

MOSHI CO-OPERATIVE UNIVERSITY

**CASH TRANSFERS IMPACT ON HOUSEHOLD POVERTY REDUCTION:
EXPENDITURE PATTERNS, FOOD DEMAND AND WELLBEING IN
LINDI DISTRICT, TANZANIA**

MOSHI CO-OPERATIVE UNIVERSITY

**CASH TRANSFERS IMPACT ON HOUSEHOLD POVERTY REDUCTION:
EXPENDITURE PATTERNS, FOOD DEMAND AND WELLBEING IN
LINDI DISTRICT, TANZANIA**

**BY
GIDION OBEID NJUGA**

**A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENT FOR
THE AWARD OF DOCTOR OF PHILOSOPHY OF
MOSHI CO-OPERATIVE UNIVERSITY**

NOVEMBER, 2023

DECLARATION AND COPYRIGHT

I, Gidion Obeid Njuga declare that this thesis is my original work and that it has not been presented and will not be presented to any other higher learning institution for a similar or any other academic award.

Signature



Date: October 2, 2023

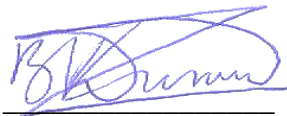
This thesis is a copyright material protected under the Berne Convention, the Copyright and Neighboring Rights Acts of 1999 and other international and national enactments, in that behalf, on intellectual property. It may not be reproduced by any means, in full or in part, except for short extracts in fair dealing, for research or private study, critical scholarly review or discourse with an acknowledgement, without the written permission of the author and Moshi Co-operative University.

CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by Moshi Co-operative University a thesis titled “**Cash Transfers Impact on Household Poverty Reduction: Expenditure Patterns, Food Demand and Wellbeing in Lindi District, Tanzani**” in fulfillment of the requirements for the award of a degree of Doctor of Philosophy of Moshi Co-operative University.

1. Prof. Benedicto B. Kazuzuru

(Supervisor’s Name)



(Supervisor’s Signature)

Date: **October 4, 2023**

2. Dr. William B. Warsanga

(Supervisor’s Name)



(Supervisor’s Signature)

Date: **October 4, 2023**

DEDICATION

This work is dedicated to my parents Mr. Obeid and Mrs. Monica, my beloved wife Pendo, my son Ushindi, and my daughters Eline and Malaika.

ACKNOWLEDGEMENTS

I am grateful to my Lord, my Saviour, Jesus Christ, the King of kings, for it is not by my might nor by my power but by His Spirit that I was able to successfully complete my Doctor of Philosophy studies. I highly appreciate my employer, Moshi Co-operative University and my family members for their support during my research work. This work would not have been completed if it was not for the insightful guidance of my supervisors, Prof. Benedicto B. Kazuzuru and Dr. William B. Warsanga. I also extend thanks to all staff of Moshi Co-operative University, Directorate of Research and Postgraduate Studies, Head of Accounting Department, Mr. Lucas Patrick, my office mates Dr. Victor Shirima, Dr. Yuda Msaki, Dr. Lucas Njau and Mr. Kanti Kimario for their invaluable support during my entire study period. Many thanks to Tanzania Social Action Fund and Village Executive Officers at Lindi District for giving me permission to collect data and for their cooperation during my data collection exercise. I appreciate the assistance of Wenceslaus Mbilango, Senior Community Development Officer at Lindi District for providing me with necessary information on cash transfer programme in Lindi District.

Special thanks to Dr. Prosper Kimaro, Dr. Jones Kaleshu, Dr. Isack Kazungu, Dr. Alban Mchopa, Dr. Esther Towo, Dr. Geoffrey Kweka, Prof. Lucas Mataba, Dr. Meda Mrimi, Dr. Cyril Komba, Dr. Richard Msuya, Dr. Neema Kumburu, Prof. Baltazar Namwata, Dr. Bikolimana Muhihi and Dr. Nathaniel Towo for their invaluable comments of improving my thesis. To my fellow PhD candidates, Kelvin Milano, and Rose Likangaga, I thank you for your support.

However, I am entirely responsible for any shortcomings in this study.

TABLE OF CONTENTS

DECLARATION AND COPYRIGHT	i
CERTIFICATION	ii
DEDICATION	iii
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENTS	v
LIST OF TABLES	ix
LIST OF APPENDICES	x
LIST OF FIGURE	xi
ABBREVIATIONS AND ACRONYMS	xii
EXTENDED ABSTRACT	xiv
CHAPTER ONE.....	1
1.0 INTRODUCTION	1
1.1 Background to the Study	1
1.1.1 Global perspective of Cash Transfers (CTs).....	1
1.1.2 Tanzania perspectives of Cash Transfers	3
1.2 Statement of the Problem.....	5
1.3 General Research Objective	7
1.3.1 Specific Research Objectives	7
1.4 Research Questions and Hypotheses	7
1.4.1 Research questions	7
1.4.2 Research Hypotheses	7
1.5 Justification of the Study	7
1.6 General Summary of Theories and Framework used	9
1.6.1 Ladder of citizen participation	9
1.6.2 Engel theory	10
1.6.3 Almost Ideal Demand System Framework	10
1.6.4 Theories of poverty	11
1.7 The Conceptual Framework	12
1.8 The General Methodology.....	14
1.8.1 Geographical coverage.....	14
1.8.2 The philosophical underpinnings of the study	15
1.8.3 Research design and approaches.....	15
1.8.4 Sample size and sampling strategies	16

1.8.5 Data collection techniques	18
1.8.6 Reliability and validity	19
1.8.7 Data analysis	20
1.9 Ethical Considerations	21
1.10 Organization of the Thesis	22
REFERENCES	23
CHAPTER TWO.....	33
2.0 Implementation of Community Based Targeting Mechanism: A Local Perspective in Lindi District, Tanzania	33
2.1 Abstract.....	33
2.2 Introduction.....	34
2.3 Concept of Community Targeting Mechanism and Theoretical Framework ...	37
2.3.1 Community targeting mechanism	37
2.3.2 Ladder of citizen participation theory	38
2.4 Methodology.....	39
2.5 Findings and Discussion	44
2.5.1 Community perception on cash transfer targeting mechanism	44
2.5.2 Households' factors influencing community's perception on CBT mechanism	47
2.6 Conclusions and Policy Implications.....	50
2.7 Limitations and area for further studies.....	51
REFERENCES	52
CHAPTER THREE	58
3.0 Spending Patterns of Households Participating in Cash-transfer Programme in Lindi District, Tanzania	58
3.1 Abstract.....	58
3.2 Introduction.....	59
3.3 Theoretical Framework.....	62
3.4 Methodology.....	63
3.5 Findings and Discussions	72
3.5.1 Impact of cash transfer on households spending patterns.....	72
3.5.2 Theoretical implications.....	77
3.6 Conclusions and recommendations	77

REFERENCES	79
APPENDICES	85
CHAPTER FOUR	87
4.0 Cash Transfer and Food Demand in Lindi District, Tanzania.....	87
4.1 Abstract.....	87
4.2 Introduction.....	88
4.3 Theoretical Framework and Hypothesis development	91
4.3.1 Almost ideal demand system framework.....	91
4.3.2 Hypothesis.....	91
4.4 Research Methodology	92
4.4.1 Research Design.....	92
4.4.2 Geographical coverage.....	92
4.4.3 Population and sampling.....	92
4.3.4 Data collection techniques and tools.....	93
4.3.5 Ethical Considerations	94
4.3.6 Analytical Model.....	94
4.4 Results and Discussion	98
4.4.1 CT effect on budget share of specified foods	98
4.5 Conclusions and Recommendations	102
4.5.1 Conclusions.....	102
4.5.2 Recommendations	102
REFERENCES	104
APPENDICES	110
CHAPTER FIVE	112
5.0 Impact of Cash Transfer on Poverty Reduction in Lindi District, Tanzania.....	112
5.1 Abstract.....	112
5.2 Introduction.....	113
5.3 Hypothesis development and theoretical framework	115
5.3.1 Concept of poverty.....	115
5.3.2 Hypothesis development.....	116
5.3.3 Guiding theory	117
5.4 Methodology.....	118
5.5 Results and Discussion	124
5.5.1 CT impact on households' poverty level	124

5.5.2 Sensitivity analysis.....	129
5.6 Theoretical implications	130
5.7 Conclusion and Recommendations.....	130
REFERENCES	132
APPENDICES	139
CHAPTER SIX.....	140
6.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	140
6.1 Summary of the Findings.....	140
6.1.1 Community perception on community-based targeting mechanism.....	140
6.1.2 Impact of CT on households spending patterns	140
6.1.3 Effect of CT on food demand	141
6.1.4 The impact of CT on poverty reduction.....	141
6.2 Conclusions.....	141
6.2.1 Community perception on community-based targeting mechanism.....	141
6.2.2 Impact of CT on households spending patterns	142
6.2.3 The effect of CT on food demand	142
6.2.4 The impact of CT on poverty reduction.....	143
6.3 Recommendations.....	143
6.3.1 Community perception on community-based targeting mechanism.....	143
6.3.2 Impact of CT on households spending patterns	143
6.3.3 The effect of CT on food demand	144
6.3.4 Impact of CT on poverty reduction.....	144
6.4 Contribution of the Study	144
6.4.1 Contribution to the literature.....	144
6.4.2 Contribution to practice	145
6.4.3 Contribution to the theory	145
6.4.4 Contribution to the methodology	146
6.5 Areas for Further Research	147
6.6 Limitations of the Study	147
APPENDICES	148

LIST OF TABLES

Table 1. 1: Sample size for selected nine villages.....	17
Table 2. 1: Description of Model Variables	42
Table 2. 2: Rotated components matrix and factorial loadings	43
Table 2.3: Community's perception on implementation of CBT mechanism	45
Table 2.4: Overall household perception on the implementation of CBT mechanism	47
Table 2. 5: Households' factors influencing community's perception on implementation of CBT mechanism	48
Table 2.6: The difference in perception of CBT mechanism between beneficiary and non-beneficiary households	49
Table 3. 1: Description of spending categories	66
Table 3. 2: Estimation of ATT on households' budget shares	71
Table 3. 3: OLS budget shares equations-Working Leser Model	72
Table 3. 4: Marginal budget shares and spending elasticities	76
Table 4. 1: HHS Categorical Indicator	96
Table 4. 2: Description of Food Categories	96
Table 4. 3: Estimation of CT effect on households' food budget shares using IV	98
Table 4. 4: Income elasticities of food categories	100
Table 4. 5 : CT effect on food insecurity using IV and descriptive statistics	100
Table 5.1: Results of PCA: Varimax rotation matrix	123
Table 5.2: PSM estimation of overall wealth index	124
Table 5.3: Estimation of impact of CT on housing conditions	125
Table 5. 4: PSM estimation of CT impact on basic services`	126
Table 5. 5: PSM estimation on productive assets.....	127
Table 5.6: PSM estimation on non-productive assets	128
Table 5.7: CT participation sensitivity analysis.	129

LIST OF APPENDICES

Appendix 3. 1 Impact of participating in cash transfer programme on household expenditure patterns (OLS results)	85
Appendix 3. 2: Determinants of household’s participation in CTs programme	86
Appendix 3. 3: Test of balancing property of propensity score	86
Appendix 4. 1 2SLS estimation of CT effect on households’ food budget shares... ..	110
Appendix 4. 2: Estimation of CT Effect on Households’ Insecurity	111
Appendix 4. 3: Description of Household Characteristics Variables.....	111
Appendix 5.1: Operationalization of variables.....	139
Appendix 6.1: Resultant Conceptual Framework	148
Appendix 6.2: Questionnaire.....	149
Appendix 6. 3: Focus Group Discussion Guide	160
Appendix 6.4: Key informants interview guide	161

LIST OF FIGURE

Figure 1.1: Conceptual Framework..... 13

ABBREVIATIONS AND ACRONYMS

AIDS:	Almost Ideal Demand Systems
ATT:	Treatment effect on the treated
CBT:	Community Based Targeting
CCT:	Conditional Cash Transfer
CDD:	Community Driven Development
CMC:	Community Management Committee
CT:	Cash Transfer
CTs:	Conditional and Unconditional Cash Transfers
DED:	District Executive Officer
DHS:	Demographic and Health Survey
FAO:	Food and Agriculture Organization
FGD:	Focus Group Discussion
HEA:	Household Economy Analysis
HHS:	Household Hunger Scale
IV:	Instrumental Variable
KIIs:	Key Informants Interviews
KMO:	Kaiser-Meyer-Olkin
MKUKUTA:	Mpango wa Kukuza Uchumi na Kupunguza Umasikini Tanzania
MoCU:	Moshi Co-operative University
MPI:	Multi-Dimensional Poverty Index
MPPN:	Multidimensional Poverty Peer Network
MSA:	Measure of Sampling Adequacy
NBS:	National Bureau of Statistics
NNM:	Nearest Neighbor Matching
NSGRP:	Growth and Reduction of Poverty
NSI:	Non-Standardized Index
NSPF:	National Social Protection Framework (NSPF)
OLS:	Ordinary Least Square
PCA:	Principal Component Analysis
PMT:	Proxy Means Test
PSM:	Propensity Score Matching
PSSN:	Productive Social Safety Net
PWP:	Public Works Programmes

SDGs:	Sustainable Development Goals
SI:	Standardized Index
SNAP:	American Supplemental Nutrition Assistance Program
TASAF:	Tanzania Social Action Fund
TFNC:	Tanzania Food and Nutrition Centre
TZS:	Tanzanian Shillings
UCT:	Unconditional Cash Transfer
UN:	United Nations
UNDP:	United Nations Development Programme
UNICEF:	United Nations Children's Fund
URT:	United Republic of Tanzania
USA:	United States of America
VEO:	Village Executive Officer
WFP:	World Food Program

EXTENDED ABSTRACT

One of the most popular methods for reducing poverty in Africa, and specifically Tanzania, is cash transfer (CT). However, variables like targeting errors and households' economic decisions limit its impact on numerous aspects of household economic wellbeing. Understanding how these aspects impact the programme's implementation can help in its reform and expansion for improved outcomes. Thus, the present study was conducted in Lindi District to (i) assess community perceptions on Community Based Targeting (CBT) Mechanism and determine households' factors influencing community perception on the transfers (ii) examine the impact of CTs on households' spending patterns (iii) determine the effect of CTs programmes on households' food demand and (iv) evaluate the impact of CTs on poverty reduction. Community perceptions on CBT were analysed using descriptive statistics and factor analysis, and ordinal logit regression was employed to determine households' factors influencing community perception of CBT. Mann-Whitney U test was used to assess the difference between beneficiary and non-beneficiary households on their perception of CBT mechanism. Community perceived performance of the mechanism as average, although complaints of exclusion and inclusion errors were reported. Moreover, the study indicates that sex and participation status of respondents influenced community perception of CBT mechanism. Beneficiary households were more likely to be aware of the villages' meetings conducted to nominate eligible households than non-beneficiary households. Furthermore, the Working Leser Model was used to assess how CTs affected household spending patterns. The study used Propensity Score Matching (PSM) to address the issue of endogeneity which was brought on by the use of the Working Leser model. Marginal budget shares and demand elasticities were calculated using Working Leser model coefficients. The results showed that CTs have a negative influence on the share of the budget allocated to food and favourable impact on the share allocated to non-food and health expenses. Consumables like food and utilities were seen as necessities by both non-beneficiaries and beneficiaries, but durables, investment assets, non-food items, health, and education were regarded as a luxury goods. Moreover, to assess the CT effect on food demand and its implications on food security, Ordinary Least Square (OLS) model adjusted to fit in Almost Ideal Demand Framework was adopted. The study employed the Instrumental Variable (IV) technique to address the challenge of endogeneity. Findings indicated that CTs has effect on demand for roots

and tubers, cereals and vegetables. Roots and tubers are staple foods while cereals are substitute foods in Lindi District, implying that, as the income rises, poor households demand for staple foods together with their substitute side dishes tend to increase. The study also evaluated the impact of CT on households' overall wealth, housing conditions, use of basic services, and productive and non-productive assets by employing Propensity Score Matching (PSM). Nearest Neighbour, Radius caliper and Mahalanobis matching techniques were used to match beneficiaries' and non-beneficiaries' households. Findings indicated that CTs has no significant impact on overall poverty level of recipients' households. Thus, small monthly free handouts to poor households by themselves are not enough to significantly reduce extreme poverty. However, the results indicated significant effect of CTs on five poverty indicators, which are; type of floor, sanitation facilities, livestock, mobile phone and chair. In conclusion, the study indicates that even though small, consistent cash transfer programmes have a noticeable influence on household spending patterns in Tanzania, they are inadequate in eradicating extreme poverty. The study recommends to the Central Government, and TASAF in particular to develop comprehensive multi-intervention programmes capable of significantly influencing various poverty indicators and addressing different aspects of household povert

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

1.1.1 Global perspective of Cash Transfers (CTs)

Poverty has always been a significant issue that has confounded the advancement of human society (Zhou and Liu, 2022; Edet, 2021). The consequences of poverty are far-reaching and long-lasting, including child deaths, lack of access to education and food insecurity, all of which can be caused by poverty and in turn can perpetuate it (World Vision, 2020). This explains why the first goal of the United Nations Agenda for Sustainable Development is to end poverty in all its forms by 2030 (UN, 2015). According to the World Bank (2022), the world continues to make progress toward these goals. In fact, the global poverty rate (at the USD \$ 1.9 poverty line) in 2018 was 8.7 percent, down from 9.1 percent in 2017, equivalent to the decline of 28 million people between the periods. Despite these achievements, extreme poverty persists, with 783 million people around the world still living in extreme poverty or earning less than \$ 1.9 a day (World Bank, 2018). Approximately half of these people live in sub-Saharan Africa.

A range of different development policies and initiatives have been pursued in developing countries such as implementing irrigation systems, applying incentives and policies, adopting transgenic crops and cash transfer (CT) programmes to combat poverty (Wossen and Berger, 2015; Mercer *et al.*, 2012). However, over the years these programmes have failed to yield the expected outcomes or worked too slowly (Kabir and Maitrot, 2019; Kim, 2019). Proponents of cash transfer (CT) programmes asserts that failure of these anti-poverty programmes is due to the fact that they don't address the real problem of poverty which is lack of cash (Haushofer & Shapiro, 2016). This instigated the introduction of conditional cash transfer (CCT) programmes in Mexico, Bangladesh, and Brazil, and today over 63 countries have at least one CCT programme (Xu *et al.*, 2022; Gamarnik, 2020; Machado *et al.*, 2018). CCT programmes are forms of poverty reduction schemes whereby the beneficiary receives free handouts contingent upon compliance with programme conditionalities (Ladhani and Sitter, 2020). In most CCT programmes, the beneficiaries are the poorest households with school-aged children. The primary objective of these programmes is to assist the beneficiary households in meeting their immediate consumption needs and to encourage households to take action in the development of

their children (Kusuma *et al.*, 2017). These actions may include sending the children to school, allowing the children to avail of health services such as vaccinations or deworming pills, and attending parental sessions, among others (Kilburn *et al.*, 2017).

Rigorous evaluations, often built in the programmes, show that CCT has positive impact on investments in children's health and education. Findings from a CCT programme in Indonesia indicated that CCT have impact on incentivized behaviours (Cahyadi *et al.*, 2020). Ladhani and Sitter (2020) assert that the impacts of CCT on human capital investments are obvious because of the conditions attached to the programmes. Hartarto *et al.* (2021) argue that the use of conditions is justified particularly for poor households because of imperfect information about the expected returns on education or inconsistent day-to-day behaviour relative to long-term goals. On the other hand, conditions are criticized because compliance with conditionalities limits participation and increases exclusion errors, particularly when compliance-related constraints are high and cash incentives are relatively low (Durán, 2020). For instance, CT programme with conditions that children attendance in school is mandatory excludes poor households with no children registered in any school.

To mitigate the limitations of CCT, donors and governments started experimenting with Unconditional Cash Transfer (UCT) from the early 2000s (Simpson, 2018). UCT are cash payments provided to financially disadvantaged people without any conditions attached to the use or performance of a particular activity (Afzal *et al.*, 2019). The impact of UCT on various dimensions of poverty is well documented in Zambia, Rwanda and Malawi. In Zambia, Handa *et al.* (2018) found that UCT has impact not only on protective domains such as food security, health, and education, but also on productive domains. This indicates that although objectives of most of these programmes are protective in nature, households might spend this money on transformative domains such as agriculture and long-term investments (Daidone *et al.*, 2018). In Rwanda, Habimana *et al.* (2021) found that UCT do not raise consumption by as much as would be expected, although they have a modest effect on measured poverty rates. Kilburn *et al.* (2016) dispels the notion of Malawians that UCT is charity and provides evidence of its development impacts. The variation on these outcomes from one country to another was due to differences in the design of the programmes and other contextual factors. The targeting approach adopted by

each country and spending behaviours of recipients were key factors determining the outcome (Hadna, 2022; Poirier, 2020).

Nevertheless, UCTs have their own share of criticisms. Liu *et al.* (2019) argue that, transfers may encourage higher spending on alcohol and tobacco, and may be consumed rather than invested. Jooste (2019) on criticism of UCT programmes asserted that poverty eradication is not all about handouts and meeting immediate needs but creating enabling environment that will allow the individual to exercise his inherent trait to better his living standard.

1.1.2 Tanzania perspectives of Cash Transfers

In 2018, about 14 million Tanzanians lived in poverty, up from 12.3 million in 2011 based on the national poverty line of TZS 49,320 per month (Aikaeli et al., 2021). However, using the international extreme poverty line of US\$ 1.9 per day, Tanzania's poverty levels remained unchanged between 2011 and 2018, with 49 percent of the population considered to be poor (World Bank, 2016). Low consumption growth for households in the bottom quintiles led to a negative shared prosperity premium, with consumption growth in the bottom 40 percent being lower than the average for the whole population (World Bank, 2020). This implies that the high economic growth that Tanzania witnessed between 2011 and 2018 has disproportionately benefited wealthier households, leaving out poor households, which constitute a large part of the population. This indicates that, although economic stagnation causes poverty, economic growth does not lift everyone out of poverty equally.

This transpires in spite of the efforts by the government of Tanzania to formulate and adopt pro-poor initiatives and strategies aimed at reducing poverty and mitigating the effects of imbalanced economic growth on poor households. These initiatives include the adoption of the National Strategy for Growth and Reduction of Poverty (NSGRP), popularly known as *Mkakati wa Kukuza Uchumi na Kupunguza Umasikini Tanzania (MKUKUTA)* (URT, 2010). As part of MKUKUTA initiatives, in the year 2000, the government established the Tanzania Social Action Fund (TASAF) as an instrument towards advancing the social protection agenda and poverty reduction through a community participation (UNICEF, 2020). Since its establishment, two phases have been implemented, and at the time this study was carried out, third phase was on its last months. Phase I (2000–2005) focused on

improving social service delivery; capacity enhancement for communities, including overseeing 1,704 community-run sub-projects such as construction and rehabilitation of health care facilities, schools and other small-scale infrastructure; and a Public Works Programme (PWP) component with 113,646 direct beneficiaries (Evans *et al.*, 2020).

The second phase (2005–2013) expanded the first phase commitments to address a shortage of social services, capacity enhancement and income poverty, including a pilot of CCT reaching communities that were strengthened during the first phase (World Bank, 2013). The third phase (2015-2020) consolidated the achievements of the previous phases, expanded CCT and introduced UCT. The objectives of the programme were to improve consumption and human capital accumulation (Kapama, 2019). Until 2018, the TASAF successfully had implemented a massive scale-up of the CT from 250,000 households to 1.1 million households translating to 4.9 million people (10.5 per cent of the population) in Tanzania. Although, there are other CT programmes in the country such as Cash Plus and DREAMS, the TASAF cash transfer programme remains to be the largest in the country in terms of coverage and the amount of money spent (TASAF, 2021).

TASAF cash transfer provides a fixed amount of UCT to identified poor households. At the household level, eligibility criteria for beneficiary households were based on household characteristics of the very poor that were defined by communities themselves through focus group discussions (Evans *et al.*, 2014). Furthermore, additional CCT based on the number of children and compliance with health and education conditionalities (ISPA, 2017). Poor households with children attending school and pregnant women receive both CCT and UCT, while other households receive UCT only. Whether conditional or unconditional, CTs constitute an important source of income for Tanzania's poor households.

There are high expectations from policymakers and donors that CTs will in the long run reduce inter-generational poverty (Apera *et al.*, 2021; Hussain and Schech, 2021). However, poverty is not solely an economic issue but also a multidimensional phenomenon that encompasses a lack of both income and basic capabilities to live with dignity (Gamboa *et al.*, 2020). This means that additional income with a lack of capabilities to generate income will have minimal impacts on poverty reduction. Owusu-Addo *et al.* (2018) argue that one of the factors that influences the degree of

CTs' impact on poverty reduction is the spending behaviours of the beneficiaries. A common myth among Tanzanians is that people will not spend wisely the income that was not earned. Lyimo (2021) asserted that only a small percentage of TASAF-funded Tanzanians wisely spend the handouts. To encourage better spending, the TASAF programme conducts an insurance campaign for beneficiaries to activate their spending on health. In Tanzania, where 32 percent of children under five are stunted and 58 percent suffer from anemia, the CT programme is also expected to have a positive impact on food demand in terms of quantity consumed and diet diversity so as to counteract the negative effects of malnutrition (Constantine *et al.*, 2021). Despite these good wishes, the choice of how the CTs should be spent remains with the CT recipients. People make their choices based on what makes sense to them. What seems logical to donors and government will not always be viewed as logical by poor households (de Groot *et al.*, 2017 and Mader, 2018).

Furthermore, the success of any CT programme on poor households is determined by the effectiveness of targeting mechanism (Stoeffler *et al.*, 2015). Targeting is the process of identifying the right households for participation in the programme. Inaccurate beneficiary identification is expensive since it results in a loss of public funds, but the non-poor are also likely to benefit more from the programme, which was designed for poor households. The government of Tanzania adopted Community Based-Targeting (CBT) to identify the poor in TASAF programmes with the hopes of minimizing targeting challenges (Evans *et al.*, 2014). CBT is a government policy that involves collaborating with community agents to identify poor households that meet the requirements for participation in CTs. The involvement of the community in the matter is regarded as efficient means of reducing identification costs, inclusion and exclusion errors.

1.2 Statement of the Problem

Despite the existence of CT programmes for more than 17 years and more than 10 percent of population being CT beneficiaries, there are still some doubts on whether CT is an appropriate tool for poverty reduction in Tanzania. The number of poor people is on the rise, whereas policy makers and others across the country express their doubts that poor households use transfers to buy some temptation goods such as alcohol and gambling (Evans and Popova, 2014). The then Tanzanian Member of Parliament Magdalena Sakaya was concerned that dishing out cash is not a

sustainable poverty reduction strategy (Mpoki, 2016). Ojomo and Sodoinde (2021) asserts that these programmes are solving a wrong problem. The goal of anti-poverty programmes shouldn't simply be to fight poverty, but to create prosperity by creating employment opportunities.

Rigorous evaluation by Kiyondo and Maghashi (2017) and World Bank (2016) resulted into contradictory findings. Kinyondo and Maghashi (2017) found that CCT has impact on livestock assets, roofing, food and literacy levels signifying that the programme has a long term impact on raising the living standard of beneficiaries' households. A study by World Bank (2016) found that CCT may allow beneficiaries to afford consumption above the poverty line but they would likely fall back into poverty if the support is removed. Both studies lacked empirical information regarding targeting efficiency and households spending behaviours. Experience from Latin America has shown that the success of CTs programmes depends on effectiveness of targeting mechanism and economic choices of households participating in the programme (Vogt-Schilb *et al.*, 2019). Therefore, leaving out such information in the CTs studies, creates paucity of important information in the debate on CTs effectiveness in poverty reduction.

Evans *et al.* (2019) concluded that CCT have impact on health because of an initial surge in clinic visits after 1.5 years due to more visits by those already complying with programme health conditions. Ajefu and Moodley (2020) found that CTs have impact on performance of beneficiaries' children at school; on contrary, Iritani (2016) concluded that CTs have impact on school attendance with no improvements on children's performance. These studies focused on the use of the services, ignoring the expenditure part of the items. Ignoring the expenditure part on the studies on cash transfers complicates the understanding of whether cash transfer programmes serve the intended purpose as the beneficiaries' households could attend clinic to meet the conditions attached to the programme and spend the money on something else.

Furthermore, literature on CTs focused on either CCT or UCT programmes when implemented separately. However, in a situation where CCT and UCT are implemented in parallel, such as by the TASAF programme, ignoring either one isolates an important subpopulation that benefits from the programme. Therefore, this study aimed to assess the impact of CTs by focusing on households receiving both CCT and UCT.

1.3 General Research Objective

The purpose of this study is to assess the impact of CCT and UCT on expenditure patterns, food demand and households' poverty in Lindi District, Tanzania.

1.3.1 Specific Research Objectives

- (i) To assesses community perceptions of CBT mechanism and determine households' factors influencing community perception on the CTs.
- (ii) To examine the impact of CTs on households' spending patterns.
- (iii) To analyze the effects of CTs programmes on households' food demand.
- (iv) To evaluate the impact of CTs on households' poverty reduction.

1.4 Research Questions and Hypotheses

The study was driven by research questions and hypotheses since it used both quantitative and qualitative research approaches. Therefore, research hypotheses were useful in analysis of quantitative data by applying inferential statistics while research questions were inevitable in guiding qualitative research.

1.4.1 Research questions

- (i) What are the factors influencing community perceptions on CBT mechanism?
- (ii) How does CTs shape the spending patterns of households participating in CT programme?
- (iii) What are the effects of CTs on households' food demand?
- (iv) Does CTs have impact on households' poverty dimensions?

1.4.2 Research Hypotheses

The following hypotheses were tested:

H_0 : Spending patterns among CT beneficiaries and non-beneficiaries' households do not differ.

H_0 : CTs has no effect on households' food demand.

H_0 : Participation in CTs is not related to households' poverty dimensions.

1.5 Justification of the Study

The need to understand the impact of CTs on poverty reduction is pressing, given the world leaders' commitment to eliminate extreme poverty by 2030 (Fan and Cho, 2021). According to Mwanga (2020), one of the challenges of CT programmes is

ensuring that cash directly reaches needy recipients, avoiding corrupt processes and opportunistic elites. Tanzania adopted CBT mechanism in what has become the largest UCT programme in the country with the hope that, involvement of community will reduce inclusion and exclusion errors. Nevertheless, an audit conducted in 2017 indicated that there were 73,561 phantom beneficiaries and 22,034 ineligible households (Kamagi, 2020). This signifies existence of loopholes which allow the leakage of transfers to unintended beneficiaries and leave out those who deserve to be included in the programme. Identification of these loopholes is useful for developing appropriate checks and balances to avoid prolongation of these errors. Thus, this study is an effort towards determining these loopholes by tapping into the views of the community itself.

Furthermore, understanding how the recipient of CTs will use the money has the potential to influence the decision for the programme to be expanded, reformed, or both. Conventional wisdom taught us that poor people are poor because of wrong choices they made throughout their life. This concept shaped a number of political decisions and various poverty strategies. In consequence, in Tanzania, doubts on the misuse of money by recipients still remain despite the reported success of CT programmes in other countries such as Kenya, Malawi, and South Africa. If these doubts continue without being verified, they are likely to be used by decision makers at different levels to undermine the implementation of the CT programmes. And since the success of the programme is highly dependent on how the recipients will use the money, the outcomes of this study are of paramount importance in the programme design and its implementation. They are very useful information in determining the amount of CT to be distributed and the timing of its distribution.

Besides, the study is in line with long term vision, Tanzania Development Vision 2025, and the medium-term policy, National Strategy for Growth and Reduction in Poverty (NSGRP) (URT, 2010) and National Social Protection Framework (NSPF). The National Social Protection Framework (NSPF) calls for social protection measures to prevent vulnerable and potentially poor populations from falling into poverty. Among the interventions proposed by NSPF to meet its operation targets is promotion of economic empowerment of vulnerable groups, through such measures as CTs, to enable households with vulnerable members meet their basic needs. Therefore, findings of this study are useful for a review of the effectiveness and the

efficiency of CTs programmes in Tanzania. They shape the improvements required to enhance effectiveness and efficiency in the context of CTs programmes. Furthermore, the findings provide a space for dialogue and policy thinking on poverty reduction based on robust evidence through an objective assessment of progress towards implementation of NSGRP interventions.

1.6 General Summary of Theories and Framework used

1.6.1 Ladder of citizen participation

The first manuscript presented in the second chapter was guided by ladder of citizen participation theory by Sherry Arnstein (1969). Arnstein's ladder is a model for understanding how the degree of citizen participation in government can affect public perceptions of legitimacy, authority and good governance. Arnstein (1969) classifies public participation into eight rungs of participation, which are, manipulation, therapy, informing, consultation, placation, partnership, delegated power and citizen control. Manipulation and therapy represent the lowest level of public participation or no participation at all. Informing, consultation and placation occupy the middle ground where the community is allowed only to express their views but they don't have real power to influence the decisions. True and meaningful participation takes place on the last three levels, partnership, delegated power and citizen control. The theory has been recently applied by Levenda *et al.* (2020) and McEvoy *et al.* (2019) in assessing community participation.

The weakness of Arnstein's theory is the assumption that donors or government provides all resources regardless of the level of community participation. Although this is true for TASAF CTs, in international development projects, donors do not always provide all of the resources. The choice of the theory is based on the fact that CBT is primarily guided by community participation. Furthermore, the level of community participation in CBT varies in each phase from awareness creation to benefits distribution. These phases reflect the rungs of participation described by Arnstein. Therefore, the theory is useful in understanding the difference between non-participation and true citizen power in assessing the motives behind CBT mechanism.

1.6.2 Engel theory

In analysing households' spending patterns, this study adopted the Engel theory, which was developed by Ernest Engel in the year 1857. Engel theory or Engel curve describes the relationship between changing levels of household's income and spending patterns. The best-known single result from the Engel theory is Engel law which states that as the household's income decreases, the larger the proportion of the budget it spent on food. This implies that as the income rises, households' shares of expenditure on goods viewed as necessities tend to decrease. This is despite the fact that expenditure on necessities in terms of Tanzania Shillings, may be increasing. This theory has been applied by Basole and Badu (2015), Démurger and Wang (2016), and Thapa and Acharya (2017) in analysis of households spending patterns.

Engel curves are expressed as spending shares rather than relating total expenditure directly to total income. This makes it possible to compare the expenditures of households with different incomes (Yu, 2018). Furthermore, marginal budget shares and income elasticities can be calculated using information obtained from expenditure share analysis (Li, 2021). Marginal budget shares and income elasticities provide useful information regarding the spending behaviour of CT recipients. This study has applied the theory to model the budget shares of various items, employing variables measuring total spending as a proxy for income, receipt of CT, and households' social and economic characteristics.

The main limitation of Engel's theory is that it only explains variation in expenditure behaviours from income perspectives (Pant, 2017). Although this is true, it ignores the reality that some other factors beyond income can relate to household expenditure behaviours (Kaus, 2012). Therefore, assessment in consistency of the relationship between the income and the budget share of each expenditure category was carried out by using the income elasticity of demand.

1.6.3 Almost Ideal Demand System Framework

The study adopted the Almost Ideal Demand System (AIDS) framework proposed by Deaton and Muellbauer (1980) for the third manuscript. According to the AIDS model, the logarithms of real total spending and relative price are linearly related to the budget shares of the various commodities. Other studies such as Khed and Kb

(2018), Ji (2019) and Lei *et al.* (2021) have applied the model to estimate the impact of CTs on food demand. This framework is useful because it has desirable characteristics of conventional demand analysis and has a functional form that is appropriate for use with households' budget and cross-sectional data (Deaton and Muellbauer 1986; Deaton, 1997). Thus, it is focused on explaining behavioural variations between households in cross-section research (Deaton and Muellbauer, 1980). Since it is typically assumed in such research that all households have access to the same pricing, behavioural differences are only explained in terms of variations in total spending and household characteristics. Besides, the variables suggested in AIDS model are important parameters in any household's food security analysis. So, the study applied the households' economic variables proposed in the model to estimate CT effect on households' food insecurity.

The limitation of the framework is based on the fact that, in estimating demand equations, one of the right-hand-side added explanatory variables, participation in CTs programme, may be endogenous in the sense that it is correlated with the equation error. Therefore, this study applied quasi-experimental techniques to address the challenge.

1.6.4 Theories of poverty

The fourth manuscript adopted two theories that explain the causes of poverty. The first one is the cultural theory, which was propounded by the anthropologist Oscar Lewis (1966). The theory asserts that poor households' choices are reflected in their behaviour, which reflects their cultural background (Lamichhane, 2021). Recently, Burney (2018), Bergolo and Galván (2018) applied the theory to study poor households' behavioural responses to CTs. This theory describes the primary causal pathway through which the CTs are expected to influence individual improvement of behaviours (Owusu-Addo *et al.*, 2019). Thus, the theory is relevant in discussion of factors guiding the choices of poor households in using the CTs. In the views of the cultural theory, it is household's behaviour which dictates how the CTs influence households' poverty level. The theory is criticized for blaming poor households for their situation. Although this may apply in some cases, in other contexts the causes of poverty may be other macro-economic actors who directly or indirectly influence the lives of poor households.

Therefore, to address theoretical limitations of the cultural theory of poverty, the study adopted the structural theory of poverty. The theory is built on the ideas of John Keynes in 1939 from his book, the Great Theory of Economy, Interest and Money. Structural theorists argue that poverty is an outcome of macro and meso-level demographic and economic factors (Brady, 2019). According to Bradshaw (2008), these structural contexts cause problematic behaviours, which instigate poverty. Sharkey (2013) applied the theory to demonstrate how children living in segregated and concentrated poor neighbourhoods are likely to grow stressful than their peer group. Also, Husz (2022) used the theory to explore constraints facing individuals living in poor municipalities. From structuralists' perspectives, macro-economic factors favour wealthier people.

The theory sets ground for justification of government intervention such as CT to ease the economic burden of poor households in the context of missing or malfunctioning markets. CTs programmes to poor households are an effort by the government to break structural barriers that socially exclude poor people and can be a powerful driver towards poverty reduction. Furthermore, the theory is useful in understanding factors beyond households' behaviours which propel or impede objectives of CT programme in various poverty dimensions. Cultural and structural theories complement one another.

1.7 The Conceptual Framework

A conceptual framework represents the relationship between the variables used in a study, graphically or by explanation. The variables used in developing the conceptual framework for this study were identified from the design of the programme, theories, and literature. Figure 1.1 brings together these ideas into a conceptual framework that shows how CTs can affect household's economic dimensions and the causal pathways involved. The diagram is read from left to right. TASAF cash transfer design adopted CBT mechanism to identify eligible households in a given locality. The mechanism involves creating awareness through village meetings, nominating and selecting eligible households, and later on distribution of CTs through VEOs in collaboration with TASAF coordinators. The mechanism is built on the assumption that participation of community in targeting eligible households will minimize unfavourable targeting outcome measured by the level of exclusion and inclusion errors. Furthermore, all identified households qualify to

receive UCT. However, receipt of CCT is based on the condition that households make a series of human capital investments in their young children. Only households with children who attend school and pregnant women qualify for receiving CCTs.

