0.122 * * * \\ & (0.010) \end{aligned}$ | $\begin{aligned} & \hline 0.1113^{* * *} \\ & (0.0 \mid 2) \end{aligned}$ | $\begin{aligned} & \hline 0.1 I 2^{* * *} \\ & (0.0 \mid 3) \end{aligned}$ | $\begin{aligned} & \hline 0.111 I^{* * *} \\ & (0.0 \mid 3) \end{aligned}$ | $\begin{array}{\|l\|} \hline 0.14 I^{* * *} \\ (0.018) \end{array}$ | $\begin{aligned} & \hline 0.138^{* * *} \\ & (0.018) \end{aligned}$ | $\begin{aligned} & \hline 0.136^{* * *} \\ & (0.017) \end{aligned}$ |
| Government hospital (I=yes) | $\begin{aligned} & -I .128^{* *} \\ & (0.44 I) \end{aligned}$ | $\begin{aligned} & -1.142 * * * \\ & (0.412) \end{aligned}$ | $\begin{aligned} & -1.125^{* * *} \\ & (0.396) \end{aligned}$ | $\begin{aligned} & -0.669 \\ & (0.556) \end{aligned}$ | $\begin{aligned} & -0.686 \\ & (0.527) \end{aligned}$ | $\begin{aligned} & -0.679 \\ & (0.508) \end{aligned}$ | $\begin{aligned} & -1.839 * * * \\ & (0.708) \end{aligned}$ | $\begin{aligned} & -1.867 * * * \\ & (0.660) \end{aligned}$ | $\begin{aligned} & -1.835^{* * *} \\ & (0.63 \mathrm{I}) \end{aligned}$ |
| Private hospital/doctor | $\begin{aligned} & -1.098^{* *} \\ & (0.442) \end{aligned}$ | $\begin{aligned} & -I .128^{* * *} \\ & (0.413) \end{aligned}$ | $\begin{aligned} & -1.114 * * * \\ & (0.396) \end{aligned}$ | $\begin{aligned} & -0.555 \\ & (0.563) \end{aligned}$ | $\begin{aligned} & -0.586 \\ & (0.533) \end{aligned}$ | $\begin{aligned} & -0.583 \\ & (0.5 \text { I } 4 \end{aligned}$ | $\begin{aligned} & -1.979 * * * \\ & (0.696) \end{aligned}$ | $\begin{aligned} & -2.02 I^{* * *} \\ & (0.65 \mathrm{I}) \end{aligned}$ | $\begin{aligned} & -1.988^{* * *} \\ & (0.622) \end{aligned}$ |
| Pharmacy or shop | $\begin{aligned} & -3.214^{* * *} \\ & (0.453) \\ & \hline \end{aligned}$ | $\begin{aligned} & -3.289 * * * \\ & (0.430) \\ & \hline \end{aligned}$ | $\begin{aligned} & -3.209 * * * \\ & (0.413) \\ & \hline \end{aligned}$ | $\begin{array}{\|l} -2.887^{* * *} \\ (0.580) \\ \hline \end{array}$ | $\begin{aligned} & -2.958^{* * *} \\ & (0.558) \\ & \hline \end{aligned}$ | $\begin{aligned} & -2.889 * * * \\ & (0.537) \\ & \hline \end{aligned}$ | $\begin{array}{\|l} -3.768^{* * *} \\ (0.713) \\ \hline \end{array}$ | $\begin{aligned} & -3.86 I^{* * *} \\ & (0.675) \\ & \hline \end{aligned}$ | $\begin{aligned} & -3.766^{* * *} \\ & (0.644) \\ & \hline \end{aligned}$ |
| Weather variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Other covariates | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 6,122 | 6,122 | 6,122 | 3,639 | 3,639 | 3,639 | 2483 | 2,483 | 2483 |

Standard errors in parentheses $* * * p<0.01, * * p<0.05, * p<0.1$
Other variables include; age, years of schooling, asset index, WASH index, treated net use, occupation, marital status, dependency ratio, survey years

