

Effect of Cash Transfers on Hunger Reduction towards Achieving Sustainable Development Goals among Female-Headed Households in Siaya County, Kenya.

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ABSTRACT

The rate of hunger is high among developing economies derailing achievement of Sustainable Development Goals. Cash transfers provide social protection to the vulnerable. Kenya's Inua Jamii programme issues CTs to Orphans and Vulnerable children, Persons living with Severe Disability and Old Persons. The main objective of this study was to establish the effect of cash transfers on hunger reduction towards achievement of SDGs among female-headed households in Siaya County, Kenya. Numerous literature on cash transfers and SDGs among female-headed households point towards a significant effect of CTs on reducing hunger. The study was founded on the Household Welfare Theory which suggests income and consumption as the best measurements of household welfare. The target population was 109,680 female-headed households in Siaya County and sample size of 399 FHHs using the Yamane formula. A correlational design was adopted to study the relationship between cash transfers and SDGs. Data was collected using a structured interview schedule. Reliability and validity of data instruments was tested during the pilot study and results found to be consistent with final study. A binary logit regression analysis of data collected revealed cash transfer to have a coefficient (-1.212) and p value (0.004). Increasing cash transfer by 1% significantly reduces probability of a FHH experiencing hunger by 1.2%. A higher frequency of meals and balanced diet in the household reduces hunger level. Conclusion was drawn that cash transfers had a significant effect on overall achievement of SDGs and further study can be done on nutritional outcomes. The study recommended more targeted approach in inclusion of female-headed households with special consideration to household size.

Keywords: Cash transfer; Sustainable Development Goals; Hunger reduction; Female-headed households.

INTRODUCTION

Poverty denies one access to basic human needs like food and clean water, hindering quality living standards vital for significant economic development (Dauda, 2017). Upon the expiry of Millennium Development Goals (MDGs) in 2015, 17 Sustainable Development Goals (SDGs) were adopted (Morton, Pencheon, & Squires, 2017). The SDGs include life below water, climate action, life on land, gender equality, zero poverty, good health, zero hunger, quality education, clean water and sanitation, clean energy, reduced inequality, decent work, innovation, sustainable cities, responsible consumption and production, partnerships, peace and justice. SDGs centered on human capital development through partnerships to address inequality, promote economic development and preserve the environment (Sachs, 2012). Studies on SDGs disclose that goals targeting hunger eradication have a greater impact but lack of political goodwill and sufficient financial support have been the main impediment to the continuance of environmental policies (Hull, Robertson, & Mortimer, 2020). The eight inter-dependent Millennium Development Goals were established by member states of the United Nations in 2000 to exterminate poverty & hunger, reduce gender inequality, enable universal education and combat HIV/AIDS among other targets (Wysokińska, 2017). The MDGs focused mainly on developing countries and were heavily funded by developed countries. They achieved 50% percent reduced poverty, improved sanitation and increased development partnerships (Gaspar, Amaglobeli, Garcia-Escribano, Prady, & Soto, 2019). Globally, high-income countries such as

Sweden score well on the Sustainable Development Goals economic progress index while low-income countries have a low score in all SDGs generally (Andrea, 2018).

The World Health Organization defines hunger as the inadequacy of a diet to sustain good health and normal activity, growth, and development among individuals. One in every 9 people is food insecure and most likely to be female (WHO, 2018). Gendered poverty exists and women are more affected by resource constraints, unemployment and gender-based violence than men (Julka & Das, 2015). More interventions are required to counter hunger and malnutrition, especially among children.

Boccia, et al., (2016) define cash transfers as social protection initiatives that provide income to the poor to reduce their economic vulnerability and create an enabling environment to flourish from birth to old age. Without money constraints, households can purchase or produce a variety of foods and increase food security and quality (Tirivayi, Knowles, & Davis, 2016). Cash transfers have gained prominence in emerging economies as an effective means to tackle hunger at the household level which can help achieve Sustainable Development Goals (Kirera, 2012).

In Sub-Saharan Africa, majority of cash transfers focus on hunger alleviation and food security (Hjelm, 2016) mainly due to instances of drought, floods and other climatic problems. In Malawi for instance, Bhalla, Handa, Angeles, and Seidenfeld (2018) contend that cash transfer programs significantly influenced the quality of diet and reduced stunted growth among children. South Africa's long apartheid rule which was advantageous to their social welfare system, greatly reduced poverty, increased child literacy and education level (Graven, 2014). Migwi (2017) found that cash transfer given to urban poor women in Nairobi, Kenya enabled them to save and invest towards achievement of other Sustainable Development Goals not just reducing poverty.