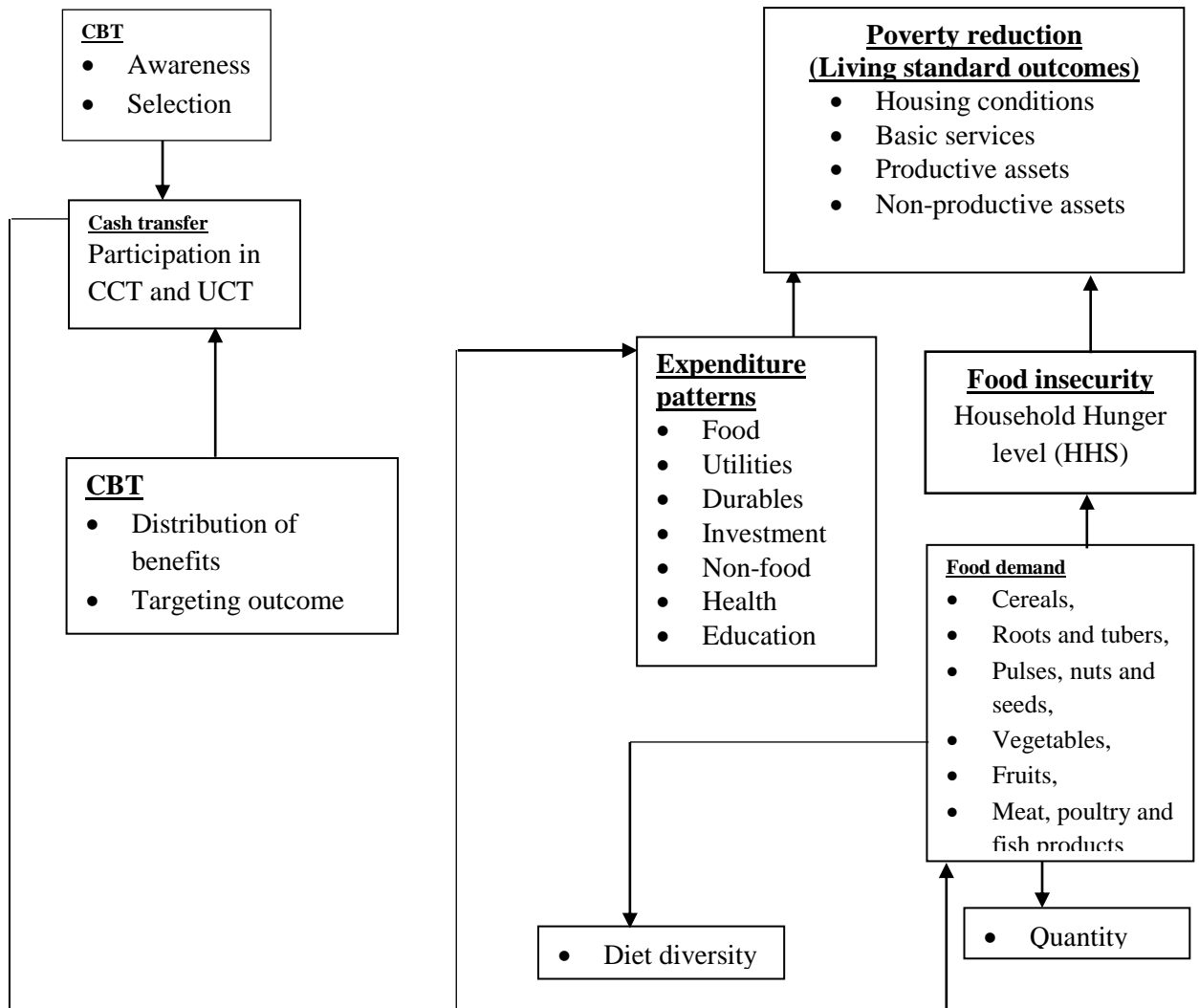


Figure 1.1: Conceptual Framework

The intention of the CTs programme is to trigger a variety of improvements in the lives of beneficiaries and their households. The immediate impact of the programme is typically to raise spending levels, particularly on basic needs such as food, education, health, and utilities. Once immediate basic needs are met, and possibly after a period of time, the influx of new cash may then trigger further responses within the household economy, for example, by providing room for investment in productive and durable assets. According to Engel's law, differences in the spending patterns of households are ascribed as far as possible to variations in the disposable income of the household, when this is the only economic factor that varies between

households. Thus, the expenditure patterns of households participating in CTs programme is expected to differ, with households not participating in the programme as the CTs increase the disposable income of the former.

Furthermore, the increase in income will have direct effect on household food demand. CTs for poor households are designed to enable better nutrition, both by relaxing the budget constraint and by educating women on the health benefits and good nutrition. Studies suggest that CT may reduce households' poverty by raising their living standards (Handa *et al.*, 2018; Kadam, 2016). While this reduction may be direct through changes in expenditure patterns (Nursini *et al.*, 2022), the path through food demand and food insecurity is documented. Poverty is intrinsically related to food insecurity (Marchetti and Secondi, 2022; USAID, 2022). Ntenywa *et al.* (2015) and Hussein *et al.* (2021) concluded that dietary diversity is negatively related with food insecurity. On the other hand, Korir *et al.* (2018) assert that it's the demand for food in terms of quantity that determines food insecurity.

1.8 The General Methodology

1.8.1 Geographical coverage

The study was carried out at Lindi District (currently known as Mtama District) located in Lindi Region, a coastal town in the southeastern part of Tanzania. Lindi is the third poorest region in Tanzania with 38% of population living below the national poverty line (NBS, 2019). Rukin *et al.* (2018) argue that poverty experienced by the people of the coastal regions is caused by lack of proper lifestyle of the coastal town community. This instigated the need to understand how CTs can shape spending behaviours and eventually the poverty dimensions of people living in coastal regions. As of 2018, the region had six districts. Among them, Lindi District was the least developed in terms of living standard indicators such as housing conditions, households' assets and amenities (URT, 2016). Moreover, with 14.8 % of households in Lindi District registered in CT programme, it was the district with the highest percentage of households participating in TASAF cash transfer programme (URT 2018). Thus, the selected district is suitable area to study the effects of CT as the programme was expected to address multiple aspects of households' economic deprivation.

1.8.2 The philosophical underpinnings of the study

The study adopted pragmatism philosophy which is pluralistic and oriented towards what works and practice. In other words, pragmatism allows a study to use multiple methods based on the research problem at hand (Kaushik and Walsh, 2019). The philosophy values both objective and subjective knowledge to meet research objectives. The study chose this approach to have a pluralistic stance of gathering all sorts of data in order to best answer the research questions. According to Maarouf (2019) and Gross (2018) pragmatism brushes aside the quantitative and qualitative divide and ends the paradigm war by suggesting that the most important question is whether the philosophy has helped to find out what the study intends to achieve. A diversity of methods offered a framework to map, triangulate and sequence the research problem against diverse community contexts.

There is relevance of pragmatism philosophical stance in this study because the problem under investigation is about organisational and households' practices through experience as well as action. It's about overcoming the dichotomy between theory and action and give voice to those impacted by organizational process. The problem is about linking beliefs and action through a process of decision-making. Thus, the approach helps the study to holistically address the knowing, acting and experience occurring in CTs programmes. The philosophy guided our sampling strategies by helping us identify information which would most likely provide useful practice-based knowledge, as well as ensuring the sampling process uncovered a range of perspectives.

1.8.3 Research design and approaches

The study adopted quasi-experimental design and used cross-sectional data. Quasi-experimental means that the research included features of a true experiment but with some elements missing (Miller *et al.*, 2020; Rogers and Revesz, 2019). The most common experimental element to be missing is randomization (Borusyak, 2022). Therefore, since assignment to TASAF was not random, the design was appropriate to evaluate the CTs impact on various dimensions of household's economics. The design offers the practical options for conducting impact evaluations in real world settings. The design allows observation of casual relationship between CT programme and post-intervention characteristics of the target population by using cross sectional data (Gope *et al.*, 2019). This involves creation of comparison groups

as similar as possible to the treatment group at baseline. Therefore, in this study treatment and control groups were created. Treatment group included CCT and UCT beneficiary households while control group included CCT and UCT non-beneficiary households. After controlling the influence of unobservable covariances on selection of CTs beneficiary households, the difference between the two groups on the outcome of interest is regarded as the outcome of participating in CTs programme.

1.8.4 Sample size and sampling strategies

Owing to practical difficulties with responses from large survey groups, a meaningful survey sample size had to be determined. An appropriate sample size was calculated by following two steps. The first step was to calculate sample size by using the formula proposed by Yamane (1967) as it was applied by Adriansyah (2020) and Kipunaa (2022). Since the number of households in Lindi district was known, the finite sample size formula presented below was used;

$$n = \frac{N}{N*(e)^2 + 1} = \frac{99,559}{99,559*(0.05)^2 + 1} = 398 \text{ respondents} \dots\dots\dots(1)$$

Where n denotes sample size, N represents the number of households in Lindi district. According to NBS (2019), as of 2019, the total number of households in Lindi district was 99,559. Furthermore, e denotes a precision level of 0.05. As a result, 398 households were suggested as the sample size. However, since this study adopted quasi-experimental design which requires creation of treatment and control groups, the second step was to determine the sample size of each group. White II (2018) advocates splitting 50/50 treatment and control groups because by using Monte Carlo simulation the groups which are equally divided produced the maximum statistical power. Therefore, the 398-sample size was split into two groups comprising 199 households each. Nine villages were systematically selected. The technique is effective since initial assessment indicated no established behavioural or cultural patterns due to village dissimilarity. However, the average amount of CT was distributed per household from one village to another differed. Thus, the list comprising all 88 villages in Lindi district was obtained and arranged in ascending order based on the average amount of CT distributed per household. The first village was randomly selected, thereafter, each ninth village was selected. Table 1.1 presents villages selected, average CT distributed per household and the sample size for each village.

Table 1. 1: Sample size for selected nine villages

S/ N	Village name	Amount of CT distributed in a village	Total No. of beneficiary households	CT distributed per household per 2 months	No. of sampled beneficiary households (d)	No. of sampled non- beneficiary households (e)
1.	Litupu	3,568,000	62	57,548.39	13	13
2.	Makonde	6,746,000	130	51,892.31	27	27
3.	Mnolela	6,236,000	128	48,718.75	26	26
4.	Kilimahewa A	11,102,000	239	46,234.31	50	50
5.	Mikongi	3,780,000	83	45,542.17	17	17
6.	NyangaoB	1,952,000	44	44,363.64	9	9
7.	Nyegedi B	4,914,000	119	41,294.12	25	25
8.	Mpenda	1,974,000	49	40,285.71	10	10
9.	Majengo	3,918,000	104	37,673.08	22	22
Total sample size					199	199

A representative sample size was determined using the number of households participating in CT programme in each of the selected villages. The proportionate sub-sample size formula for calculating the number of households selected in each village is indicated in column (d) and (e) is given below:

$$\text{Sample size} = \frac{\text{Number of beneficiary households in village A}}{\text{Total number of beneficiary households in selected villages}} \times 398 \dots \dots \dots (2)$$

Public works, CCTs, and UCTs were three main TASAF components during the data collection period. Therefore, the treatment group was limited to households that received both CCT and UCT. Codes were assigned to all households receiving CTs, then a computerized number generator was employed to randomly choose sampled households. According to White and Sabarwal (2014), the control group must be drawn from the same population as the treated in order for matching estimators to reduce biasness as it is often measured. Thus, the selection of beneficiaries' households was followed by the selection of non-beneficiary households. A linear snowballing technique was applied to choose non-beneficiary households, where by each respondent gave information about another non-beneficiary household. The technique was useful because the study sought to create a control group which had similar characteristics with the treatment group. The first non-beneficiary household was purposively chosen from each sampled village. The chosen household was categorized as poor on the village meeting but was not in the programme because of other reasons beyond the decision of village meeting. Also, the chosen households had characteristics which could qualify them to receive both CCT and UCT at the same time. VEOs guided the choice of the first respondent. The head of the

household served as the primary respondent, and each household was chosen as one study unit. A responsible household member was chosen to reply to the questionnaire in absence of the household head.

1.8.5 Data collection techniques

The study used a questionnaire to collect data. The tool is recommended in gathering large amount of data at once (Boparai *et al.*, 2018). Furthermore, the tool is effective for measuring behaviour, preferences and opinions (Kumari *et al.*, 2020). Thus, the questionnaire was used to collect data about households' characteristics, expenditure, poverty indicators and perception on CTs programmes. The questionnaire included both open and close ended questions. The use of open and close ended questions enabled the study to obtain both qualitative and quantitative information, resulting in more comprehensive results.

To collect qualitative information, Key Informant Interviews (KII) were used. Key informants provide information directly from knowledgeable people. In this study fourteen key informants were chosen, based on their prior experience. Nine were Village Executive Officers (VEOs), four were TASAF coordinators, and one was the District Nutrition Officer. VEOs were chosen because of their role in identifying poor households eligible for participating in the CT programme. They organized village meetings and led Community Management Committees (CMCs). The fact that the researcher had to access other villagers after getting permission of VEO led to the inclusion of each VEO as a key informant in a sampled village. TASAF coordinators were chosen because of their role in disbursement of CTs. The number of coordinators who were included was determined by the saturation point and their availability during data collection period. The District Nutrition Officer was included because the design of TASAF cash transfer programme requires inclusion of nutrition officers to build capacity of CTs beneficiaries. Lindi district had only one nutrition officer.

Furthermore, FGDs are useful in discussing complex personal experiences, beliefs, perceptions and attitudes of participants through a moderated interaction (Kalamar *et al.*, 2022). Thus, Ten Focus Group Discussions (FGD) were carried out in five villages. Two groups were conducted in one sampled village. The groups were homogenous; one of the two groups in the village included heads of beneficiaries'

households and the other one heads of non-beneficiaries' households. Each group included seven participants. In determining the number of participants for each FGD, the researcher was guided by Khatun and Saadat (2020) advice that the number of participants should be large enough to gain a variety of perspectives and small enough not to become disorderly or fragmented. Participants were drawn from the previously sampled households, using self-selection sampling. The theoretical saturation principle was used to determine the required number of FGDs. Divergent points of view on the same topic were brought together in a validation meeting which included representatives from all FGDs. A validation meeting included ten participants, one from each FGD.

Documentary review was also used in data collection. The review was useful in gathering CTs background information, determining if implementation of the programme reflected programme plans and in developing other data collection tools. The researcher assessed and analysed the documents themselves before extracting content. Appraising documents typically included four criteria: authenticity, credibility, representativeness, and meaning (Rapley and Rees, 2018). Some of the documents reviewed were: ISPA-PWP assessment tool on TASAF PSSN (2017), UNICEF Endline Evaluation Report on PSSN Tanzania (2018), World Bank Tanzania Mainland Poverty Assessment (2019), USAID Household Hunger Scale (USAID, 2011) et cetera.

1.8.6 Reliability and validity

Reliability is an assessment of the degree of consistency between multiple measurements of a variable. There are two forms of reliability; one is the test-retest and the other one which is more commonly used is the internal consistency (Hair *et al.* 2007). This study has adopted the second form which applies to the consistency among the variables in a summated scale. Inter item consistency reliability is a test of the consistency of the respondent's responses to all the items in a measure. To the degree that the items are independent measures of the same concept, they will be correlated with one another. The most popular test of inter item consistency reliability is Cronbach's alpha which is used for multipoint scaled items. The generally agreed upon lower limit for Cronbach alpha is 0.70 although it may decrease to 0.60 in exploratory research (Hair *et al.* 2007). In this study Cronbach's alpha was more than 0.7 which meets the recommended threshold. Furthermore, a

composite reliability was also used in order to overcome the weaknesses of Cronbach's alpha such as assuming that, factor loadings are the same for all items. All composite reliability values were greater than the recommended value of 0.60 indicating that the measurement tool was reliable (Hair *et al.*, 2010). Furthermore, a pilot test was conducted using a sample size of 30 respondents including 15 beneficiaries and 15 non-beneficiaries households from Lindi Municipal. The municipal was not within the study area as suggested by Saturno-Hernandez *et al.* (2019). The initial reliability assessment produced a result of 0.913. Subsequently, after eliminating similar and ambiguous items and re-evaluating the reliability, the Cronbach's alpha coefficient for the items reached 0.879. Since this Cronbach's alpha coefficient exceeded the 0.7 threshold, it can be inferred that the variables employed in the research were deemed reliable.

The validity of an instrument is usually defined as the extent to which the instrument measures what it is designed to measure. It is about determining the relevance of an instrument in achieving the research purpose and addressing the research questions. The study used content validity as recommended by Heale and Twycross (2015). Content validity differs from other types of validity in that it refers to test-based rather than score-based validity. In this study, content validity was ensured by conducting theoretical and empirical reviews on the topic of study to establish important theories and empirical works on CTs and the economic dimensions of households. Experts in the area were consulted to validate the instrument, and some items such as tractors, cars were removed from the questionnaire were removed while others were restated.

1.8.7 Data analysis

Qualitative data were analysed using content analysis. This analysis was appropriate to this study because it looks at the text; so it captures the central aspect of it. Furthermore, it follows a set of systematic procedures; therefore, it is easily replicable. Communication artifacts including audio and texts were coded into themes on the basis of the study's objectives. After coding, the data were categorized and further reduced into meaningful information by using ATLAS Ti software. In some circumstances, direct quotes were picked to complement inferential statistics.

Perception of community on CBT mechanism was assessed by ten items on a 5-point Likert scale. Modes were calculated for each item capturing community's perceptions and indices were created by using Principal Component Analysis (PCA). Furthermore, Ordinal logistic regression model was used to assess household factors affecting community perception on CBT mechanism, and differences in perception between beneficiary and non-beneficiary households towards CBT mechanism were analysed by using Mann-Whitney U test. The study used Working-Leser model in examining the impact of CTs on spending patterns of poor households. To deal with endogeneity which may be caused by households' characteristics, the study employed Propensity Score Matching (PSM). PSM estimates the average treatment effect related to participation in CTs programme on the outcome of interest. Specifically, the study compared the spending patterns of households participating in CTs programme with those not participating, after matching treatment and control groups on the basis of their characteristics. To determine whether there was endogeneity problem the PSM results were compared with those obtained from Ordinary Least Square (OLS) model which comprised control variables similar to those used by PSM in comparing treatment and control group.

The study used PSM to estimate the impact of CTs on household poverty. Average treatment effect of a CT programme on the outcome of interest was calculated. Specifically, the study compared poverty indicators of households participating in CT programmes with those not participating, after matching both groups based on their characteristics. The matching techniques employed were Nearest Neighbour Matching (NMM), Radius Calliper, and Mahalanobis. The difference in poverty levels was then attributed to household participation in the CT programme. Poverty indicators were adopted from living standard measures proposed in the Global Multidimensional Poverty Index (MPI). The MPI was introduced by UNDP and Oxford University (UNDP, 2020). Factor analysis was used to calculate the overall wealth index.

1.9 Ethical Considerations

The study observed research ethical requirements as provided in Moshi Co-operative University (MoCU) general guidelines and regulations for postgraduate studies in 2020. A data collection permit was obtained from MoCU. Thereafter, the permit was submitted to TASAF headquarters where they issued an introduction letter, which

was submitted to the District Executive Director (DED). DED issued a letter introducing the researcher to VEOs. The researcher observed the principles of voluntary participation, and the identities of the respondents were not disclosed. The findings of this study will be submitted to TASAF as that was part of the requirements for obtaining a data collection permit from them.

1.10 Organization of the Thesis

The thesis has been organized into six chapters apart from the preliminary and appendices pages. The first chapter provides background information on the thesis, while the second one presents the first manuscript, which is about local community perceptions of the CBT mechanism. Chapter three presents the second manuscript, which deals with the expenditure patterns of households participating in the CTs programme. Chapter four presents the third manuscript, which concentrates on the effects of CTs on food demand. Furthermore, chapter five presents the fourth manuscript, which is about CTs' impact on poverty reduction. In chapter six, the thesis presents a summary of the findings, conclusions, contributions of the study, areas for further study, and limitations encountered in the course of conducting the research.

REFERENCES

- Adriansyah, M. A., Setiawan, M., & Yuniarinto, A. (2020). The influence of transactional leadership style and work culture on work performance mediated by work motivation. *Jurnal Aplikasi Manajemen*, 18(3), 563-571.
- Afzal, A., Nawazish, M., & Arshad, F. (2019). Conditional vs unconditional cash transfers: a study of poverty demographics in Pakistan. *Economic research-Ekoomskaist raživ anja*, 32(1), 3360-3377.
- Aikaeli, J., Garcés-Urzaínqui, D., & Mdadila, K. (2021). Understanding poverty dynamics and vulnerability in Tanzania: 2012–2018. *Review of Development Economics*, 25(4), 1869-1894.
- Ajefu, J. B., & Moodley, J. (2020). Parental Disability and Children's Educational Outcomes: Evidence from Tanzania. *Journal of Human Development and Capabilities*, 21(4), 339-354.
- Apera, I., Daniel, A., Balogun, M., Mohammed, M., Lawal, A., Abdullahi, K., & Nongo, S. (2021). National Social Register: An Approach to Social Protection and Poverty Reduction in Nigeria. *Radic. Stat. Newsl*, 129, 29-44
- Arnstein, S. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners*.
- Basole, A. and Basu, D. (2015). Non-Food Expenditures and Consumption Inequality in India. *Economics Department Working Paper Series*. 191. doi: <https://doi.org/10.7275/7088892>
- Bergolo, M. & Galván, E. (2018). Intra-household Behavioural Responses to Cash Transfer Programs. Evidence from a Regression Discontinuity Design, *World Development*, 103:100-118. doi: <https://doi.org/10.1016/j.worlddev.2017.10.030>.
- Boparai, J. K., Singh, S., & Kathuria, P. (2018). How to design and validate a questionnaire: a guide. *Current clinical pharmacology*, 13(4), 210-215.
- Borusyak, K., Hull, P., & Jaravel, X. (2022). Quasi-experimental shift-share research designs. *The Review of Economic Studies*, 89(1), 181-213.
- Bradshaw, S. (2008). From structural adjustment to social adjustment: a gendered analysis of conditional cash transfer programmes in Mexico and Nicaragua. *Global Social Policy*, 8(2), 188-207.
- Brady, D. (2019). Theories of the Causes of Poverty. *Annual Review of Sociology*, 45, 155-175. doi: <https://doi.org/10.1146/annurev-soc-073018-022550>

- Burney, S. (2018). In-kind benefits and household behaviour: The impact of SNAP on food-away-from-home consumption, *Food Policy*, 75, 134-146.<https://doi.org/10.1016/j.foodpol.2018.01.010>
- Cahyadi, N., Hanna, R., Olken, B. A., Prima, R. A., Satriawan, E., & Syamsulhakim, E. (2020). Cumulative impacts of conditional cash transfer programs: Experimental evidence from Indonesia. *American Economic Journal: Economic Policy*, 12(4), 88-110.
- Constantine, G., Flora, M., & Marianne S. U. (2021). Social Protection in Tanzania: Challenges in the shift of financing PSSN from external funding to government. Retrieved from www.repoa.or.tz/?publication=social-protection-in-tanzania-challenges-in-the-shift-of-financing-pssn-from-external-funding-to-government on 8/8/2022.
- Daidone, S., Rossi, N. W., & Soares, F. V. (2018). Synergies between social protection and agriculture. *Boosting Growth to End Hunger by 2025*, 2017-2018.
- de Groot, R., Palermo, T., Handa, S., Ragno, L. P., & Peterman, A. (2017). Cash transfers and child nutrition: pathways and impacts. *Development Policy Review*, 35(5), 621-643.
- Deaton, A. (1997). *The analysis of household surveys: a micro econometric approach to development policy*. World Bank Publications
- Deaton, A. and Muellbauer, J. (1980). An Almost Ideal Demand System. *The American Economic Review* 70(3), 312-26
- Deaton, S., and Muellbauer, J. (1986). On measuring child costs: with applications to poor countries. *Journal of Political Economy*, 94(4), 720-744.
- Démurger, S., & Wang, X. (2016). Remittances and Expenditure Patterns of the Left Behinds in Rural China. *China Economic Review, Elsevier*. 37(C):77-190. doi:10. 1016/j.chieco .2015.12.002
- Durán, G. M. (2020). Sustainable development chapters in EU free trade agreements: Emerging compliance issues. *Common Market Law Review*, 57(4).
- Edet, F. F. (2021). Widowhood in Africa: A major challenge to the church and society. *Lwati: A Journal of Contemporary Research*, 18(1), 188-195.
- Evans, D. K., Gale, C., & Kosec, K. (2020). *The Educational Impacts of Cash Transfers for Children with Multiple Indicators of Vulnerability*. Center for Global Development.

- Evans, D. K., Holtemeyer, B., & Kosec, K. (2019). Cash transfers increase trust in local government. *World Development*, 114, 138-155.
- Evans, D.K., & Popova, A. (2014). Unconditional cash transfers and Temptation Goods: A Review of Global Evidence. *Research Working Paper: World Bank, Africa*.
- Evans, D.K., Hausladen, S., Kosec, K., & Reese, N. (2014). *Evaluation report on Community based conditional UCTs in Tanzania*, World Bank. Washington D.C
- Fan, S. G., & Cho, E. E. (2021). Paths out of poverty: International experience. *Journal of Integrative Agriculture*, 20(4), 857-867
- Gamarnik, J. (2020). Empowerment through Poverty Policy: The Evolution of Conditional Cash Transfer Programs in Mexico (Doctoral dissertation, Carleton University).
- Gamboa, G., Mingorría, S., & Scheidel, A. (2020). The meaning of poverty matters: Trade-offs in poverty reduction programmes. *Ecological Economics*, 169, 106450
- Gope, R. K., Tripathy, P., Prasad, V., Pradhan, H., Sinha, R. K., Panda, R., & Prost, A. (2019). Effects of participatory learning and action with women's groups, counselling through home visits and crèches on undernutrition among children under three years in eastern India: a quasi-experimental study. *BMC Public Health*, 19(1), 1-15.
- Gross, N. (2018). Pragmatism and the study of large-scale social phenomena. *Theory and Society*, 47, 87-111.
- Habimana, D., Haughton, J., Nkurunziza, J., & Haughton, D. M. A. (2021). Measuring the impact of unconditional cash transfers on consumption and poverty in Rwanda. *World Development Perspectives*, 23, 100341
- Hadna, A. H. (2022). The Impact of Conditional Cash Transfers on Low-Income Individuals in Indonesia. *Advances in Southeast Asian Studies*, 15(1), 23-41.
- Hair, J. F., Money, A. H., Samouel, P., & Page, M. (2007). Research methods for business. *Education and Training*.
- Hair, J. F., Ortinau, D. J., & Harrison, D. E. (2010). *Essentials of marketing research* (Vol. 2). New York, NY: McGraw-Hill/Irwin.
- Handa, S., Natali, L., Seidenfeld, D., Tembo, G., Davis, B., & Zambia Cash Transfer Evaluation Study Team. (2018). Can unconditional cash transfers raise long-

- term living standards? Evidence from Zambia. *Journal of Development Economics*, 133, 42-65.
- Hartarto, R. B., Wardani, D. T. K., & Azizurrohman, M. (2021). A qualitative study of conditional cash transfer and education aspirations: Evidence from Yogyakarta. *Journal of Social Service Research*, 47(6), 776-785.
- Haushofer, J., & Shapiro, J. (2016). *The short term impact of UCTs to the poor: Experimental evidence from Kenya*. Princeton University
- Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence-based nursing*, 18(3), 66-67.
- Hussain, A., & Schech, S. (2021). Cash Transfer Programmes in Pakistan through a Child Well-Being Lens. *Social Sciences*, 10(9), 330.
- Hussein, M., Law, C., & Fraser, I. (2021). An analysis of food demand in a fragile and insecure country: Somalia as a case study. *Food Policy*, 101, 102092.
- Husz, I., Kopasz, M. & Medgyesi, M. Social Workers' Causal Attributions for Poverty: Does the Level of Spatial Concentration of Disadvantages Matter?. *Soc Indic Res* (2022). <https://doi.org/10.1007/s11205-021-02868-4>
- Iritani, B. J., Cho, H., Rusakaniko, S., Mapfumo, J., Hartman, S., & Hallfors, D. D. (2016). Educational outcomes for orphan girls in rural Zimbabwe: Effects of a school support intervention. *Health care for women international*, 37(3), 303-324.
- ISPA (2017). Assessment of TASAF PSSN in Tanzania Using the ISPA-PWP Tool. Retrieved from <https://ispatools.org/tools/ISPA-Country-Report-Tanzania-PWP.pdf> on 5/11/2022.
- Ji, J. (2019). Demand analysis of processed food using the usage differentiated AIDS model. *Journal of Rural Development (Seoul)*, 42(3), 31-54
- Jooste, K. (2019). Power, Poverty and Socio-Economic Policy in South Africa. *Basic Income Earth Network (BIEN) Hyderabadkonferensie*.
- Kabir, A., & Maitrot, M. R. L. (2019). Qualitative exploration of factors affecting progress in antipoverty interventions: Experiences from a poverty-reduction program in Bangladesh. *Cogent Social Sciences*.
- Kadam, B. S. (2016). Cash transfer subsidy: Directions and implications. *International Journal for Innovative Research in Multidisciplinary Field*, 2(7), 30-38.
- Kamagi, D. (2020. December 18). JPM furious about project mismanagement. *Daily*

News.

- Kapama, D. M. (2019). *Assessment of TASAFA-III in Poverty Reduction: A Case Study of Kanazi Ward-Ngara District, Kagera Region, Tanzania* (Doctoral dissertation, The Open University of Tanzania).
- Kaus, W. (2012): Beyond Engel's Law: Pursuing an Engelian approach to welfare a cross country analysis. *Jena Economic Research Papers*. 2012-028, Friedrich Schiller University Jena and Max Planck Institute of Economics, Jena
- Kaushik, V., & Walsh, C. A. (2019). Pragmatism as a research paradigm and its implications for social work research. *Social sciences*, 8(9), 255.
- Khatun, F., & Saadat, S. Y. (2020). Focus Group Discussion (FGD). In *Youth Employment in Bangladesh* (pp. 77-88). Palgrave Macmillan, Singapore.
- Khed, V., & Kb, U. (2018). *Application of AIDS model to analyse the farm household food demand elasticity: Evidence from panel data* (No. 2058-2018-5228).
- Kilburn, K., Handa, S., Angeles, G., Mvula, P., & Tsoka, M. (2017). Short-term impacts of an unconditional cash transfer program on child schooling: Experimental evidence from Malawi. *Economics of education review*, 59, 63-80.
- Kilburn, K., Handa, S., Angeles, G., Tsoka, M., & Mvula, P. (2018). Paying for happiness: Experimental results from a large cash transfer program in Malawi. *Journal of Policy Analysis and Management*, 37(2), 331-356.
- Kim, J. S. (2019). Making every study count: Learning from replication failure to improve intervention research. *Educational Researcher*, 48(9), 599-607
- Kinyondo, A., & Magashi, J. (2017). Enhancing rural livelihoods in Tanzania: A small-holder farmers' perspective
- Kipunaa, L. S. (2022). Perceptions of Stakeholders on Community Health Volunteers' Contribution to Immunization Uptake in Pokot South Sub-County, Kenya. *African Journal of Health Sciences*, 35(3), 298-306.
- Korir, L., Rizov, M., & Ruto, E. (2018). *Analysis of household food demand and its implications on food security in Kenya: an application of QUAIDS model* (No. 2111-2018-4123). 35 (4). 216–224.
- Kumari, A., Ranjan, P., Vikram, N. K., Kaur, D., Sahu, A., Dwivedi, S. N., ... & Goel, A. (2020). A short questionnaire to assess changes in lifestyle-related behaviour during COVID 19 pandemic. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 14(6), 1697-1701.

- Kusuma, D., McConnell, M., Berman, P., & Cohen, J. (2017). The impact of household and community cash transfers on children's food consumption in Indonesia. *Preventive medicine, 100*, 152-158.
- Ladhani, S., & Sitter, K. C. (2020). Conditional cash transfers: A critical review. *Development Policy Review, 38*(1), 28-41.
- Lamichhane, G. (2021). Tourism for Sustainable Livelihood in Nepal. *Voice of Teacher, 6*(1), 55–63. doi: <https://doi.org/10.3126/vot.v6i1.44067>
- Lei, L. I., Zhai, S. X., & Bai, J. F. (2021). The dynamic effect of income and income distribution on food consumption among adults in rural China. *Journal of Integrative Agriculture, 20*(1), 330-342.
- Levenda, A. M., Keough, N., Rock, M., & Miller, B. (2020). Rethinking public participation in the smart city. *The Canadian geographer/Le géographe canadien, 64*(3), 344-358.
- Lewis, O. (1966). The culture of poverty. *Scientific American, 215*(4), 19-25.
- Li, N (2021). An Engel Curve for Variety. *The Review of Economics and Statistics. 103* (1):72–87. doi: <https://doi.org/10.1162/resta00879>
- Liu, M., Jiang, Y., Wedow, R., Li, Y., Brazel, D. M., Chen, F., ... & Vrieze, S. (2019). Association studies of up to 1.2 million individuals yield new insights into the genetic etiology of tobacco and alcohol use. *Nature genetics, 51*(2), 237-244.
- Long, K. M., McDermott, F., & Meadows, G. N. (2018). Being pragmatic about healthcare complexity: our experiences applying complexity theory and pragmatism to health services research. *BMC medicine, 16*(1), 1-9.
- Lyimo (2021. December.16). Only a small percentage of TASAF-funded Tanzanians wisely spend the handouts, the Citizen Newspaper.
- Maarouf, H. (2019). Pragmatism as a supportive paradigm for the mixed research approach: Conceptualizing the ontological, epistemological, and axiological stances of pragmatism. *International Business Research, 12*(9), 1-12.
- Mader, P. (2018). Contesting financial inclusion. *Development and change, 49*(2), 461-483.
- Marchetti, S., Secondi, L. The Economic Perspective of Food Poverty and (In)security: An Analytical Approach to Measuring and Estimation in Italy. *Soc Indic Res* **162**, 995–1020 (2022). <https://doi.org/10.1007/s11205-021-02875-5>

- McEvoy, R., Tierney, E. & MacFarlane, A. (2019). 'Participation is integral': understanding the levers and barriers to the implementation of community participation in primary healthcare: a qualitative study using normalization mechanism theory. 19 (515): <https://doi.org/10.1186/s12913-019-4331-7>
- Mercer, K.L.; Perales, H.R.;& Wainwright, J.D. (2012). Climate change and the transgenic adaptation strategy: Smallholder livelihoods, climate justice, and maize landraces in Mexico -Global Environmental Change 22. 495-504.
- Miller, C. J., Smith, S. N., & Pugatch, M. (2020). Experimental and quasi-experimental designs in implementation research. *Psychiatry Research*, 283, 112452.
- Mooij, J. (1999). Real targeting: the case of food distribution in India. *Food Policy-Economics Planning and Politics of Food and Agriculture*, 24(1), 49-70.
- Mpoki, G. (2016. December 7). TASAf cash handouts queried. *The Guardian*
- Mwanga, U. R. (2020). *Assessment of the challenges facing conditional cash transfer (CCT beneficiaries in improving livelihood: a case of Chamwino district council* (Doctoral dissertation, The University of Dodoma).
- National Bureau of Statistics (2019). *Tanzania Mainland Key Indicators report*. Retrieved from https://www.nbs.go.tz/nbs/takwimu/hbs/2017_18_HBS_Key_IndicatorReport_Engl.pdf
- Ntwenya JE, Kinabo J, Msuya J, Mamiro P, Majili ZS (2015) Dietary Patterns and Household Food Insecurity in Rural Populations of Kilosa District, Tanzania. *PLoS ONE* 10(5): e0126038. <https://doi.org/10.1371/journal.pone.0126038>
- Nursini, N., Fachry, M. E., & Nurbayani, S. U. (2022). Income Analysis of Poor Households During Covid-19 Pandemic in the Coastal area of South Sulawesi. *Agrisocionomics: Jurnal Sosial Ekonomi Pertanian*, 6(2), 323-338.
- Ojomo, O., & Sodeinde, O. A. (2021). Social Media Skits: Reshaping the Entertainment Experience of Broadcast Audience. *SAGE Open*, 11(3), 21582440211032176.
- Owusu-Addo, E., Renzaho, A. M., & Smith, B. J. (2018). The impact of cash transfers on social determinants of health and health inequalities in sub-Saharan Africa: a systematic review. *Health policy and planning*, 33(5), 675-696.

- Owusu-Addo, E., Renzaho, A. M. N., & Smith, B. J. (2019). CTs and the social determinants of health: A conceptual framework. *Health Promotion International, 34*(6), E106–E118. <https://doi.org/10.1093/heapro/day079>
- Pant, D. (2017). An analysis of the determinants of remittances and effect of remittance on expenditure habits and child welfare in the households of Nepal. Thesis submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy International Development and Applied Economics School of Agriculture, Policy and Development. University of Reading, UK.
- Poirier, M. J. (2020). Geographic targeting and normative frames: revisiting the equity of conditional cash transfer program distribution in Bolivia, Colombia, Ecuador, and Peru. *International journal for equity in health, 19*(1), 1-12.
- Rapley, T., & Rees, G. (2018). Collecting documents as data. *FLICK, Uwe. The sage handbook of qualitative collection. London: Sage, 378-391.*
- Rogers, J., & Revesz, A. (2019). Experimental and quasi-experimental designs. In *The Routledge handbook of research methods in applied linguistics* (pp. 133-143). Routledge.
- Rukin, R. (2018). Economic development as a way to fight against poverty in a coastal society. *Masyarakat, Kebudayaan dan Politik, 31*(2), 230-240.
- Rukin, R., Rahman, B., Toha, A., & Gianawati, N. D. (2018). Coastal Rural Community Economic Development as a Poverty Reduction Efforts. *International Journal of Social Sciences and Humanities Invention, 5*(4), 4627–4633. <https://doi.org/10.18535/ijsshi/v5i4.12>
- Sharkey, P. (2013). *Stuck in Place: Urban Neighborhoods and the End of Progress toward Racial Equality*. The University of Chicago Press
- Simpson, J. P. (2018). Do donors matter most? An analysis of conditional cash transfer adoption in Sub-Saharan Africa. *Global Social Policy, 18*(2), 143-168
- Stoeffler, Q., Mills, B., & Del Ninno, C. (2016). Reaching the poor: Cash transfer program targeting in Cameroon. *World Development, 83*, 244-263.
- TASAF (2021). PSSN-Public Works. Retrieved from <http://www.tasaf.go.t/index.php/tasafcomponents/supported-interventions/public-works-program> on 2/11/2022.

