

# Remittances and food security in rural Zimbabwe: Does the gender of the remittances recipient matter?

Terrence Kairiza<sup>a</sup>, George Kembo<sup>b</sup>, Vengesai Magadzire<sup>c</sup>, & Asankha Pallegedara<sup>d</sup>

<sup>a</sup>Department of Economics, Bindura University of Science Education, P. Bag 1020, Bindura, Zimbabwe.

<sup>b</sup>Food and Nutrition Council of Zimbabwe, 1574 Alpes Road, Hatcliffe, Harare, Zimbabwe

<sup>c</sup>RGM School of Intelligence, No 20 Homestead Road, Msasa Park, Harare, Zimbabwe

<sup>d</sup>Department of Industrial Management, Wayamba University of Sri Lanka and Chair of Development Economics, Passau University, Germany

# Outline of presentation

- Introduction
- Research questions
- Study design
- Descriptive analysis
- Empirical estimation and results
- Conclusion and policy recommendations

# Introduction

- A target of the second United Nations Sustainable Development Goals (SDGs)
  - is to end hunger and ensure access by all people, in particular the poor and people in vulnerable situations to safe, nutritious and sufficient food all year round by the year 2030.
- The majority of countries in South Asia and Sub-Saharan Africa (SSA) lagged behind (FAO, 2015; FAO et al., 2015).
- Lack of essential nutrients such as proteins, vitamins, and hem iron lead to malnutrition
- The target essentially looks at ending malnutrition
- Malnutrition especially has long lasting consequences for development
  - including reduced cognitive impairment, reduced school attendance, as well as reduced productivity.
- Interventions to reduced have basically focused on the first 1000 days
  - Window of opportunity
- Interventions have previously focused on WASH and access to food (e.g., SHINE experiment in Zimbabwe).

# Introduction

- Interventions in WASH and food access have recorded modest but insufficient success to meet SDG 2
- This has called upon for MCBM
- In this paper we look at the impact of remittances on food and nutrition security in rural Zimbabwe
- We also included a component of gender
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# Questions

- What is the impact of the gender of the household head on the propensity to receive remittances?
- Do remittances improve household food and nutrition security?
- Is there gender heterogeneity in the impact of remittances on household food and nutrition security?

# Design of the study

- Nationally representative household data on rural livelihoods from a cross-section survey conducted by the Zimbabwe Vulnerability Assessment Committee (ZimVAC).
  - ZimVAC is a consortium comprising of the Zimbabwean government, UN agencies and non-governmental organizations.
  - It is headed by the Food and Nutrition Council of Zimbabwe (FNC) in the president's office
- 2017 data comprises 11,661 rural households in Zimbabwe
- Urban surveys are conducted every five years

# Design of the study

- Four outcome variables at the household level:
  - Consumption of proteins
  - Consumption of vitamins
  - Consumption of iron
  - Dietary diversity score (DDS)
- Key control variable is the reception of remittances

# Descriptive analysis

**Table 1. Background characteristics by gender of the recipient**

	Household head is female	Household head is male	Difference
	[F]	[M]	[F-M]
	(I)	(II)	(III)
Household head age [Years]	52.846	48.421	4.425***
Household head education [8 ascending categories]	2.131	2.746	-0.614***
Married living together	0.187	0.891	-0.704***
Married living apart	0.135	0.032	0.103***
Divorced/Separated	0.117	0.016	0.100***
Widow/widower	0.534	0.036	0.499***
Never married	0.027	0.024	0.002
Household size	4.674	5.172	-0.497***
Household has HIV positive member	0.035	0.042	-0.007*
Household income [USD]	3.310	3.651	-0.341***
Manicaland	0.139	0.103	0.036***
Mashonaland Central	0.102	0.151	-0.049***
Mashonaland East	0.149	0.153	-0.003
Mashonaland West	0.087	0.132	-0.045***
Matabeleland North	0.120	0.116	0.004
Matabeleland South	0.145	0.101	0.044***
Midlands	0.117	0.140	-0.023***
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# Descriptive analysis

**Table 2. Gender differences in nutrition and remittances**

	Household head is female	Household head is male	Difference
	[F]	[M]	[F-M]
	(I)	(II)	(III)
Household consumes proteins [1 if Yes, 0 if No]	0.820	0.865	-0.045***
Household consumes vitamins [1 if Yes, 0 if No]	0.910	0.932	-0.022***
Household consumes iron [1 if Yes, 0 if No]	0.509	0.588	-0.079***
Household dietary diversity score	4.490	4.689	-0.199***
Household receives remittances [1 if Yes, 0 if No]	0.327	0.249	0.078***

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# Empirical estimation and results