The ailing elements of social protection in the society set the stage for the enactment of Kenya's social transfer policy. The Orphans and Vulnerable Children Cash transfers (OVC-CT) was therefore introduced in 2004 guided by the constitution which accords every Kenyan the right to basic needs and social security (Constitution of Kenya, 2010). The objective was to retain orphans and vulnerable children in a family set-up and prepare them for prosperity (Omolo, 2017). The pilot program was rolled out among 500 households in former Kwale, Nairobi and Garissa districts with each beneficiary receiving Kshs.500 monthly. The cash transfer later extended in 2006, to non-pensionable old persons who are more than 65 years of age in 2007, Persons Living with Severe Disability-CT (PWSD-CT) in 2010 and finally became a universal programme in 2017. Currently, about 1,094,372 households are supported across the 47 counties with beneficiaries receiving 2,000 shillings per month up from Ksh.1500 in 2010 (Omolo, 2017). Beneficiary households have been reported to eat more balanced, frequent meals and their children are less absent from school (Roger, 2009).

Literature on cash transfers and sustainable development goals give varied views though pointing to the same outcomes. Ervin, et al., (2017) through baseline data and a randomized control trial method found that in Zambia, cash transfers increased consumption and food security among households. In Uganda, Blattman, Fiala, & Martinez (2020) also carried out a random evaluation of the impact of social grants on young people of 16-35 years old and determined that cash grants stimulated them to acquire skills and kick-start self-employment. Haushofer & Shapiro, (2016) through a randomized clinical trial, observed households' responses to unconditional transfer programs in Kenya. The evidence revealed that although recipient's gender did not matter, there was a more notable footprint on female recipients. Most studies on cash transfers employ a randomized control trial research design. The covid-19 pandemic further unfolded that hunger is a major crisis. The Government of Kenya has 4 nationwide cash transfers namely the Old Persons-Cash Transfer, Cash Transfer for Orphans and Vulnerable Children, Persons with Severe Disability-Cash Transfer and the Hunger Safety Net Programme for ASAL areas (Kenya National Social Protection Policy 2011). The Inua Jamii Cash Transfer Programme which is the umbrella for the OVC-CT, OP-CT and

PWSD-CT is the largest and most universal program and the focus of this study. Before cash transfers, the annual progress report of 2004/2005 reported Kenya’s population at 35 million, 4.2% of children were severely malnourished and 15.4% of the general population considered to be at risk of extreme hunger. Ten years after the introduction of cash transfers, the annual progress report 2014/2015 showed 11% of children were underweight. The Kenya Poverty Report of 2021 signals cash transfer program design challenges, technical and financial issues hampering implementation and insufficient statistics for more coverage and inclusion of beneficiaries especially in the rural areas. The monthly pay out has also not been reviewed since 2010 to account for the high cost of living and population pressure. These challenges slow the achievement of the SDG -2030 agenda. The main objective of this study focuses on the Inua Jamii cash transfer program as an intervention to steadily reduce hunger among female-headed households in Siaya County.

A. Research Objectives

The main objective of this study is to establish the effect of cash transfer on hunger reduction towards achieving sustainable development goals among female-headed households in Siaya County, Kenya.

B. Research Questions

Does cash transfer have a significant effect on reducing hunger among female-headed households in Siaya County?

C. Research Hypothesis

H_0 : Cash transfers have no significant effect on hunger reduction in female-headed households in Siaya County.

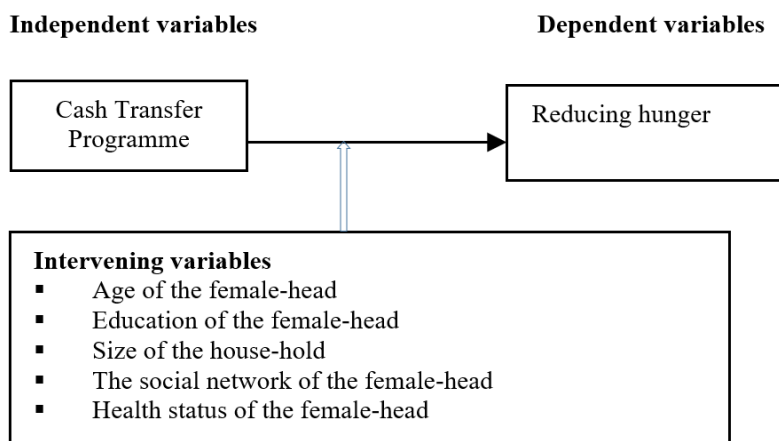
D. Scope of the study

The area of study was the six sub counties of Siaya County and data collected from female-headed households across the county.