- Thapa, S., & Acharya, S. (2017). Remittances and household expenditure in Nepal: Evidence from cross-section data. *Economies*, 5(2). doi: <https://doi.org/10.3390/economies5020016>
- UN (2015). Make the SDGs a reality. Retrieved from <https://sdgs.un.org/> on 4/06/2022.
- UNDP (2020). 2020 Global Multidimensional Poverty Index (MPI) Charting pathways out of multidimensional poverty: Achieving the SDGs. Retrieved from <https://hdr.undp.org/content/2020-global-multidimensional-poverty-index-mpi>.
- UNICEF (2020). *A Cash Plus Model for Safe Transitions to a Healthy and Productive Adulthood: Midline Report*.
- URT (2010). National Strategy for Growth and Reduction of Poverty (NSGRP II), Ministry of Finance and Economic Affairs. Retrieved from <http://www.tzonline.org/pdf/mkukutalldraft.pdf> on 7/06/2022.
- URT (2016). Lindi Region Basic Demographic and Socio-Economic Profile. Retrieved from <https://lindi.go.tz/storage/app/uploads/public/58d/618/b80/58d618b80cc67883898328.pdf> on 2/11/2017.
- URT (2018). Tanzania Social Action Fund Fourth Quarter Progress Report April – June, Dar es Salaam, Tanzania.
- USAID (2011). Household Hunger Scale: Indicator Definition and Measurement Guide: Food and Nutrition Technical Assistance II Project, FHI 360. Washington DC.
- USAID (2022). What we do? Agriculture and food security. Retrieved from <https://www.usaid.gov/what-we-do/agriculture-and-food-security> on 7/9/2022.
- Vogt-Schilb, A., Walsh, B., Feng, K., Di Capua, L., Liu, Y., Zuluaga, D., ... & Hubaceck, K. (2019). Cash transfers for pro-poor carbon taxes in Latin America and the Caribbean. *Nature Sustainability*, 2(10), 941-948.
- Weiss, J. (Ed.). (2005). *Poverty targeting in Asia*. Edward Elgar Publishing.
- White II, M. (2018). How big should control group be in a randomized control group? Retrieved from <https://www.markhw.com/blog/control-size> on 24, December 2019.
- White, H., and Subarwal, S. (2014): *Quasi experiment designs and methods: Methodological Briefs Impact Evaluation No. 8*, UNICEF: New York.

- World Bank. (2013). Implementation, Completion and Results Report on a Credit Grant to the United Republic of Tanzania for Tanzania Second Social Action Fund (TASAF II) P085786, Washington DC: World Bank.
- World Bank (2016). *Tanzania Productive Social Safety net: Findings from impact evaluation baseline survey*. Washington, D.C.
- World Bank (2018). April 2018 global poverty update from the World Bank. [<http://blogs.worldbank.org/developmenttalk/april-2018-global-poverty-update-world-bank>] site visited on 21/09/2018.
- World Bank. (2019). Tanzania mainland poverty assessment; Tanzania's Path to Poverty Reduction and Pro-Poor Growth PART 1. <http://www.copyright.com/>
- World Bank. (2020). *Poverty and shared prosperity 2020: Reversals of fortune*. The World Bank. Retrieved from <https://www.im4change.org/upload/files/Poverty%20and%20Shared%20Prosperity%202020%20Reversals%20of%20Fortune%20World%20Bank%20Group.pdf>
- World Bank. (2022). Poverty and Shared Prosperity 2022: Correcting Course. Retrieved from <https://elibrary.worldbank.org/doi/abs/10.1596/978-1-4648-1893-6>
- World Vision (2020). What is poverty? Retrieved from <https://www.worldvision.com.au/global-issues/work-we-do/poverty> on 4/7/2022.
- Wossen, T., & Berger, T. (2015). Climate variability, food security and poverty: Agent-based assessment of policy options for farm households in Northern Ghana. *Environmental Science Policy*, 47, 95–107. doi:10.1016/j.envsci.2014.11.
- Xu, S., Shonchoy, A. S., & Fujii, T. (2022). Assessing gender parity in intrahousehold allocation of educational resources: Evidence from Bangladesh. *World Development*, 151, 105730.
- Yamane, T. (1967). Research methods: determination of sample size. *University of Florida, IFAS Extension*.
- Yu, X. (2018). Engel curve, farmer welfare and food consumption in 40 years of rural China. *China Agricultural Economic Review*, 10(65-77) [http://&WT.mc_id=RePEc]. Site visited on 6/10/2021
- Zhou, Y., & Liu, Y. (2022). The geography of poverty: Review and research prospects. *Journal of Rural Studies*, 93, 408-416.

CHAPTER TWO

2.0 Implementation of Community Based Targeting Mechanism: A Local Perspective in Lindi District, Tanzania

Gidion Njuga¹, Benedicto Kazuzuru², and William Warsanga³

¹Lecturer, Moshi Co-operative University, Tanzania, Email: gidionjuga@gmail.com.

²Associate Professor, Sokoine University of Agriculture, Tanzania, Email: kazuzurub@gmail.com

³Lecturer, Moshi Co-operative University, Tanzania, Email: wbarnos@gmail.com

2.1 Abstract

Deciding on which poor households targeting mechanism is appropriate has always been a challenge to policy makers. In view of the challenge, Tanzania adopted Community Based Targeting (CBT) for poor households' cash transfer programme. The design was expected to increase legitimacy of the programme at local level, though it's exposed to elite capture and information distortion which may, in turn, negatively affect the legitimacy level of the programme. This paper assesses community perceptions of CBT mechanism in Lindi district and determines influence of households' factors on community perception on the transfers. Data were collected using a questionnaire which included a Likert scale, and they were analysed using factor analysis, ordinal logit regression and Mann-Whitney U test. Community perceived performance of the mechanism was average, although complaints of exclusion and inclusion errors were reported. Threshold set by programme design, information distortion and other implementation flaws were blamed for such errors. Moreover, the paper indicates that sex and participation status of respondents influenced community perception on CBT mechanism. Beneficiary households were more likely to be aware of the villages' meetings conducted to nominate eligible households than non-beneficiary households. The study recommends that programmes for targeting poor households should be designed in a way that criteria set for households' participation are matched with available resources. Moreover, the study suggests modification of Productive Social Safety Net (PSSN) operational manual (URT, 2013) so that community actively participate in selecting and scrutinizing eligible households by removing exclusion mandate from the hand of Community Management Committee (CMC).

Key words: Community Based Targeting, Cash transfer, Perception

2.2 Introduction

Through the Tanzania Social Action Fund (TASAF), the Tanzanian government implemented a conditional cash transfer programme for low-income households in pilot areas since 2005 (UNICEF, 2020). The government scaled up conditional cash transfer and introduced unconditional cash transfer in 2013 to consolidate achievements of the pilot study. The objective was to reach out one million households living below the basic needs poverty line in 159 councils in Tanzania Mainland (URT, 2013). The effect of free handouts to poor households towards poverty reduction is well documented. Studies have consistently demonstrated that cash transfers are immensely effective in alleviating extreme poverty throughout the world (Benasius, 2017; Dou, 2016).

Nonetheless, in context where public resources are constrained, policy makers have been concerned on how to best target the intended individuals or households at reasonable cost (Handa *et al.*, 2014). The question is of paramount importance; as Verme and Gagliarano (2018) argue, the most accurate targeting mechanism might be expensive and less cost-effective while less accurate targeting be affordable and cost-effective. The need to balance both targeting accuracy and costs underlines the challenges that governments come across in identifying poor households and generating mechanism to deliver benefits. Molyneux *et al.* (2016) assert that inaccurate identification and targeting of poor households has been one of the factors contributing to failure of cash transfer programmes.

In order to address the challenge of accuracy and costs, the government of Tanzania adopted Community Based-Targeting (CBT) to identify the poor (Evans *et al.*, 2014). CBT is a government policy of collaborating with community agents to identify recipients for cash transfer (Conning and Kevane, 2002). The approach raises the awareness of the villagers and hence allows community to participate in setting pre-determined criteria for targeting and delivering the cash transfers to poor households (Benasius, 2017). Village leaders call for meetings in which all the villagers are invited to air out their opinions on who deserves to participate in the programme. Households that the community perceive to be poor stand higher chances of being selected, though their assessment is prone to subjectivity and may not conform to the design of the programme (Hypher and Veras, 2016). The involvement of the community in the matter is regarded as an efficient means of

reducing identification costs and therefore increase the legitimacy of the programme to community (Stoeffler *et al.*, 2016).

Although community participation is expected to improve social acceptability of the targeting decisions, concerns of unfairness on the selection of poor households have been reported in Malawi and Zimbabwe (Ellis and Manda, 2014; MacAuslan and Riemenschneider, 2014). The feelings that everyone deserves a share of government support and no one is poorer than another one have been reported to effect social acceptability of the poor households' identification mechanisms in most parts of Africa (Platteau *et al.*, 2014). Then again, involving society in targeting mechanism creates the possibility of elite capture (Briggs, 2018). Indeed, some politicians and donors might be more interested in setting organizations to meet their own needs, more than achieving poverty reduction (Nyamongo, 2012). Alignment of leaders and administrators' perceptions with that of community has always been challenging. Decisions about who and how to target, regularly raise intense debate (Devereux *et al.*, 2015).

Efficient targeting would, in particular, succeed in limiting inclusion error and exclusion error of cash assistance programmes (Bah *et al.*, 2018). Inclusion error occurs when un-intended households receive cash transfer benefits and exclusion error when intended households do not receive cash transfer benefits. The flawed inclusion of households who are not part of the targeted population normally means money misused (Karlán and Thuysbaert, 2016). In contrast, exclusion error reduces the impact of the programme in poverty reduction (Kidd *et al.*, 2017). Inclusion and exclusion errors might be the outcome of the programme design or implementation weaknesses. Whether owing to the design or implementation, targeting errors, regardless of how small they are, have negative implications in terms of community's trust in the government.

Liu *et al.* (2018) asserts that social trust affects legitimacy of the community-based programmes. In Niger, CBT has low legitimacy among local population (Premend and Shnitzer, 2018). In contrast, the mechanism is more preferred by local community in Indonesia to other targeting mechanisms such as Proxy Means Test (PMT). The degree of trust among residents and the way the targeting mechanisms are communicated and implemented could explain the difference in outcomes between these two countries. In the context of Niger, communities appear to suspect

manipulation risk and less trust in leaders who may be viewed as trying to benefit themselves. Therefore, understanding of how the perception of a particular local community influences the relative performance of the chosen targeting mechanism cannot be overemphasized.

The World Bank (2018) discovered that in Tanzania, 86 percent of prelisted households and 66 percent of non-targeted households have positive attitudes toward the targeting mechanism. Moreover, it was found that the community did not think that personal interests influenced the targeting mechanism. Notwithstanding these interesting findings, the Minister of State in the President's office, Public Service and Good Governance, ordered suspension of five TASAF officials after a verification exercise unearthed a total of 55,692 ghost cash transfer beneficiary households (Mbago, 2016). An audit conducted in 2017 indicated that there were 73,561 phantom beneficiaries and 22,034 ineligible households (Kamagi, 2020). Such statements and audit suggest the existence of elite capture in targeting of poor households in the TASAF programme.

On the other hand, Kurdi *et al.* (2018) found that, in a particular locality, subjective perception of the targeting effectiveness reflects the quantitative results in the same area. Therefore, inconsistency of the findings may be attributed to political, historical, social and cultural factors which are likely to influence community trust on perceptions-gathering teams. The World Bank's reliance on government agencies in data collection may compromise results since beneficiaries may be pressured to provide convenient information. Moreover, most studies (White, 2018; Nssah, 2018; Brown *et al.*, 2017) ignore the fact that poor household mistargeting may arise after the identification exercise is concluded. The list of the names identified during the identification exercise may differ from the list of actual recipients of the cash transfer.

Thus, in reducing subjectivity, this study avoided the direct use of government agencies in data collection. Moreover, since the moderator had no direct link with the partners of the programme, the effect of sponsor bias was minimized. The moderator reiterated the independence status whenever possible. Informed of the possibility of mistargeting after the identification exercise, the study sought to understand the payment system and the extent of inclusion and exclusion errors during the identification and implementation stages.

Furthermore, the reviewed literature reveals a lack of a formal comprehensive assessment on community perception of cash transfer targeting mechanisms in Tanzania. Although recent trends indicate an increasing number of studies on cash transfer programmes, particularly on TASAF related programmes (Mzingula and Madeye, 2020; George and Ulriksen, 2021; Prencipe *et al.*, 2021; Mohamed and Hamad, 2022), community perception of the targeting mechanism is rarely discussed. In a participatory programme design such as the cash transfer programme in Tanzania, the perception of the local community cannot be disregarded during preparation, monitoring, evaluation, and design of the intervention. Understanding local community perceptions of cash transfer programme implementation could help to increase the programme's positive impacts (DFID, 2011). Moreover, Tanyanyiwa (2015) asserts that successful participation requires a blend of various households' factors. Thus, the objectives of this paper are to (i) assess local community perceptions of the implementation of a community-based targeting mechanism and (ii) determine influence of household factors on local community perceptions of the community-based targeting mechanism.

2.3 Concept of Community Targeting Mechanism and Theoretical Framework

2.3.1 Community targeting mechanism

Targeting mechanism carries various definitions based on the question the study intends to address. Targeting, according to Weiss (2005), is the process of using policy tools to identify the disadvantaged within a population. According to Weiss, targeting process ends when the identification of the poor is concluded. On the other hand, targeting was described by Mooij (1999) as the identification and selection of particular groups, households, or people in order to distribute benefits to them. Mooij's definition includes a broad view of targeting which contemplates distribution of benefits as part of the targeting process. This study adopted the definition propounded by Mooij because, while correct identification of poor may be achieved, there is possibility of mistargeting during distribution of benefits. Money intended for poor households may end up in the hands of fraudulent leaders.

While there are several targeting mechanisms, including the Proxy Means Test (PMT), geographic targeting, the Household Economy Analysis (HEA), and others, there is an increasing focus on community-based targeting mechanisms. Community

targeting is a sub-set of community participation. Therefore, its main assumption is that communities lead the decision-making process. This community-led arrangement includes three key elements: awareness creation, selection of beneficiary households and distribution of benefits. All these elements involve some level of community participation. A failure to appropriately balance these levels of community participation inevitably leads to one of the two types of errors associated with targeting. These include the errors of under-coverage or exclusion and the error of leakage or inclusion. Programmes are deemed effective if they can minimize inclusion and exclusion errors while keeping low targeted costs. Thus, the study conceives that effectiveness of community-based targeting programme is determined by levels of community awareness and participation in selection of beneficiaries and distribution of benefits.

2.3.2 Ladder of citizen participation theory

The study draws the insights from ladder of citizen participation theory developed by Sherry Arnstein (1969). Arnstein asserts that citizens may collaborate with governmental organizations, political figures, non-profits, and private sector groups to develop or carry out public policies and programmes, though the level of participation varies. Arnstein classifies these degrees of participation into eight rungs, which are, manipulation, therapy, informing, consultation, placation, partnership, delegated power and citizen control. Manipulation and therapy represent the lowest level of public participation or no participation at all. Informing, consultation and placation occupy the middle ground where the community is allowed only to express their views but they don't have real power to influence the decisions. True and meaningful participation takes place on the last three levels: partnership, delegated power and citizen control. The theory has been widely applied in assessing community participation in various government programmes. For instance, T. Ndlovu and S. Ndlovu (2019) applied the theory in assessing contribution of local involvement in humanitarian decision making while Li *et al.* (2020) applied the theory in assessing community participation in urban regeneration practices.

The theory is relevant in assessing who has power in making decision for programmes which adopted community participatory approach such as TASAF cash transfer programme. The assumption is that, through involving community, decision-

making processes will become more inclusive, spark ownership of development processes, and ultimately result in more lasting effects. (Thoman and Fliert, 2014; Christopher, 2020). However, Craig *et al.* (2017) argue that it is the degree of community participation on the specific programme which effects public perception on the legitimacy, authority, good governance and ultimately the outcomes. From Arnstein's perspectives, community will positively commend a programme if meaningful participation is achieved. The theory was applied in the context of this study to better understand the relationship between community engagement levels and their impression of CBT mechanisms.

The limitation of Arnstein's theory is the assumption that donors or government provides all resources regardless of the level of community participation. Although this is the fact for TASAF cash transfers, in international development projects, donors do not always provide all of the resources.

2.4 Methodology

The study was carried out in the coastal town of Lindi District in Tanzania's Lindi Region, in the country's southeast. Lindi, the third-poorest region of Tanzania, has 38% of its population living below the national poverty line (NBS, 2019). Lindi district has 14.8% of households registered for the cash transfer programme, making it the district with the highest proportion of households registered in the programme (URT, 2018). This made the district the appropriate area for studying Tanzania's targeting system for cash transfers.

The study used a cross-sectional design since it allows examination of population data at a single moment in time and allows for the comparison of numerous factors at once without affecting the subjects (Setia, 2016). The ways groups experience and benefit from cash transfer vary based on the household characteristics and participation status (Weinstock, 2021). As such, to understand perception differentials between different groups, the study included both beneficiary and non-beneficiary households. The non-beneficiaries group included vulnerable households which did not receive cash transfer. Thus, the sample size was 398 (including beneficiary and non-beneficiary households), estimated by using Yamane's (1963) finite population formula. The ratio of 1:1 was used in selection of beneficiary and non-beneficiary households. Therefore, each group constituted 199 households. The

head of the household served as the primary respondent, and each household was chosen as one study unit. A responsible household member was chosen to reply to the questionnaire in absence of the household head. Within each village, proportionate to sample size formula was used to determine the required number of households. Nine villages were purposively selected based on the average CTs per household. A list of beneficiary households was obtained from TASAF coordinator; then a random number generator was used to sample estimated number of households after coding each of them. Since obtaining the list of vulnerable non-beneficiary families was not possible, the selection process used linear snowballing technique, in which each sampled head of non-beneficiary household provided information regarding one more non-beneficiary household.

The characteristics of households and their perceptions of the CBT mechanism were gathered using a questionnaire. A total of 398 questionnaire copies were administered to households receiving cash transfers and those who did not. Additionally, Focus Group Discussions (FGD) and Key Informant Interviews (KIIs) were employed to gather qualitative data in order to validate the information from the survey. Ten FGDs were organized using self-selection sampling from the previously sampled households, each with seven participants from five villages (2 in each of the five villages). In order to discover how perception of respondents differed, homogenous groups for beneficiary and non-beneficiary households were created in each village. The number of FGDs to be undertaken was chosen using the theoretical saturation principle. Thirteen KIIs in all, nine of whom were village executive officers, and four of whom were TASAF coordinators, were carefully chosen based on their knowledge of the TASAF programmes. Qualitative data were coded, transcribed and analysed using content analysis.

The perception of cash transfer targeting effectiveness was assessed by ten items. On a 5-point likert scale, responses to the questions were assessed using the following options: strongly disagree, disagree, undecided, agree, and strongly agree. From 1 for strongly disagree to 5 for strongly agree, the five points were tallied. Cronbach's alpha (α), as established by Gliem and Gliem (2003), was used to measure the internal reliability of questionnaire responses. The α is given in the equation below:

$$\alpha = \frac{rk}{[1+(k-1)r]} \dots \dots \dots (1)$$

Where α is the coefficient alpha; k is the number of items considered, and r is the mean of the inter-item correlations. The assumption is that if variables measure the same item, they should be highly correlated and thus Cronbach alpha increases. Therefore, the coefficient can test internal consistency and reliability of variables. Cronbach's alpha ranges from 0 to 1, however, Nawi *et al.* (2020) provide that alpha should be above 0.7 so that an instrument to have good level of internal consistency. Some of the items in the questionnaire were dropped to obtain required alpha results. The reliability test Cronbach alpha coefficient for community perceptions on targeting approach items was assessed to be 0.803. On basis of this alpha, the identified variables were used in assessing CBT mechanism. Review of studies on the cash transfer theory of change allowed for the determination of the content validity.

Community perception on implementation of CBT mechanism were analysed by using percentages of modes and perception index. Ordinal logistic regression model was used to determine effects of household factors on residents' perception on targeting mechanism, and the differences in perception between beneficiary and non-beneficiary households towards targeting mechanism were analysed by Mann-Whitney U test. The dependent variable was ordinal and categorical; hence the ordinal logit regression model was used. Y is limited to a five-point Likert item to prevent misunderstanding and incorrect interpretation of estimates. The general ordinal logit regression model is given as:

$$\text{Logit}(\pi(x)) = \beta_0 + \beta_1 X_1 + \dots + X_p \beta_p \dots \dots \dots (2)$$

Where: $\pi(x)$ = probability of adherence,

β_0 = Y intercept,

β_{1-p} = regression coefficients and,

X_{1-p} = set of predictors.

Variables which were used on general ordinal logit regression are described in Table 2.1.

Table 2. 1: Description of Model Variables

Variable	Definition and Measurement Unit
Dependent Variable	Perception on targeting mechanism (low = 0, mild = 1, high = 2)
POT	
Independent Variables	
MAR (X_1)	Marital status (1 = Married, 0 = Not married)
AGE (X_2)	Age of household head (years)
HHS (X_3)	Household size (number of household members)
HHG (X_4)	Household head sex (1=Male; 0=Female)
EDU (X_5)	Education Level of household head (years of school)
OCU (X_6)	Household occupation (scores)
PAT (X_7)	TASAF Participation (1=Beneficiary; 0=Non-beneficiary)
YRS (X_8)	Years lived in a village (Number of years)
LAP (X_9)	Land for production (Number of acres)
LAH (X_{10})	Land for home (Number of acres)

Multicollinearity test was carried out as one of the key assumptions which should be met when running ordinal logistic regression. To test the assumption, VIF and tolerance level were calculated. The VIF and tolerance levels obtained for all the independent variables were below 5 and above 0.25 respectively. For the assumption to be met, Kwak and Kim (2015) recommend that VIF values should be below 10 and tolerance above 0.2. Therefore, for this case, there was no evidence of multicollinearity for independent variables under consideration. Moreover, parallel lines assumption was tested by using Chi-square. If the Chi-square is not significant, the parallel assumption has been met. The obtained Chi-square was 3.56 at p-value of 0.305 which is greater than 0.05. Thus, since the Chi-square was not significant, the assumption held. In summary, the model is credible in analysis of households' factors influencing community perception on CBT mechanism.

Moreover, the Mann-Whitney U test is recommended by Harpe (2015) in comparison of two independent groups when the independent variable is either ordinal or continuous, but not normally distributed. Mean rank was chosen because the distributions of scores for beneficiaries and non-beneficiaries had different shapes. Mathematically, Mann-Whitney U test for each group is presented as follows:

$$U_x = n_x n_y + n_x \frac{(n_x + 1)}{2} - R_x \dots \dots \dots (3)$$

$$U_y = n_x n_y + n_y \frac{(n_y + 1)}{2} - R_y \dots \dots \dots (4)$$

Where U_x and U_y are Mann-Whitney U test statistics for beneficiaries and non-beneficiaries respectively; n_x is the number of beneficiaries; n_y is the number of non-beneficiaries; R_x is the sum of the ranks assigned to beneficiaries; and R_y is the sum of the ranks assigned to non-beneficiaries.

The principal factor analysis was performed on community's perception on CBT. To find multicollinearity in the data, the Kaiser-Meyer-Olkin (KMO), a Measure of Sampling Adequacy (MSA), was applied. KMO's maximum value is 1.0, but any value above 0.6 is acceptable (Krishnan, n.d.). It was 0.743 for this set of data, indicating that the variables could be subjected to factor analysis. The Bartlett's (1950) Test of Sphericity was used to assess the strength of the relationship between variables. The test proved helpful in determining if the variables in the population correlation matrix were uncorrelated. Analysis revealed a significance level of <0.001 , which was small enough to rule out the hypothesis (the probability should be less than 0.05 to reject the null). Thus, it can be concluded that the correlation matrix is not an identity matrix, as per the requirements of factor analysis.

Table 2. 2: Rotated components matrix and factorial loadings

Variable	Awareness	Selection	Distribution of benefits	Targeting efficiency
Fact. 1	0.692			
Fact. 2	0.631			
Fact. 3	0.715			
Fact. 4	0.660			
Fact. 5		0.732		
Fact. 6		0.706		
Fact. 7				0.826
Fact. 8				0.614
Fact. 9			0.764	
Fact. 10				
Fact. 11			0.733	
Fact. 12			0.651	
Fact. 13				
Fact. 14				
Fact. 15	2.725	1.539	1.45	1.2
Eigen value				
% Variance	24.49	15.99	15.41	12.83
Cronbach's Alpha	0.81	0.87	0.79	0.80

Extraction Mechanism: Principal Component Analysis. Four components extracted.

Results of rotated component matrix and factorial loadings are presented in Table 2.2. Factors with loading greater than .60 and Kaiser's Eigen value greater than one were retained. The correlation between variables was assessed using the oblique

promax rotation, which then revealed if the constructs were contained within a same theoretical framework. This resulted in four interpretable factors relating to community's perception on CBT: awareness creation, selection process, distribution of benefits and targeting efficiency. The four factors accounted for a total variance of 68.7%, with awareness accounting for 24.49 % of the variances, selection process accounting for 15.99%, distribution of benefits accounting for 15.41 %, and targeting efficiency accounting for 12.83% of the variance. The reliability tests showed consistency across the four factors indicating: 0.81, 0.87, 0.79, and 0.80 for awareness, selection process, distribution of benefits, and targeting efficiency respectively. The results revealed consistency in community's perceptions on CBT, that is, all the four factors were perceived as critical on CBT.

2.5 Findings and Discussion

2.5.1 Community perception on cash transfer targeting mechanism

Community perception on cash transfer targeting mechanism was assessed. The specific areas assessed included awareness of eligibility criteria, poor households' identification steps, villagers' opinions on CBT, village meeting to discuss eligible households, participation in selection of poor households, attendance in village meetings, inclusion and exclusion errors, appropriateness of payment structure and unpredictability of payment time. All these were measured by ten items as shown in Table 2.3. The findings indicate that 72% of the respondents thought that the community was aware of village meetings to discuss eligible households, when the scores strong agreed and agreed were combined. Moreover, 77% of the respondents agreed that villagers attended the meeting to discuss selection of beneficiaries. This provides evidence that programme coordinators and village leaders communicated the information about the cash transfer programme to villagers.

Nevertheless, awareness on the cash transfer identification steps was rated low at 37%. Respondents perceived level of awareness as either strongly agreeable (4%) or agreeable (33%). This shows that villagers were less aware of the whole mechanism of identifying poor households. Tokenism was the method of participation used, in which participants were just given the opportunity to voice their opinions and had no meaningful influence. This was revealed through an FGD consensus that:

“...The Community Management Committee (CMC) was the one deciding who should participate and who should not; the village meeting was just called to confirm their decision” (Lindi district, 16 January, 2020).

The above statement suggests that village leaders and CMC had more understanding of the identification steps than other members of community. Variation on levels of awareness was the outcome of differentiated purpose of participation for each group. The purpose of participation for leaders was to enable them to identify eligible households while for other community members’ participation was only to make them alerted of the cash transfer programme. This variation on the levels of awareness gave leaders an upper hand on deciding who should participate in the programme and who should not. These findings are consistent with the findings of studies by Kakwani *et al.* (2018) and Reshmi *et al.* (2017) which disclosed that lack of community awareness about a programme and its targeting mechanism creates the room for community leaders, programme coordinators and representatives of local councils to take advantage of the poor and misinformation during targeting mechanism. This undermines cash transfer objectives and ultimately reduces its impact on poverty reduction.

Table 2.3: Community’s perception on implementation of CBT mechanism

Items	SA%	A%	U%	D%	SD%	Total
1. Awareness						
Eligibility criteria	24	34	10	23	8	100
Identification steps	4	33	26	30	7	100
Village meeting	21	51	12	12	4	100
2. Selection						
CMC selection	7	41	15	29	8	100
Meeting attendance	25	52	12	6	5	100
Villager’s opinions on CBT	20	20	17	15	28	100
3. Distribution of benefits						
Payment structure	24	21	56	7	3	100
Unpredictability of payment time	7	19	58	11	5	100
4. Targeting outcome						
No exclusion error	7	10	11	34	38	100
No inclusion error	14	20	25	24	17	100

Note: SA-Strongly Agree, A-Agree, U-Unsure, D-Disagree, SD-Strongly Disagree, Very high=80%-100%, High=60%-79.9%, Medium=40%-69.9%, Low=20%-39.9%, Very low=0-19.9%

Both inclusion and exclusion errors were rated very low. Seventeen percent of respondents perceived that there was no exclusion error, while 34% believed that there was no inclusion error. This implies that most respondents believed in the prevalence of exclusion and inclusion errors. Exclusion errors were mostly caused by

the programme design and negligence. In some cases, poor households were excluded because they were absent from home when CMCs were registering eligible households. The threshold imposed by the programme on the number of beneficiaries required for each village was blamed for exclusion of some poor households. This was supported by consensus from an FDG participants who agreed that:

“...CMC were given the maximum number of beneficiaries required for each village, so when the threshold was reached, they couldn't add more people”.
(Lindi district, 15 January, 2020).

The quotation above reveals that, the number of poor households in Lindi district was far larger than the share that cash transfer programme could cover. One million households target set by TASAF cash transfer programme was lower than the number of extremely poor households in Tanzania. World Bank (2019) estimated that by 2018, 14 million people, equivalent to 3 million households, lived below the national poverty line. Leaving many poor households without coverage, limits the effectiveness of the programme to the community.

Furthermore, the findings attested that inclusion error was the results of implementation flaws. One of the factors which emerged was information distortion. Beneficiaries who died after the identification exercise were included in the programme and were not removed even after the CMCs were notified. The names of the deceased were still being mentioned during payment meetings. This explains why phantom beneficiaries were evident during auditing conducted by Chief Auditor General in 2017. Delays in removing the names of the deceased cast doubts on the fidelity of programme coordinators. The possibility that programmes coordinators may be taking advantage of weakness of the system affirms the claim that involving communities in targeting poor households runs the risk of elite capture.

Similarly, unpredictability of the amount to be received was rated very low. Twenty six percent of respondents either strongly agreed or agreed that the timing for receiving cash transfer was predictable. This implies it was difficult to predict when the money would be delivered to beneficiaries. Although it was expected the money should be paid for the interval of two months, in some cases it took longer period than expected and without notifying the recipients. Other government monetary priorities were accused for undermining the allocation of fund to cash transfer

programme. Unpredictability of income impedes household consumption (Ganong and Noel, 2019). For poor households, income volatility increases the odds of food insecurity.

Table 2.4: Overall household perception on the implementation of CBT mechanism

Perceptions	Frequency	Percent
Effective	414	45.5
Undecided	225	24.7
Not effective	271	29.8
Total	910	100%

Nonetheless, overall score per person was calculated by using Principal Component Analysis (PCA) and results are presented in Table 2.4. The outcomes were grouped into three categories: not effective, undecided, and effective. Generally, the descriptive statistics show that 45.5% of respondents believed that the programme was effective in targeting poor households. Moreover, 24.7% of respondents were undecided, while 29.8% rated the targeting mechanism as not effective.

2.5.2 Households' factors influencing community's perception on CBT mechanism

The study determined influence of household factors on community's perception on CBT mechanism. The results in Table 2.5 show that of the ten explanatory variables which were tested, only two variables, sex and TASAF participation status, had statistically significant influence. Beta coefficient for household head sex was -0.636 and statistically significant at $p\text{-value} = 0.017$. This indicated that ordered logit of females' positive perceptions on CBT mechanism were 0.636 times greater than their male counterparts. The study findings may have been influenced by the design and implementation strategies of cash transfer programme. TASAF prioritised cash payment to women in order to address the power differences that exist within the community and the fact that women are considered to be more concerned on improving their family living standards than men (Kinyondo and Maghashi, 2020). Prioritisation of women increased their awareness and participation to the programme. Increased awareness and participation of women might have contributed to the positive perception of women about the programme targeting mechanism. This

improved the chances of women taking advantages of the opportunities provided by participation in cash transfer programmes.

Table 2.5: Households' factors influencing community's perception on implementation of CBT mechanism

Variables	B	S.E	Z	Sig.
Marital	0.067	0.087	0.599	0.439
Sex	-0.626	0.262	5.737	0.017
Age	0.007	0.008	0.639	0.424
Years of schooling	0.028	0.038	0.546	0.460
Occupation	0.061	0.035	2.991	0.084
Household size	0.066	0.071	0.845	0.358
TASAF participation	0.992	0.227	19.117	0.000
Land size (Production)	0.068	0.067	1.031	0.310
Land size (Home)	0.169	0.140	1.462	0.227
Years lived in village	0.004	0.004	1.060	0.303
Cut1	2.437	0.853		
Cut2	5.671	0.982		

Moreover, participation status beta coefficient was 0.992 and statistically significant at $p\text{-value} < 0.001$. This means that ordered log odds of beneficiary households to have positive perception on CBT mechanism were 0.992 times more than non-beneficiary households. This is consistent with findings of a study by Kurdi *et al.* (2018) who concluded that beneficiaries in Egypt were more likely to perceive targeting mechanism as fair or very fair while non-beneficiaries in general, and specifically non-beneficiaries near threshold, tended to see the less fairness in targeting mechanism. However, the results contradict outcomes by Njuguna (2019) who found that beneficiaries in Kenya perceived targeting mechanism to be biased, and households in serious needs were left out. Participants in Kenya assessed the fairness of the beneficiary selection in relationship to their status in the programme and that of other poor households in the community. Although the difference perception of some targeting issues can be regarded as the outcome of community diversity, difference on key targeting mechanisms may signify the existence of systematic bias in selection mechanism.

To understand whether the difference of perception was an outcome of systematic bias which resulted from the targeting mechanism, Mann-Whitney U test was employed to get more insights on the items of targeting mechanism which contributed to this difference. Results of Mann-Whitney U test are presented in Table

2.6. Items relating to payment system could not be comparable because non-beneficiaries were less aware of it.

Table 2.6: The difference in perception of CBT mechanism between beneficiary and non-beneficiary households

Items	Participation	Mean rank	z-score	p-value
1. Awareness				
Eligibility criteria	BF	232.7	-3.447	0.000
	NF	160.0		
Identification steps	BF	198.0	-0.674	0.500
	NF	204.8		
Awareness village meeting	BF	223.7	-4.813	0.000
	NF	171.7		
2. Selection of beneficiaries				
CMC selection participation	BF	188.1	-2.667	0.08
	NF	217.7		
Village Meeting attendance	BF	217.1	-3.444	0.001
	NF	180.2		
Villagers' opinions on CBT	BF	197.4	-2.700	0.07
	NF	166.5		
3. Targeting outcome				
No exclusion error	BF	198.2	-0.592	0.55
	NF	204.7		
No inclusion error	BF	192.3	-1.771	0.077
	NF	121.3		

Note: BF=Beneficiary household, NF= Non-beneficiary household

The results indicate that there was significant difference on understanding of eligibility criteria, awareness and attendance of village meetings. Mean ranking on awareness of eligibility criteria was 232.7 for beneficiary households and 160 for non-beneficiary households with p-value <.001. This indicates that majority of respondents agreed that they were aware of eligibility criteria. However, when they were asked to state the criteria used, their responses were personalized based on their status in cash transfer programmes. Instead of stating criteria, most of them emphasized that they were really poor and deserved to be participants; they referred their struggling to meet ends meet as the main reason for their selection. On the other hand, most of non-beneficiary households argued that they did not understand why they had not been included. The feeling that some households were left out while they deserved to participate in the programme might create social tension between beneficiary and non-beneficiary households.

Beneficiaries' and non-beneficiaries' mean ranks on awareness of village meeting to discuss eligible households was 223.7 and 171.7 respectively with p-value < .001. Furthermore, beneficiary households' mean rank on attendance of village meeting were 217.1 and 180.2 for non-beneficiary households (p-value =.001). Beneficiaries were more likely to be aware of village meeting discussing eligible households and attend. It was possible that their awareness and attendance was motivated by prior-information from CMC that their names have been proposed for inclusion in the programme. This indicates that there was possibility of selection bias during implementation stage. The bias gave some households advantage over others in identification stages.

2.6 Conclusions and Policy Implications

The study concludes that community participation by itself does not guarantee the legitimacy of the programme in the community. Quality of the programme design and implementation strategies determine the extent of inclusion and exclusion errors. In general, community perceived the performance of CBT mechanism as average. Villagers' perception indicates that they were aware of meetings conducted to discuss eligible households and they did attend. However, concerns on inclusion and exclusion errors were evident. Respondents perceived exclusion error was the outcome of programme design and implementation strategies while inclusion error was the results of implementation flaws. Existence of inclusion and exclusion errors reduce effectiveness of the programme and its impact in poverty reduction. Moreover, low predictability of pay day delays income consumption of poor households and increases the risk of food insecurity.

Also, the study found that the programme design had positive influence on women's perception of cash transfer programme. This indicates that programme achieved its objective of prioritizing women in participation of community's activities. This instigates decrease of outdated traditions and norms which undermine the capacity of women in improving household's welfare. Findings indicate that perception on cash transfer targeting differ among beneficiary and non-beneficiary households. The fact that beneficiaries were pre-informed by CMC that their names had been proposed for inclusion in the programme suggests prevalence of systematic bias in selecting the poor households. The study confirms the theoretical underpinning that participation

procedure including only those who are easily available is likely to result into biased outcome.

The study provides valuable policy implications to Tanzania government as well as TASAF in efforts to improve CBT mechanism. The central government and TASAF should design cash transfer programmes for poor in such a way that all eligible beneficiaries are included. This is in agreement with National Social Protection Framework, which recognizes universality as the key guiding principle. Moreover, the study suggests modification of PSSN operational manual (URT, 2013) so that community actively participate in selection and scrutinization process by removing exclusion mandate from the hand of CMC. In case of limited resources, ranking of identified potential beneficiary households should be done in village meetings on the basis of simplified procedures established by villagers themselves. It is worthwhile to establish mechanisms of verifying the existence of the beneficiary households every time the monies are disbursed. Programme coordinators should verify the list of recipients, and their names should appear in the village notice board to enhance public accountability.

2.7 Limitations and area for further studies

This study's limitation is the lack of data on PMT, which assigns scores to all beneficiary households and those who were considered for participation in the cash transfer programme. PMT is conducted by TASAF to rank proposed cash transfer recipients by reviewing their socio-economic status. Comparing the PMT results with the villagers' recommendations might be accomplished with the help of these data. This could have added quantitative information on the roots of inclusion and exclusion errors. On this study, existence of inclusion and exclusion errors were determined qualitatively.

Despite the numerous impact assessments of cash transfer programmes, there is little concrete information on their cost-effectiveness, particularly with regard to the CBT mechanism. There are significant discrepancies in the costs that are included in calculations, uncertainty surrounding the benefits' value, and a range of programme aims and approaches. Therefore, this area calls for further research.

