Spring 2020

Time and Consumption Poverty among Mainland Tanzanian Children: Material Conditions to Secure Stated Rights

Marokey Sawo

Time and Consumption Poverty among Mainland Tanzanian Children: Material Conditions to Secure Stated Rights

Thesis Submitted to Levy Economics Institute of Bard College

by Marokey Sawo

Annandale-on-Hudson, New York May 2020

ACKNOWLEDGEMENTS

I am indebted to all those who have and continue to nurture me as a thinking, conscious, and moral being; past and present, my parents and company. Many thanks to the Levy Institute for an intellectually nourishing two years, including to those who especially made the academic work doable – Elizabeth Dunn, Martha Tepepa, and Kathleen Mullaly. I am grateful for the mentorship and guidance of my trio of advisors – Ajit Zacharias, Fernando Rios-Avila, and Thomas Masterson – who, thankfully were all also in conversation with each other. Special thanks to Masterson for patiently and thoughtfully seeing through my many drafts and helping guide my nascent ideas to fruition. I am also thankful for my friends who helped in the editing process, giving constructive feedback under ungenerous time constraints. Finally, a nod of admiration to and acknowledgement of the many girls around the world carrying the livelihoods of their communities to little accolade. And often at the expense of their formal education, mental space to be and think, and their leisure. I salute you and hope the analysis here contributes to the fight for a fairer world.

PLAGIARISM STATEMENT

I have written this project using my own words and ideas, except otherwise indicated. I have subsequently attributed each word, idea, figure, and table which is not my own to their respective authors. I am aware that paraphrasing is plagiarism unless the source is duly acknowledged. I understand that the incorporation of material from other works without acknowledgment will be treated as plagiarism. I have read and understand the Levy Economics Institute of Bard College statement on plagiarism and academic honesty as well as the relevant pages in the Student Handbook.

Marokey Sawo May 19th, 2020

ABSTRACT

This paper examines the differences in how Tanzanian children across various socioeconomic axes spend their time across schooling, unpaid care work, and income-generating activities. Previous research and theory have primarily focused on child employment and its dynamics with education, neglecting a substantial amount of work borne by some children to maintain their households' livelihoods. Using time use and consumption survey data, this paper fills the current gap in the literature by applying a multidimensional framework called the Levy Institute Measure of Time and Consumption Poverty. The results indicate that child employment is quite prevalent in mainland Tanzania across different tiers of household consumption expenditures. Rural children are significantly more likely to be working children than their urban counterparts, although employed children in urban areas tend to work higher weekly hours. Furthermore, although girls have comparable work incidence and employment hours as boys, they bear disproportionately high shares of housework, cumulating to their higher work burden and time poverty rates. The findings support a multidimensional policy approach to ensuring children's stated rights, including policies to mitigate the effects of removing children's productive labor and sociological changes to address the gendered maldistribution of care work.

Keywords: Child Employment; Time Poverty; Unpaid Care Work; Girls' Double Work Burden; Children's Education; Multidimensional Poverty Measures

JEL Classifications: D13, D39, I24, I32, J13, J22

TABLE OF CONTENTS

Abstract 3
Table of Contents 4
Abbreviations and Acronyms 7
1. Introduction 8
2. National Context and Child Rights 10
2.1 Country Overview and Status of Children 10
2.2 The Rights of the Child 11
3. Literature Review 13
3.1 Child Labor Literature 13
3.1.1 Seminal Underpinnings 13
3.1.2 Modern Child Labor Research 14
3.1.3 Child Labor in Tanzania 15
3.2 Literature on Children's Time-Use 17
3.3 Education in the Global South 19
3.3.1 Overview of Conventional Narrative 19
3.3.2 Education Policies in Tanzania 20
3.3.3 Education and Work 21
3.4 Methodology-Related Works 23
4. Methodology 25
4.1 Overview and Definition of Key Concepts 25
4.2 Data Sources 26
4.3 LIMTCP Time Accounting Foundations 27
4.4 Analytical Blocs 27
4.5 Analytical Process 29
5. Results and Analysis 30
5.1 Time Thresholds and Distributions 30
5.1.1 Personal Maintenance 30
5.1.2 Household Production Distribution and Thresholds 32
5.1.3 Commuting Thresholds 36
5.1.4 Distribution of Employment Hours 37
5.1.5 Importance of Consumption Expenditures 41
5.1.6 Time Poverty Rates 44
5.1.7 Time and Consumption Poverty Rates 47
5.2 Time Spent in School: Legislation versus Empirics 50