E. Conceptual Framework

The conceptual framework summarizes that social assistance through cash transfers to vulnerable individual households influences their consumption and expenditure decision (Devereux & Sabates Wheeler, 2004). The study expects that providing more income to the female-headed household will increase food consumption. By connecting selected research questions and theory, the study is built on the hypothesis that providing regular cash transfers to vulnerable female-headed households can potentially reduce hunger in their household.

Fig.1 Conceptual framework



Source; (Researcher, 2023)

LITERATURE REVIEW

The study adopted household welfare theory that is based on household income and consumption-based decisions.

Household Welfare Theory

The theory was proposed by Deaton in 1989. The theory assumes that the basic decision making unit about consumption and investment in society is the household. A household with K individuals consume X bundles of goods of prices P hence the K^{th} individual consumes n_k goods, $X_k=(X_{k1}, X_{knk})$ with prices $P_k=(P_{k1}, \dots, P_{knk})$ as postulated by (Chavas, Menon, Pagani, & Perali, 2018). Many public policies assume that income and accumulation of assets is an adequate indicator of household welfare. The household spends some resources on goods and services to maximize utility against a budget constraint (Shikur, 2020). This theory is relevant for the study as it considers expenditure data and dwelling of the household as macro-determinants of household welfare. These variables are used to target vulnerable households that will benefit cash transfers. The social intervention injects income into the household which increases demand and consumption of food items (Devereux, 2016).

Empirical Literature on Cash Transfers and Hunger reduction among Female-Headed Households

An estimated 795 million people are undernourished in the world today with a high of 23% in Sub-Saharan Africa alone (Hjelm, 2016). Lack of sufficient food causes serious nutrient deficiencies among affected populations (Ecker & Nene, 2012). According to case studies by Tiwari, et al., (2016) in Zambia, Lesotho, Kenya, and Ghana, there is a notable increase of 35% in food expenditures as a result of cash transfers but no measure on whether the increase in food expenditure translates to increase in dietary quality and nutrient intake. Dietrich & Schmerzeck (2019) estimated the ramifications of cash transfers on nutrition in Kenya using the difference-in-differences model. They found that the program positively influenced food diversity and value of purchased foods but does not individualize nutrition at the household level.

Hjelm (2016) conducted an impact evaluation study on cash transfers' repercussions on food security in 8 Sub-Saharan countries through randomized control trials and longitudinal propensity score matching. She found evidence that food security is influenced by cash transfers. Bhalla et al. (2018) reported that in Malawi, even though the program alone did not significantly contribute to food expenditures, there was an 11% increase in the frequency of meals in a day. Sufficient income enables households to purchase or produce variety of foods which increases food quantity and quality (Tirivayi, Knowles, & Davis, 2016).

The number of undernourished people has dropped by almost half globally in the past two decades but covid-19 has exposed weaknesses in food supply chains among vulnerable nations (Heggen, Sandset, & Engebretsen, 2020). Bhalla, Handa, Angeles, and Seidenfeld's (2018) expressed scepticism on whether cash transfers alone are adequate to eradicate hunger or further exploration for other interventions is necessary. This study therefore aims to establish the effect of cash transfers on reducing hunger among female-headed households by influencing diet quality and nutrient intake through a correlational design.

METHODOLOGY

The philosophical assumption of this study is that quantitative data will enable testing of the hypothesis through measurable variables (Needleman & Needleman, 1996). A correlational design was therefore suitable for the study to weigh the relationship between variables (Peteros, Columba, Etcuban, Almerino, & Almerino, 2019). The correlation coefficient will help to establish whether increasing cash transfers has any significant effect on reducing hunger on among female-headed households in Siaya County. Siaya County

was the area of study and is made up of six sub-counties. The population of Siaya County as per the 2019 census is about 993,183 with 240,000 households and women account for 521,496 of the population. The target population was female-headed households in the county. The Kenya Integrated Household Budget Survey 2015/2016 through the Kenya National Bureau of Statistics indicates that out of 240,000 households in Siaya County, 109,680 are female-headed. A suitable sample size was arrived at using the Yamane formula (Chaokromthong & Sintao, 2021).

$$n=109680/(1+109680(.052))$$

$$n=399$$

Where, n = Sample Size N = population (109680 FHHs) e = level of precision at 95%