REFERENCES

- Arnstein, S. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners*. 35 (4), 216–224.
- Bah, A., Bazzi, S., Sumarto, S., & Tobias, J. (2018) Finding the Poor vs. Measuring Their Poverty: Exploring the Drivers of Targeting Effectiveness in Indonesia. *The World Bank Economic Review*. 0(0):1–25. doi:10.1093/wber/lhx020.
- Bartlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Psychology, Statistical Section*, 8, 77-85.
- Benasius, A.G. (2017). Stakeholders' perception on cash transfer programme as strategy for poverty reduction in Tanzania. MSc-HRM Dissertation, Mzumbe University: Tanzania, 84pp.
- Briggs (2018). Poor targeting: A gridded spatial analysis of the degree to which aid reaches the poor in Africa. *World development*. 103(2018).133-148. doi:<https://doi.org/10.1016/j.worlddev.2017.10.020>
- Brown, C., Ravallion, M., & Van de Walle, D. (2017). Are Poor Individuals Mainly Found in Poor Households? Evidence Using Nutrition Data for Africa. *World Bank Working Paper 8001*. Washington. 53 pp.
- Christopher, S. M. (2020). Ladder of citizen participation: Insights into female student representatives on public university councils in Uganda. *International Journal of Educational Administration and Policy Studies*, 12(2), 121-132.
- Conning, J., & Kevane, M. (2002). Community-based targeting mechanisms for social safety nets: A critical review. *World Development*. 30 (3): 375–394.
- Craig, R. K., A. S. Garmestani, C. R. Allen, C. A. Arnold, H. Birgé, D. A. DeCaro, A. K. Fremier, H. Gosnell, and E. Schlager. 2017. Balancing stability and flexibility in adaptive governance: an analysis of tools available in U.S. environmental law. *Ecology and Society* 22(2):3. <https://doi.org/10.5751/ES-08983-220203>
- Devereux, S., Masset, E., Sebates-Wheeler., R. Samson, M., Rivas, A., and Lintelo., D. (2015). Evaluating the Targeting Effectiveness of Social Transfers: A Literature Review. *IDS Working paper*. 460(12): 2-65.
- DFID (2011). *Cash transfers: Evidence paper policy division*. Retrieved from https://www.who.int/alliance-hpsr/alliancehpsr_dfidevidencepaper.pdf
- Dou, Y. (2016). The Impacts of Cash Transfer Programmes on Rural Livelihoods: a Study of Caboclos in the Brazilian Amazon Estuary Region. A thesis for

Award of PhD Degree at the University of Waterloo, Canada.

- Ellis, F., and Manda, E. (2014). Seasonal Food Crises and Policy Responses: A Narrative Account of Three Food Security Crises in Malawi. *World Development*. 40(7):1407-1417.
- Evans, D.K., Hausladen, S., Kosec, K., & Reese, N. (2014). *Evaluation report on Community based conditional cash transfers in Tanzania*, World Bank. Washington D.C.
- Ganong, P., & Noel, P. (2019). Consumer spending during unemployment: Positive and normative implications. *NBER working papers 2541*. National Bureau of Economic Research, Inc.
- George, C., & Ulriksen, M. S. (2021). Social Protection in Tanzania: Challenges in the shift of financing PSSN from external funding to government. Retrieved from <https://www.africaportal.org/publications/social-protection-tanzania-challenges-shift-financing-pssn-external-funding-government/> on 29/06/2022.
- Gliem, J., and Gliem, R. (2003). Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-type scales. *Research to Practice Conference*. 2003. Midwest. U.S.A. 82-88pp.
- Handa, S., Huang, C., Hypher, N., Teixeira, C., Soares, F., and Davis, B. (2014). Targeting effectiveness of social cash transfer programmes in three African countries. *Journal of Development Effectiveness*. 4(1).78-108.
- Harpe, S.E (2015). How to analyze Likert and other rating scale. *Currents in Pharmacy Teaching and Learning*. 7 (2015). 836-850. doi:org/10.1016/j.cptl.2015.08.001
- Kakwani, N., Li, S., Wang, X., & Zhu, N. (2018). Evaluating the effectiveness of the rural minimum living standard guarantee (Dibao) programme in China. *China economic review*. Chieco (18). doi:10.1016/j.chieco.2018.07.010.
- Kamagi, D. (2020. December 18). JPM furious about project mismanagement. *Daily News*.
- Karlan, D., & Thuysbaert, B. (2016). Targeting Ultra-poor Households in Honduras and Peru. *The World Bank Economic Review*. 0(0):1-38. doi: 10.1093/wber/lhw036.
- Kidd, S., Gelders, B., and Athias, D. (2017). Exclusion by design: An assessment of the effectiveness of the proxy means test poverty targeting mechanism. *ESS – Working Paper*. (56). Geneva, Switzerland.

- Kinyondo, A., & Magashi, J. (2020). Women's employment status and domestic violence in Tanzania: How do they link? *International Journal of Social Welfare*. 30 (2): 216-225. doi: <https://doi.org/10.1002/pop4.256>
- Krishnan, V. (n.d.). *Constructing an Area-based Socioeconomic Index: A Principal Components Analysis Approach*.
- Kurdi, S., Breisinger, C., ElDidi, H., El-Enbaby, H., Gilligan, D. O., & Karachiwalla, N. (2018). Targeting social safety nets using proxy means tests: Evidence from Egypt's Takaful and Karama program. *ReSAKSS Annual Trends and Outlook Report*, 135-153.
- Kwak, S. K., & Kim, J. H. (2017). Statistical data preparation: management of missing values and outliers. *Korean journal of anaesthesiology*. 70(4):407–411. doi: <https://doi.org/10.4097/kjae.2017.70.4.407>
- Li, W., Feng, T., Timmermans, H. J., & Zhang, M. (2020). The public's acceptance of and intention to use ICTs when participating in urban planning processes. *Journal of Urban Technology*, 27(3), 55-73.
- Liu, P., Yang, R., & Xu, Z. (2018). Public Acceptance of Fully Automated Driving: Effects of Social Trust and Risk/Benefit Perceptions. *Risk analysis International Journal*. (0)0:1-16. doi: [doi:10.1111/risa.13143](https://doi.org/10.1111/risa.13143).
- MacAuslan, I., & Riemenschneider, N. (2014m). Richer but Resented: What do Cash Transfers do to Social Relations? *IDS Bulletin*. 42(6): 60–66. doi: [10.1111/j.1759-5436.2011.00274.x](https://doi.org/10.1111/j.1759-5436.2011.00274.x)
- Machado, D. B., Rodrigues, L. C., Rasella, D., Lima Barreto, M., & Araya, R. (2018). Conditional cash transfer programme: Impact on homicide rates and hospitalisations from violence in Brazil. *PloS one*, 13(12), e0208925.
- Mbago, G. (2016. December 7). TASAF officials suspended over budding grants scandal. *The Guardian*.
- Mohamed, N. K., & Hamad, A. U. (2022). Implementation Livelihood Enhancement Through Saving Component in South District Unguja. *Research & Development*, 3(2), 73-78.
- Molyneux, M., Nicola, J., & Samuels, F (2016). Can Cash Transfer Programmes Have 'Transformative' Effects? *The Journal of Development Studies*. 52 (8): 1087-1098. doi: [doi:10.1080/00220388.2015.1134781](https://doi.org/10.1080/00220388.2015.1134781)
- Mzingula, P. and Medeye, G. (2020). Livelihood Impacts and Sustainability of Livestock Farming Among Targeted Households of TASAF III in Kilole

- Village Lushoto District, Tanzania. *International Journal of Arts, Humanities, Literature and Science*. 4(9):13-22
- National Bureau of Statistics (2019). *Tanzania Mainland Key Indicators report*. Retrieved from https://www.nbs.go.tz/nbs/takwimu/hbs/2017_18_HBS_Key_Indicator_Report_Engl.pdf.
- Nawi, F., Tambi, A., Samat, M., and Mustapha, W. (2020). A review on the internal consistency of a scale: the empirical example of the influence of human capital investment on Malcom Baldrige quality principles in TVET institutions. *Asian people journal*. 3(1). 19-29. doi:<https://doi.org/10.37231/apj.2020.3.1.121>.
- Ndlovu, T. & Ndlovu, S., 2019, 'Are cash transfers the panacea to local involvement in humanitarian decision making? Evidence from World Vision projects in Umzingwane', *Jàmbá: Journal of Disaster Risk Studies* 11(1), a486. <https://doi.org/10.4102/jamba.v11i1.486>
- Nicola Hypher & Fabio Veras Soares, 2016. Does Community-Based Targeting Really Work in Cash Transfer Programmes in Africa. *International Policy Centre for Inclusive Growth*. UNDP, Brazil.
- Njuguna, J. (2019). Impact of a conditional cash transfer program aimed at promoting maternal and child health services in kakamega County, Kenya. *Journal of Health Care for the Poor and Underserved*, 30(1), 329-338.
- Nnsah, B. (2018). Assessing the performance of targeting mechanisms. *Society for the study of economic inequality*. Working paper series. Cameroon. 39pp.
- Nyamongo, C.K. (2012). Elites attitudes towards the poor and pro-poor policies in Malawi. Thesis for Award of PhD Degree at University of Birmingham: England, 369pp.
- Platteau, J. Somville, V. & Wahhaj, Z. (2014). Elite capture through information distortion: A theoretical essay. *Journal of Development economics*. 106: 205-263. doi.org/10.1016/j.jdeveco.2013.10.002
- Premand, P., and Schnitzer, P. (2018). Efficiency, legitimacy and impacts of targeting mechanisms evidence from an experiment in Niger. *Policy Research Working Paper 8412*. World Bank
- Prencipe, L., Houweling, T. A., van Lenthe, F. J., & Palermo, T. (2021). Do conditional cash transfers improve mental health? Evidence from Tanzania's

- governmental social protection program. *Journal of Adolescent Health*, 69(5), 797-805.
- Reshmi, B., Nair, S., and Unnikrishnan, B. (2017). Determinants Perception and Experiences of Beneficiaries of a Hospital-based Community Health Insurance in Coastal Karnataka in India. *Journal of health management*. 19(2).1-11.
- Setia M. S. (2016). Mechanismology Series Module 3: Cross-sectional Studies. *Indian journal of dermatology*, 61(3), 261–264. <https://doi.org/10.4103/0019-5154.182410>
- Stoeffler, Q., Mills., B and Ninno, C., P (2015). Reaching the poor: Cash transfer programme targeting in Cameroon. *Agricultural & Applied Economics Association and Western Agricultural Economics Association Annual Meeting*, 26-28 July, 2015. San Fransisco, U.S.A. 53 pp.
- Tanyanyiwa, V. (2015). Decentralisation as a Rural Development Strategy in Zimbabwe: *Good Policy but Bad Practise*. 13 (2) :598-606
- Thomas, P. N., & Van de Fliert, E. (2014). *Interrogating the theory and practice of communication for social change: The basis for a renewal*. Springer.
- UNICEF, (2020). *Round 3 Report. A Cash Plus Model for Safe Transitions to a Healthy and Productive Adulthood*. UNICEF Office of Research – Innocenti: Florence.
- URT (2013). *Productive Safety Nets: Operational Manual. Tanzania Third Social Action Fund*. Vice Presidents Office. Government Printers, Dar es Salaam, Tanzania.
- URT (2018). *Tanzania Social Action Fund Fourth Quarter Progress Report April – June*, Dar es Salaam, Tanzania.
- Verme, P., & Gigliarano, C. (2018). Optimal targeting under budget constraints in a humanitarian context. *World development*. doi:org/10.1016/j.worlddev.2017.12.012
- White II, M. (2018). How big should control group be in a randomized control group? Retrieved from <https://www.markhw.com/blog/control-size> on 24, December 2019.
- World Bank (2018). *Executive summary. Tanzania Mainland Poverty Assessment*. Washington. 60pp.

Yamane, T. (1967). *Statistics: An Introductory Analysis*. the University of Michigan, USA.

CHAPTER THREE

3.0 Spending Patterns of Households Participating in Cash-transfer Programme in Lindi District, Tanzania

Gidion Njuga¹, Benedicto Kazuzuru², and William Warsanga³.

¹Lecturer, Moshi Co-operative University, Tanzania; Email: gidionjuga@gmail.com

²Associate Professor, Sokoine University of Agriculture, Tanzania; Email: kazuzurub@gmail.com

³Lecturer, Moshi Co-operative University, Tanzania; Email: wbaranos@gmail.com

3.1 Abstract

The question of whether cash transfers are being spent wisely is up for debate. Empirical investigations into the subject matter are inconclusive. This study adds to and broadens the debate of how recipient households use cash transfers. Specifically, the study aimed to examine the impact of cash transfers on household spending patterns in terms of food items, non-food, utilities, durables, investment, education, and health. The study employed the Propensity Score Matching (PSM) technique to address the challenge of endogeneity. To examine the impact of cash transfers on households' spending patterns, the Working Leser model was adopted. Coefficients from the model were used to calculate marginal budget shares and elasticities of demand. The findings indicated that cash transfers have a negative impact on food budget shares and a positive impact on non-food and health budget shares. Both non-beneficiaries and beneficiaries regarded food and utilities as normal goods, while durables, investment, non-food, health, and education were regarded as luxury goods. The study concludes that poor households' spending patterns are determined by their income variations. Thus, it is recommended that the government and donors increase the amount provided to poor households to enable these households to invest in productive assets.

Key words: Cash transfer, spending patterns, Propensity Score Matching (PSM)

3.2 Introduction

Low household spending has always been associated with economic vulnerability (Waidler *et al.*, 2017). This has made household spending the core of various economic decisions by policy makers. Almost all economic activities are affected directly or indirectly by the level of private household spending, such that obvious impacts manifest in increasing or decreasing industrial production and employment levels (Varlamova and Larionova, 2015). To improve household spending, governments have been applying fiscal policies to redistribute the income generated by growth towards poor households (Jouini *et al.*, 2018). However, they have not been sufficient enough to have a substantial impact on poor households in a context where the targeted population lacks the necessary skills and abilities to participate in the economy. To counterbalance these shortcomings, governments introduced direct cash transfers for poor households (Evans *et al.*, 2016).

Cash transfers are free handouts to increase the consumption of poor households and also invest in the nutrition, health, and education of their children. The transfers have been popular since the beginning of the twenty-first century (Tiwari *et al.*, 2016). Almost all countries in Latin America have such programmes, and countries throughout Africa are implementing cash transfer programmes. In Tanzania, the government, through its umbrella Tanzania Social Action Fund (TASAF), introduced a cash transfer programme for poor households in limited pilot areas from 2005 to 2013 (Evans *et al.*, 2021). The government consolidated the achievements of the pilot study by scaling up conditional cash transfers and introducing unconditional cash transfers.

The expected immediate impact of the cash transfer is on the household's spending patterns. The direction of beneficiaries' spending determines the extent to which the transfer influences the households' economic welfare (Onyango, 2017). Cash transfer advocates assume that households are rational, so they will spend the transfers on priority areas based on pre-determined programme goals (Brown *et al.*, 2017). However, households are faced with different economic choices and, since there is no formal mechanism to control how they should spend the money, what is the priority for programme designers may differ from the priorities of cash transfer recipients. Policymakers and others around the world are sceptical that poor households will use transfers to purchase enticing goods like alcohol and gambling

(Evans and Popova, 2014). This is supported by Tanzanian Member of Parliament Magdalena Sakaya when she expressed fears that dishing out cash is not a sustainable poverty reduction strategy (Mpoki, 2016). Asfaw *et al.* (2016) found that, in Kenya, there is a widespread belief that transfers will be used for non-essential forms of consumption. The question of how the money will be spent increases concern over whether the cash transfer programmes will have a sustainable impact on the lives of the poor.

Per the view of the permanent income hypothesis theory, economic policies may result in increased income but do not necessarily translate into increased consumer spending (Natali *et al.*, 2016). Households will increase their spending on consumption goods such as food and utilities only if they perceive the increase in income to be a permanent change in circumstances. Thus, the cash transfer programme can have an impact on the households' budget share if the cash transfer programme is to exist permanently throughout the lifetime of the beneficiaries (Forget *et al.*, 2013). Alternatively, households may consider the cash received to be a form of transitory income (Randazzo and Piracha, 2014). As such, households will maintain their current spending and use the money as supplemental assets, or they may invest the money to gain long-term rewards rather than spending it on disposable products and services.

Engels theory indicates that at low levels of income, household spending is both highly concentrated on food spending, and is highly homogenous (Mpasa, 2016). Nevertheless, as household income rises, households tend to alter their spending patterns, and a wide variety of new goods enters the consumption basket (Coibion *et al.*, 2021). Food budget share declines while the consumption on normal and luxury goods increases. Households' spending diversity rises with income rises and the observed differences in household spending patterns become larger. According to Duesenbery's relative income hypothesis, this diversity on household's spending is not dependent on their absolute income but on their relative income to the income of other households in the society (Anindita and Sahadewo, 2020). Households will try to imitate and copy the spending of their neighbours or friends. If the household income is regarded to be low in the given community, they are likely to spend more in order to match with the spending of the other households in their community.

There is no consensus in the literature on the manner in which beneficiaries spend their free handouts. Receipts of cash transfers yielded no spending change relative to non-recipients in Indonesia (Bazzi *et al.*, 2014). In contrast, Bastagli *et al.* (2016) found cash transfer beneficiaries have increased their spending on essential goods (food, clothing, etc.) rather than superfluous consumption. The poorest of the poor in Malawi, facing severe labour constraints, managed to invest a portion of the transfer in their family business, mostly in subsistence agriculture (Covarrubias *et al.*, 2012). In Tanzania, the evaluation of the pilot cash transfer programme by Evans *et al.* (2016) indicated that there are significant impacts on a broad array of areas, including health, education, non-food items, and investment in livestock. In contrast, a study by Wamoyi (2020) indicated that cash transfer beneficiaries spent the money on basic needs only. Beneficiaries' everyday challenges interfered with some of their investment plans, which limited the achievement of their business goals.

The inconsistency of results might be attributed to methodological issues of individual research such as sampling bias and research design. For instance, a study by Evans *et al.* (2021) focused on households with vulnerable children and the elderly (60+) therein, while the study by Wamoyi (2020) applied qualitative design and purposive sampling technique in assessing the impact of cash transfer on the spending patterns of adolescent girls and young women only. Applying qualitative design only limits the establishment of casual inference and interpretation of the findings. Thus, to reduce the weaknesses of the previous studies, this study adopted both qualitative and quantitative techniques to estimate the cash spending patterns of households participating in a cash transfer intervention in Tanzania. Furthermore, since the cash transfer programme covers all vulnerable households irrespective of their demographic characteristics, in a context where some members are more likely to be systematically selected than others, findings can only be generalized to the population that shares characteristics with the sample. Therefore, this study is an important step towards filling this gap by matching the sampling frame to the target population to reduce the possibility of sampling bias.

Findings by Jappelli and Pistaefferri (2017) indicate that households with low incomes respond more strongly to the economic stimulus. Economic stimulus on low-income earners or tax-cuts will have an impact 2-3 times greater on increasing spending than the same amount on the rest of the population (Carroll *et al.*, 2021).

Thus, accurate microeconomic estimates of the effectiveness of fiscal stimulus programmes aimed at low-income households are an important input to public policy. Cash transfer programme is highly determined by how household budget allocation responds to cash transfer income. Therefore, it is important to evaluate how the cash transfer will shape the spending patterns of poor households, as long as the programme is expected to remain as an economic phenomenon into the future. This paper aimed at assessing the impact of cash transfer on poor households spending patterns and determining the marginal budget shares and elasticity of demand of each of the poor households' spending category. The study was guided by the null hypothesis that: "*Cash transfer has no impact on poor households' spending patterns*".

3.3 Theoretical Framework

The study was guided by Engel theory which was developed by Ernest Engel (1857). Engel theory or Engel curve describes how household spending on particular goods or services depends on household income. The best known single result from the Engel theory is Engel law which states that the poorer a family is, the larger the proportion of the budget it spends on the nourishment. On the view of Engel's theory, whilst the total amount spent on necessities rises with income, the percentage of income spent on the same tends to fall. This theory has recently been applied to studies in household spending patterns by Basole and Badu (2015), Démurger and Wang (2016), and Thapa and Acharya (2017). The theory has more advantages than any other theories. Engel curves are expressed as spending shares (the total spending of a specific item over total expenditure) rather than relating total expenditure directly to total income. This association enables better comparison of households spending regardless of their income variations (Yu, 2018). Besides, another benefit of using Engle curves for economists in analysing household spending habits is the straightforward calculation of marginal budget shares and income elasticities (Li, 2021). Obtaining marginal budget shares and income elasticities assist in analysing households' spending habits. Additionally, Engel curves can be extended to include households' characteristics that influence the spending patterns of households (Husain *et al.*, 2018). This extension has a useful role in measuring the changes in quantity demanded for a particular commodity given a change in household income while taking into account the unique characteristics of households, in order to better

comprehend their spending habits and patterns. The theory is relevant in analysing the changes of the proportional spending on various commodities in relation to the increase of the beneficiaries' budget per capita. The study applied the theory to model the budget shares of various items employing variables measuring total spending as the proxy of income, receipt of cash transfer and households' socio-economic characteristics.

The well-known limitation of Engel's theory, like other demand function models, is the failure to capture some of the observed variation in individual consumption habits (Pant, 2017). This implies that beyond Engel's law there is possibility of significant relationships between income rise and particular expenditure categories (Kaus, 2012). To address the theoretical limitation described above, the study assessed the consistency of relationship between income rise and budget share of each expenditure category by using income elasticity of demand.

3.4 Methodology

The study was carried out in Lindi District located in Lindi Region, a coastal town in the southeastern part of Tanzania. Lindi is the third poorest region in Tanzania with 38% of population living below the national poverty line (NBS, 2019). Furthermore, with 14.8 % of households in Lindi district registered in cash transfer programme, it is the district with the highest percentage of households participating in cash transfer programme (World Bank, 2018). Thus, the district was a suitable area to study the impact of cash transfer programme on households spending patterns in Tanzania.

The sample size of this study was determined using two steps. The first step involved calculation of sample size using Yamane's (1967) finite formula where the minimum sample size of 398 respondents was obtained. To estimate casual impact of intervention when randomization is not feasible, quasi-experimental design is recommended (Weber *et al.*, 2020). Thus, this study adopted quasi experimental design since assignment to intervention (cash transfer) was by means of administrator selection rather than random. The design identifies two comparable groups (treatment and control) so that researchers can look into disparities in outcomes of these groups. Therefore, the second stage was to determine the comparison group. White II (2018) suggested splinting 50/50 treatment and control groups using Monte Carlo simulation because this gives the maximum statistical

power. Therefore, in choosing beneficiary and non-beneficiary households, the minimum sample size above was split equally into beneficiary and non-beneficiary groups, with each group consisting of 199 households.

In Tanzania, the largest Productive Social Safety Net (PSSN) is carried out by Tanzania Social Action Fund (TASAF) since 2000 to date. TASAF main components during data collection period were public works, conditional CTs and unconditional CTs. Thus, the treatment group included only those households benefiting by both conditional and unconditional CT. Nine villages from Lindi district were purposively selected based on the average CTs benefits per households. The number of TASAF beneficiaries for each village was used as the basis for calculating the representative sample size. Proportional-to-size formula was applied. Heckman and Todd (2009) show that, in order for matching estimators to reduce bias as conventionally measured, it is crucial that non-experimental comparison group be drawn from the same local community with respect to the treated. Thus, non-beneficiaries were sampled to mirror the selection of beneficiaries. Codes were assigned to beneficiaries, and then a random number generator was used for selection. Snowballing technique was used to select non-beneficiaries where each respondent provided information about one other non-beneficiary.

A questionnaire was used to gather households' characteristics, their consumption and long-term expenditure. A total of 398 questionnaire copies were administered to cash transfer beneficiaries and non-beneficiaries' households. Moreover, to validate information obtained from survey, Focus Group Discussions (FGD) and Key Informants interviews (KIIs) were used to collect qualitative information. Five FGDs were organized, each consisting of seven respondents selected from five villages. FGD included beneficiaries only, as they are the ones who could well describe the relationship between cash transfer and households' spending choices. The principle of theoretical saturation was applied in deciding the number of FGDs to be conducted. A total of 13 KIIs of whom nine were village executive officers and four were TASAF coordinators were selected based on their knowledge of cash transfer programme. Qualitative data were coded and transcribed using content analysis.

Spending patterns were divided into seven groups which are: healthcare, education, physical investments, durable goods, utilities, non-food and food (Table 3.1). For

spending on food, the household reported for the previous seven days including both food purchased and produced by the household. For spending on non-food items, a number of services and goods such as clothing, shoes, wedding, transport, funeral, home enhancements, engagement, upkeep, leisure and entertaining goods, luxury goods, credit repayment and others were included. For this group, transportation costs, personal care, leisure, and entertainment were reported on for previous seven days, while other items were reported on for the previous six months. Utilities included kerosene, charcoal, candles, water, electricity and airtime. Charcoal, kerosene and candles were reported on for the previous seven days while the remaining items were reported on for the previous six months.

Appliances, bicycles, phones, radios, and electronic items were classified as durable goods. Cash used on these items for previous six months was stated. Physical investments include the capital for starting up new business and acquisition of agricultural inputs, livestock and transport related items. The spending on these items were likewise stated for the previous six months. Spending on education is related to anything used for schooling purposes (e.g., tuition fees, uniforms, stationeries and supplies) were reported on for the previous six months. Spending on healthcare was reported on for the previous six months and included expenditure on consultation costs, medicines and other medical charges. While there is debate on what should be categorized as durable goods and physical investments (Ahmed *et al.*, 2018; Tandazzo and Piracha, 2020), in this study, durable goods denote those consumables used to meet long term needs and investment spending are those expenditures for which the household expects to enjoy some future economic benefits.

Table 3. 1: Description of spending categories

Categories	Goods/Commodities
Food	Grains, banana, potatoes, bites, fruits, vegetables, including self-produced and consumed food items. Meat: fish, chicken, red meat including self-produced and consumed.
Non-food	Transportation costs such as bus and boda-boda fare Clothing and shoes Wedding, engagement and funeral contributions/costs. Home enhancements (e.g., roofing, flooring, plumbing etc) Luxury items (expensive clothes, rings) Loan repayment, etc.
Utilities	Cooking fuels such as kerosene Rental payment for living housing (imputed rent) Expenses for utilities such as water, electricity and gas
Durables	Furniture (e.g., cupboards, chairs, beds, carpet) Car/bicycle/ motorcycle/bajaj Mobile phone (purchasing cost) Other electronic items (e.g., music systems, radio,DVDs)
Physical investment	Starting up a new venture Purchase of land or house Productive assets and farming equipment (e.g., plough, water pump)
Education	Education and apprenticeship costs (including uniforms, tuition fees, stationeries, and supplies)
Healthcare	Health (insurance cover, doctor consultation charges, hospital charges, medicines costs)

The study adopted Working-Leser model in examining the impact of cash transfer on spending patterns of low-income household. The model has been widely applied in determining the households' budget shares and spending elasticities on various commodities (Ahmed *et al.*, 2020; Husain *et al.*, 2018). The model relates the budget share of good j with the logarithm of total household spending. However, since the model uses OLS estimates, it does not address the biasness due to endogeneity. For households not selected randomly, characteristics related to a poor household rather than their participation state in a cash transfer programme can potentially impact their spending patterns, which means OLS results can be influenced. Thus, to deal with endogeneity which may be caused by households' characteristics, the study employed Propensity Score Matching (PSM).

PSM estimates the average treatment effect related to participation in cash programme on the outcome of interest. Specifically, the study compares the spending patterns of households participating in cash transfer programme with those not participating, after matching both groups on the basis of their characteristics. The difference in spending patterns is then attributable to the participation of household

in cash transfer programme. The participation in cash transfer programme is represented by a dummy variable D_j which is equal to one for household j participating in cash transfer programme and zero for non-participating household. Let W_{ij1} and W_{ij0} represent the outcome variable indicating the households budget share in commodity i for household j in the existence and non-existence of cash transfer programme respectively. So, the intervention effect of cash transfer with and without relevant outcome indicators can be given by:

$$\pi_j = E[W_{j1}|D_j] - E[W_{j0}|D = 1] \dots \dots \dots (1)$$

where π_j is the average treatment effect on participation in cash transfer programme (average difference on budget shares of cash transfer receiving households and households without cash transfer). The problem is that the study does not observe the same household under two different periods: So, the study can estimate $E(W_{j1}/D_j=1)$ and $E(W_{j0}/D_j=0)$, but it cannot estimate the counterfactuals $E(W_{j1}/D_j=0)$ and $E(W_{j0}/D_j=1)$.

The first step of using propensity score matching is to select the covariate to be used in the model. Harris and Horst (2016) recommend that when deciding the variables, it is important to include variables that are theoretically related to self-selection and characteristics present prior to the intervention. The study used households' characteristics influencing their participation in the programme. Eight independent variables which are: age, marital status, gender, household size, years of schooling, home land size, production land size, and occupation were used. The choice of the variables was influenced by the indicators used in selection of cash transfer beneficiaries in Tanzania as indicated by Evans (n.d).

The second step was to estimate propensity score. Propensity score is the probability that the household received cash transfer given the set of variances included in the model. Propensity score is expressed as $P(X) = P(D_j=1/X)$. The purpose of creating propensity score was to enable balancing of beneficiaries and non-beneficiaries' characteristics. The comparison between households receiving cash transfer and those households not receiving, on the basis of observable variables, assumes that unobservable characteristics have no effect in the assignment of the treatment. PSM expect that at assumed set of household's characteristics X , the households budget shares are independent of cash transfer participation status. This assumption is

named conditional independence assumption. The assumption implies that only covariates which are not affected by participation in cash transfer programme should be included in the model. The condition assumes that there will be no election bias due to unobservable factors. It can be presented as:

$$(W_{j0}, W_{j1}) \perp D_j / X_j \dots \dots \dots (2)$$

Where \perp denotes independence. A further requirement is the overlap assumption which states that households with the same characteristics have equal positive probability to receive or not the cash transfers (Dehejia and Wahba, 2018). The assumption is expressed as:

$$0 < (D_j=1/X_i) < 1 \dots \dots \dots (3)$$

Assumptions (2) and (3) confirm that the exposure of households to treatment is random thus, treated and control units should be identically observed. Therefore, counterfactual estimation is presented as:

$$E(W_{j0}/D_j=1, W_j) = E(W_{j0}/D_j=0, X_j) \dots \dots \dots (4)$$

And lastly, the PSM average treatment effect on the treated (ATT) for household j is expressed

$$\pi_j = E(W_{j1}/D_j=1, P(X_j)) - E(W_{j0}/D_j=0, P(X_j)) \dots \dots \dots (5)$$

A number of methods have been proposed to match beneficiaries and non-beneficiaries. However, the most commonly used approaches are Nearest Neighbour Matching (NNM), Kernel matching (KM), Radius Calliper matching and Mahalanobis (Lane *et al.*, 2012). Each of the matching technique introduced has both benefits and drawbacks in terms of trade-off between quantity and quality of the outcomes. Therefore, they are often used in combination with others. This study applied NNM, Radius Calliper and Mahalanobis to match the beneficiaries and non-beneficiaries because they provided adequate balance on covariates.

The PSM methods gives insights into the impact of cash transfer on different expenditure items but it does not indicate whether there are differences at the marginal spending habits among cash transfer beneficiaries and non-beneficiaries. The marginal budget shares are computed by applying the Working-Leser model.

First, the study sought to understand if the average effect of cash transfer on household spending patterns using simple OLS was consistent with the findings obtained by the applying the matching techniques. The function form (6) for the budget share of household i in good j (w_{ij}) includes similar household characteristics z_i used in generating the propensity score in the process of matching:

$$w_{ij} = \alpha_i + z_i\gamma_i + D_i\theta_j + \epsilon_{ij} \dots \dots \dots (6)$$

where $i=1,2\dots W_{ij}$ is the budget share of household i in good j , z_i is the vector of household characteristics. D_i is a dummy variable capturing whether the household received cash transfer or not. α , β and γ_i are unknown parameters to be estimated and ϵ_{ij} is the error term. Attention is on the estimates of θ_j which indicates the effect of cash transfer on the different budget shares and the results are compared with those calculated from the PSM matching methods. If receiving cash transfer indicates similar effect on the households' budget shares allocated to specific expenditure items then the model can be extended so that it includes other factors which may affect households' budget share: The model can be expressed as follows:

$$W_{ij} = \alpha_i + \beta \ln x_i + z_i\gamma_i + D_i\theta_j + \epsilon_{ij} \dots \dots \dots (7)$$

The equation above is called the Working-Leser Model developed to relate households budget shares with the logarithm of total household expenditure (x_i). In equation (6) and (7) the budget share of household i in good j is defined as:

$$W_{ij} = c_{ij}/x_i \dots \dots \dots (8)$$

To capture the difference in marginal budget shares and spending elasticities, the study adopted expressions presented by Castaldo and Reilly (2007). The marginal budget share of household i in good j is defined as follows:

$$mbs_{ij} = \partial c_{ij} / \partial x_i \dots \dots \dots (9)$$

Where c_{ij} is the consumption of household i by good j , and x_i is the total consumption by household. After some manipulation the marginal budget share is derived as:

$$mbs_{ij} = \beta_j + c_{ij}/x_i = \beta_j + w_{ij} \dots \dots \dots (10)$$

The spending elasticity of good j for household i is calculated by using the formula below:

$$e_{ij} = (\beta_j + w_{ij}) \frac{1}{w_{ij}} = \frac{\beta_j}{w_{ij}} + 1 \dots \dots \dots (11)$$

The computation of elasticities allows the study to determine if a particular commodity should be categorized as luxury ($e_{ij} > 1$), necessity commodity ($e_{ij} < 1$) or it is an inferior commodity ($e_{ij} < 0$).

A main challenge relating to the application of budget share equations to cross-sectional household data is the censorship effect as the results of household's choice whether or not to purchase a particular item. If there are only few households reporting to have zero expenditure it is logical to assume that those items are non-censored. Therefore, it was not possible to distinguish households' choices from the random zeroes, therefore the problem couldn't be addressed by using Tobit model.

Standardised residual values were used to check outliers for OLS and Working Leser Model. Obtained residual values were above 3.0 or less than -3.0 as recommended by Chatterjee and Hadi (2015), which indicates that there were no outliers. Variance Inflation Factor (VIF) and tolerance statistics were used to check whether there is multicollinearity in the data. Multicollinearity arises when the independent variables are highly correlated with each other. Kwak and Kim (2017) assert that for the assumption to be met VIF scores should to be below 10, and tolerance scores above 0.2, which is the case in this study thus; there was no evidence of multicollinearity. The Durbin-Watson statistic was applied to test the assumption that the residuals are not linearly autocorrelated. For the assumption to be met, this value should be between 1.5 and 2.5. In this study, the value was between 1.8 and 2.31, so the assumption was met.

Table 3. 2: Estimation of ATT on households' budget shares

Outcome Variables	Matching Algorithm	Beneficiaries (ATT)	Non-beneficiaries (ATT)	Diff.	Std. error	t-stat
Food budget share	NNM(1)	0.55	0.62	-0.070	0.03	-2.33
	Radius(0.05)	0.55	0.60	-0.05	0.03	-1.86
	Mahalanobis	0.54	0.60	-0.06	0.03	-2.00
Utilities budget share	NNM(1)	0.092	0.097	-0.005	0.014	-0.37
	Radius(0.05)	0.093	0.095	-0.002	0.012	-0.17
	Mahalanobis	0.09	0.092	0.0014	0.013	0.11
Durables budget share	NNM(1)	0.19	0.18	0.011	0.024	0.46
	Radius(0.05)	0.19	0.20	-0.014	0.021	-0.66
	Mahalanobis	0.19	0.18	0.006	0.025	0.25
Investment budget share	NNM(1)	0.03	0.023	0.007	0.009	0.75
	Radius(0.05)	0.03	0.023	0.007	0.008	0.94
	Mahalanobis	0.029	0.026	0.003	0.009	0.37
Non-food budget share	NNM(1)	0.026	0.007	0.019	0.005	3.44
	Radius(0.05)	0.027	0.009	0.018	0.005	3.48
	Mahalanobis	0.025	0.011	0.014	0.006	2.54
Health budget share	NNM(1)	0.065	0.049	0.016	0.014	1.17
	Radius(0.05)	0.062	0.041	0.021	0.011	1.82
	Mahalanobis	0.069	0.046	0.023	0.015	1.59
Education budget share	NNM(1)	0.051	0.028	0.023	0.010	2.26
	Radius(0.05)	0.051	0.034	0.016	0.0095	1.70
	Mahalanobis	0.051	0.037	0.014	0.013	1.03

PSM estimators indicated that cash transfer had impact on food, non-food and education budget shares of beneficiaries' households. All three matching methods revealed that there was statistically significant difference on budget share allocation of non-food spending. However, Nearest Neighbour Method (NNM) and Mahalanobis matching indicated statistically significant differences on budget share allocation of food and non-food items. Radius calliper matching indicated that cash transfer impact on beneficiaries' household spending was on non-food budget share only. Non-beneficiaries' households being the reference category, a negative percentage point difference implies that they allocated a greater share to that consumption category than beneficiaries' households, and a positive percentage point difference implies the vice versa. In all matching methods, spending on food budget share indicated negative point difference while spending on non-food budget share had positive point difference.

From the OLS model which was expressed in equation (6), the study compares the effect of TASAF cash transfer programme budget shares of different items with the matching estimates in Table 3.2. The main interest is on the participation of TASAF cash transfer programme. The participation status was expressed as a dummy variable and its effect was mutually estimated with poor households' characteristics. The study found that cash transfer has different effects on how households allocated it to various commodities. Analysing the effect of cash transfer on household's spending patterns, the study found that cash transfer affected spending on food and non-food budget shares. In particular, receiving cash transfer decreased the budget on food by 3.9% per cent and increased the budget shares on non-food items by 1.5%. These findings are consistent with those which were obtained using the PSM matching methods. The study concludes that, overall, the OLS estimates on households' spending patterns were consistent with the ATT results by the PSM matching methods, and this allows us to rely on them.

3.5 Findings and Discussions

3.5.1 Impact of cash transfer on households spending patterns

Impact of cash transfer on households spending patterns was assessed by using Working Leser Model. To ensure conformity to the Working Leser Model, the study introduced log of total spending in the OLS equation (6). The main interest was to determine whether participation in cash transfer programme shaped the spending patterns of poor households. Therefore, the discussion is focused on the independent variable Participation in TASAF cash programme. Results of the model indicate that cash transfer had significant impact on food, non-food and health budget shares (Table 3.3). Therefore, the study partly rejects the null hypothesis that cash transfer has no impact on spending patterns of poor households. The receipts of cash transfer decrease the budget share allocated to food spending by 3.8 %, on average and *ceteris paribus*, relative to not receiving cash transfer. Also, the results suggest that budget share of non-food and health budget shares were about 1.47% and 2.7% higher, on average and *ceteris paribus*, for beneficiaries' households than non-beneficiaries' households respectively.