- Assessing the impact or the treatment effect of remittances on food security using observational data is confounded by incomplete information arising from the self-selection of observations into remittances (Austin 2009; 2011; Caliendo & Kopeinig, 2008; Heckman et al., 1997).
- Propensity score matching (PSM) is used to eliminate the confounding effects of observational survey data as observational or non-randomized studies always suffer from selection bias unlike randomized control trials (RCTs) which use random treatment allocation.
- Using PSM, we can reduce or eliminate the problem of systemic differences in baseline characteristics between treated and untreated groups (Austin 2009; 2011; Caliendo & Kopeinig, 2008; Heckman et al., 1997).
- We estimate the average treatment effect on the treated (ATT) that provides the impact of remittances on food security food security as follows:
- $$ATT = E(Y_{i1} | Rem_i = 1) - E\{E(Y_{i0} | Rem_i = 0, Pr(Rem_i = 1|X))\} \quad [1]$$

# Empirical estimation and results

**Table 3. Impact of gender on remittances**

VARIABLES	Logit	Probit	OLS
	(I)	(II)	(III)
Household head sex [1 if Male, 0 if female]	-0.288*** (0.0629)	-0.170*** (0.0379)	-0.0573*** (0.0126)
Household head age [Years]	0.0165*** (0.00145)	0.00983*** (0.000866)	0.00327*** (0.000288)
Household head education [8 ascending categories]	0.0230 (0.0189)	0.0140 (0.0113)	0.00439 (0.00368)
Married living together	-0.526*** (0.139)	-0.320*** (0.0830)	-0.105*** (0.0288)
Married living apart	-0.0102 (0.152)	-0.00863 (0.0922)	0.00259 (0.0329)
Divorced/Separated	-0.633*** (0.166)	-0.380*** (0.0991)	-0.128*** (0.0339)
Widow/widower	-0.563*** (0.148)	-0.340*** (0.0895)	-0.112*** (0.0312)
Household size	-0.0313*** (0.00987)	-0.0186*** (0.00589)	-0.00662*** (0.00194)
Household has HIV positive member	-0.0496 (0.113)	-0.0269 (0.0661)	-0.00907 (0.0206)
ln (Household income [USD])	0.000111** (5.35e-05)	6.61e-05** (3.28e-05)	2.20e-05* (1.16e-05)
Manicaland	-0.156* (0.0873)	-0.0894* (0.0520)	-0.0299* (0.0169)
Mashonaland Central	-0.0218 (0.0838)	-0.0125 (0.0501)	-0.00411 (0.0164)
Mashonaland East	-0.126 (0.0814)	-0.0728 (0.0486)	-0.0244 (0.0160)
Mashonaland West	-0.188** (0.0890)	-0.109** (0.0527)	-0.0345** (0.0168)
Matabeleland North	-0.187** (0.0871)	-0.107** (0.0518)	-0.0361** (0.0169)
Matabeleland South	0.159* (0.0834)	0.0984* (0.0505)	0.0345** (0.0176)
Midlands	0.174** (0.0814)	0.105** (0.0491)	0.0360** (0.0168)
Constant	-1.009*** (0.173)	-0.617*** (0.103)	0.275*** (0.0353)
Observations	11,661	11,661	11,661
R-squared	0.0236	0.0236	0.028

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Observations	11,661	11,661	11,661
R-squared	0.0236	0.0236	0.028

# Empirical estimation and results

**Table 4. PSM estimates of the impact of remittances on FS**

VARIABLES	Household consumes proteins [1 if Yes, 0 if No]	Household consumes vitamins [1 if Yes, 0 if No]	Household consumes iron [1 if Yes, 0 if No]	Household dietary diversity score
	(I)	(II)	(III)	(IV)
Household receives remittances [1 if Yes, 0 if No]	0.0271*** (0.00856)	0.00437 (0.00658)	0.0507*** (0.0119)	0.141*** (0.0308)
Observations	11,661	11,661	11,661	11,661



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# Empirical estimation and results

**Table 5. PSM estimates of gender heterogeneity in the impact of remittances on food security**

VARIABLES	Household consumes proteins [1 if Yes, 0 if No]	Household consumes vitamins [1 if Yes, 0 if No]	Household consumes iron [1 if Yes, 0 if No]	Household dietary diversity score
	(I)	(II)	(III)	(IV)
Household head is female [4,138 observations]				
Household receives remittances [1 if Yes, 0 if No]	0.0813*** (0.0139)	0.0197* (0.0108)	0.122*** (0.0194)	0.377*** (0.0508)
Household head is male [7,523 observations]				
Household receives remittances [1 if Yes, 0 if No]	0.00844 (0.0107)	0.00113 (0.00821)	0.0192 (0.0155)	0.0570 (0.0393)

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# Conclusion and policy recommendations

- Results consistent with our other findings on the impact of FinTechs & Remittances on household and firm level outcomes
  - Kairiza, Terrence, Kiprono, Philemon & Magadzire, Vengesai. 2017. Gender differences in access and returns to financial inclusion amongst SMEs in Zimbabwe. *Small Business Economics*
  - Kairiza , Chigusiwa, Kiprono, & Pallegedara. submitted. Does mobile money transfer usage affect household commercialization of farming? Empirical evidence from Rwanda. *RDE*
  - Kairiza, Kembo, Magadzire and Pallegedara. submitted. Gender Attributes of the Impact of Informal Savings and Loans Associations on Food Security in Rural Zimbabwe. *RDE*
- Results have been based on observational data
- RCTs needed to establish causality definitively

**Thank you for your attention**