Multistage sampling ensured that respondents were fairly represented across the 6 sub-counties (Campbell, et al., 2020). Siaya county has 6 sub counties. Out of the six sub counties, 13 households from each of the 30 wards and 4 more each from the larger wards of Rarieda and Gem made up the sample of 399 households. Structured interview schedules with standardized, closed-ended questions aided to collect primary data and reduce interviewer bias (Jayaratne & Jayatilleke, 2020). Qualitative observations were useful to know more about the household demographics (Hamilton & Finley, 2019). The instrument for data collection was accompanied by a preliminary letter obtained from the University and personally handed to the participants. A preliminary visit to the social services office was done to declare the intention to serve the research instrument and to get to know where to locate the targeted female-headed households. Test-retest reliability was achieved through a pilot test of 25 respondents in the West Uholo location to note the consistency in responses and time taken to respond. The area has similar characteristics to the study population. Respondents from the pilot study were excluded from the final study. Internal reliability of how well the test measures the variables of interest was measured using the Cronbach alpha formula whereby a value of 0.7 and above was acceptable. Face validity was determined through expert opinions from resourceful persons in the field of economics (Shrotryia & Dhanda, 2019). Content validity conducted through analysis of common attributes among the theoretical framework of the topic ensured that all areas are appropriately covered. Construct validity of inferences made about the study was done using the Rasch model to test correct responses. Convergent validity can be measured by correlating findings from this study with similar studies.

The Econometric Model

The study's main objective is to establish the effect of cash transfers in reducing hunger among female-headed households in Siaya County. The conceptual framework illustrated that the achievement of this sustainable development goal is influenced by other intervening variables. The questionnaires were clustered through statistical analysis of the SDG after intervention of cash transfers. This study makes use of binary categorical values 'yes' or 'no' and unit of measure is probability hence its suitability. A binary logit regression model was applied to analyze binary responses. The main objective model is,

$$\text{Prob}(Y_{\text{zero hunger}}=1|X) = \beta_0 + \beta_1 X_{\text{Cash transfer}} + \beta_2 K_{\text{frequency of meals}} + \beta_3 K_{\text{balanced diet}} + e_i \dots (2)$$

Estimating the logit model gave the probability that the female-headed household is not hungry, upon receiving cash transfers controlled by the household's demographics.

FINDINGS

A response rate of 377 (94%) out of the targeted 399 respondents was realised and adopted for analysis. According to Mugenda and Mugenda (2003), a response rate above 80% is acceptable for further statistical

analysis. The average age of the female head was found to be 49 years. Kenya’s current life expectancy is 65 years; this could imply a low productivity age for the should-be breadwinner. 85.7% of the female-head had reached primary level or below as the highest education level due to poverty, ignorance and poor exposure. Low literacy level can affect the individual’s employability and overall social and economic decision-making. Most households had an average of five members against 3.9 as per the 2019 census showing no much variation. The table also indicates that 52.8% of the household heads had recurring or permanent health issues which could imply constant health care costs. Poor health can also limit economic participation and further worsen non-beneficiaries. Beneficiaries might have to use part of the money to cater for these costs instead of investing or purchasing other needs. 51.7% of the female-heads had membership in at least one social group where they do mostly weekly table banking and merry-go rounds. Beneficiaries of cash transfers are able to save part of their pay-out and access credit in case of an emergency or investment opportunity. Social networks provide a sense of belonging which has emotional and mental benefits.

Effect of Cash Transfers on Reducing Hunger Among Female-Headed Households in Siaya County

This was measured in terms of frequency of meals and diet diversity as non-monetary indicators of hunger levels in the household.

Table 4.9: Food Consumption Score within 7 Days

	N	Minimum	Maximum	Mean	Std. Deviation
How many meals did you eat in the past 7 days?	377	.00	21.00	16.9523	10.73114
How many meals did underage and children eat in the past 7 days?	363	.00	35.00	14.5207	7.34896

Household members, both children and adults had an average of 2 meals per day. The WHO recommends at least 3 meals a day to meet the daily nutritional requirement for good health and development. The data shows sign of food insufficiency among the female-headed households because a large part of the farm produce is sold upon harvest to get income for other needs of the household. The land is fragmented within the homestead so farming is largely subsistent with no excesses. Poor storage for produce means that it is disposed of when harvested or cannot be well stored for dry seasons.