Table 3. 3: OLS budget shares equations-Working Leser Model

Variables	Food	Utilities	Durables	Investment	Non-food	Health	Education
Part_TASAF	-0.038*** (0.0108)	0.0086 (0.0109)	-0.0092 (0.0175)	00.0074 (0.0071)	0.0147*** (0.00417)	0.027** (0.0118)	0.0072 (0.0093)
Marital	-0.00991 (0.0801)	0.0012 (0.00418)	-0.0046 (0.0067)	-0.0014 (0.00274)	0.0013 (0.0016)	0.004 (0.0045)	-0.00003 (0.0036)
Sex	-0.0206 (0.0239)	0.0049 (0.0124)	0.0263 (0.0200)	-0.004 (0.00816)	0.0034 (0.00477)	-0.007 (0.01351)	-0.0029 (0.0107)
Age	0.0013* (0.0008)	0.0004 (0.0004)	-0.0011* (0.0007)	0.0028 (0.00027)	0.327 (0.00015)	-0.0006 (0.00043)	-0.00043 (0.00035)
Years_school	-0.0065 (0.0035)	0.0053*** (0.0018)	00.0012 (0.0026)	0.0022* (0.0012)	0.00092 (0.0007)	-0.0037 (0.00201)	0.00065 (0.00159)
Occupation	0.008*** (0.0033)	0.0278 (0.0017)	0.00067 (0.0027)	0.0027** (0.0011)	0.0006 (0.00065)	-0.005*** (0.00184)	-0.0034** (0.0015)
HH_size	0.004 (0.0067)	-0.0008 (0.0035)	-0.0075 (0.0057)	-0.0013 (0.0023)	-0.0015 (0.00134)	-0.005 (0.0038)	0.0117*** (0.00302)
Yrs_village	0.00027 (0.0003)	0.00004 (0.00016)	-0.00038 (0.0002)	-0.00001 (0.0001)	0.00003 (0.00006)	-0.00004 (0.0001)	0.00008 (0.00014)
Homeland_size	0.00061 (0.0109)	0.016*** (0.0057)	-0.011 (0.0092)	0.0074 (0.0071)	0.00075 (0.0022)	-0.0045 (0.0062)	0.0033 (0.0049)
Land_production	-0.0056 (0.0061)	-0.004 (0.00317)	0.067 (0.0051)	0.0051 (0.00208)	-0.0008 (0.0012)	0.0029 (0.0034)	-0.00087 (0.00272)
Log total annual spending	-0.109*** (0.0111)	-0.01* (0.0058)	0.063*** (0.0093)	0.0093*** (0.0038)	-0.001 (0.0022)	0.025** (0.063)	0.012** (0.0050)
Constant	1.8707*** (0.1498)	0.150** (0.0781)	-0.502*** (0.126)	-0.202*** (0.0512)	-0.0067 (0.02997)	-0.201* (0.0848)	-0.126* (0.067)
Observations	398	398	398	398	398	398	398
R-squared	0.625	0.622	0.647	0.132	0.511	0.802	0.707

Standard error in parentheses, ***p < 0.01, **p < 0.05, *p < 0.1

The decrease on food budget share is well explained by Engel's law which states that, as income rises, the proportion of income spent on food decreases. This is despite the fact that the absolute spending on food may rise or remain unchanged. These findings are consistent with the results by Tiehen *et al.* (2017) who reported that households participating in American Supplemental Nutrition Assistance Program (SNAP) spend less share of food budget than eligible non-participants. Food is the key budget component for low-income households. Food consumption typically makes up a great portion of the budget of a poor household. The share of total budget spent on food determines the poverty status of the household and the level of food security. The less the households spend on food in terms of budget share, the wealthier they are. Thus, the results imply that cash transfer beneficiaries are more wealthier and food secure than non-beneficiaries.

Allocation of higher budget share on health spending by beneficiaries than non-beneficiaries indicates positive outcome of cash transfer programme. These findings are supported by Courtin *et al.* (2018) and Sun *et al.* (2021) who concluded that cash transfer led to a modest improvement on health spending of low-income households in USA and China respectively. While in USA and China, beneficiaries were self-

motivated to invest in health care, in Tanzania the outcome is the results of the universal health insurance campaign which was ongoing throughout the country. However, the campaign was for all villagers: it was designed in such a way that the contribution was to be made on the days which cash would be disbursed to cash transfer recipients. This was confirmed by consensus from the FGD as follows:

“...They gave us only half of the payment which we were to receive in June payment; the remaining was to cover health insurance” (Lindi, January 15 2020).

This statement means that health insurance campaign favoured cash transfer beneficiaries, and hence encouraged their health spending. Complementary programmes designed to fit the local context of beneficiaries and conducted in line with cash transfer programmes can yield the desirable outputs. Thus, cash transfer reduces out of pocket expenditure and distress financing on health for poor households.

The increase in budget share of non-food items for beneficiary households can be explained by the fact that, as household income grows, spending diversity increases via reductions in the budget share of food spending and increases in non-food spending (Nsabimana *et al.*, 2020). Moreover, the view that cash transfer is not permanent income might induce beneficiaries to use it on goods that have longer utility. If consumption spending is taken as a straightforward proxy for income, such increase in spending is desirable outcome. This is an indication that purchasing power of beneficiary households has increased. However, if the increase in spending on non-food items has come at the expense of food, in a situation where majority of the beneficiaries' households continue to remain under-nourished this would suggest that, probably, not all is well.

To explore further, the study estimated the marginal budget shares and spending elasticities of each commodity. These marginal budget shares and elasticities are calculated from coefficients of budget shares as per OLS equation (6). The results in Table 3.4, indicate that increasing one unit in the household budget per capita, *ceteris paribus*, will increase spending on all seven items. However, the extent of increase varies from one item to another. Looking into three items in which OLS outcome indicated significant difference, increasing one shilling in household budget per

capita, *ceteris paribus*, will result in 0.453 of a shilling increase in spending on food for beneficiaries' households, and 0.512 of a shilling increase for non-beneficiary households. Increasing one shilling in budget per capita, *ceteris paribus*, will increase spending on non-food items by 0.137 and 0.067 of a shilling for beneficiaries and non-beneficiaries' households respectively. Furthermore, increasing one shilling in the budget per capita will increase health spending by 0.042 and 0.030 for beneficiaries and non-beneficiaries' households respectively, on average and *ceteris paribus*. Ranking all seven items by their marginal budget shares, beneficiaries' households spent more on food, non-food, utilities, investment, durables, education and health. On the other hand, non-beneficiaries spent more on food, utilities, investment, durables, non-food, education and health. The difference in priorities of households spending suggests that cash transfer has changed the households spending patterns. This implies that cash transfer is not treated like any other source of income.

This is further explained by elasticities results as presented in Table 3.4. Outcome indicates that income elasticities for food and utilities were positive but below 1. Income elasticities for durables, investment, non-food, health and durables were positive and above 1. From Marshall theory of supply and demand, goods with positive income elasticity but below 1 are categorized as necessity goods while goods with income elasticity above 1 are luxury goods. On this ground, both non-beneficiaries and beneficiaries viewed consumables (food and utilities) as necessity commodities and durables, investment, non-food, health and education as luxury goods. The fact that the sampled households regarded essential items such as health and education as luxury commodities underlines their low-income status.

Due to the fact that normal and luxury goods have a positive income elasticity of demand, it implies that, as incomes rise, more goods are demanded at each price level. On the other hand, the proportion of total consumer spending on necessity goods decline when the proportion of total spending for luxury commodities increase (Varlamova and Larionova, 2015).

Table 3. 4: Marginal budget shares and spending elasticities

	Food	Utilities	Durables	Investment	Non-food	Health	Education
Marginal budget share-beneficiaries	0.453	0.120	0.091	0.110	0.137	0.042	0.046
Marginal budget share-non-beneficiaries	0.512	0.134	0.099	0.112	0.067	0.030	0.049
Elasticity-beneficiaries	0.807	0.899	3.220	1.097	1.979	2.515	1.265
Elasticity-non-beneficiaries	0.704	0.901	2.551	1.345	1.010	3.113	1.304

Income elasticities for beneficiaries and non-beneficiaries on food were 0.807 and 0.704 respectively. This means that an income increases of 10% generated a spending increase of 8.07 % for beneficiaries' households and 7.04% for non-beneficiaries' households. These findings are consistent with Engel's theory that income elasticity of food is positive but less than 1 (Brugh *et al.*, 2018). When the household's income increases, the expenditure on food for that household increases as well, which indicates positive relationship between household's income and demand for food. However, the increase in food expenditure is slower than the increase in households' income, which leads to decrease in food budget share as income rises.

Income elasticities for beneficiaries and non-beneficiaries on non-food expenditure were 1.979 and 1.010 respectively. This infers that an increase of income by 10% will result into increase of non-food expenditure by 19.79% for beneficiary households and 10.10% for non-beneficiary households. Increase of poor households' income will result into increase in budget share of items which, from their views, are luxury commodities. Based on the fact that the amount of money given to them was not enough to purchase all the luxuries they wanted, recipient households opted to purchase only affordable luxuries. On this view, non-food items were affordable luxuries. This increase on poor household's budget share on non-food items is consistent with Duesenberry's relative income hypothesis, that low-income families will devote more of their increased income on consumption of goods which will raise their status quo in the community if they are living in a community where that income is regarded as relatively low because of the working of demonstration effect (Anindita and Sahadewo, 2020). Since non-food spending are conspicuous goods, their acquisition is the way to show others that the household is a success and thus it increases households' social status. Spending for social status

only, have negative implications for productive assets accumulation and investment in human capital development. Thus, spending on non-food items reduces cash transfer efforts of reducing households' poverty.

Income elasticities for beneficiaries and non-beneficiaries on health expenditure are 2.515 and 3.113 respectively. This implies that an increase of income by 10% will result into increase of health expenditure by 25.15 % for beneficiaries' households and 31.13 % for non-beneficiaries' households. Though healthcare is needed by everyone, poor households regarded it as a luxury commodity. Findings indicate that expenditure on health was more elastic than all other expenditure categories. This is supported by Khan *et al.* (2016) who concluded that poor households in Malaysia considered health as a luxury when financed by private households and as a necessity when financed by the public sector. Most poor households consider health expenditure as luxury commodity due to issues related to its affordability. Thus, although cash transfer programme has positive impact on poor households spending through insurance campaign, the impact was not enough to transform health from a luxury to necessity good. Poor households attend hospital only when they are critical ill and they can't spend on insurance voluntarily. The fact that health care was highly elastic, shows that increase of poor households' income will ultimately improve households spending on health.

3.5.2 Theoretical implications

Engel theory provides that, as the income rises, the households spending on necessities increases, while the budget share on the same decreases. In the context of cash transfer, the increased income of poor households has decreased the budget share on food items and increased budget share on health and education. These happen despite the fact that the cash transfer has resulted into increased spending of each expenditure category in absolute terms. Poor households regarded food and utilities as necessity goods, thus the decrease on budget share of food and its increase in absolute terms is consistent with the Engel's hypothesis.

3.6 Conclusions and recommendations

The study concludes that variation of poor household budget share on commodities is explained by variation in income level. Thus, increased income as a results of small and regular cash transfer, has increased budget share on non-food items, decreased

budget share on food items and increased budget share on health. Although the increase of spending on non-food items and decrease on food budget share was self-motivated, the increase of spending on health was influenced by TASAF insurance campaign. Thus, without external influence, low spending on health care could have been observed. This is contrary to programme expectations, that the cash transfer would improve spending on food, health and education. The results suggest that what are deemed to be essential items by government and donors for cash transfer recipients don't conform to the priorities of poor households. The fact that poor households perceived health and education as luxury commodities undermines the fight against intergenerational poverty.

The study recommends that policy makers and donors should design cash transfer programmes in such a way that programme expected outcomes are aligned with the spending habits of poor households at particular levels of income. Free cash transfer to poor households can transform the living standards of the households if it is invested in productive assets. However, this can only be achieved if the particular level of income is reached. Donors and government should design the cash transfer programmes with the objectives of not only improving households' consumption, but also improving spending on physical investments and durable commodities. Providing capital rather than dishing out money enough for small consumption only may reduce households' long-term dependence on cash transfer programmes. The study recommends review of the amount provided on its sufficiency to bring critical impacts. Using a combination of lump sum and small, regular cash transfer can promote wealth creation and transform households' view of health and education as luxury commodities.

REFERENCES

- Ahmed, J., Pau, F., & Martinez-Zarzoso, I. (2020). They earn and send; we spend: Consumption patterns of Pakistani migrant households Mazhar Mughal. *International Journal of Social Economics*. 45(7): 1092-1108pp.
- Anindita, A., & Sahadewo, A.(2020). Lighten the Burden: Assessing the Impact of a for Poor-Students Cash Transfer Programme on Spending Habits. *Journal of Development Studies*.56(7):1367–1383.doi://doi.org/10.1080/00220388.2019.1677888.
- Asfaw, S., Davis, B., & Dewbre, J., Federighi, G., & Handa, S., & Winters, P. (2016). The impact of the Kenya CT-OVC programme on productive activities and labour allocation. [<http://www.fao.org/economic/ptop/en/>]. Site visited on 7/11/2021.
- Basole, A. & Basu, D. (2015). Non-Food Expenditures and Consumption Inequality in India.*Economics Department Working Paper Series*.191.doi: <https://doi.org/10.7275/7088892>.
- Bastagli, F., Zanker., H., Harman, L., Barca, V., Sturge, G., Schmidst, T., &Pellerano, L.,(2016). Cash transfers: What does the evidence say? The rigorous review of program impact and of the role of design and implementation features. [<https://cdn.odi.org/media/documents/11316.pdf>]. Site visited on 8/10/2021.
- Bazzi, S., Sumarto, S., Suryahadi, A., Clemens, M., Hanson, G., McIntosh, C., Niehaus, P., Suryadarma, D., & Tobias, J. (2014). It's All in the Timing: Cash Transfers Consumption Smoothing in a Developing Countries. [https://www.bu.edu/econ/files/2012/11/BazziSumartoSuryahadi_Manuscript.pdf].Site visited on 7/11/2021.
- Brown, C., Ravallion, M., & Van de Walle, D. (2017). A Poor Means Test? Econometric Targeting in Africa.Policy Research Working Paper; No. 7915.World Bank. Washington, DC. [<https://openknowledge.worldbank.org/handle/10986/25814>]. Site visited on 7/09/2021.
- Brugh, K. Angeles, G. Mvula, P. Tsoka, M. & Handa, S. (2018). Impacts of the Malawi social cash transfer program on household food and nutrition security. *Food Policy*. 76:19-32. doi: <https://doi.org/10.1016/j.foodpol.2017.11.002>.

- Carroll, R., Dolmas, J., & Young, R. (2021). The politics of flat taxes. *Review of Economic Dynamics*. 39:174–201. doi: <https://doi.org/10.1016/j.red.2020.06.016>
- Castaldo, A., & Reilly, B. (2007). Do migrant remittances affect the consumption patterns of Albanian households? *South-Eastern Europe Journal of Economics*, 5(1).
- Chatterjee, S., and Hadi, A. (2015). *Regression Analysis by Example*. New York, John Wiley & Sons. 54pp.
- Coibion, O., Georgarakos, D., Gorodnichenko, Y., Kenny, G., & Weber, M. (2021). The Effect of Macroeconomic Uncertainty on Household Spending. *Working Papers Series 2557*. European Central Bank.
- Courtin, E. Muennig, P. Verma, N. Riccio, J. Lagarde, M. Vineis, P. Kawachi, I. & Avendano, M. (2018). Conditional Cash Transfers and Health of Low-Income Families in the US: Evaluating the Family Rewards Experiment. *Health Affairs* .37(3): 438-446. doi: <https://doi.org/10.1377/hlthaff.2017.1271>.
- Covarrubias, K., Davis, B., & Winters, P. (2012). From protection to production: Productive impacts of the Malawi Social Cash Transfer scheme. *Journal of Development Effectiveness*. 4(1): 50–77. doi: <https://doi.org/10.1080/19439342.2011.641995>.
- Dehejia, H., & Wahba, S. (2018.). Propensity score-matching methods for non experimental causal studies.[<https://users.nber.org/~rdehejia/papers/matching.pdf>]. Site visited on 3/8/2021.
- Démurger, S., & Wang, X. (2016). Remittances and Expenditure Patterns of the Left Behinds in Rural China. *China Economic Review, Elsevier*.37(C):177-190. doi:10.1016/j.chieco.2015.12.002
- Engel, E. (1857). Die productions-und consumtionsverhältnisse des königreichs sachsen. *Zeitschrift des Statistischen Bureaus des Königlich Sächsischen Ministeriums des Innern*, 8, 1-54.
- Evans, D. K., Bank, W., & Holtemeyer, B.(2016). Evaluating the effectiveness of a community-managed conditional cash transfer programme in Tanzania. Grantee Final Report. International Initiative for Impact Evaluation. New Delhi

- Evans, D. K., Gale, C., Kosec, K., Baird, S., Barrera-Osorio, F., Carvalho, S., Davies, E., Gilligan, D., Katz, L., Kurdi, S., Niehaus, P., Schaffner, J., & Taylor, E. (2021). The Educational Impacts of Cash Transfers for Children with Multiple Indicators of Vulnerability.[<https://www.cgdev.org/sites/default/files/education-impacts-cash-transfers-children-multiple-indicators-vulnerability.pdf>]. Site visited on 1/09/2021.
- Evans, K., & Popova, A. (2014). *Cash Transfers and Temptation Goods A Review of Global Evidence. Policy Research Working Paper;No. 6886. World Bank, Washington, DC.* <https://openknowledge.worldbank.org/handle/10986/18802>.
- Evans., K (n.d). Proposed pilot evaluation design: Community-based conditional cash transfer pilot Tanzania social action fund (TASAF). *retrieved from [https:// catalog. ihsn.org/index.php/catalog/2331/download/37125](https://catalog.ihsn.org/index.php/catalog/2331/download/37125)*
- Forget, L, Peden, D, & Strobel., B. (2013). Cash transfers, basic income and community building. *Social Inclusion. 1(2):84–91.* doi: <https://doi.org/10.12924/si2013.01020084>.
- Harris, H. & Horst, S. (2016). A Brief Guide to Decisions at Each Step of the Propensity Score Matching Process. *Practical Assessment, Research, and Evaluation, 21(4).*doi: <https://doi.org/10.7275/yq7r-4820>
- Heckman, J.J. & Todd, P.T.(2009). A note on Adapting Propensity Score Matching and Selection Models to Choose Based Samples. *Economic Journal. 119(1): 230-234.* doi:doi: 10.1111/j.1368-423X.2008.00269.x.
- Husain, J., Datta, K., Virk-Baker, K., Parascandola, M., & Khondker, H. (2018). The crowding-out effect of tobacco expenditure on household spending patterns in Bangladesh. *PLOS ONE. 13(10).* doi: <https://doi.org/10.1371/journal.pone.0205120>
- Jappelli, T & Pistaferri, I. (2017). *The Economics of Consumption; Theory and Evidence.* Oxford University Press.
- Jouini, N., Lustig, N., Moumni, A., & Shimeles, A. (2018). Fiscal Policy, Income Redistribution, and Poverty Reduction: Evidence from Tunisia. *Review of Income and Wealth. 64: 225–S248.* doi: <https://doi.org/10.1111/roiw.12372>.
- Kaus, W. (2012) : Beyond Engel’s Law: Pursuing an Engelian approach to welfare a cross country analysis. *Jena Economic Research Papers.* 2012-028, Friedrich Schiller University Jena and Max Planck Institute of Economics, Jena, Germany.

- Khan, H. N., Razali, R. B., & Shafie, A. B. (2016). Modeling determinants of health expenditures in Malaysia: evidence from time series analysis. *Frontiers in pharmacology*, 7, 69.
- Kwak, S. K., & Kim, J. H. (2017). Statistical data preparation: management of missing values and outliers. *Korean journal of anaesthesiology* 70(4): 407–411. doi: <https://doi.org/10.4097/kjae.2017.70.4.407>.
- Lane, F. C., To, Y. M., Shelley, K., & Henson, R. K. (2012). An Illustrative Example of Propensity Score Matching with Education Research. *Career and Technical Education Research*. 37(3):187–212. doi: <https://doi.org/10.5328/cter37.3.187>
- Li, N (2021). An Engel Curve for Variety. *The Review of Economics and Statistics*. 103 (1):72–87. doi: <https://doi.org/10.1162/resta00879>
- Mpasa, O. (2016). Socio-economic determinants of household spending on education in Sumbawanga Municipality. Dissertation for award of the Degree of Master of Science in Economics of Mzumbe, Tanzania.
- Mpoki, G. (2016. December 7). TASAF cash handouts queried. *The Guardian*
- Natali, L., S., & A., & Peterman, D., & Seidenfeld, G. Tembo., & Zambia Cash Transfer Evaluation Team (2016). Making Money Work: Unconditional cash transfers allow women to save and re-invest in rural Zambia. *Innocenti Working Paper*. 2016 (2). UNICEF Office of Research, Florence. [https://www.unicef-irc.org/publications/pdf/IWP_2016_02.pdf]. Site visited on 25/8/2021.
- National Bureau of Statistics (2019). *Tanzania Mainland Key Indicators report*. Retrieved from https://www.nbs.go.tz/nbs/takwimu/hbs/2017_18_HBS_Key_Indicators_Report_Engl.pdf
- Nsabimana, A., Swain, R., Surry, Y., & Ngabitsinze, J. (2020). Income and food Engel curves in Rwanda: a household microdata analysis. *Agric Econometrics*. 8:11. doi: <https://doi.org/10.1186/s40100-020-00154-4>
- Onyango, W. (2017). Impact of conditional cash transfer programme on household consumption in *Kitui county*. A Research Project for Partial Fulfilment for the Award of Masters in Economics (Policy Management) in Kenyatta University, Nairobi.
- Pant, D. (2017). An analysis of the determinants of remittances and effect of remittance on expenditure habits and child welfare in the households of

- Nepal. Thesis submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy International Development and Applied Economics School of Agriculture, Policy and Development. University of Reading, UK.
- Randazzo, T., & Piracha, M. (2014). *Remittances and Household Expenditure Habits in Senegal*. [<https://ftp.iza.org/dp8106.pdf>]. Site visited on 9/10/2021.
- Sun, S., Huang, J., Darrell L., & Sherraden, M. (2021). Cash Transfers and Health Annual Review of Public Health. 42(1). 363-380. doi:<https://doi.org/10.1146/annurev-publhealth-090419-102442>.
- Thapa, S., & Acharya, S. (2017). Remittances and household expenditure in Nepal: Evidence from cross-section data. *Economies*. 5(2). doi: <https://doi.org/10.3390/economies5020016>
- Tiehen, L., Newman, C., & Kirlin, J. A. (2017). *The food-spending patterns of households participating in the Supplemental Nutrition Assistance Program: Findings from USDA's FoodAPS* (No. 1476-2017-4105).
- Tiwari, S., Daidone, S., Ruvalcaba, M. A., Prifti, E., Handa, S., Davis, B., Niang, O., Pellerano, L., Quarles van Ufford, P., & Seidenfeld, D. (2016). Impact of cash transfer programmes on food security and nutrition in sub-Saharan Africa: A cross-country analysis. *Global Food Security Elsevier*. L (11): 72–83. doi: <https://doi.org/10.1016/j.gfs.2016.07.009> . Site visited on 7/11/2021
- Varlamova, J., & Larionova, N. (2015). Macroeconomic and Demographic Determinants of Household Expenditures in OECD Countries. *Procedia Economics and Finance, Elsevier*.24: 727–733. doi: doi: [https://doi.org/10.1016/s2212-5671\(15\)00686-3](https://doi.org/10.1016/s2212-5671(15)00686-3)
- Waidler, J., Hagen-Zanker, J., Gassmann, F., & Siegel, M. (2017). Do remittances and social assistance have different impacts on expenditure patterns of recipient households? The Moldovan Case. *Migration and Development*. 6(3):355–375. doi: <https://doi.org/10.1080/21632324.2016.1159887>.
- Wamoyi, J., Balvanz, P., Gichane, M. W., Maman, S., Mugunga, S., Majani, E., & Pettifor, A. (2020). Decision-making and cash spending patterns of adolescent girls and young women participating in a cash-transfer intervention in Tanzania: Implications for sexual health. *Global Public Health*.15(4):587–597. doi:<https://doi.org/10.1080/17441692.2019.1692891>.

- Weber, E., Amos, A., Fry, M., Stevens, S., & Rinehimer, M. (2020). Clinical Effectiveness of an Aquatic Exercise Programme on Those with Visual Impairments: A Protocol Study.
- White II, M. (2018). How big should control group be in a randomized control group? Retrieved from <https://www.markhw.com/blog/control-size> on 24, December 2019.
- World Bank (2018). April 2018 global poverty update from the World Bank [<http://blogs.worldbank.org/developmenttalk/april-2018-global-poverty-update-world-bank>] site visited on 21/09/2018
- Yamane, T. (1967). *Statistics: An Introductory Analysis*. the University of Michigan, USA.
- Yu, X. (2018). Engel curve, farmer welfare and food consumption in 40 years of rural China. *China Agricultural Economic Review*. 10(1): 65-77. [http://www.emeraldinsight.com/10.1108/CAER-10-2017-0184?utm_campaign=RePEc&WT.mc_id=RePEc]. Site visited on 6/10/2021.

APPENDICES

Appendix 3. 1 Impact of participating in cash transfer programme on household expenditure patterns (OLS results)

Variables	Food	Utilities	Durables	Invest	Non-food	Health	Education
Part_TASAF	-0.039** (0.019)	-0.0086 (0.09)	-0.0087 (0.009)	0.00752 (0.805)	0.0146*** (0.0015)	0.027 (0.02)	0.0073 (0.007)
Marital	-0.0059 (0.006)	0.0016 (0.002)	0.0022 (0.002)	-0.0021 (0.002)	0.0013 (0.001)	0.0033 (0.003)	-0.00049 (0.00048)
Sex	0.0056 (-0.006)	0.0063 (0.006)	0.0175 (0.017)	-0.0067 (0.007)	0.0036 (0.004)	-0.0105 (0.010)	-0.0046 (0.005)
Age	0.002 (0.002)	0.0004 (0.0004)	-0.0012 (0.001)	0.00316 (0.0002)	0.000154 (0.0001)	-0.00068 (0.001)	-0.00045 (0.005)
Years_schooling	0.012*** (-0.0039)	0.0047** (0.00182)	0.0045 (0.004)	0.00316** (0.0012)	0.00085 (0.0009)	-0.0024 (0.020)	0.0013 (0.001)
Occupation	-0.0047 (0.005)	0.031* (0.0017)	-0.0015 (0.001)	- (0.0034*** (0.0011))	-0.00056 (0.001)	0.0041** (0.0019)	0.00296 (0.003)
HH_size	-0.0013* (0.0073)	-0.0024 (0.002)	0.0028 (0.003)	0.0018 (0.002)	-0.0017 (0.002)	-0.00072 (0.001)	0.013*** (0.0029)
Yrs_village	0.0001 (0.0021)	0.000034 (0.0006)	-0.00029 (0.003)	0.00001 (0.021)	0.00003 (0.013)	0.0000001 (0.0020)	0.001 (0.0041)
Homeland_size	0.00099 (0.034)	0.0158*** (0.0057)	-0.0112 (0.011)	-0.0049 (0.005)	0.00076 (0.0008)	-0.0046 (0.005)	0.0033 (0.003)
Land_production	-0.0069 (0.007)	-0.0038 (0.004)	0.0075 (0.007)	0.0016 (0.002)	-0.0082 (0.001)	0.00319 (0.003)	-0.0007 (0.0007)
Constant	0.614*** (0.02)	0.038 (0.091)	0.229*** (0.0689)	0.021 (0.102)	0.0065 (0.250)	0.0875 (0.011)	0.0167 (0.020)
Observations	398	398	398	398	398	398	398
R-squared	0.0698	0.0544	0.709	0.504	0.727	0.406	0.434

Note: Standard error in parentheses, ***p < 0.01, **p < 0.05, *p < 0.1, two tailed test.

Appendix 3. 2: Determinants of household's participation in CTs programme

Variables	Coefficient	Std. error	Z-score	p-value
Marital	-0.096	0.086	-1.12	0.263
HH_Head	.5303577	.2568949	2.06	0.039
Sex	.5303577	.2568949	2.06	0.039
Age	-.0062756	.0081997	-0.77	0.444
Yr_schooling	-.1037705	.0372166	-2.79	0.005
Occupation	.0374555	.033877	1.11	0.269
HH-size	.062351	.0688087	0.91	0.365
Homeland_size	.0592819	.1157017	0.51	0.608
Productionland_size	.0366706	.0648017	0.57	0.571
Constant	-.9079625	.8917157	-1.02	0.309

Appendix 3. 3: Test of balancing property of propensity score

Blocks of propensity score	Treatment: Participation in CT programme		Total
	Control group	Treated group	
.1964676	2	4	6
.2	102	98	200
.4	90	93	183
.6	5	4	9
Total	199	199	398

CHAPTER FOUR

4.0 Cash Transfer and Food Demand in Lindi District, Tanzania

Gidion Njuga¹, Benedicto Kazuzuru², and William Warsanga³

¹Lecturer, Moshi Co-operative University, Tanzania; Email: gidionjuga@gmail.com.

²Associate Professor, Sokoine University of Agriculture; Tanzania:Email;
kazuzurub@gmail.com

³Lecturer, Moshi Co-operative University, Tanzania; Email: wbarnos@gmail.com

4.1 Abstract

It is well documented how Cash Transfer (CT) programmes affect several aspects of poverty. There is, however, paucity of information on how it affect household food demand. This study assessed Cash Transfer (CT) effect on food demand and its implications on food insecurity in Lindi District using Almost Ideal Demand Framework. The study employed the Instrumental Variable (IV) technique. To gather households' information, a questionnaire was administered to 398 households, apportioned to two groups of beneficiary and non-beneficiary households using the ratio of 1:1. Five Focus Group Discussions (FGDs) and 14 Key Informants Interviews (KIIs) were conducted. Qualitative data were analysed using content analysis. Findings indicated that CT has effect on demand for roots and tubers, cereals and vegetables. Roots and tubers and cereals are staple foods in Lindi district, implying that, as the income rises, poor households demand for staple foods together with their side dishes. This increase in demand had no significant effect on reduction of food insecurity. Therefore, to further increase food demand and ultimately reduce food insecurity, the study recommends to TASAF to increase the amount of money given to poor households and introduce food schemes that are directly focused on tackling food insecurity.

Key words: Food demand, Cash Transfer, Propensity Score Matching (PSM).

4.2 Introduction

Tanzania made considerable advancements in food production during 2010s, supported by consistent economic growth. In the year 2021/2022, food surplus increased to 3.8 tonnes from 1.4 tonnes in the year 2010/2011 (URT, 2022). Despite this increase, poorest and most marginalized households have limited access to food. Limited access to food (inability to afford or access a healthy diet) is a public health emergency, manifesting as a short-term dilemma of accessing food alongside longer-term effects of relying on poor nutritional quality foods to satiate hunger and worrying about food running out because of lack of money. As of 2022, 5.3 million people in Tanzania lacked sufficient food for consumption (Kamer, 2022). This corresponds to 9.4 percent of the country's population. Having the food surplus on one hand and food insecurity on the other hand reveals the marginalization of market economy to those who are not able to compete. This is due to the fact that food production is unequally distributed across the country (Mkonda & He, 2018). While larger producers have enough surplus to meet their demand and sell to others, poor households still produce less than what they need for consumption and lack financial muscles to purchase the food they need even if it is available in the market (Kinyondo & Maghashi, 2017).

One possible approach to eliminate food insecurity for poor households is to alleviate their financial constraints through livelihood diversification or by implementing income assistance programmes based on Cash Transfers (CTs) or food credit schemes. Cash Transfers (CTs) are direct payments by government made to eligible groups of people, usually poor households for the purpose of smoothing consumption. In 2013, as part of the third phase of the Tanzania Social Action Fund (TASAF), Tanzania began a countrywide CT programme (UNICEF, 2018) which aimed to help households in the nation that are extremely poor. Although there are other CT programmes in the country, such as Cash Plus, TASAF programme is by far the largest (Pettifor *et al.*, 2019). The programme targets 9.7 per cent of the population below the food poverty line plus an additional 5 per cent who are transient poor (Wright *et al.*, 2018). The programme intends to increase poor households' income and give them the power to make their own choices about what they need each month. It is expected that, with increase of poor households' income, positive effect will be achieved on nutrition through direct or indirect mechanisms. The direct effect expected is through purchase of highly needed food to meet their

households' food demands. These expectations are banked on the assumption that the recipients are rational and will choose the best for their health. Nevertheless, the argument over food insecurity in developing nations centres on everyone's right to obtain safe, adequate, culturally acceptable and nourishing food, rather than the food choices made by impoverished households (Bandumula, 2018; Waha *et al.*, 2018; Giller, 2020). Poor households are challenged to balance between the need for nutrients or satiation. The CT programme by TASAF encourage recipients to maintain the balanced diet as recommended by Tanzania Food and Nutrition Centre (TFNC) (Msuya, 2017).

Studies have documented the difficulties that low-income households experience in trying to satisfy their food needs within the constraints of limited budget (Ahmed *et al.*, 2017; Mah and Taylor, 2020). Higher food prices and availability of food particularly in rural areas have repeatedly been mentioned as factors directly influencing poor households' choices on food demand. The law of demand indicates that the consumption rate declines when the price of food rises, even when the consumer is monetarily compensated for the effect of the higher price; this is called the substitution effect (Mazurek *et al.*, 2019). As the cost of food increases, buyers tend to turn to other food categories. The reduction in total buying power caused by the price increase leads to reduction in food demand, when the increase is not substituted by increase in income (Franks and Bryant, 2017). The effects of prices are minimized in the context that the rise is proportional to the increase in income. Thus, as the income of households rises, demand for most food products increases, shifting the demand curve higher at all possible prices (Mian *et al.*, 2021).

It has been documented by empirical studies that, as the income increases, the demand for food increase at a decreasing rate (Cranfield, 2020; Ndanshau, 2018, Yu, 2018). Poor households spend a much higher share of their income on food than on other items (Arndt *et al.*, 2020). This relationship between food consumption and income is well described by Engel curves. FAO estimates food budget share of poor households between 60 per cent and 80 percent of households' total expenditure (Rahayu *et al.*, 2021). This implies that any policy changes which influence food demand might significantly influence the life style and choices of poor households.

However, the relationship between income and specified food category cannot be generalized. Types of food available and preferences of consumers vary greatly from

one context to another. In Thailand, increase in income had significant effect on demand for eggs and dairy products, rice and oils and fats (Phetcharat & Chinnakum, 2022). In China, increase of household's income had no effect on demand for grain and positive effect on all remaining food categories. Explaining this variation of food consumption demand from one context to another, Moreno and Malone (2020) argue that consumers are more willing to pay a premium for the food product which is part of their local identity than for a similar food which is not part of their identity.

Additionally, people's judgements and decisions are frequently affected by systemic biases or heuristics and are highly dependent on the context in which they are produced; hence, even little or unanticipated changes in the environment can have a significant effect on people's choices (Reisch and Zhao, 2017). This complicates the understanding of what guides individual households' choice of appropriate food mix.

In Tanzania, a study by McCullough *et al.* (2020) found that the poorest consumers exhibit elastic demand (with respect to their total expenditures) for poultry, eggs, red meat, wheat, nuts and seeds, fruit, dairy and fish and seafood. Expenditure elasticities of demand are lower (less than 1) for maize, pulses, vegetables, roots and tubers, cassava, fats and oils, sugar, and other foods. These outcomes are contrary to those by Cockx *et al.* (2019) who found that consumption for Tanzanian households were elastic for staple foods such as maize, cereals and tubers and less elastic for fruits, seeds and fish. In both studies, there was a consensus that changes in income levels influence the food consumption demand. However, the extent and direction of changes differed on the basis of sources of income. McCullough *et al.* (2020) focused on the income generated from agricultural activities while Cockx *et al.* (2019) focused on income from employment as the outcome of urbanization.

Thus, if the source of income may lead to variation of food demand, the need to understand how CT income can influence food spending of poor households should not be ignored. In developing countries, where a large percentage of household expenditure is allocated to food, analysis of food demand is particularly useful because it can provide information on specific sub-populations of households that are more likely to be affected by changes in commodity prices or household incomes. Furthermore, for promotion of poor households' consumption shift towards more beneficial goods (such as nutritious foods), the knowledge on their demand of different food items is needed.

4.3 Theoretical Framework and Hypothesis development

4.3.1 Almost ideal demand system framework

The study adopted the Almost Ideal Demand System (AIDS) framework proposed by Deaton and Muellbauer (1980) to estimate household budget shares for different food groups. The budget proportions of the different commodities under the AIDS framework are linearly connected to the logarithms of real total spending and relative price logarithms. This study selected this framework because it has a functional form that is consistent for use with household budget and cross-sectional data and has the majority of the desirable qualities in traditional demand analysis (Deaton & Muellbauer 1986, Deaton, 1997). Furthermore, it is focused on explaining behavioural variations between households in cross-section research (Deaton & Muellbauer, 1980). Since it is typically assumed that all households have access to the same pricing, behavioural differences are only explained in terms of variations in total spending and household characteristics.

Other studies that have employed variants of the AIDS model to estimate households' food demand include ones by Khed and Kb (2018), Ji (2019) and Lei *et al.* (2021). The limitation of AIDS framework is based on the fact that in estimating demand equations, one of the right-hand-side added explanatory variables, participating in CT programme, may be endogenous in the sense that it is correlated with the equation error. Therefore, to deal with endogeneity problems, this study introduced Instrumental Variable (IV).

4.3.2 Hypothesis

A rise in income often encourages people to eat a variety of foods and tends to boost their intake of high-quality foods like meat, fish, milk, fresh fruit, and vegetables (Seidu, 2019; Korir *et al.*, 2020). Additionally, when earnings rise and lifestyle changes, there is a corresponding rise in the need for energy, which effects grain demand. Mostly, Tanzanians consume cereals, with maize as the main dietary group along with fruits, vegetables, milk, eggs and other starchy foods. Few people consume sweeteners, legumes, nuts, oil crops and animal items (Minja *et al.*, 2021). Thus, the main assumption with CT programmes is that the increased household's income will increase household food consumption in terms of quantity and

diversification. Therefore, the study hypothesized that as income increases, households' demand for goods, including food, increases.

4.4 Research Methodology

4.4.1 Research Design

To empirically estimate casual effect of intervention when randomization is not feasible, quasi-experimental design is recommended (Weber *et al.*, 2019). Thus, this study adopted a quasi-experimental design by assigning respondents to intervention (CT) by means of administrator selection rather than random. The design identified two comparable groups (treatment and control) so that researchers could look into disparities in outcomes of these groups.

4.4.2 Geographical coverage

Lindi District, which is part of the Lindi Region, a seaside town in Tanzania's southeast, was the area of study. With 38 percent of the population living below the national poverty line, Lindi is Tanzania's third poorest region (World Bank, 2019). The Lindi District has more than 14.8 percent of households enrolled in the CT programme, making it the district with the highest percentage of recipients enrolled in the CT programme (URT, 2018b). As a result, the district was a suitable area to investigate Tanzania's CT influence on household's food demand.

4.4.3 Population and sampling

The sample size for this investigation was determined in two stages. The first stage was to calculate the required minimum sample size, and since the number of households in Lindi district was known, the following finite population formula proposed by Yamane (1967) was used;

$$n = \frac{N}{N * (e)^2 + 1} = \frac{99,559}{99,559 * (0.05)^2 + 1} = 398 \text{ respondents}$$

Where, n is sample size, N is number of households in Lindi district (NBS, 2019), e is a precision level which was 0.05. As a result, the sample units included 398 households. The second stage was to determine a comparison group. Using Monte Carlo simulation, White II (2018) recommended splinting 50/50 treatment and control groups since it yields highest statistical power. Thus, the ratio of 1:1 was

used in selection of beneficiary and non-beneficiary households. Each group had 199 households.

In Tanzania, the largest Productive Social Safety Net (PSSN) is carried out by Tanzania Social Action Fund (TASAF) since 2000. TASAF's main components during data collection period were public works, conditional CTs and unconditional CTs. Thus, the treatment group included only households benefiting in terms of both conditional and unconditional CT. Nine villages were chosen in a systematic manner, and the number of CT recipients in a village was used to calculate a representative sample size using the size-proportional formula. White and Subarwal (2014) argue that, in order for matching estimators to decrease biasness as conventionally measured, the control group must be sampled from the same population as the treated group. Non-recipients were then selected to reflect the selection of recipients. Recipients were assigned codes and then an automated number generator was used to randomly select them. To select non-recipients, a snowballing technique was used, in which each respondent provided information about one other non-recipient.