## Health care services on work days lost

| VARIABLES | Total sample |  |  | Women |  |  | Men |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | GLM | Truncated NB | Negative Binomial | GLM | Truncated NB | Negative Binomial | GLM | Truncated NB | Negative Binomial |
|  | (1) | (2) | (3) | (7) | (8) | (9) | (4) | (5) | (6) |
| Distance to health facility | 0.092*** | 0.090*** | 0.082*** | 0.089*** | 0.088*** | 0.077*** | 0.092*** | 0.089*** | 0.085*** |
|  | (0.009) | (0.009) | (0.009) | (0.011) | (0.010) | (0.011) | (0.015) | (0.015) | (0.015) |
| Government hospital(I=yes) | -1.182*** | -1.208*** | -1.183*** | -0.900* | -0.907** | -0.977** | -1.691*** | -1.743*** | -1.532*** |
|  | (0.359) | (0.327) | (0.322) | (0.459) | (0.398) | (0.396) | (0.579) | (0.563) | (0.545) |
| Private hospital/doctor | -1.111*** | -1.148*** | -1.088*** | -0.764* | -0.779* | -0.761* | -1.782*** | -1.847*** | -1.671*** |
|  | (0.359) | (0.326) | (0.32I) | (0.464) | (0.402) | (0.399) | (0.564) | (0.555) | (0.537) |
| Pharmacy or shop | -3.041*** | -3.217*** | -3.261*** | -2.745*** | -2.903*** | -2.992*** | -3.546*** | -3.751*** | -3.718*** |
|  | (0.380) | (0.352) | (0.342) | (0.491) | (0.437) | (0.427) | (0.603) | (0.593) | (0.568) |
| Weather variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Other covariates | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 4632 | 4632 | 6122 | 2,776 | 2,776 | 3,639 | 1,856 | 1,856 | 2,483 |

Standard errors in parentheses ${ }^{* * *} p<0.01,{ }^{* *} p<0.05, * p<0.1$
Other variables include; age, years of schooling, asset index, WASH index, treated net use, occupation, marital status, dependency ratio, survey years

## Source of gap in illness between men \& women - decomposition

## Without health care services

|  | Logistic |  |  |  | Negative binomial |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| VARIABLES | Suffered illness (dummy) |  | Stopped working (dummy) |  | Days illness (number) |  | Days stopped working |  |
| Overall decomposition (Women - men) | Coefficie nts | Percent | Coefficient <br> s | Percen <br> t | Coefficient | Percent | Coefficient | Percent |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Characteristics (E) (Explained) | $\begin{gathered} \hline 0.025 * * * \\ (0.003) \end{gathered}$ | 26.61 | $\begin{gathered} \hline 0.024 * * * \\ (0.003) \end{gathered}$ | 33.89 | $\begin{gathered} \hline 0.318^{* * *} \\ (0.076) \end{gathered}$ | 27.997 | $\begin{gathered} \hline 0.155 * * * \\ (0.039) \end{gathered}$ | 40.19 |
| Coefficients (C) - | 0.068*** | 73.39 | 0.046*** | 66.10 | 0.817*** | 72.003 | 0.230** | 59.81 |
| (Unexplained) | (0.009) |  | (0.008) |  | (0.174) |  | (0.092) |  |
| Raw difference | $\begin{gathered} 0.093 * * * \\ (0.008) \\ \hline \end{gathered}$ | 100 | $\begin{gathered} 0.070 * * * \\ (0.007) \end{gathered}$ | 100 | $\begin{aligned} & \text { I.134*** } \\ & (0.168) \end{aligned}$ | 100 | $\begin{aligned} & 0.385 * * * \\ & (0.0896) \end{aligned}$ | 100 |

## With health care services (comparison with columns 5 \& 6 above)

| VARIABLES | $(\mathrm{I})$ | $(2)$ |
| :--- | :---: | :---: |
| Overall decomposition | Coefficients |  |
|  | $0.187 * * *$ | Percent |
| Characteristics (E)- Explained component | $(0.026)$ | 54.02 |
| Coefficients (C) - Unexplained component | $0.159 * * *$ | 45.98 |
| R - raw difference | $(0.056)$ |  |
|  | $0.345 * * *$ | 100 |
|  | $(0.059)$ |  |

## Implication of illness on dietary diversity








## Conclusion

O Both men and women health were negatively affected by weather anomalies at the extensive margins.

O Overall effect of weather variables was significant, positive and of higher magnitude in women than in men.

O Health care services matter in reduction of the number of illness and number of work day lost.
O Health-seeking behaviours is the main source of the women-men health gap in terms of days of illness. Also education, income, occupation.

O Improved access to quality health care and women empowerment.
O Investment in health adaptation such as early warning systems, health insurance.
O Time poverty reduction strategies.

The End
Thank you for listening