Table 4.10: Coping Mechanism in Food Security

Food	No	Yes
We relied on borrowed food	179 (47.5%)	198 (52.5%)
We limit food portion size	163 (43.2%)	214 (56.8%)
We restricted food consumption to certain members of the family only	188 (49.9%)	189 (50.1%)
We reduced number of meals eaten per day	119 (31.6%)	258 (68.4%)

The food scarcity reported above can be extreme forcing the households to adopt ways to cope. The leading coping mechanism adopted by 68.4% of the respondents was to drop the third meal to two meals in a day. Other households limited food portions, and restricted consumption of certain foods. There is indication of risk of undernutrition especially for children which has reduces economic productivity or hamper proper growth and development of the affected population.

Table 4.11: Balanced Diet in the last seven days

Food	No	Yes
Meat	161 (42.7%)	216 (57.3%)
Vegetables	37 (9.8%)	340 (90.2%)
Carbohydrates	68 (18.0%)	309 (82.0%)
Cereals	70 (18.6%)	307 (81.4%)
Fruits	57 (15.1%)	320 (84.9%)
Probability	21.65%	79.15%

About 79.15% of the female-headed households were able to have a balanced meal over the course of seven days. The households kept livestock and could get milk and animal protein occasionally, indigenous fruits though seasonal were locally available as well as local vegetables and cereals forming the most consumed food categories. Diet diversity depended on good farming practices and climatic factors beyond the control of respondents. The cash transfers would increase food expenditure and enable households to afford various foods atleast every other day.

Inferential Data on Cash Transfer on Hunger Reduction among Female-Headed Households in Siaya County

H_0 : Cash transfers have no significant effect on reducing hunger among female-headed households in Siaya County

Logit regression of cash transfer (X_Cash_Trans), frequency of meals (K_Frequency_Meal) and balanced diet (K_Bal_Diet) was done against reducing hunger.

Table 4.17: Logit Regression Model 2

Zero Hunger		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	X_Cash_Trans	-1.212	.424	8.184	1	.004	.298
	K_Frequency_Meal	.127	.040	10.220	1	.001	1.136
	K_Bal_Diet	3.091	1.000	9.546	1	.002	21.999
	Constant	-5.665	1.107	26.193	1	.000	.003
Variable(s) entered on step 1: X_Cash_Trans, K_Frequency_Meal, K_Bal_Diet.							
-2Log likelihood =181.614							
Cox & Snell R Square =.127							
Nagelkerke R Square =.201							
Chi-Square(3) =28.555							
Sig. = 0.000							

The logit model results were given as;

$$\text{Prob}(Y_{\text{zero hunger}}=1|X) = -5.665 - 1.212X_{\text{Cash transfer}} + 0.127K_{\text{frequency of meals}} + 3.091K_{\text{balanced diet}}$$

A variation of 20.1% in reduction of hunger was associated with the three independent variables while other variables contributed 79.9% according to the Nagelkerke $R^2=0.201$. The coefficients of cash transfer (-1.212) and p value of (0.004), implied that increasing cash transfer among female-headed households by 1% reduces probability of a household experiencing hunger by 1.2% significantly. Increasing frequency of

meals (0.127, $p=0.001$) by 1% reduces hunger level by 0.12%. Balanced diet had a positive coefficient (3.091) and p value of (0.002). Frequency of meals and balanced diet both had positive significant effect on reducing hunger. Food security was also dependent on other factors such as climatic conditions, proper farming practices, household size, land size for farming. Cash transfers only increased food expenditure but not nutritional outcomes such as growth and development.

This concurs with what Bhalla et al. (2018) reported in Malawi, that even though the program had no notable consequence on the food expenditure there was only an increase in the frequency of meals in a day. They recommended additional interventions alongside cash transfers. Tiwari, et al., (2016) in Zambia, Lesotho, Kenya, and Ghana, noted an increase of 35% in food expenditures as a result of cash transfers but could not ascertain whether the increase in food expenditure translated to increase in dietary quality and nutrient intake. This study draws conclusion that cash transfers therefore significantly reduce hunger among female-headed households in Siaya County.

CONCLUSIONS

This study's main objective was to establish the effect of Cash Transfers on reducing hunger as a means of achieving Sustainable Development Goals Among Female-Headed Households in Siaya County, Kenya. The study concluded that cash transfers had significant effect on reducing hunger hence can help to achieve the agenda 2 of SDGs of Zero Hunger by 2030.

RECOMMENDATIONS

The recommendation is that cash transfers should bring on board more eligible female-headed households with more consideration to the household size. Other interventions to enhance coping mechanisms for food security such as irrigation, cultivation of drought-resistant crops, proper food storage need for collaborative efforts between the government and other stakeholders. This will enhance food security more sustainably and Zero hunger will be achieved when cash transfers are converted to sustainable food production in the long run.

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