4.3.4 Data collection techniques and tools

A questionnaire was used to gather data on the household characteristics and food expenditure. A total of 398 questionnaire copies were administered to both CT recipients and non-recipients. The questionnaire included both open and close ended questions. The use of open and close ended questions enabled the study to obtain both quantitative and qualitative data, resulting in more comprehensive results. Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) were also employed to acquire qualitative data in order to validate survey results. Each of the five focus groups had seven participants from five villages. Only CT recipients were included in the FGD because they were the ones who could best describe the link between CTs and household food expenditures. The number of FGDs that were undertaken was determined using the theoretical saturation principle. Validation sessions with representatives from all FGDs were held to reconcile divergent viewpoints on the same subject. Fourteen KIIs were chosen based on their previous expertise, nine of them being Village Executive Officers (VEOs); four were TASAF coordinators and one was a District Nutrition Officer. Qualitative data were analysed by using content analysis as recommended by Schilling (2006). The steps included transcription of interview tapes into raw data, condensing and structuring the data, building and

applying a category system, displaying data and results for concluding analyses and interpretation. Quantitative data were first analyzed using AIDS model and then supplemented with using qualitative data.

4.3.5 Ethical Considerations

During fieldwork, participants were informed about the purpose of the study and the possible outcomes. Each participant’s consent form was obtained and participants were informed that information so extracted would be treated in a strictly confidential way and the names of individuals would not be included in the reporting of the findings. Analysis and interpretation were guided by literature review, and there was no fabrication or falsification of results.

4.3.6 Analytical Model

The study models household food consumption behaviour using an Almost Ideal Demand System. Correspondingly, the demand functions, expressed in terms of budget shares are:

$$w_{ij} = \alpha_i + \sum_i \gamma_{ij} \log p_j + \beta_i \log(X/P) \dots\dots\dots(1)$$

where $i=1,2\dots$ W_{ij} is the budget share of household i in good j while α_i, β_i and γ_i are unknown parameters to be estimated. p_j is the price of good j , X is total expenditure where P is the translog price index defined by:

$$P = \alpha_0 + \sum_k \alpha_k \log p_k + \frac{1}{2} \log \sum_j \sum_k \alpha_k \log p_k \dots\dots\dots(2)$$

where p_k is the aggregate price for food group k . To obtain linear demand system at the estimation stage, Deaton and Muellbauer (1986) suggest replacing equation (2) by the Stone price index P^* , defined as:

$$\log P = \sum_k w_k \log p_k \dots\dots\dots(3)$$

Approximation of the AIDS using this price index has produced empirical results similar to those obtained from the complete nonlinear system (Nuani *et al.*, 2022). For the AIDS to be consistent with the properties of individual consumer demand theory, the structural parameters of Equation (1) must satisfy the homogeneity, adding-up, and Slutsky symmetry as presented below:

$$\sum_{i=1}^n \alpha_i = 1; \sum_{i=1}^n \gamma_{ij} = 0 \sum_{i=1}^n \beta_i = 0; \sum_{j=1}^n \gamma_{ij} = 0; \gamma_{ij} = \gamma_{ji} \dots\dots\dots(4)$$

Alternatively, these restrictions can be tested as behavioural hypotheses implied by the theory of consumer demand. Since one of the objectives of the study was to

estimate expenditure (income) elasticities of various group of foods, the coefficients from the demand system estimated in equation (1) are inserted in the following formula:

$$e_{ij} = (\beta_j + w_{ij}) \frac{1}{w_{ij}} = \frac{\beta_j}{w_{ij}} + 1 \dots\dots\dots(5)$$

Where e_{ij} is the expenditure elasticity of household i in food group j . The computation of elasticities allows the study to determine if a particular food group should be categorized as luxury ($e_{ij} > 1$), necessity commodity ($e_{ij} < 1$) or it is an inferior commodity ($e_{ij} < 0$).

To estimate the effect of CT on food budget share, CT participation status dummies and households' characteristics were introduced to equation (1). It was extended and presented as

$$:w_{ij} = \alpha_i + \sum_i \gamma_{ij} \log p_j + \beta_i \log(X/p) + \beta_{2i}D_j + \beta_{3i}Z_j + \epsilon_{ij} \dots\dots\dots(6)$$

Where D_j is a dummy variable capturing whether the household received CT or not, z_i is the vector of household characteristics and ϵ_{ij} is the error term.

However, estimation of equation (6) is subject to endogeneity errors due to selection bias which may occur as a result of differences in characteristics between the treatment group (households receiving CTs) and the control group (households not receiving CTs) prior to the programme. To address the potential endogeneity problem, this study adopted the instrumental variable (IV) approach which takes care of the issues related to unobserved variables and since it uses Ordinary Least Square (OLS) equations, coefficients β_j can be estimated. If the correlation between the explanatory variable and the error term is zero, then the OLS estimate is consistent. However, if the explanatory variable is correlated with the error term via other unobservable variable, then one needs an IV estimator to achieve consistency. IV improves over OLS in the sense that the effect is still biased but consistent, while under endogeneity the effect would not only be biased but also inconsistent.

For the IV model, the following equations were estimated:

$$w_{ij} = \alpha_i + \sum_i \gamma_{ij} \log p_j + \beta_i \log(X/p) + \beta_{2i}D_j + \beta_{3i}Z_j + \epsilon_{ij} \dots\dots\dots(7)$$

$$D_j = a_i + \beta_{4i}T_i + \beta_{5i}Z_j + \pi_{ij} \dots\dots\dots(8)$$

Where T_i represents the vector of instrumental variables relating to D_j . The study implemented IV estimation using two-stage least squares (2SLS) in Stata 15, where equation (8) was first estimated by OLS to obtain the predicted value of the treatment variable. In the second stage, the parameters in equation (7) were estimated by replacing D_j with the predicted value. When the instrument is valid, the estimated coefficient of the treatment variable β_{2i} can be interpreted as the local average effect of the treatment on household food budget share.

Furthermore, to estimate how changes in food demand influenced poor households' food insecurity, the following Instrumental Variable (IV) models were used:

$$Y_{ij} = \alpha_i + \beta_{2i}D_j + \beta_{3i}Z_j + \epsilon_{ij} \dots \dots \dots (9)$$

$$D_j = a_i + \beta_{4i}T_i + \beta_{5i}Z_j + \pi_{ij} \dots \dots \dots (10)$$

Here, the dependent variable is Y_{ij} is Household Hunger Scale (HHS). The scale is recommended by USAID (2011) and has been widely used to assess food insecurity in developing countries such as Ghana, Bangladesh and Zambia (Cooper *et al.*, 2019; Nkomoki *et al.*, 2019). The USAID (2011) recommends three household hunger categories as shown in Table 4.1

Table 4. 1: HHS Categorical Indicator

Household Hunger Score (HHS)	Household Hunger Categories
0-1	Little to no hunger in the household
2-3	Moderate hunger in the household
4-6	Severe hunger in the household

Source: USAID (2011).

Food expenditure was divided into seven food groups as presented in Table 4.2. Categorization of the groups was based on the food composition table recommended by Tanzania Food and Nutrition Centre (TFNC). On reference to TFNC (URT, 2008c), these food groups were: cereals and cereal products, pulses, seeds and nuts, meat, poultry and fish, fruits and fruit juices, vegetables, oils and fats. The details of each group are presented in Table 4.2. Spending on each food item, the household reported for the previous seven days including both food purchased and produced by the household. The price index for each food group was computed by dividing the group expenditure by the group quantity, and the aggregate price of food (in log form) was computed as a weighted sum of the index of prices for each group (in log form), where the weights were the average share of food expenditure for each group.

Table 4. 2: Description of Food Categories

Food group	Details
Cereals	Cereals such as rice, wheat, oat, sorghum. Cereal products such as bread, biscuits, porridge, breakfast cereals. Local dishes prepared with cereals (e.g. porridges, chapatti)
Roots and tubers	Cassava (fresh and flour), cooking bananas and plantains, Irish potatoes, sweet potatoes, other roots and tubers
Pulses, nuts and seeds	Beans, peas, lentils and other pulses, groundnuts, cashew nuts etc
Vegetables	Tomatoes, onions, spinach, pumpkin leaves, pumpkins, cassava leaves and other dark green leaves
Fruits and fruit juices	Mango, papaya, ripe banana, lemon, oranges, fruit juices etc
Meat, poultry and fish products	Chicken, fish, cow, goat, sheep milk, seafood and meats (any)
Oils and fats	Cooking oil, animal fats, butter, margarine

Source: URT (2008c)

On the assumptions of the models (Table 4.3 and Table 4.6), multicollinearity (<0.6), tolerance value of variables were >0.10 , while Variance Inflation Factor (VIF) for variables were <10 . The goodness of fit for the models indicated acceptability as ANOVA ($p < 0.01$) and Durbin-Watson value >1 but <2 . For an instrument to be valid, two key assumptions must be met. First, the instrument should have no independent effect on the food budget share, unless it is through participation in CT programme. Second, variation in the instruments should cause substantial variation in the CT participation status. In this study, frequency of attending in VEO's office was used as an instrument variable. Since CT recipients are required to pick their CTs at VEO's office, they are more likely to be attending VEO's office than CT non-recipients. Furthermore, attending VEO's office by itself doesn't influence expenditure elasticities of food items unless it is through CTs. To evaluate the instrument, the weak instrument test suggested by Stock and Yogo (2010) was used. For all models, the F-statistic of the weak instrument test exceeds the rule of thumb criterion of 10 or the critical value of Stock and Yogo (2010). These results suggest that there was no evidence of weak instrument and that the instrument was relevant.

4.4 Results and Discussion

4.4.1 CT effect on budget share of specified foods

The study sought to determine the effect of CT on budget share of seven food categories. Thus, coefficients and standard errors of variables influencing budget shares of households participating in the CT programme were estimated using 2SLS equations (7) and (8). The variable of interest was participation in the CT programme, and its' results are presented in Table 4.3. Results for additional variables' coefficients and standard errors are shown in the Appendix 3.1. This data is crucial in order to provide a sense of the relative importance of each food group to the overall spending of recipients' households. The findings indicate that CT resulted into positive increase in the budget share of all food items with exception of pulses, nuts and seeds and fruits. However, significant influence was noted in cereals, roots and tubers, and vegetables.

Table 4. 3: Estimation of CT effect on households' food budget shares using IV

Variables	Cereals	Roots & tubers	Pulses, Nuts and seeds	Vegetables	Fruits	Meat, poultry & fish	Oils and fats
Part TASAF	0.102*** (0.021)	0.047*** (0.011)	-0.0531 (0.0423)	0.0361** (0.013)	-0.0091 (0.026)	0.0014 (0.043)	0.010 (0.091)
Constant	-0.717** (0.267)	0.204** (0.0781)	-0.456 (0.562)	0.134*** (0.035)	-0.0835 (0.067)	0.0901*** (0.004)	-0.487 (0.346)
F statistic	756.66	534.78	345.68	632.56	453.01	676.11	564.42
Observations	398	398	398	398	398	398	398
R-squared	0.644	0.734	0.534	0.223	0.431	0.710	0.691

Standard error in parentheses, ***p < 0.01, **p < 0.05, *p < 0.1

The findings show that participation in CT programme, *ceteris paribus*, increased budget share of roots and tubers by 4.14 percent. Cereals are staple foods in most parts of Tanzania. However, in Lindi District, the staple foods are roots and tubers. These results are supported by a study by Filmer *et al.* (2018) who concluded that CT had effect on staple food in Philippines. Although the staple food in Philippines was rice, in the context of Lindi district, stiff porridge from cassava flour was their main food. It is among the high calorie foods and much preferred by poor households for its ability to reduce hunger. Booth (2018) argued that eating high-calorie products reduces hunger more than eating low-calorie products. People learn to consume more energy rich foods when hungry than when sated. Cassava flour can be substituted by sorghum or maize flour since they both have characteristics similar to those of

cassava flour, although their taste is different. Increase of budget share of staple food might, therefore, signify that households don't have enough to eat. Although 75% of the food is produced at home in rural areas in Tanzania (Sanches-Pereira *et al.*, 2017), substantial amount of the food by poor households is purchased. Thus, CT gives poor households ability to acquire the difference between what is produced and what is needed.

Furthermore, findings indicate that CT had led to increase of cereals by 10.2 percent, *ceteris paribus*. These results are in line with the finding by Dietrich and Schmerzeck (2022) in Kenya and Zhou and Hendricks (2017) in Mozambique that CT increased consumption of cereals. In the context of Lindi District, cereals are their main alternative food after the staple foods. This is reflected in the report by URT (2018a) about food production in the neighbouring Lindi Municipality, that their second and third most produced food crops after cassava, are maize and sorghum. Thus, the CT gives poor households the room to diversify their food consumption. A study by Mani and Azam (n.d) argued that food choice behaviour is guided by two personality variables which are variety seeking and quality-consciousness. However, the latter variable is more associated with middle- and high-income households than poor households. Therefore, the most likely reason that CT recipients increased consumption of the cereals is variety seeking behaviours.

Moreover, findings indicated that participation in CT increased household consumption of vegetables by 3.61 percent, *ceteris paribus*. This is true even if the veggies that poor rural households eat are either self-produced or freely taken from the forest. This implies that an increase in vegetable consumption has a tangential relationship with CT. Stiff porridge is typically served with veggies in Lindi district. Therefore, an increase in ugali eating is likely to result in an increase in vegetable consumption. An FGD consensus endorsed this by saying:

“...we usually eat ugali and kisamvu (cassava plant leaves) ..this is our main dish inherited from our fore fathers” (Lindi District, 23 January 2020).

This claim highlights the fact that eating stiff porridge with green vegetables is a way of life for them. This implies that developing a taste for certain foods is probably a lifelong process. Although omnivores—including humans—have the freedom to choose, their decisions are influenced by the requirement for a little amount of

variation in their diets in order to receive all essential nutrients. Even though it is ingrained throughout life, this culture helps to retain the nutrients that the human body needs.

However, to establish the extent to which the increase in income had affected the quantity of food consumed in each category, the study estimated income elasticities by substituting coefficients from Table 4.3 in equation (5). Income elasticity measures the responsiveness of demand to a change in consumer income and, since it is independent of the main units in which demand is measured, it provides more meaningful measurement. It may be interpreted as a percentage change in quantity demanded when income changes by 1%, *ceteris paribus*. The measure enables classification of commodity as luxury, necessity or inferior. Household consumption expenditure was used as proxy of income as the data were more reliable than income data.

Table 4. 4: Income elasticities of food categories

Food items	Cereals	Roots and tubers	Nuts and seeds	Vegetables	Fruits	Condiments and spices	Meat, poultry and fish
Income elasticities	0.453***	0.820***	0.091	0.110***	0.137	0.042	1.46

Table 4. 5 : CT effect on food insecurity using IV and descriptive statistics

	IV			Descriptive statistics	
	Coef.	SE	p-value	Mean	Std. dev
Part TASAF Beneficiaries HH	-0.108	1.9323	0.409	2.93	1.02
Constant	0.811	0.368	0.028		
R square	0.47				

F statistic=567.81

Income elasticities of demand are presented in Table 4.5. On average, all food categories had positive income elasticities of demand. However, the significant effect was on roots and tubers, cereals and vegetables. This infers that increase of income will result into increase of quantity demanded on all seven food categories. Thus, these results support the hypothesis that CT affects households' food demand. Elasticities of demand for roots and tubers, cereals and vegetables were less than 1 which means they were regarded as necessities. Meat, poultry and fish had more than

1 elasticities of demand. Therefore, they are classified as luxury food. However, the elasticity for roots and tubers were very close to 1, justifying the findings, that as the income increase, households will seek to diversify their food consumption (Kundu *et al.*, 2021). These findings are in line with findings of a study by Naheed and Hussain (2020) which estimated income elasticities of cereals and vegetables at 0.67 and 0.31 respectively by applying the AIDS model. They found cereals and vegetables to be necessities which is similar to the results of this study. These results violate Engels' curve that, as the income rises, the budget share of necessities tends to decrease

To assess whether the increase in food was significant enough to reduce food insecurity, the study estimated the effect of CT on food insecurity using 2SLS equations (9) and (10). To measure household insecurity, HHS was used. Essentially, HHS is the behaviour measure which captures the most extreme manifestations of insufficiency. Thus, it is an appropriate measure for assessing poor households' food insecurity as this is the subpopulation mostly severely affected by any food demand-supply imbalances.

Results of 2SLS with IV estimations and descriptive statistics are presented in Table 4.6. The findings indicate that CT had no significant effect on reduction of food insecurity with the coefficient of -0.108 and p-value = 0.409. These results are contrary to findings by Resosudarmo *et al.* (2020) who found that lump-sum CT programme in Indonesia reduced food insecurity. This difference in results may be explained by the fact that the CT programme in Tanzania is on the basis of small and regular payments rather than lump-sum.

This suggests that CT influence on food demand was not significant enough to improve food security. According to mean score interpretation in table 4.1, the HHS mean of 2.93 indicates that majority of CT recipients still faced moderate hunger. They sometimes lacked enough food to eat due to lack of resources. One of Key Informants indicated that;

"...Most of people here take only two meals per day which are breakfast and supper, or one meal per day often a dinner" (Lindi District, 25 January 2020).

This indicates that majority of poor households in rural areas of Lindi district cannot afford the luxury of three meals per day as recommended by TFNC guidelines. By

considering two major dimensions of food insufficiency, the amount of food taken per meal and the number of meals per day, the results obtained from household demand analysis presented in Table 4.5 imply that CT improved the amount of food taken per day but still CT recipients' stayed long hours without any meal. This means that, though the demand for some food items had increased, food insecurity for CT recipients persisted.

4.5 Conclusions and Recommendations

This section presents the conclusions of the study and then gives the recommendations as follows:

4.5.1 Conclusions

The study concludes that the direction of changes in food demand as a result of the CT programme is steered by household's satiation level, variety seeking behaviour and hereditary eating patterns. The income generated from participating in the CT programme increased poor households demand for staple food together with its substitutes and side dishes. The fact that out of seven food categories, six of them were regarded as necessities indicate that the increase of income increased households' food demand at a decreasing rate. The increase in food demand as a result of cash transfer had no significant impact on households' food insecurity. This indicates that the amount of money given as cash transfer is not enough to cover the difference between the food produced and food demanded by recipients' households to achieve the recommended food requirements.

4.5.2 Recommendations

The study recommends to TASAF to increase the amount of money given to poor households if there should be improvements in food demand to the extent that significant changes in food insecurity levels are noted. Raising the cash transfer amount will increase households' disposable income which is associated with increased food security. However, the increase should be done with caution such that negative effects of free meal are minimized. Furthermore, the study recommends to the central government of Tanzania to introduce food schemes that directly focused on tackling food insecurity rather than including food poverty issues on schemes targeting poverty in general. Programmes such as provision of subsidized food for

poor households or free food to most needy groups in community such as children and pregnant women will address food insecurity directly.

REFERENCES

- Ahmed, I., Ying, L., Bashir, M. K., Abid, M., & Zulfiqar, F. (2017). Status and determinants of small farming households' food security and role of market access in enhancing food security in rural Pakistan. *PloS one*, 12(10), e0185466.
- Arndt, C., Davies, R., Gabriel, S., Harris, L., Makrelov, K., Robinson, S., & Anderson, L. (2020). Covid-19 lockdowns, income distribution, and food security: An analysis for South Africa. *Global food security*, 26, 100410.
- Bandumula, N. (2018). Rice production in Asia: Key to global food security. *Proceedings of the National Academy of Sciences, India Section B: Biological Sciences*, 88(4), 1323-1328.
- Booth, A. (2018). Mechanisms from models' actual effects from real life: the zero-calorie drink-break option. *Appetite*, 11, 94-102.
- Cockx, L., Colen, L., De Weerd, J., and Paloma, G. (2019). Urbanization as a driver of changing food demand in Africa: evidence from rural-urban migration in Tanzania.
- Cooper, M., Brown, M. E., Azzarri, C., and Meinzen-Dick, R. (2019). Hunger, nutrition, and precipitation: evidence from Ghana and Bangladesh. *Population and Environment*, 41(2), 151-208.
- Cranfield, A. (2020). Framing consumer food demand responses in a viral pandemic. *Canadian Journal of Agricultural Economics/Revue canadienne d'agroeconomie*, 68(2), 151-156.
- Deaton, A. (1997). The analysis of household surveys: a micro econometric approach to development policy. World Bank Publications.
- Deaton, A. and Muellbauer, J. (1980). An Almost Ideal Demand System. *The American Economic Review* 70(3), 312-26.
- Deaton, S., and Muellbauer, J. (1986). On measuring child costs: with applications to poor countries. *Journal of Political Economy*, 94(4), 720-744.
- Dietrich, S., and Schmerzeck, G. (2022). For real? CTs' effects on food consumption during price shocks in Kenya. *Journal of Development Effectiveness*, 14(2), 160-188.
- Filmer, D., Friedman, J., Kandpal, E., and Onishi, J. (2018). CTs, food prices, and nutrition effects on nonbeneficiary children. World Bank Policy Research Working Paper, (8377).

- Franks, E., & Bryant, W. D. (2017). The Uncompensated Law of Demand: A 'Revealed Preference' approach. *Economics Letters*,152, 105-111.
- Giller, K. E. (2020). The food security conundrum of sub-Saharan Africa. *Global Food Security*,26, 100431.
- Ji, J. (2019). Demand analysis of processed food using the usage differentiated AIDS model. *Journal of Rural Development (Seoul)*,42(3), 31-54.
- Kamer, L (2022). Number of people facing insufficient food consumption in Tanzania from to January 2021 to May 2022. Retrieved from <https://www.statista.com/statistics/1236193/number-of-people-facing-food-insecurity-intanzania/#:~:text=As%20of%20May%202022%2C%205.3,in%20food%20insecurity%20kept%20stable%20on%2023%20September%202022>.
- Khed, V., & Kb, U. (2018). Application of AIDS model to analyse the farm household food demand elasticity: Evidence from panel data (No. 2058-2018-5228).
- Kinyondo, A., & Magashi, J. (2017). Enhancing rural livelihoods in Tanzania: A small-holder farmers' perspective.
- Korir, L., Rizov, M., and Ruto, E. (2020). Food security in Kenya: Insights from a household food demand model. *Economic Modelling*,92, 99-108.
- Kundu, S., Al Banna, M. H., Sayeed, A., Sultana, M. S., Brazendale, K., Harris, J., ... & Khan, M. S. I. (2021). Determinants of household food security and dietary diversity during the COVID-19 pandemic in Bangladesh. *Public Health Nutrition*,24(5), 1079-1087.
- Lei, L. I., Zhai, S. X., & Bai, J. F. (2021). The dynamic effect of income and income distribution on food consumption among adults in rural China. *Journal of Integrative Agriculture*,20(1), 330-342.
- Mah L., & Taylor, N. (2020). Store patterns of availability and price of food and beverage products across a rural region of Newfoundland and Labrador. *Canadian Journal of Public Health*,111(2), 247-256.
- Mani, S., & Azam, M. (n.d). Rethinking cultural orientations on variety-seeking behaviour: a review-based article.
- Mazurek, J., García, F., and Rico, P. (2019). The law of demand and the loss of confidence effect: An experimental study. *Heliyon*,5(11), e02685.

- McCullough, E., Shin, S., Arsenault, J., and Zhen, C. (2020). Harnessing Food Demand Systems for Improved Nutrition in Tanzania. University of Georgia Working Paper 58. http://www.ellenmccullough.com/uploads/4/7/7/5/47756249/hds_tanzania_200405.pdf.
- Mian, A., Straub, L., & Sufi, A. (2021). Indebted demand. *The Quarterly Journal of Economics*, 136(4), 2243-2307.
- Minja, G., Swai, K., Mponzi, W., Ngowo, H., Okumu, F., Gerber, M., and Finda, M. (2021). Dietary diversity among households living in Kilombero district, in Morogoro region, South-Eastern Tanzania. *Journal of Agriculture and Food Research*, 5, 100171.
- Mkonda, M. Y., & He, X. (2018). Agricultural history nexus food security and policy framework in Tanzania. *Agriculture & Food Security*, 7(1), 1-11.
- Moreno, F., & Malone, T. (2020). The Role of Collective Food Identity in Local Food Demand. *Agricultural and Resource Economics Review*, 50(1), 22-42. doi:10.1017/age.2020.9.
- Msuya, A. (2017, November 21). TASAF in concerted efforts to combat malnutrition. *The daily news*. Retrieved on August 18, 2021 from <https://www.dailynews.co.tz/news/tasaf-in-concerted-efforts-to-combat-malnutrition.aspx#>.
- Naheed, K., & Hussain, I. (2020). Elasticity Measurement of Food Demand in Pakistan: Cross-Price and Own Price Elasticity Analysis. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 11(5), 1-6.
- National Bureau of Statistics (2019). *Tanzania Mainland Key Indicators report*. Retrieved from https://www.nbs.go.tz/nbs/takwimu/hbs/2017_18_HBS_Key_IndicatorReport_Engl.pdf
- Ndanshau, M. O. (2018). An econometric analysis of Engel's curve: the case of peasant households in Northern Tanzania. *Utafiti Journal*, 4(1).
- Nkomoki, W., Bavorová, M., & Banout, J. (2019). Factors associated with household food security in Zambia. *Sustainability*, 11(9), 2715.
- Nuani, F. O., Gido, E. O., Ayuya, O. I., & Musyoka, M. P. (2022). Demand analysis for selected roots and tubers among urban households of Nakuru County, Kenya. *Cogent Food & Agriculture*, 8(1), 2093047.

- Pettifor, A., Wamoyi, J., Balvanz, P., Gichane, W., and Maman, S. (2019). Cash plus: exploring the mechanisms through which a CT plus financial education programme in Tanzania reduced HIV risk for adolescent girls and young women. *Journal of the International AIDS Society*, 22(S4). <https://doi.org/10.1002/jia2.25316>
- Phetcharat, C., & Chinnakum, W. (2022). Differences in Household Food Demand by Income Category as Evidenced in Rural Thailand (No. 181). Puey Ungphakorn Institute for Economic Research.
- Rahayu, W., Marwanti, S., & Antriyandarti, E. (2021, November). Dynamics of nutritional food consumption and expenditure patterns of Central Java population as welfare indicators to achieve sustainable development goals. In *IOP Conference Series: Earth and Environmental Science* (Vol. 905, No. 1, p. 012058). IOP Publishing.
- Reisch, L. A., & Zhao, M. I. N. (2017). Behavioural economics, consumer behaviour and consumer policy: state of the art. *Behavioural Public Policy*,1(2), 190-206.
- Resosudarmo, B. P., Yamazaki, S., & Girsang, W. (2020). Contribution of cash transfers in moderating household food insecurity in small-island communities: Experimental evidence from Indonesia. *Marine Policy*,118, 104025.
- Sanches-Pereira, A., Onguglo, B., Pacini, H., Gómez, F., Coelho, T., and Muwanga, K. (2017). Fostering local sustainable development in Tanzania by enhancing linkages between tourism and small-scale agriculture. *Journal of Cleaner Production*,162, 1567-1581.
- Schilling, J. (2006). On the Pragmatics of Qualitative Assessment. *European Journal of Psychological Assessment*, 22(1), 28–37. doi:10.1027/1015-5759.22.1.2810.1027/1015-5759.22.1.28
- Seidu, A. (2019). Opportunity cost of time, income, education and food away from home consumption expenditures by type of facility in Albania. *Journal of Agribusiness in Developing and Emerging Economies*.
- Song, S., & Imai, K. S. (2019). Does the hunger safety net programme reduce multidimensional poverty? Evidence from Kenya. *Development Studies Research*,6(1), 47-61.

- Stock, J., & Yogo, M. (2010). Asymptotic distributions of instrumental variables statistics with many instruments. *Identification and inference for econometric models: Essays in honor of Thomas Rothenberg*, 6, 109-120.
- UNICEF (2018). Tanzania Youth Study of the Productive Social Safety Net (PSSN) Impact Evaluation: Endline Report. Retrieved from [https://www.unicef.org/tanzania/media/1426/file/Tanzania-2018-PSSN-Youth-Impacts -Evaluation-Endline.pdf](https://www.unicef.org/tanzania/media/1426/file/Tanzania-2018-PSSN-Youth-Impacts-Evaluation-Endline.pdf) on 13 August 2022.
- URT (2008c). Tanzania Food Composition Tables. Tanzania Nutrition Center, Dar es Salaam, Tanzania. 19pp.
- URT (2018a). Lindi Municipal Council Strategic Plan 2018/2019-2022/2023. Retrieved from <http://lindimc.go.tz/storage/app/uploads/public/5be163/99a/5be16399a1df4753306522.pdf>
- URT (2018b). Tanzania Social Action Fund Fourth Quarter Progress Report April – June, Dar es Salaam, Tanzania
- URT (2008c). Tanzania Food Composition Tables. Tanzania Nutrition Center, Dar es Salaam, Tanzania. 19pp.
- URT (2022). Tanzania is 125 percent food sufficient: PM. Retrieved from <https://english.news.cn/africa/20220407/2b12d90b0bdc4ae4ba5996f45d0ae73c.html>
- USAID (2011). Household Hunger Scale: Indicator Definition and Measurement Guide: Food and Nutrition Technical Assistance II Project, FHI 360. Washington DC.
- Waha, K., Van Wijk, M. T., Fritz, S., See, L., Thornton, P. K., Wichern, J., & Herrero, M. (2018). Agricultural diversification as an important strategy for achieving food security in Africa. *Global change biology*, 24(8), 3390-3400.
- Weber, E., Amos, A., Fry, M., Stevens, S., & Rinehimer, M. (2020). Clinical Effectiveness of an Aquatic Exercise Programme on Those with Visual Impairments: A Protocol Study.
- White II, M. (2018). How big should control group be in a randomized control group? Retrieved from <https://www.markhw.com/blog/control-size> on 24, December 2019.
- White, H., and Subarwal, S. (2014): Quasi experiment designs and methods: Methodological Briefs Impact Evaluation No. 8, UNICEF: New York

- World Bank. (2019). Tanzania mainland poverty assessment; Tanzania's Path to Poverty Reduction and Pro-Poor Growth PART 1. <http://www.copyright.com/>
- Wright, G. C., Leyaro, V., Kisanga, E., & Byaruhanga, C. (2018). Policy transparency in the public sector: the case of social benefits in Tanzania (No. 2018/50). WIDER Working Paper.
- Yamane, T. (1967). *Statistics: An Introductory Analysis*. the University of Michigan, USA.
- Yu, X. (2018). Engel curve, farmer welfare and food consumption in 40 years of rural China. *China Agricultural Economic Review*. doi: <https://doi.org/10.1108/CAER-10-2017-0184>
- Zhou, A. C., & Hendriks, S. L. (2017). Does food assistance improve recipients' dietary diversity and food quality in Mozambique? *Agrekon*, 56(3), 248-262

APPENDICES

Appendix 4. 1 2SLS estimation of CT effect on households' food budget shares.

Variables	Cereals	Roots & tubers	Pulses, Nuts and seeds	Vegetables	Fruits	Meat, poultry & fish	Oils and fats
Part_TASAF	0.102*** (0.021)	0.047*** (0.011)	-0.0531 (0.0423)	0.0361** (0.013)	-0.0091 (0.026)	0.0014 (0.043)	0.010 (0.091)
Marital	-0.00991 (0.0801)	0.0012 (0.00418)	-0.0046 (0.0067)	-0.0014 (0.00274)	0.0013 (0.0016)	0.004 (0.0045)	-0.00003 (0.0036)
Sex	-0.0206 (0.0239)	0.0049 (0.0124)	0.0263 (0.0200)	-0.004 (0.00816)	0.0034 (0.00477)	-0.007 (0.01351)	-0.0029 (0.0107)
Age	0.0013* (0.0008)	0.0004 (0.0004)	-0.0011* (0.0007)	0.0028 (0.00027)	0.327 (0.00015)	-0.0006 (0.00043)	-0.00043 (0.00035)
Years_school	-0.0065 (0.0035)	0.0053*** (0.0018)	00.0012 (0.0026)	0.0022* (0.0012)	0.00092 (0.0007)	-0.0037 (0.00201)	0.00065 (0.00159)
Occupation	0.008*** (0.0033)	0.0278 (0.0017)	0.00067 (0.0027)	0.0027** (0.0011)	0.0006 (0.00065)	-0.005*** (0.00184)	-0.0034** (0.0015)
HH_size	0.004 (0.0067)	-0.0008 (0.0035)	-0.0075 (0.0057)	-0.0013 (0.0023)	-0.0015 (0.00134)	-0.005 (0.0038)	0.0117*** (0.00302)
Yrs_village	0.00027 (0.0003)	0.00004 (0.00016)	-0.00038 (0.00026)	-0.00001 (0.0001)	0.00003 (0.000061)	-0.00004 (0.00017)	0.00008 (0.00014)
Homeland_size	0.00061 (0.0109)	0.016*** (0.0057)	-0.011 (0.0092)	0.0074 (0.0071)	0.00075 (0.0022)	-0.0045 (0.0062)	0.0033 (0.0049)
Land_production	-0.0056 (0.0061)	-0.004 (0.00317)	0.067 (0.0051)	0.0051 (0.0020)	-0.0008 (0.0012)	0.0029 (0.0034)	-0.00087 (0.00272)
Log P	0.019*** (0.033)	0.0467 (0.0610)	0.00091 (0.0027)	0.027** (0.013)	0.0056 (0.0045)	-0.053*** (0.00134)	-0.0134** (0.0116)
Log (X/P)	- 0.109*** (0.0111)	-0.01* (0.0058)	0.063*** (0.009)	0.0093*** (0.0038)	-0.001 (0.0022)	0.025** (0.063)	0.012** (0.0050)
Constant	-0.717** (0.267)	0.204** (0.0781)	-0.456 (0.562)	0.134*** (0.035)	-0.0835 (0.067)	0.0901*** (0.004)	-0.487 (0.346)
Observations	398	398	398	398	398	398	398
R-squared	0.644	0.734	0.534	0.223	0.431	0.710	0.691

Standard error in parentheses, ***p < 0.01, **p < 0.05, *p < 0.1

Appendix 4. 2: Estimation of CT Effect on Households' Insecurity

Variables	Coefficient	Standard Error	p-value
Part_TASAF	-0.108	1.9323	0.409
Marital	2.96	2.85	0.299
Sex	2.86	1.57	0.070
Age	5.20	3.81	0.172
Years_school	-2.91	2.13	0.175
Occupation	-0.41	0.24	0.082
HH_size	4.64	4.31	0.282
Yrs_village	2.08	1.61	0.198
Homeland_size	4.68	2.61	0.074
Land_production	0.59	0.63	0.346
Log P	0.147	0.0038	0.000
Log (X/P)	0.525	0.256	0.040
Constant	0.811	0.368	0.028
Observations	398		
R-squared	0.691		

Appendix 4. 3: Description of Household Characteristics Variables

Variable	Definition and Unit of Measurement
MAR (X_1)	Marital status (1 = Married, 0 = Not married)
AGE (X_2)	Age of household head (years)
HHS (X_3)	Household size (number of household members)
HHG (X_4)	Household head sex (1=Male; 0=Female)
EDU (X_5)	Household head education Level (years of school)
OCU (X_6)	Household occupation (scores)
PAT (X_7)	TASAF Participation (1=Beneficiary; 0= Non-beneficiary)
YRS (X_8)	Years lived in a village (Number of years)
LAP (X_9)	Land for production (Number of acres)
LAH (X_{10})	Land for home (Number of acres)

CHAPTER FIVE

5.0 Impact of Cash Transfer on Poverty Reduction in Lindi District, Tanzania

Gidion O. Njuga¹, Benedicto Kazuzuru², and William B. Warsanga³

¹Lecturer, Moshi Co-operative University, Tanzania, Email: gidionjuga@gmail.com.

²Associate Professor, Sokoine University of Agriculture, Tanzania, Email:
kazuzurub@gmail.com

³Lecturer, Moshi Co-operative University, Tanzania, Email: wbaranos@gmail.com.

5.1 Abstract

The government of Tanzania, through its umbrella institution, Tanzania Social Action Fund (TASAF), introduced what has become the largest CT for poor households in the country, since 2010 to date. Although there is growing evidence on the impact of CT on poverty reduction, the results are contextual. Thus, the paper examined the causal effect of CT on poverty reduction in Lindi District, Tanzania. Specifically, the study assessed the impact of CT on households' overall wealth, housing conditions, use of basic services, and use of productive and non-productive assets in Lindi District, Tanzania. The paper employed Propensity Score Matching (PSM) to estimate the effects of CT on households by matching 199 recipients and 199 non-recipients using Nearest Neighbor, Radius caliper and Mahalanobis matching techniques. Five Focus Group Discussions (FGDs) and 13 Key Informants Interviews (KIIs) were conducted. Qualitative data were analysed using content analysis. Findings indicated that CT has no significant impact on overall poverty level of recipients' households. Thus, small monthly free handouts to poor households by themselves are not enough to significantly reduce extreme poverty. However, the results indicated significant effect of CT on five poverty indicators, which are type of house floor, sanitation facilities, livestock, mobile phone and chair. Structural factors, individual and community behaviour determined the direction and extent of changes in specified indicators. The study recommends to the government, adoption of multi-intervention programmes directed on key living standard indicators such as productive assets to transform the quality of poor households.

Key words: Households Poverty, Propensity Score Matching (PSM), Unconditional Cash Transfer

5.2 Introduction

The majority of the world's poorest people live in sub-Saharan Africa and struggle to make ends meet, particularly in light of challenges such as climate change, declining cash crop prices, decreased access to land, and declining employment opportunities (Hajdu *et al.*, 2020). Various development efforts, ranging from agricultural development interventions and microfinance initiatives to private investment promotion, have frequently failed to foster sustainable livelihoods in impoverished rural areas (Magombeyi and Odhiambo, 2016; Nagarajan, 2021). For many years, poverty alleviation programmes have focused on providing goods or services, constructing infrastructure, providing training, or, more recently, financial services such as microloans (Page and Pande, 2018). Conventional wisdom held that these programmes were superior to handing out cash.

However, beginning in the early 2000s, developing countries began experimenting with giving poor people cash grants in exchange for them using the money in a specific way or following through on a commitment, such as sending their children to school (Davis *et al.*, n.d.). Cash Transfers (CTs) are direct payments made to eligible groups of people, usually by governments. There are two types of CTs: unconditional CTs (UCTs), which are made without any conditions for the recipient, and conditional CTs (CCTs), which are made on the condition that the recipient meets certain criteria, such as school attendance or vaccinations. CTs are a continuation of the social protection programme outlined in 2030 Sustainable Development Goal 1.3, which calls for the abolition of all forms of poverty through the implementation of nationally appropriate social protection systems (Cluver *et al.*, 2016). Their popularity grew globally due to their relative simplicity and ability to reach a large number of recipients when compared to other social safety net programmes. Today, such CT programmes exist in over 120 countries, with over \$200 million in cash distributed daily (Martin and Rawlings, 2018). The obvious question is how much a small and predictable sum of money paid monthly could lead to poverty reduction.

The decision to distribute cash via targeted transfers is a complicated one. Some arguments are fundamentally ethical, arguing that society should protect the vulnerable and provide them with additional assistance (Hagen-Zanker *et al.*, 2018). As a result, CT should enable recipients to afford basic services and improved living

conditions. Other arguments, however, are economic in nature, claiming that transfers should have a transformative impact on household income and reduce poverty. Poor households' investment in productive assets helps them create sustainable sources of income. This is supported by Stoeffler *et al.* (2020) who suggest that small regular CTs combined with enhanced saving mechanisms can generate asset accumulation among the extremely poor. Still others make arguments based on the intergenerational transmission of poverty, viewing transfers as a mechanism to help increase investments in child health and education (Manley and Slavchevska, 2019). This argument is supported by those who support conditional CT.

Tanzania launched a national CT programme in 2013 as part of the third phase of the Tanzania Social Action Fund (UNICEF, 2018). The programme targets households living in extreme poverty in the country. Although there are other CT programmes in the country, such as Cash Plus, TASAF programme is by far the largest (Pettifor *et al.*, 2019). Until 2018, Tanzania pro-poor CT had benefited 1 million households and 4.9 million people, reaching 15% of extremely poor households, 14% of poor households, and 8% of non-poor ones (World Bank, n.d). The programme intends to reduce households' poverty by improving consumption of poor households. Although positive progress has been reported, a significant proportion of the recipients remains vulnerable to falling into poverty and the number of poor people in Tanzania increased, up to 14 million in 2018 from 12.3 million in 2012 (World Bank, 2019). The fact that cash alone is rarely sufficient to mitigate all risks and vulnerabilities facing poor households pose questions on what can and what cannot be achieved by CT programmes in reducing poverty at the household level.

Evans *et al.* (2016) investigated the impact of CT in various aspects of household development in Tanzania. He concluded that CT had impact on purchase of livestock assets. Mzingula (2020) found that CT had impact on livestock and food security. However, both studies focused on conditional CT only. The fact that at the time Evans *et al.* (2016) conducted the study the largest CT programme targeting poor households in the country was conditional, the justification was clear. As an attempt to overcome pitfalls of conditional CT such as lack of choice on use of money by recipients and high exclusion rate, TASAF introduced unconditional CT to poor households in the year 2015 (UNICEF, 2018). This created the need to understand

how the combined bimonthly (conditional and unconditional CT) CT programme improves the previous reported pitfalls of conditional CT. Thus, this study investigated the impact of these bimonthly CT programmes on poverty reduction in their combined form in Tanzania.

The study will add to a stock of knowledge and literature on the relationship between CT and poverty of poor households. The need to understand the impact of CT on poverty is especially pressing given the world leaders' commitment to eliminate extreme poverty by 2030 as part of sustainable development goals. Moreover, information about the relationship between CT programmes and households' poverty level is a major input to the improvement of the CT programme design. Therefore, this study is timely and significant as the findings will provide considerable information on modeling the impact of CT in Tanzania and providing useful feedback to policymakers, programme managers and other development stakeholders on terms of programme evaluation, design and implementation.

5.3 Hypothesis development and theoretical framework

5.3.1 Concept of poverty

Poverty can be viewed from absolute or relative point of view. Absolute poverty refers to a single standard such as poverty line while relative poverty is defined on reference to comparative members of a particular community (Decerf, 2021). The most common example of poverty definition in absolute terms is the poverty line, established by the World Bank. The bank defines extreme poverty as living on less than US\$ 2.15 per day, and moderate poverty as less than \$3.10 a day (World Bank, 2022). On this view, poverty is a lack of sufficient income to meet basic needs. However, due to challenges of capturing income such as possibility of underreporting and short fluctuation, economists prefer to use expenditure per capita as proxy of income (Ali *et al.*, 2021; Ramadan, 2021). Even if income and expenditure are perfectly measured, none of these measures objectively shows well-being. Major developments and research in this area indicate that traditional one-dimensional measures of poverty, based primarily on income or calorie consumption, are severely flawed (Coudouel *et al.*, n.d.). This is because poverty frequently entails being deprived on multiple fronts, which do not always correlate well with income.

Thus, to understand poverty beyond monetary deprivation Multidimensional Poverty

Index (MPI) was introduced by UNDP and Oxford University (UNDP, 2020). The MPI addresses poverty on multiple levels and investigates how these levels interact. This is why target 1.2 of the Sustainable Development Goals (SDGs) states that "by 2030, to reduce at least half the proportion of men, women, and children of all ages living in poverty in all its dimensions, according to national definitions". The MPI is both universal and sensitive to the national complexities of each country (OPHI, 2018). Many countries are using either global or national MPI to assess their achievement of SGD indicator 1.2.2 (MPPN, n.d). These countries include India, Bangladesh, Chile, Colombia etc. A universal or global MPI is internationally comparable and can incorporate agreed-upon poverty dimensions. It captures various types of deprivation that each poor person faces in ten indicators across three dimensions – education, health, and living standards. The ability of MPI to show many different aspects of poverty that poor people experience at the same time can inform more integrated policy and provide incentives to reduce many aspects of poverty concurrently and break down the silos of poverty-reduction programmes. Thus, this study views poverty as a multidimensional concept and dependent on social context, which means that poverty is relative.

5.3.2 Hypothesis development

Evidence from the first wave of Latin America CT programmes suggested that these interventions might have helped reduce poverty among participants. After two years, the Nicaraguan CT programme reduced the proportion of participating households below the poverty line by five percentage points, while the Colombian CT programme reduced the percentage of poor people by three over four years (Saavedra, 2016). Evidence from programmes in Mexico and Honduras suggests that there is no discernible impact on the poverty rate among participants (Boo and Creamer, 2019; Martnez-Martnez *et al.*, 2020). Thus, there is consensus among scholars that CT has no negative impact on households' poverty reduction. However, the difference in rates of CT impact on poverty from one country to another suggests that the extent on which these programmes can reduce poverty may be contextual. Therefore, the paper hypothesizes that CT has significant impact on households' poverty reduction.

5.3.3 Guiding theory

There are two main competing theories explaining the causes of poverty. First, there is the cultural theory propounded by the anthropologist Oscar Lewis in 1966. The theory suggests that individuals create, sustain, and transmit to future generations a culture that reinforces various social and behavioural deficiencies (Lamichhane, 2021). This means that poor households' choices are mirrored in their behavioural lenses which reflect their cultural background. Reflecting culture theories Burney (2018); Bergolo and Galyan (2018) used individual level data sets to study poor households' behavioural responses to CTs.

The study adopted the theory because the primary casual pathway through which CT impact poverty is through individual improvement of behaviours (Owusu-Addo *et al.*, 2019). Thus, the theory is relevant in understanding factors guiding the choices of poor households in using the CTs. The fact that low levels of the economy and the likelihood of poverty experienced by the people of the coastal villages is caused by lack of proper lifestyle of the coastal village community itself (Rukin *et al.*, 2018) underpins the relevance of the theory in providing the roadmap for impact analysis in the context of Lindi District. In the views of the cultural theory, it is household's behaviour which will dictate how CT influences the poverty level. Criticism of this theory is based on its overemphasis on the individual deficiencies and that the poor are to blame for the situation. This leaves out other macro-economic actors who directly or indirectly might influence the lives of poor households.

Therefore, to address the theoretical limitation described above, the study adopted the structural theory of poverty. The theory is traced back from the ideas presented by John Keynes in his 1939 book, the Great Theory of Economy, Interest and Money. The theory presents a contrary argument to the idea that individual behaviours are the cause of poverty. Structural theorists contend that poverty is an outcome of macro and meso-level demographic and economic factors (Brady, 2019). Bradshaw (2006) argue that structural contexts cause problematic behaviours, which cause poverty. Additionally, structure directly causes poverty, even net of behaviour. For instance, Sharkey (2013) applied the theory to demonstrate that growing up in segregated and concentrated poor neighbourhoods exposes children to stress. Likewise, Husz *et al.* (2022) used the theory to explain how multiple disadvantages are concentrated on poorest municipalities. Thus, constraints facing poor households

in making economic choices differ from those of wealthier people. The presumptions that human behaviour responds to structural reforms rather than cultural changes, justifies government interventions such as CT to ease the economic burden of poor households in the context of missing or malfunctioning markets. From this perspective, CT to poor households is an effort by the government to break structural barriers that socially exclude poor people and can be a powerful driver of sustainable poverty escape. So, the theory provides theoretical ground for explaining the structural characteristics propelling or impeding CT programme.

Critics of this theory argue that poverty is merely the deprivation or shortfall of basic capabilities. Hence, it is difficult to change this common structural reality with just a simple CT, no matter how big it is. In this case, cultural and structural theories complement each other.

5.4 Methodology

Lindi District, which is part of Lindi Region, a seaside town in southeast Tanzania, was the area of study. With 38 percent of the population living below the national poverty line, Lindi is Tanzania's third poorest region (NBS, 2019). Lindi district has 14.8 percent of households enrolled in the CT programme, making it the district with the highest percentage of recipients enrolled in the programme (URT, 2018). As a result, the chosen region, and district in particular, was suitable area to investigate Tanzania's CT programme's influence on household poverty. The sample size for this investigation was calculated in two stages. The first stage was to calculate sample size, since the number of households in Lindi district was known, the finite population formula proposed by Yamane (1967) detailed below was used:

$$n = \frac{N}{N * (e)^2 + 1} = \frac{99,559}{99,559 * (0.05)^2 + 1} = 398 \text{ respondents}$$

Where, n is sample size, N is number of households in Lindi district (NBS, 2019), e is a precision level which was 0.05. As a result, the minimum sample units was 398 households. To empirically estimate casual impact of intervention when randomization is not feasible, quasi-experimental design is recommended (Weber *et al.*, 2019). Thus, this study adopted quasi experimental design in terms of assigning respondents to intervention (cash transfer) by means of administrator selection rather than randomly. The design identifies two comparable groups (treatment and control) so that researchers can look into disparities in outcomes of these groups. Therefore,

the second stage was to determine the comparison group. White II (2018) suggested creation of equally divided groups because they produce maximum statistical power. Therefore, two groups (beneficiary and non-beneficiary households) were created with each group comprising 199 respondents.

In Tanzania, the largest Productive Social Safety Net (PSSN) is carried out by Tanzania Social Action Fund (TASAF) since 2000 to date. TASAF's main components during the data collection period were public works, conditional CTs and unconditional CTs. Thus, the treatment group included only those households benefiting by both conditional and unconditional CT. Nine villages were chosen purposive using the average CTs per household, and the number of CT recipients in a village was used to calculate representative sample size. A size-proportional formula was employed. White and Sabarwal (2014) argue that, in order for matching estimators to decrease biasness as conventionally measured, the control group must be sampled from the same population as the treated group. Non-recipients were then selected to reflect the selection of recipients. Recipients were assigned codes, and then automated number generator was used to randomly select them. To select non-recipients, a snowballing technique was used, in which each respondent provided information about one other non-recipient.

A questionnaire was used to gather data on the characteristics, assets, and other households' indicators of living standard. CT recipients and non-recipients' received a total of 401 questionnaire copies. Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) were also employed to acquire qualitative data in order to validate survey results. Each of the five focus groups had seven participants from five villages. Only recipients were included in the FGD because they are the ones who can best describe the link between CTs and household poverty. The number of FGDs which were undertaken was determined using the theoretical saturation principle. Thirteen KIIs were chosen based on their previous expertise; nine of them were village executive officers and four of were TASAF coordinators.

Furthermore, to estimate the impact of CTs on household poverty, the study used PSM. It calculates the average treatment effect of cash programme participation in the outcome of interest. The study specifically compared poverty indicators of households participating in CT programmes with those not participating after matching both groups based on their characteristics. The difference in poverty levels

was then attributed to household participation in the CT programme. Participation in the CT programme was represented by a dummy variable P_j , equals to one for participating household j and zero for non-participating households. Let V_{j1} and V_{j0} represent variables indicating the poverty indicators in commodity i for household j in the presence and absence of a CT programme. As a result, the intervention effect of CT on relevant outcome indicators can be calculated as:

$$\pi_j = E[V_{j1}|P_j] - E[V_{j0}|P = 1] \dots\dots\dots (1)$$

where π_j is the average treatment effect on CT programme participation (average difference on poverty levels of CT recipients and non-recipients). This study did not track the particular household over two different time periods. Therefore, the study estimated $E(V_{j1}/P_j=1)$ and $E(V_{j0}/P_j=0)$ but it could not estimate the counterfactuals $E(V_{j1}/P_j=0)$ and $E(V_{j0}/P_j=1)$.

Selecting the covariates to be used in the model is the first stage in applying PSM. It is vital to incorporate variables related to self-selection and traits present at the beginning of the intervention (Harris and Horst, 2016). The study looked into the variables that influenced households' participation in the programme. Age, gender, household size, marital status, years in school, production land size, home land size, and occupation are variables which were used. The choice of the variables was influenced by indicators used in selection of CT recipients in Tanzania as indicated by Evans (2016).

The estimation of propensity score was the second stage. Given the model's set of variables, the propensity score is the likelihood that the household will receive CT. Expression $S(X) = S(P_j=1/X)$ represent the propensity score, which is the probability of being assigned to treatment. The goal of developing a propensity score was to allow for a more balanced distribution of characteristics between recipients and non-recipients. On the basis of observable factors, the comparison between households getting CT and those not receiving CT implies that unobservable features have no effect on participation in CT programmes. PSM expects that the outcomes of interest are unaffected by CT participation status when a set of X characteristics is assumed. The conditional independence assumption is the name given to this assumption. Only factors that are unaffected by participation in the CT programme should be included

in the model, according to this assumption. The condition presupposes those unobservable factors will not cause selection bias. It can be expressed as:

$$(V_{j0}, V_{j1}) \perp P_j / X_j \dots\dots\dots (2)$$

Where \perp denotes independence. In addition, the overlap assumption states that each household with matching characteristics has positive probability of receiving the CT (Dehejia and Wahba, 2018). The assumption is expressed as:

$$0 < (P_j=1/X_i) < 1 \dots\dots\dots (3)$$

Equations (2) and (3) confirm that households are randomly exposed to treatment, hence treated and control households should be examined similarly. As a result, counterfactual estimation is shown as:

$$E(V_{j0}/P=1, V_j) = E(V_{j0}/P_j = 0, X_j) \dots\dots\dots (4)$$

Finally, for household j, the PSM average treatment effect on the treated (ATT) is expressed as

$$\pi_j = E(V_{j1}/P = 1, S(X_j)) - E(V_{j0}/P_j = 0, S(X_j)) \dots\dots\dots (5)$$

A number of techniques have been proposed for matching recipients and non-recipients. Nearest Neighbor Matching (NNM), Kernel Matching (KM), Radius Calliper Matching, and Mahalanobis Distance are the most prominent approaches (Lane *et al.*, 2012). In terms of the trade-off between quantity and quality of outcomes, each of the matching technique described has pros and cons. As a result, they are frequently used in conjunction with others. NNM, Radius Calliper, and Mahalanobis were used in this study to match recipients and non-recipients because they provided adequate covariate balance.

The ATT calculated with PSM was based on the premise that unobserved variables had no influence. However, a hidden bias might exist, and the matching results might no longer be robust if unobserved variables that affect impoverished households' participation to CT programme existed. The study employed Rosenbaum's proposed sensitivity parameter gamma coefficient (Γ) to assess the presence of a hidden bias in the model (Becker and Caliendo, 2007). When the reported confounders have been dealt with using matching methods which generate matched pairs of exposed and unexposed households, who are similar on the observed variables, this method is most commonly utilized. The core premise of the Rosenbaum technique is to employ Γ to measure the effects of hidden bias on processing estimations (Nannicini, 2013).

The value cannot be calculated directly since the unobserved variables cannot be determined; hence, the value representing hidden bias is assumed before calculating the significance of the estimated changes on treatment effects. As the value of Γ increases, so does the level of significance decreases. This is performed with various values to determine the value at which the upper-bound p-value becomes non-significant, e.g p-value > 0.05 . A higher value of Γ is desired to make the upper-bound p-value non-significant, as it shows that the odds ratio of the association between the outcome and the exposure is more resilient to unobserved bias. The assumed maximum gamma is referred to as Rosenbaum boundary. There is no specific criterion for determining the value of Γ ; however other studies (Ji *et al.*, 2019; Norjo and Adjasi, 2020; Krishnamoorthy and Rehman, 2021) in the social sciences, used Γ between 1 and 2 to indicate that a hidden bias did not exist.

Poverty variables were adopted from living standard measures proposed in the Global Multidimensional Poverty Index (MPI) as recommended by World Food Programme (2017) and Demographic and Health Survey (DHS) wealth index (Hjelm *et al.*, n.d.; Pirani, 2014). The index was chosen because it measures simultaneous occurrence of multiple deprivations in an individual or household. The use of multidimensional poverty measures in the evaluation of the CT programme raises the bar for the programme success because, in order to be effective, the transfer must address multiple deprivations, not only by reducing each deprivation individually, but also by lowering the likelihood of them occurring simultaneously. They do not cover all aspects of human welfare, but they do capture a critical component of any assessment of low-income country living standards. The study used seventeen indicators to measure five dimensions of deprivation (Appendix 5.1). Four dimensions proposed are housing dimensions (SDG 11: Sustainable Cities and Communities), use of basic services (SDG 6: Clean Water and Sanitation, SDG 7: Affordable clean energy), productive and non-productive assets (SDG 1: No poverty). The choice of the variables was guided by their indication of the longer-term economic status of household rather than short-term economic changes. Indicators are defined as binary variables, taking value 1 if the individual is deprived, 0 otherwise. Appendix 5.1 shows the definition of deprivation for each indicator used in this analysis.

Factor analysis was used to calculate the overall wealth index. The Kaiser-Meyer-Olkin (KMO), a Measure of Sampling Adequacy (MSA), was used to detect multicollinearity in the data and determine whether or not to conduct a factor analysis. KMO has a maximum value of 1.0, but any value above 0.6 is acceptable (Krishnan, n.d.). For this data it was 0.743, indicating that factor analysis of the variables could proceed. The Bartlett's (1950) Test of Sphericity was used to assess the strength of the relationship between variables. The null hypothesis that the variables in the population correlation matrix are uncorrelated was tested using Bartlett's Test of Sphericity. The analysis of results revealed a significance level of 0.00, which is small enough to rule out the hypothesis (the probability should be less than 0.05 to reject the null). It can be concluded that the relationship between variables was strong, or that the correlation matrix was not an identity matrix, as required by factor analysis.

Table 5.1 contains the PCA results using varimax rotation. The number of extracted factors can be defined by the user, and there are techniques available in SPSS to assist in determining the number of factors. Kaiser's criterion, also known as the eigenvalue rule, is a popular technique. Only factors with an eigenvalue (the variances extracted by the factors) of 1.0 or greater are retained under this rule (Yeoman and Golder, 1982). Using this criterion, seven factors were retained.

Table 5.1: Results of PCA: Varimax rotation matrix

Indicator	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Livestock						0.707	
Hoe	0.801						
Sword	0.732						
Crowding			0.813				
Type of wall		0.642					
Type of roofing		0.739					
Type of floor		0.659					
Lighting					0.597		
Drinking water					0.793		
Toilet				0.736			
Axe	0.601						
Slasher							0.771
Chair					0.601		
Bed	0.616						
Cupboard							0.579
Mobile phone	0.464						
Cooking fuel						0.774	
Eugen Value	2.543	1.915	1.381	1.261	1.201	1.086	1.051
% of variance	14.129	10.636	7.665	7.004	6.675	6.036	5.839

The seven factors accounted for 57.984% of the total variation. As a result, the importance of the factors in measuring overall socioeconomic condition differed. A Non-standardized Index (NSI) was created for each household by using the proportion of these percentages as weights on the factor score coefficients. On a linear scale, this index compares the socioeconomic status of one DA to another. The index's value can be positive or negative, making interpretation difficult. As a result, a Standardized Index (SI) was created, with a value ranging from 0 to 100.

5.5 Results and Discussion

5.5.1 CT impact on households' poverty level

(i) Impact analysis on overall wealth

Using the wealth index created previously, the study estimated the impact of CT on living standard of poor households by using PSM. The PSM estimated results using NNM(1), Radius caliper (0.05) and Mahalanobis techniques are presented on Table 5.2. T-statistics by NNM(1), Radius caliper and Mahalanobis were 1.64, 1.51 and 1.72 respectively. Although the effect of CT on overall household's wealth using all the three PSM matching estimators was positive, the findings did not indicate significant impact on the same. These findings are in line with findings of the studies by Saeed *et al.* (2020) in Pakistan and Sumarto (2021) in Indonesia who both found that CT has no significant impact in the overall wealth of poor households.

Table 5.2: PSM estimation of overall wealth index

	Matching Estimators	Recipients (ATT)	Non-recipients (ATT)	Mean diff.	Standard errors	t-stat
Wealth Index	NNM(1)	43.92	39.91	4.01	2.45	1.64
	Radius (0.05)	42.45	39.90	2.55	1.69	1.51
	Mahalanobis	42.53	38.99	4.49	2.61	1.72

The findings do not support the alternative hypothesis that CTs have impact on households' poverty reduction. This was confirmed by consensus from the FGD participants that:

"...We know no one whose life has really been transformed because of CT. We are all still struggling to make our ends meet." (Lindi district, 24 January 2020).

This indicates that CTs alone are generally not sufficient on their own to lift the poorest households out of poverty permanently. However, to further understand the impact of CT on each specific indicator of the index, impact analysis for each item was carried out.

(ii) Impact of CT on housing conditions

On reference to MPI (2014), one of the indicators of deprivation is the housing condition. Therefore, the study sought to understand the impact of CT on housing conditions by using Propensity Score Matching (PSM). Housing conditions analyzed comprise of crowding, type of wall, roofing materials and type of floor. Results of PSM estimation using NNM, Radius caliper (0.05) and Mahalanobis are presented in Table 5.3. The findings indicate that mean scores for recipients were higher than that of non-recipients on type of wall, roofing materials and type of floor. This suggests that it is likely CT contributed positively to housing conditions. However, CT was found to have statistically significant impact on type of floor only. For type of house floor, the t-statistic was 2.47, 2.39 and 2.54 for NNM, Radius caliper (0.5) and Mahalanobis matching techniques respectively. This means that in comparison to non-recipients' houses, most of recipients' houses had cement floor.

Table 5.3: Estimation of impact of CT on housing conditions

Outcome Indicators	Matching Estimators	Recipients (ATT)	Non-recipients (ATT)	Mean Diff.	Standard. Error	t-stat
Crowding	NNM(1)	0.0057	0.0088	-0.0031	0.0087	-0.36
	Radius(0.05)	0.0066	0.0132	-0.0066	0.011	-0.58
	Mahalanobis	0.0057	0.0114	-0.0057	0.0128	-0.45
Type of wall	NNM(1)	0.3198	0.2733	0.0465	0.0606	0.77
	Radius(0.05)	0.3223	0.2961	0.0263	0.0532	0.49
	Mahalanobis	0.3829	0.3200	0.0629	0.0664	0.95
Roof material	NNM(1)	0.6047	0.5872	0.0174	0.0663	0.26
	Radius(0.05)	0.6053	0.5724	0.0329	0.0566	0.58
	Mahalanobis	0.6239	0.5943	0.0296	0.0492	0.60
Type of floor	NNM(1)	0.1991	0.1086	0.0905	0.0367	2.47
	Radius(0.05)	0.2039	0.1052	0.0987	0.0412	2.39
	Mahalanobis	0.2457	0.1086	0.1371	0.0539	2.54

The findings are consistent with findings of studies by Habimana *et al.* (2021) in Rwanda and Pettifor *et al.* (2019) which concluded that CT has impact on type of floor. The probable reason is that it's easier and cheaper to renovate house floor than other house properties. This was confirmed by consensus from an FGD that:

“... *We wish we could be able to improve our houses, but you know we lack money to do so; some of us have only been able to improve the floors of our homes.*” (Lindi district, 20 January, 2020).

The statement means that improvement of floor is a cheaper option compared to other options which they had thought about. The poor have to make their decisions under severe resource conditions which influence the way they choose. While improvements of other house structures such as wall and roof may necessitate households to shift to another house during construction, changing or improving the floor can be done while household members still live in the house. This implies that households' choices on how to spend the CT are also guided by convenience.

(iii) Impact of CT on basic services

CT can address financial barriers to basic services. Thus, the impact of CT on household's source of lighting energy, cooking fuel, source of drinking water and type of sanitation facility was estimated. PSM results on estimation of the CT impact on basic services are presented in Table 5.4. Mean score differences on cooking fuel, source of drinking water and type of sanitation facility were positive, indicating that CT may positively contribute to the improvement of the basic services. Nevertheless, its impact was statistically significant on households' sanitation facility only.

Table 5. 4: PSM estimation of CT impact on basic services

Outcome Indicators	Matching Estimators	Recipients (ATT)	Non-recipients (ATT)	Mean Diff.	Standard. Error	t-stat
Lighting	NNM(1)	0.7558	0.8256	-0.0698	0.054	-1.28
	Radius(0.05)	0.7697	0.8092	-0.0395	0.047	-0.84
	Mahalanobis	0.7486	0.8343	-0.0857	0.058	-1.48
Cooking fuel	NNM(1)	0.6452	0.5623	0.0829	0.0911	0.91
	Radius(0.05)	0.6310	0.6200	0.1100	0.1211	0.92
	Mahalanobis	0.6221	0.6124	0.0097	0.0132	0.73
Drinking water	NNM(1)	0.4069	0.3547	0.0523	0.6610	0.79
	Radius(0.05)	0.4211	0.4013	0.0197	0.0566	0.35
	Mahalanobis	0.4057	0.3829	0.0229	0.0683	0.33
Sanitation facility	NNM(1)	0.9543	0.9292	0.0251	0.0122	2.05
	Radius(0.05)	0.9474	0.9211	0.0263	0.0090	2.92
	Mahalanobis	0.9543	0.9486	0.0057	0.0026	2.18

T-statistics results for sanitation facility were 2.05, 2.92 and 2.18 by using NNM, radius caliper (0.5) and Mahalanobis matching techniques respectively. Data from

Nepal suggest that households receiving CTs have better sanitation facilities than those not receiving CTs (Renzaho *et al.*, 2018). Most households were concerned with their privacy in using facilities. Thus, CT was useful in addressing lack of privacy which was associated with lack of money. Although the main concerns of policy makers on using unimproved sanitation facilities are health, respondents were less concerned with health issues. The feeling that they were inferior to other households because of poor toilets and bathroom guided them to this choice.

(iv) Impact of CT on productive assets

To get insight on how low-income households create wealth, the study analyzed the impact of CT on households' productive assets. Four agricultural assets which mostly explain productive capabilities of rural Tanzanians were chosen (Bjornlund *et al.*, 2020). PSM estimation on the livestock, hoe and sword are presented in Table 5.5. Furthermore, the findings indicate that assets accumulation for recipients in all four items was more than for non-recipients, but only increase in livestock was robust. The t-statistic for livestock was 2.58, 3.11 and 2.56 for NNM, Radius (0.05) and Mahalanobis respectively.

Table 5. 5: PSM estimation on productive assets

Outcome Indicators	Matching Estimators	Recipients (ATT)	Non-recipients (ATT)	Mean Diff.	Standard. Error	t-stat
Livestock	NNM(1)	0.8895	0.7733	0.1163	0.0451	2.58
	Radius(0.05)	0.8800	0.8171	0.0629	0.0202	3.11
	Mahalanobis	0.8571	0.8389	0.0182	0.0071	2.56
Hoe	NNM (1)	0.2500	0.2034	0.0465	0.0577	0.81
	Radius(0.05)	0.2571	0.2457	0.0114	0.0593	0.19
	Mahalanobis	0.2566	0.2434	0.0132	0.0498	0.26
Sword	NNM(1)	0.7849	0.7558	0.0291	0.0538	0.54
	Radius(0.05)	0.7965	0.7771	0.0193	0.0412	0.47
	Mahalanobis	0.8026	0.7961	0.0066	0.0461	0.41

Although most of recipients argued that the money received was not enough to cause significant impact on productive assets, the indirect effect of CT on livestock was noticed. The probable pathway through which livestock assets increased is through reduced depletion as a results of increased economic resilience. These findings are consistent with findings of a study by Daidone *et al.* (2019) which concluded that CT in Malawi has significant impacts on livestock. This is an indication that, in a long

run, CT can have transformative impact on livestock accumulation of low-income households.

(v) Impact of CT on non-productive assets

The study sought to understand the impact of CT on non-productive assets. Non-productive assets such as household durables represent households' wellbeing and may determine households' consumption. Six assets which are axe, mobile phone, cupboard, bed, chair and slasher were analysed and the findings are presented in Table 5.6. PSM estimation indicated that, for all six assets, there was positive mean difference between recipients and non-recipients' households. This implies that recipients were more likely to own non-productive assets than non-recipients. However, the CT had significant impact on mobile phone and chair with t-statistics above 1.96 in all the matching techniques.

Table 5.6: PSM estimation on non-productive assets

Outcome Indicators	Matching Estimators	Recipients (ATT)	Non-recipients (ATT)	Mean Diff.	Standard. Error	t-stat
Axe	NNM(1)	0.4417	0.4400	0.0017	0.0503	0.03
	Radius(0.05)	0.4823	0.4474	0.0349	0.0504	0.69
	Mahalanobis	0.4710	0.4581	0.0129	0.024	0.53
Mobile phone	NNM(1)	0.3982	0.2920	0.1062	0.048	2.21
	Radius(0.05)	0.3965	0.2134	0.1831	0.063	2.90
	Mahalanobis	0.3872	0.3469	0.0403	0.017	2.42
Cupboard	NNM(1)	0.1046	0.0639	0.0406	0.037	1.09
	Radius(0.05)	0.1157	0.0601	0.0556	0.057	0.98
	Mahalanobis	0.1103	0.0782	0.0321	0.026	1.23
Bed	NNM(1)	0.7151	0.7093	0.0058	0.059	0.10
	Radius(0.05)	0.6977	0.6812	0.0165	0.034	0.49
	Mahalanobis	0.7045	0.7131	-0.0086	0.066	-0.13
Chair	NNM(1)	0.2478	0.1611	0.0867	0.041	2.15
	Radius(0.05)	0.2500	0.1710	0.0789	0.029	2.70
	Mahalanobis	0.2629	0.1693	0.0936	0.034	2.76
Slasher	NNM(1)	0.0291	0.0233	0.0058	0.0166	0.35
	Radius(0.05)	0.0197	0.0066	0.0132	0.0131	1.01
	Mahalanobis	0.0265	0.0214	0.0051	0.001	0.91

T-statistics for mobile phone were 2.21, 2.90 and 2.42 for NNM, Radius caliper (0.05) and Mahalanobis matching techniques respectively. For chair, the T-statistics were 2.15, 2.70 and 2.76 for NNM, Radius caliper (0.05) and Mahalanobis matching techniques respectively. This might imply that the recipients used the money received from the CT programme to buy mobile phones and chairs. While the

purchase of mobile phone phones might be instigated by the need for social participation, the chair improves social and economic prestige. These findings are supported by Bursztyn and Jensen (2016) and Freshman and Segal (2018) who argue that human is inherently social animal, and his craving for social participation affect his economic choices. This means interaction between decision makers affects their preferences. CT improves social inclusion by improving the terms of participation in a society.

5.5.2 Sensitivity analysis

PSM results presented previously relied heavily on assumption of unconfoundedness, or conditional independence. That is, all the variables affecting both the treatment and the outcome variable are observed and can be controlled for. However, hidden bias may arise by exclusion of variables that may have impact on both participation in CT programme and poverty indicators. Thus, this study adopted Rosenbaum bounds approach to determine how strongly confounders relate to participation in the CT programme unobserved. Table 5.7 presents Rosenbaum bounds sensitivity analysis using the Hodges-Lehmann point estimate of the treatment effect and Wilcoxon's signed rank statistic. The Hodges-Lehmann test gave the median range of ATT for every value of gamma while the Wilcoxon provided their corresponding ranges of significance levels for each ATT generated from gamma values.

Table 5.7: CT participation sensitivity analysis.

Gamma (Γ)	Hodges-Lehmann point estimate (ATT)		Wilcoxon's signed rank (p-value)	
	Lower bound	Upper bound	Lower bound	Upper bound
1	0.4206	0.4206	0	0
1.1	0.4160	0.4252	0	0
1.2	0.4119	0.4293	0	0
1.3	0.4081	0.4329	0	0
1.4	0.4046	0.4366	0	0
1.5	0.4010	0.4398	0	0
1.6	0.3979	0.4429	0	0
1.7	0.3951	0.4458	0	0
1.8	0.3923	0.4484	0	0
1.9	0.3897	0.4509	0	0
2.0	0.3872	0.4533	0	0

The results indicate that, for each variation of gama (Γ) by 0.1 from 1 to 2, Wilcoxon's signed rank was significant at $p < 0.0001$. The fact that the p-value results were significant at different levels of Γ indicates the resilience of the treatment group

to being affected by unobserved confounders. Thus, the study is free from hidden bias from an unobserved confounder.

5.6 Theoretical implications

The fact that CT had significant impact in some poverty indicators confirms that structural changes in rural areas might improve the living standards of poor households. Furthermore, the revelation that poor household's choices on improvements on of their house floor was dictated by convenience signaled structural constraints poor households are facing in making economic decisions. Additionally, significant impact of CT on livestock assets as a result of increased resilience signifies what the CT can loosen up some structural constraints. Thus, CT impact on poverty reduction is limited in a context where other structural factors strain recipients' ability to excel. Furthermore, the findings are consistent with the cultural theory of poverty which states that CT can alleviate the harsh conditions of poverty, but unless it is used to leverage changes in behaviour. Impact of CT on housing use of basic services, productive and non-productive assets is explained by the need for privacy, social participation and social prestige. The study contributes to the cultural theory by specifying behaviours which incentivizes the use of CT. It's the interaction between cultural and structural factors which may determine the impact of CT on poverty reduction.

5.7 Conclusion and Recommendations

The study concludes that, to eliminate extreme poverty in Tanzania, small, regular CT programme by itself is not enough. CT has positive influence on reducing poverty levels of low-income households. However, the impact on overall poverty level is not significant enough to infer the results to the CT. Specifically, CT has impact on type of floor, livestock, sanitation facilities, mobile phone and chairs. Thus, a unit increase of income for low-income households improves some households' living standard indicators. Nevertheless, the number of indicators impacted and the extent of impact were not enough to significantly influence overall wealth. Therefore, the extent to which an additional unit of income influences poverty reduction levels is contextual.

To address multiple aspects of households' poverty, the study recommends to TASAF to adopt multi-intervention programmes which can directly impact key

poverty indicators. One programme fits for all, and results into unbalanced programme outcomes. Thus, understanding the needs of low-income households and how selected intervention affect poverty indicators is useful in tailoring CT programmes for specific contexts. To increase the impact of CT programmes on specific indicators, additional supportive initiatives to address resource multiplication constraints facing low-income households are needed.

REFERENCES

- Ali, A. F. M., Radzi, N. A. M., Kosnin, R., Hassan, S., & Saidin, S. S. (2021). Estimating expenditure pattern and permanent income hypothesis: Evidence from Kelantan Malaysia. In *Journal Ekonomi Malaysia* (Vol. 55, Issue 2, pp. 39–49). Penerbit Universiti Kebangsaan Malaysia. <https://doi.org/10.17576/JEM-2021-5502-4>
- Bartlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Psychology, Statistical Section*, 8, 77-85.
- Becker, S. O., & Caliendo, M. (2007). *mhbounds - Sensitivity Analysis for Average Treatment Effects*.
- Bergolo, M. & Galván, E. (2018). Intra-household Behavioural Responses to Cash Transfer Programs. Evidence from a Regression Discontinuity Design, *World Development*, 103:100-118 doi: https://doi.org/10.1016/j.world_dev.2017.10.030.
- Bjornlund, V., Bjornlund, H., & van Rooyen, A. F. (2020). Why agricultural production in sub-Saharan Africa remains low compared to the rest of the world—a historical perspective. *International Journal of Water Resources Development, sup1*. <https://doi.org/10.1080/07900627.2020.1739512>
- Boo, F. L., & Creamer, J. (2019). Cash, conditions, and child development: Experimental evidence from a CT programme in Honduras. *Economia*, 19(2). <https://doi.org/10.1353/eco.2019.0005>
- Brady, D. (2019). Theories of the Causes of Poverty. *Annual Review of Sociology*, 45, 155-175. doi: <https://doi.org/10.1146/annurev-soc-073018-022550>
- Burney, S. (2018). In-kind benefits and household behaviour: The impact of SNAP on food-away-from-home consumption, *Food Policy*, 75, 134-146. <https://doi.org/10.1016/j.foodpol.2018.01.010>
- Bursztyn, L. & Jensen, R. (2017). Social Image and Economic Behaviour in the Field: Identifying, Understanding, and Shaping Social Pressure, *Annual Review of Economics*, 9(1). 131-153. doi 10.3386/w23013
- Cluver, L. D., Orkin, F. M., Meinck, F., Boyes, M. E., Yakubovich, A. R., & Sherr, L. (2016). Can social protection improve sustainable development goals for adolescent health? *Plos one*. 11(10). <https://doi.org/10.1371/journal.pone.0164808>

- Coudouel, A., Hentschel, J. S., & Wodon, Q. T. (n.d.). *Chapter 1 Poverty Measurement and Analysis*.
- Daidone, S., Davis, B., Handa, S., & Winters, P. (2019). The Household and Individual-Level Productive Impacts of CT Programmes in Sub-Saharan Africa. In *American Journal of Agricultural Economics* (Vol. 101, Issue 5, pp. 1401–1431). Oxford University Press. <https://doi.org/10.1093/ajae/aay113>
- Davis, B., Handa, S., Hypher, N., Winder Rossi, N., Winters, P., & Yablonski, J. (n.d.). *From Evidence: The Story of CTs and Impact Evaluation in Sub-Saharan Africa*.
- Dehejia, R. H., & Wahba, S. (2018Hab). *Propensity score-matching methods for nonexperimental causal studies*.
- Decerf, B. (2021). Combining absolute and relative poverty: income poverty measurement with two poverty lines. *Social Choice and Welfare*, **56**, 325–362. doi: <https://doi.org/10.1007/s00m355-020-01279-7>
- Evans, D. K., Hausladen, S., Kosec, K., & Reese, N. (2016). *Community-Based Conditional CTs in Tanzania, A World Bank Study*
- Fershtman, C., & Segal, U. (2018). *Preferences and Social Influence*. *American Economic Journal: Microeconomics*, *10*(3), 124–142. doi:10.1257/mic.2016019010.1257/mic.20160190
- Habimana, D., Haughton, J., Nkurunziza, J., & Haughton, D. M. A. (2021). Measuring the impact of unconditional CTs on consumption and poverty in Rwanda. *World Development Perspectives*, *23*. <https://doi.org/10.1016/j.wdp.2021.100341>
- Hagen-Zanker, J., Ulrichs, M., & Holmes, R. (2018). What are the effects of CTs for refugees in the context of protracted displacement? Findings from Jordan. *International Social Security Review*, *71*(2). <https://doi.org/10.1111/issr.12166>
- Hajdu, F., Granlund, S., Neves, D., Hochfeld, T., Amuakwa-Mensah, F., & Sandström, E. (2020). CTs for sustainable rural livelihoods? Examining the long-term productive effects of the Child Support Grant in South Africa. *World Development Perspectives*, *19*. <https://doi.org/10.1016/j.wdp.2020.100227>

- Harris, H. and Horst, S. (2016). A Brief Guide to Decisions at Each Step of the Propensity Score Matching Process. *Practical Assessment, Research, and Evaluation*: 21(4).doi: <https://doi.org/10.7275/yq7r-4820>
- Hjelm, L., Mathiassen, A., Miller, D., & Wadhwa, A. (n.d.). *Creation of a Wealth Index-1-Creation of a Wealth Index-2-Creation of a Wealth Index-3*.
- Holmes, W., & Olsen, L. (n.d.). *Using propensity scores with small samples*.
- House, Q. E., Wang, X., Alkire, S., Feng, H., Xia, Q., & Wang, A. (2016). *Oxford Poverty & Human Development Initiative (OPHI) Oxford Department of International Development On the Relationship between Income Poverty and Multidimensional Poverty in China*. <http://www.ophi.org.uk>
- Husz, I., Kopasz, M. & Medgyesi, M. Social Workers' Causal Attributions for Poverty: Does the Level of Spatial Concentration of Disadvantages Matter?. *Soc Indic Res* (2022). <https://doi.org/10.1007/s11205-021-02868-4>
- ISPA. (2017). *Assessment of TASAF PSSN in Tanzania Using the ISPA-PWP Tool*.
- Ji, C., Jin, S., Wang, H., Ye, C. (2019) Estimating effects of cooperative membership on farmers' safe production behaviours: Evidence from pig sector in China. *Food Policy*, 83 (1), 231-245. doi: <https://doi.org/10.1016/j.foodpol.2019.01.007>.
- Krishnamoorthy, Y. & Rehman, T. (2021). Impact of antenatal care visits on childhood immunization: a propensity score-matched analysis using nationally representative survey,*Family Practice*. doi:<https://doi.org/10.1093/fampra/cmab1>
- Krishnan, V. (n.d.). *Constructing an Area-based Socioeconomic Index: A Principal Components Analysis Approach**.
- Lamichhane, G. (2021). Tourism for Sustainable Livelihood in Nepal. *Voice of Teacher*, 6(1), 55–63. doi: <https://doi.org/10.3126/vot.v6i1.44067>
- Lane, F. C., To, Y. M., Shelley, K., & Henson, R. K. (2012). An Illustrative Example of Propensity Score Matching with Education Research. *Career and Technical Education Research*, 37(3), 187–212. <https://doi.org/10.5328/cter37.3.187>
- Lewis, O. (1966). The culture of poverty. *Scientific American*, 215(4), 19-25.
- Magombeyi, M. T., & Odhiambo, N. M. (2016). Poverty Alleviation Policies in Tanzania: Progress and Challenges. *EuroEconomica*, 35(2).

- Manley, J., & Slavchevska, V. (2019). Are CTs the answer for child nutrition in sub-Saharan Africa? A literature review. *Development Policy Review*, 37(2). <https://doi.org/10.1111/dpr.12346>
- Martin, J. & Rawlings, L. (2018). How Incorporating Behavioural Science into Cash Transfer Programs Is Changing Lives. Retrieved from [https://www.ideas42.org/blog/ incorporating-behavioural-science-cash-transfer-programs-changing-lives/](https://www.ideas42.org/blog/incorporating-behavioural-science-cash-transfer-programs-changing-lives/)
- Martínez-Martínez, O. A., Coronado-García, M., & Orta-Alemán, D. (2020). The effect of CTs from the PROSPERA programme (formerly Oportunidades) on poverty in urban households in Northeast Mexico. *Journal of International and Comparative Social Policy*, 36(2). <https://doi.org/10.1080/21699763.2019.1641133>
- MPPN (n.d). SDGs and MPI: What is the importance of SDG Target 1.2 for reducing multidimensional poverty? Retrieved from <https://mppn.org/sdgs-and-mpi/>
- Mzingula, E.P. (2020). Peculiarities Food Security and Coping Strategies During Food Shortfalls Among TASAF III's Targeted Households in Makole Village Lushoto District Tanzania. *International Journal of Arts, Humanities, Literature and Science*, 4(9):1-12.
- Nagarajan, P. (2021). Financial inclusion through micro finance. *Global journal for research analysis*. <https://doi.org/10.36106/gjra/7607165>
- Nannicini, T. (2013). *A Simulation-Based Sensitivity Analysis for Matching Estimators*.
- Nordjo, R.E. and Adjasi, C.K.D.(2020). The impact of credit on productivity of smallholder farmers in Ghana. *Agricultural Finance Review*, 80 (1). 91-109. doi:<https://doi.org/10.1108/AFR-10-2018-0096>
- National Bureau of Statistics (2019).*Tanzania Mainland Key Indicators report*. Retrieved from https://www.nbs.go.tz/nbs/takwimu/hbs/2017_18_HBS_Key_Indicators_Report_Engl.pdf
- OPHI (2018). *Global Multidimensional Poverty Index 2018: The Most Detailed Picture to Date of the World's Poorest People*. Report. Oxford Poverty and Human Development Initiative, University of Oxford.
- Owusu-Addo, E., Renzaho, A. M. N., & Smith, B. J. (2019). CTs and the social determinants of health: A conceptual framework. *Health Promotion International*, 34(6), E106–E118. <https://doi.org/10.1093/heapro/day079>

- Page, L., & Pande, R. (2018). Ending global poverty: Why money isn't enough. *Journal of Economic Perspectives*, 32(4). <https://doi.org/10.1257/jep.32.4.173>
- Pettifor, A., Wamoyi, J., Balvanz, P., Gichane, M. W., & Maman, S. (2019). Cash plus: exploring the mechanisms through which a CT plus financial education programme in Tanzania reduced HIV risk for adolescent girls and young women. *Journal of the International AIDS Society*, 22(S4). <https://doi.org/10.1002/jia2.25316>
- Pirani, E. (2014). Wealth Index. In: Michalos, A.C. (eds) *Encyclopedia of Quality of Life and Well-Being Research*. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-0753-5_3202
- Ramadan, R. (2021). *Determinants of Income Inequality in Jordan*. www.erf.org.eg
- Renzaho, A., Chitekwe, S., Chen, W., Rijal, S., Dhakal, T., Chikazaza, I. R., & Dahal, P. (2018). Impact of a multidimensional child cash grant programme on water, sanitation and hygiene in Nepal. *Journal of Water Sanitation and Hygiene for Development*, 8(3), 520–532. <https://doi.org/10.2166/washdev.2018.006>
- Rukin, R., Rahman, B., Toha, A., & Gianawati, N. D. (2018). Coastal Rural Community Economic Development As a Poverty Reduction Efforts. *International Journal of Social Sciences and Humanities Invention*, 5(4), 4627–4633. <https://doi.org/10.18535/ijsshi/v5i4.12>
- Saavedra, J. E. (2016). The Effects of Conditional CT Programmes on Poverty Reduction, Human Capital Accumulation and Wellbeing. In *The effects of conditional CT programmes on poverty reduction, human capital accumulation and wellbeing*.
- Saeed, M., Kashif, H., Azmat, M., Saeed, M. K., & Hayat, M. A. (2020). *The Impact of Social CTs on Poverty in Pakistan-A Case Study of Benazir Income Support Programme*.
- Sharkey, P. (2013). *Stuck in Place: Urban Neighborhoods and the End of Progress toward Racial Equality*. The University of Chicago Press.
- Stoeffler, Q., Mills, B., & Premand, P. (2020). Poor households' productive investments of CTs: Quasi-experimental evidence from Niger. *Journal of African Economies*, 29(1), 63–89. <https://doi.org/10.1093/jae/ejz017>

- Sumarto, M. (2021). Welfare and conflict: Policy failure in the Indonesian CT. *Journal of Social Policy*, 50(3), 533–551. <https://doi.org/10.1017/S0047279420000252>
- UNDP (2020). 2020 Global Multidimensional Poverty Index (MPI) Charting pathways out of multidimensional poverty: Achieving the SDGs. Retrieved from <https://hdr.undp.org/content/2020-global-multidimensional-poverty-index-mpi>
- UNICEF. (2018). Tanzania Youth Study of the Productive Social Safety Net (PSSN) Impact Evaluation : Endline Report. *TASAF, UNICEF, REPOA, April*.
- URT (2018). Tanzania Social Action Fund Fourth Quarter Progress Report April – June, Dar es Salaam, Tanzania.
- Warsanga, W. B., & Evans, E. A. (2018). Welfare Impact of Wheat Farmers Participation in the Value Chain in Tanzania. *Modern Economy*, 09(04), 853–887. <https://doi.org/10.4236/me.2018.94055>
- Weber, D., Uhlmann, L., Schönenberger, S. & Kieser, M. (2019). Adaptive propensity score procedure improves matching in prospective observational trials. *BMC Med Res Methodol*, 19 (150). doi: <https://doi.org/10.1186/s12874-019-0763-3>
- White, H., & Sabarwal, S. (2014). *Quasi-Experimental Design and Methods*. www.unicef-irc.org
- White II (2018) advocated splitting 50/50 treatment and control groups because by using Monte Carlo simulation the groups equally divided produced the maximum statistical power.
- World Bank (2022). Fact Sheet: An Adjustment to Global Poverty Lines. Retrieved from <https://www.worldbank.org/en/news/factsheet/2022/05/02/fact-sheet-an-adjustment-to-global-poverty-lines>
- World Bank (2019). *Tanzania mainland poverty assessment; Tanzania's Path to Poverty Reduction and Pro-Poor Growth PART 1*. <http://www.copyright.com/>.
- World Bank (n.d). *Tanzania mainland poverty assessment, Executive Summary*: Washington DC.pp.29.
- Yamane, T. (1967). *Statistics: An Introductory Analysis*. the University of Michigan, USA.

Yeomans, K. A., & Golder, P. A. (1982). The Guttman-Kaiser Criterion as a Predictor of the Number of Common Factors. *Journal of the Royal Statistical Society. Series D (The Statistician)*, 31(3), 221–229. <https://doi.org/10.2307/2987988>

APPENDICES

Appendix 5.1: Operationalization of variables

Variable	Indicator	Wealthier	Poorer
Housing conditions	Crowding	1=1 or fewer than 5 in a room	0= 6 or more people per room
	Type of wall	1= baked bricks, sundries brick	0=Mud, timber, branches
	Roof material	1= Iron sheet	0= Grass or leaves
	Type of floor	1= Cement/Tiles	0= Sand/Earth
Use of basic services	Source of lighting energy	1= Solar and Electricity	0=Kerosene
	Cooking fuel	1=Electricity/Gas, charcoal, kerosene/Purchased wood	0= Collected Wood and dung
	Source of drinking water	1=Improved sources	0=Unimproved sources
	Sanitation facility	1=Improved facility	0=Unimproved facility
Productive assets	Had a livestock	1=Yes	0=No
	Had a hoe	1=Yes	0=No
	Had a sword	1=Yes	0=No
Non-productive assets	Had an axe	1=Yes	0=No
	Had a mobile phone	1=Yes	0=No
	Had a cupboard	1=Yes	0=No
	Had a bed	1=Yes	0=No
	Had a chair	1=Yes	0=No
	Had a slasher	1=Yes	0=No

CHAPTER SIX

6.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary of the Findings

6.1.1 Community perception on community-based targeting mechanism

This study assessed community perceptions on CBT mechanism and determined households' factors influencing community perception on the transfers. The specific areas assessed included awareness of eligibility criteria, poor households' identification steps, villagers' opinions on CBT; village meetings to discuss eligible households, participation in selection of poor household, attendance in village meetings, inclusion and exclusion errors; appropriateness of payment structure and unpredictability of payment time. Confirmatory factor analysis was conducted, and the items were grouped into awareness, selection, distribution of benefits, targeting outcome. Descriptive analysis was carried out and to determine households' factors affecting their perception of CBT mechanism, ordinal logit regression was used. To understand whether the difference in perception was on outcome of systematic due to the targeting mechanism, Mann-Whitney U test was employed to get more insights into the items of targeting mechanism which contributed to this difference. Community perceived performance of the mechanism was average, although complaints of exclusion and inclusion errors were reported. Sex and participation status of respondents were found to be influencing community perception of CBT mechanism. Beneficiary households were more likely to be aware of the village meetings conducted to nominate eligible households than non-beneficiary households.

6.1.2 Impact of CT on households spending patterns

The study aimed to examine the impact of UCT on household spending patterns in terms of food, non-food items, utilities, durables, investment, education and health. Secondly, the study determined the households' marginal budget shares and elasticities of demand for each households' spending category. To examine the impact of UCT on households' spending patterns, Working Leser model was adopted. To address the challenge of endogeneity arising from the application of Working Leser model, the study employed Propensity Score Matching. Coefficients from the Working Leser model were used to calculate marginal budget shares and

elasticities of demand. The findings indicated that UCT has negative impact on food budget share and positive impact on non-food and health budget shares. These outcomes are consistent with Engel's law which states that as income grows, spending on food decreases. Both non-beneficiaries and beneficiaries regarded consumables (food and utilities) as normal goods while durables, investment, non-food, health and education were regarded as luxury goods.

6.1.3 Effect of CT on food demand

This study assessed the UCT (CT) effect on food demand and its implications on food security in Lindi District using Almost Ideal Demand Framework. There were seven food groups into which food expenditure was broken down. The groupings was based on the food composition table suggested by Tanzania Food and Nutrition Centre. These food groups are: cereals and cereal products, pulses, seeds and nuts, meat, poultry and fish, fruits and fruit juices, vegetables, oils and fats. Food insecurity was measured by using Households Hunger Score. The findings indicated that CT has effect on demand for roots and tubers, cereals and vegetables. Furthermore, the study indicated that this increase on demand had no significant effect on reduction of food insecurity.

6.1.4 The impact of CT on poverty reduction

This study examined the causal effect of CT on poverty reduction. Specifically, the study assessed the impact of CT on households' overall wealth, housing conditions, use of basic services, productive and non-productive assets. The findings indicated that CT has no significant impact on overall poverty level of recipients' households. Thus, small monthly free handouts to poor households by themselves are not enough to significantly reduce extreme poverty. However, the results indicated significant effect of CT on five poverty indicators, which are type of house floor, sanitation facilities, livestock, mobile phone and chair.

6.2 Conclusions

6.2.1 Community perception on community-based targeting mechanism

The study concludes that, although the programme design may advocate for community participation, it is the level of participation which will guarantee the legitimacy of the programme in the community. This is revealed by the fact that, community rated the performance of CBT mechanism as average albeit they were

aware of meetings conducted to discuss eligible households and they had attended. Furthermore, findings indicated existence of inclusion and exclusion errors. Exclusion error is an outcome of programme design and implementation strategies while inclusion error is a result of implementation flaws. Participants could not predict the pay day. Low predictability of pay day delays income consumption of poor households and increases the risk of food insecurity.

The programme design emphasizes on giving cash to women rather than men in households where both spouses live together. Prioritizing women instigates decrease of outdated traditions and norms which undermines the capacity of women in improving household's welfare. The fact that beneficiaries were pre-informed by CMC that their names had been proposed for inclusion in the programme suggests prevalence of systematic bias in selecting poor households. Participation procedure including only those who are easily available results into biased outcome.

6.2.2 Impact of CT on households spending patterns

The study concludes that disparities in spending patterns of poor households are explained by disparities in their income levels. Therefore, any significant increase in income for poor households, such as increase brought by the cash transfer will have significant impact on spending patterns of the recipients. Spending patterns of cash transfer beneficiaries did not conform to the programme objectives, which suggests that what are deemed to be essential items by government and donors for CT recipients don't conform to the priorities of poor households. The fact that poor households perceived health and education as luxury commodities undermines the fight against intergenerational poverty. This implies that poor households might have imperfect information about the expected returns on investment in human capital.

6.2.3 The effect of CT on food demand

The study comes to the conclusion that household satiation levels, behaviour seeking diversity, and inherited eating habits all influence how food demand changes as a result of the CT programme. However, food insecurity in households was not significantly impacted by the rise in food demand brought on by CT. This demonstrates that the funds provided as CT are insufficient to bridge the gap between the amount of food that is produced and the amount that recipients are requesting.

6.2.4 The impact of CT on poverty reduction

The analysis comes to the conclusion that a small, regular CT programme is insufficient to end extreme poverty in Tanzania. Low-income households benefit from CT's efforts to reduce their poverty levels, but the programme's effects on general poverty levels are insufficient to draw conclusions about its effectiveness. Neither the number of metrics affected nor the magnitude of the impact were sufficient to have a meaningful impact on overall wealth.

6.3 Recommendations

6.3.1 Community perception on community-based targeting mechanism

The study offers useful policy implications to the Tanzanian Central Government and TASAF in their attempts to enhance the CBT mechanism. The study recommends to the Central Government and TASAF that the programme should be designed in such a way that all eligible beneficiaries get the opportunity to participate in the programme. The National Social Protection Framework, which acknowledges universality as the primary guiding principle, concurs with this. Additionally, the study recommends changing the PSSN operational manual (URT, 2013) to remove the exclusion rule from the control of the CMC and allow the community to be actively engaged in the selection and scrutiny process. On the basis of streamlined methods created by the villagers themselves, rating of identified prospective recipient households should be done in village meetings in cases of limited resources. Setting up a system to confirm the beneficiary households' existence each time money is distributed is worthwhile. To increase public accountability, programme coordinators should confirm the list of recipients and post their names on the village notice board.

6.3.2 Impact of CT on households spending patterns

According to the study, TASAF, the Central Government, and donors should design the CT programme so that its objectives are compatible with the choices and ways of life of those who are poor at a given income level. If it is invested in useful assets, free CT to poor households can drastically improve their standard of living. Instead of concentrating solely on protective domains, the programme's objectives should encompass transformative domains to increase expenditure on productive and durable assets. Instead of giving households just enough money for smoothing consumption, providing capital could lessen their long-term dependency on CT

programmes. The study suggests reviewing the amount of money offered to determine whether it is sufficient to have significant effects in the long run. Combining big sum payments with small, frequent CTs can encourage wealth accumulation and change people's perceptions of health and education as luxury items.

6.3.3 The effect of CT on food demand

The study recommends to TASAF, the Central Government, and donors to boost the amount of money allocated to low-income households if improvements in food demand are to occur to a point where the levels of food insecurity noticeably shift. By increasing the CT amount, households will have more money to spend, which is linked to improved food security. To ensure that the negative impacts of the free lunch are kept to a minimum, the increase should be implemented carefully. Furthermore, the study recommends implementation of food schemes that are specifically targeted at addressing food insecurity rather than integrating food insecurity issues in programmes addressing poverty in general. Programmes that provide free food to the most vulnerable members of the community, such as children and pregnant women, or subsidized food to poor households will directly alleviate food insecurity.

6.3.4 Impact of CT on poverty reduction

The study recommends to TASAF, the Central Government and donors to create multi-intervention programmes that can significantly affect important indicators of poverty in order to address various facets of households' poverty. Unbalanced programme outcomes occur from a one-size-fits-all approach. Thus, understanding the needs of poor households and how the selected intervention affects poverty indicators is useful in improving programme design. Additional supportive activities to alleviate the resource multiplication constraints faced by poor households are required to increase the impact of CT programmes on a specific indicator.

6.4 Contribution of the Study

6.4.1 Contribution to the literature

Reviewed literature reveals lack of a formal comprehensive assessment on community perception of CBT mechanisms in Tanzania. Although recent trends indicate an increasing number of studies on cash transfer programmes, particularly

on TASAF related programmes community perception on the targeting mechanism is rarely discussed. For the programme which adopted participatory approaches as its main targeting mechanisms, insights from local villagers who participated in targeting of poor households are useful in identification of possible loopholes which might make the programme ineffective. This study documented the views of the beneficiary and non-beneficiary households on awareness of the mechanism, selection procedures, payment systems and outcomes of targeting mechanisms.

Although studies on impact of CCT or UCT on various dimensions of poverty exist, little is known about the impact of bimonthly CCT and UCT programmes on poverty reduction. Implementation of both CCT and UCT at once is expected to address the challenge of small amounts of money given to poor households and limitations of each approach if they were implemented separately. The findings of this study confirm that challenges of exclusion error which was highly pronounced during implementation of the CCT only is no longer brought by the conditions attached to selection of beneficiaries, rather the challenge of targeting mechanism adopted. Furthermore, the findings indicate that combining CCT and UCT was not enough to address the challenge of small and regular amount provided as CTs.

6.4.2 Contribution to practice

CT effects on budget share of non-food items informs the policy makers on the possibilities of demand shift for items such as clothes, shoes and other non-essential commodities. This might influence other related economic variables such as inflation and supply side constraints specifically in rural areas where poor households constitute two-thirds of the population. Furthermore, estimates of cash transfer effects on spending patterns provides useful information on the household's economic choices. What was thought to be rational choices by the designers of the programme didn't align with the poor households' choices. Thus, results of this study challenge the main assumption guiding provision of CT that recipients are rational and hence will make choices which will positively influence their investment in human capital.

6.4.3 Contribution to the theory

In terms of theoretical contributions, the study confirms the ladder of citizen participation theory that participation procedure including only those who are easily

available is likely to result into biased outcome. Furthermore, the results are consistent with Engel's theory which states that as income rises households spending on necessities increases, while the budget share on the same decreases. In the context of CT, the increased income of poor households has decreased the budget share on food items and increased budget share on health and education. This has happened despite the fact that the CT has resulted into increased spending of each expenditure category in absolute terms. Poor households regarded food and utilities as necessity goods, thus the decrease on budget share of food and its increase in absolute terms is consistent with the Engel's hypothesis.

The fact that CT has significant impact on some poverty indicators confirms that structural changes in rural areas might improve the living standards of poor households. Furthermore, the revelation that poor households' choice of improvements of their house floor was dictated by convenience and signaled structural constraints poor households were facing in making economic decisions. Additionally, significant impact of CT on livestock assets as a result of increased resilience signifies what the CT can do to loosen up some structural constraints. Thus, CT impact on poverty reduction is limited in a context where other structural factors strain recipients' ability to excel. Furthermore, the findings are consistent with the cultural theory of poverty which states that CT can alleviate harsh conditions of poverty, but unless it is used to leverage changes in behaviour. Impact of CT on housing use of basic services, productive and non-productive assets is explained by the need for privacy, social participation and social prestige. The study contributes to the cultural theory by specifying behaviours which incentivize the use of CT. It's the interaction between cultural and structural factors which may determine the impact of CT on poverty reduction.

6.4.4 Contribution to the methodology

In terms of methodological approach, by using Multidimensional Poverty Index to capture households' living standards, the study provided an alternative approach for measurement of poverty in context of CT programmes. Furthermore, for impact analysis studies, Instrumental Variable (IV) is useful in addressing the challenge of endogeneity. Thus, this study suggested frequency of attendance in the village meetings as an appropriate instrumental variable for community-based targeting

mechanisms. The instrument can be replicated in evaluation of programmes where beneficiaries are required to pick their monies from village office.

6.5 Areas for Further Research

To assess the effectiveness of targeting mechanism, another study could use targeting differential index. This could enable bench making of results with other programmes worldwide. The relation between household expenditure patterns and poverty is well documented. However, the extent and the direction of relationship for each expenditure category on reflection to variables capturing living standard as proposed by MPI is not well established. Thus, the study recommends further research on assessment of relationship between households' expenditure patterns and households' living standard variables in Tanzania.

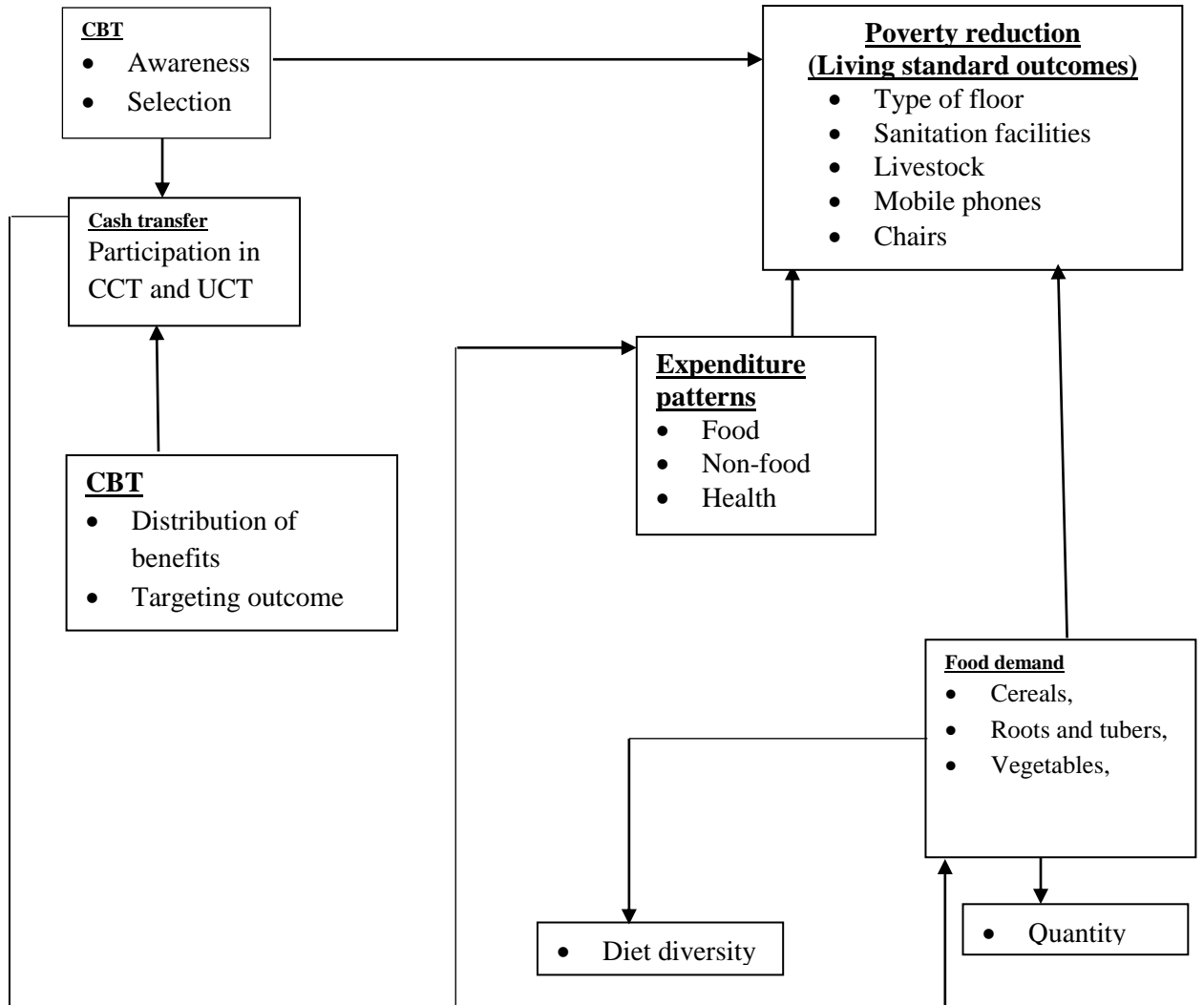
Furthermore, literature points out that there is indirect relationship between food demand and various poverty dimensions. Nevertheless, the pathway through which food demand influences other poverty dimensions might vary depending on the context. Therefore, this study recommends further research on the influence of changes in food demand on improving long term poverty levels of poor households in Tanzania. Moreover, most of CT programme designs require the recipient of CT to be a woman in the household both spouses are alive. In a male dominated culture such as Tanzania, there is need to establish whether CT have impact on intra-household decision making.

6.6 Limitations of the Study

It is argued that the most rigorous method for answering causal relationship questions is a randomised controlled trial (RCT) where individuals are randomly assigned to treatment and control groups and changes are compared. However, RCTs were not possible as the assignment to TASAF cash transfer programme was not random. Thus, the study adopted quasi experimental design which is recommended in a situation where randomisation is not feasible. Another limitation of this study was incapability to test the difference between the pre-intervention and post-intervention trends, due to limited availability of adequate quality data in the period before the implementation of the intervention. However, the differences in pre-intervention trends were adjusted by using matching techniques and IV.

APPENDICES

APPENDIX 6.1: RESULTANT CONCEPTUAL FRAMEWORK



Appendix 6.2: Questionnaire

Interviewer's Introduction

Dear respondent,

This questionnaire intends to collect information on research titled **Impact of cash transfer on income poverty reduction: Experience from Tanzania Social Action Fund in Lindi Region, Tanzania**. You are kindly requested to provide relevant information that will assist us to achieve the objectives of this study. I assure you that the information so extracted will be treated in strictly confidential and the names of individual or organizations will not be included in the reporting of the findings. It is estimated that you will take between 30 and 45 minutes to fill the questionnaire. Thank you in advance for your involvement in this research.

A. PRELIMINARY INFORMATION

Item	Details/Responses
Questionnaire number	
Date of interview	
Name of interviewer	
Name of respondent (Optional)	
Respondent's contact (Optional)	
Region	
District	
Ward Name	
Village Name	
Are you TASAF beneficiary? 1 = Yes, 0= No	

B. HOUSEHOLD SPENDING PATTERNS**B1. Human Resource**

1. Members of household (Household defined as members who live, cook and eat together) with 18 years and above

S N	Name	Marital (A)	Relation to head of HH (B)	Sex (C)	Age (D)	Max. years of schooling	Main occupation , current year (E)	Foot wear expenses for last 12 months in TZS	Clothes expenses for last 12 months in TZS
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

*** HH head**

(A): 1 - single, 2 - married, with the spouse permanently present in the household, 3 - married with the spouse migrant, 4 - widow or widower, 5 - divorced or separated

(B): 1 - spouse, 2 - son or daughter, 3 - father or mother, 4 - grandchild, 5 - grandparents, 6 - other relative, 7 - other non-relative.

(C): 1 - male, 2 - female

(D): age

(E): 1 - self-employed in agriculture, 2 - self-employed in nonfarm enterprise, 3 - student, 4 - casual worker, 5 - salaried worker, 6 - domestic worker, 7 - unemployed, looking for a job, 8 - unwilling to work or retired, 9 - not able to work (handicapped)

2. Members of household below 18 years

SN	Name	Age	Clothes 12 months in TAS	foot wear expenses for last 12 months in TAS
1				
2				
3				
4				
5				
6				
7				
8				

3. Total household size (Household defined as members who live, cook and eat together).....
4. Are you beneficiaries of any other programme for assisting power other than TASAF? 0-NO, 1-YES []

B3: Non-food expenditure

6. Does the household spent money on the following items in the last 12 months?

(This information will be used also in “D” below)

** Who decides on this spending?, 1= Husband, 3=Wife,2=Collectively (Wife and husband),4=Not applicable*

Consumption item	Does the household spend money on this item in the last 12 months (0=No, 1=Yes).	Total value used for 7 days TAS	Total value used for 30 days TAS	Total value used for 12 months TAS	Who decides on this spending? TAS 1,2,3,OR 4
School fees /books/uniform					
Doctors fee/Medical fees/medicines/BIMA					
Transportation					
Water					
Electricity					
Wood, charcoal, candles, kerosene					
Soap					
alcohol, beverages					
Tobacco/Cigarette					
Remittances to relatives					
Churches/Mosques					
Credit repayments/VICOBA					
Wedding /Engagement and funeral					
Air time/telephone bills					
Agricultural inputs					
Personal care/leisure/Saloon					
Others					

B4: Asset-related expenditure (This information will be used also in “D” below)

7. Number and value of selected assets owned by household.

* *Who decides on this spending? 1= Husband, 3=Wife, 2=Collectively (Wife and husband), 4=Other HH members, 5=Other Non HH members*

Items	Do you own this item 0=No, 1=Yes	How many of this item do you own in past 12 months Quantity	How much did u spend to acquire this item? TZS	What value would you ascribe (if you were to sell today per each item) TZS	Total values TZS	Who decides on this spending? 1,2,3,4 OR 5
Livestock						
Adult Cows						
Adult Sheep						
Adult Goats						
Adult Pigs						
Adult Chickens						
Other livestock (specify)						
Transportation-related assets						
Cars						
Motorcycles						
Bicycles						
Carts						
Other vehicles						
Durable goods						
Televisions						
DVD players						
Refrigerators						

Items	Do you own this item 0=No, 1=Yes	How many of this item do you own in past 12 months Quantity	How much did u spend to acquire this item? TZS	What value would you ascribe (if you were to sell today per each item) TZS	Total values TZS	Who decides on this spending? 1,2,3,4 OR 5
Electric or gas cookers						
Watches						
Radios						
Fans						
Iron						
Mobile phone						
Sewing Machine						
Sofa sets						
Cupboard						
Bed						
Chair						
Kerosene stove						
Home improvements i.e roof, plumbing etc						
Agricultural Implements						
Hoe						
Sword						
Rake						
Axe						
Slasher						
Sickle						
Watering cane						
Wheelbarrow						
Ox-Plough						
Chemical sprayer						
Motor Irrigation pump						
Power tillers						
Other, mention						

B5: INFORMATION ON PARTICIPATION ON CASH TRANSFER PROGRAMME

8. How long have you stayed in the village.....(years)

9. Did you participate in any of public work TASAF programmes?

0 = No 1= Yes

10. For the past 12 months, did you receive cash transfer from TASAF?

0=No 1=Yes []

11. If the answer on Q 9 above is yes, how much in TZS.....

12. Who is the recipient of cash transfer in your house?

1 = Husband 2 = Wife 3 = Not applicable

13. Do you own any business?

0=No 1=Yes []

14. If yes in Q 11, which type of business?

1. Shop 2. Food vendors 2. Tailoring 4. Bodaboda 5. Vegetable vendors

(Genge) 6. Animal husbandry 7.Others (specify).....

15. If yes in Q 11, how long have you own or practiced business

activities.....(years)

16. If yes in Q 11, how much was spent to start a business

(TZS).....

17. How did you spent the cash received from

TASAF?.....

18. How did you spent the cash received from

VICOBA?.....

C. PERCEPTION ON DESIGN AND IMPLEMENTATION OF CASH TRANSFER PROGRAMME

For each of the statements in the table below, choose only one of the three options.

❖ *Strong agree – S.A, Agree – A, Neutral – N, Disagree – D.S.A and Strong Disagree –S.D.S.A*

Main factor	S/N		S.A	A	N	D.S. A	S.D.S. A
Community awareness	1	Community was aware of eligibility criteria					
	2.	Community was not aware of TASAF cash transfer targeting process					
	3.	Community was aware of village meeting to discuss eligible household					
Community participation	4.	Community was not involved in the selection of poor household					
	5.	Villagers attended village meetings to discuss the eligible household					
Targeting	6.	There are some poor household not included in the programme					
	7.	There are some beneficiaries who don't qualify for the programme yet they receive cash transfer					
	8	Targeting process was fair and transparent					
Adequacy	9	The amount of cash transfer is enough to empower poor household					
Payment system	10	Beneficiaries do not receive cash transfer on time					
	11	The payment system is appropriate					
	12	The amount received is not as was pre-determined					
Grievances	13	Beneficiaries are not aware of the place to take their complaints in case of any.					
	14	Complains are addressed on time					

19. For TASAF beneficiaries, why you think you were selected to participate in the programme?

20. For non TASAF beneficiaries, why you think you were not selected to participate in the programme?.....

D. IMPACT OF CASH TRANSFER ON POVERTY REDUCTION**D1: Food-security Indicators**

21. Did any special event occur in the last seven days (for example, family event, guests invited)? 0=No 1=Yes []
22. If no in, how many meals per day were served to the household members during the last 7 days?
1. One meal 2.Two meals 3. Three meals 4.More than three meals []
23. If yes, how many meals were served to the household members during the 7 days preceding the special event?)
1. One meal 2.Two meals 3. Three meals 4.More than three meals []
24. During the last seven days, for how many days were the following foods served in a main meal eaten by the household?

Luxury Food	Number of days served
Luxury food 1: Fish	
Luxury food 2: Meat	
Luxury food 3: Wheat products e.g. chapati, bread, etc.	

25. During the last 30 days, for how many days did your household not have enough to eat every day? []
26. During the last 12 months, for how many months did your household have at least one day without enough to eat? []
27. For the period of 12 months, how many months do you have a stock of local staples in your house?

Staple Food	Months of Stocks
Staple food 1 : Maize	
Staple food 2: Rice or paddy	

D2: Dwelling-Related Indicators

28. How many rooms for sleeping does the dwelling have? (Include detached rooms in same compound if same household. []
29. What type of roofing material is used in the main house? 1.Grass and Leaves
2.Iron Sheet 3.Precoated iron sheet. 4.Tiles []

30. What type of exterior walls does the dwelling have? 1. Tent or branches and twigs 2. Mud walls 3. Timber and Iron Sheets 4. Sundries brick 5. Baked brick. 6. Stone 7. Others (specify) _____ []
31. What type of flooring does the dwelling have? 1. Earth/Sand 2. Cement 3. Cement with Tiles []
32. What is the main source of energy for lighting 1. Kerosene 2. Pico solar lamps 3. Advanced Solar panel system 4. Electricity 5. Others (specify) _____ []
33. What type of cooking fuel source primarily is used? 1. Dung 2. Collected wood 3. Purchased wood 4. Charcoal 5. Kerosene 6. Gas and/or Electricity []
34. What is the source of drinking water? 1. Unprotected sources e.g. dam, pond, lake or river 2. Protected sources e.g. public well sealed with pump 3. Piped public water []
35. What type of toilet facility is available? 1. Bush, field, or no facility 2. Pit toilet 3. Ventilated, improved pit latrine 4. Flush toilet []

Appendix 6. 3: Focus Group Discussion Guide

1. How did the cash transfer programme beneficiaries identified in your village?
2. Are villagers aware of the criteria used to select cash transfer programme beneficiaries?
3. Was a village meeting conducted to discuss the eligible households?
4. Was the confirmation meeting called up to discuss the list of accepted and rejected households by TASAF coordinator?
5. Did the attendance in the village meeting to discuss cash transfer beneficiaries meet the required column?
6. Were the villagers satisfied by the criteria set by TASAF to identify cash transfer household beneficiaries?
7. What were the factors used in the village meeting to suggest the eligible households?
8. Did village leaders ensure the process of selecting cash transfer household beneficiaries open and fair?
9. Did the cash transfer programme influence the spending behaviour of the beneficiaries?
10. Did cash transfer programme reduce poverty level of the beneficiaries?
11. Did cash transfer programme result into the reduction of vulnerability of beneficiaries?
12. Did cash transfer programme improve the mental fitness of the beneficiaries?

Appendix 6.4: Key informants interview guide

1. How did the CTs programme beneficiaries identified in your village?
2. Are you aware of the criteria used to select CT programme beneficiaries?
3. Was a village meeting conducted to discuss the eligible households?
4. Was the confirmation meeting called up to discuss the list of accepted and rejected households by TASAF coordinator?
5. Did the attendance in the village meeting to discuss cash transfer beneficiaries meet more than half of the villagers?
6. Were you satisfied by how the discussion on selection of cash transfer beneficiaries was conducted?
7. What were the factors used in the village meeting to suggest the eligible households?
8. Were the factors used to select cash transfer households clear to villagers?
9. Did village leaders ensure the process of selecting cash transfer household beneficiaries open and fair?
10. Did the cash transfer programme influence the spending behaviour of the beneficiaries?
11. Did cash transfer programme reduce poverty level of the beneficiaries?