5.2.1 School-Adjusted Time Poverty Rates 55
5.3 Analysis and Policy Recommendations 59
6. Conclusion 66
References 71

LIST OF TABLES AND FIGURES

Table 5-1: Personal Maintenance Thresholds (Weekly Hours) 31
Table 5-2: Quality of Match for Household Production Hours by Age and Sex 33
Table 5-3: Commuting Thresholds for Children (Weekly Hours) 37
Table 5-4: Commuting Thresholds for Working Age Population (Weekly Hours) 37
Table 5-5: Incidence and Number of Working Children by Age, Sex, and Area 38
Table 5-6: Incidence and Number of Working Children aged 5–17 by Area and Consumption Tier 42
Table 5-7: Official and LIMTCP-Adjusted Poverty Rates for and Number of Consumption-Poor Children aged 5–17 by Area, Sex, and Employment Status 44
Table 5-8: Time Poverty Rates and Number of Time-Poor by Age, Sex, and Employment Status 45
Table 5-9: Time Poverty Rates and Number of Time-Poor among Employed Individuals by Age, Sex, and Area 46
Table 5-10: Thresholds for Weekly Hours of Formal Schooling by Age 51
Table 5-11: Weekly School Hours of Working Children in Dar es Salaam 55
Table 5-12: Initial and School-Adjusted Time Poverty Rates and Number of Time-Poor by Age, Sex, and Employment Status 57
Table 5-13: School-Adjusted Time Poverty Rates and Number of Time-Poor among Employed Children by Age, Sex, and Area 58
Table 5-14: Initial and School-Adjusted Time Deficits among Time-Poor, Non-Employed Children Age 5–17 by Sex (Weekly Hours) 59
Table 5-15: Initial and School-Adjusted Time Deficits among Time-Poor, Employed Children Age 5–17 by Sex and Area (Weekly Hours) 59

Figure 5-1: Distribution of Household Production Hours for Girls by Age and Area 35
Figure 5-2: Distribution of Household Production Hours for Boys by Age and Area 35

Figure 5-3: Distribution of Employment Hours for Girls by Age and Area..... 40
Figure 5-4: Distribution of Employment Hours for Boys by Age and Area 40
Figure 5-5: LIMTCP Classifications across Non-Employed Children by Area and Sex 49
Figure 5-6: LIMTCP Classifications across Employed Children by Area and Sex 49
Figure 5-7: Distribution of School Hours for Young Children by Age and Area 52
Figure 5-8: Distribution of School Hours in Other Urban Areas by Age and Working Status ... 53
Figure 5-9: Distribution of School Hours in Rural Areas by Age and Working Status 53
Figure 5-10: School Hours of Non-Working Children in Dar es Salaam by Age and Sex 55

ABBREVIATIONS AND ACRONYMS

ACRWC	African Charter on the Rights and Welfare of the Child
Children's Charter	African Charter on the Rights and Welfare of the Child (ACRWC)
CRC	UN Convention on the Rights of the Child
HBS	Household Budget Survey
ILFS	Integrated Labour Force Survey
ILO	International Labour Organization
LIMTCP	Levy Institute Measure of Time and Consumption Poverty
NBS	National Bureau of Statistics (Tanzania)
SNA	United Nations System of National Accounts
TUS	Time Use Module within the ILFS
UNICEF	United Nations Children's Fund

1. INTRODUCTION

The growing prevalence of time use surveys over the past several decades has enabled researchers to take a closer look into various aspects of the livelihoods of individuals, as well as examine differences among sub-populations across various dimensions of social stratification. This thesis explores two central questions concerning children's time use in mainland Tanzania.[1] The primary issue explored is whether the level of material wellbeing of the household a Tanzanian child belong to, as measured by consumption expenditures, as well as the child's sex, notably predict their likelihood of being a working child. The relevant (work) time requirements on a child to be examined here can be broken into two broad categories: market-oriented activities that involve working in the labor market or home production activities that are sold for revenue (e.g. working on a family farm where output is sold in the market); and household production activities where provisioning of goods and services is unpaid and for own use (e.g. cooking, cleaning, child care, procurement of home goods). This division follows the definition of household production specified by Zacharias et al. (2018, 18) in the authors' creation of the Levy Institute Measure of Time and Consumption Poverty (LIMTCP) for Tanzania. These two categories roughly align with the definitions of economic and non-economic activities under the United Nations System of National Accounts (SNA) (Edmonds 2007, 3615–16).

The second and related question is, if there exist differences in children's time demands across households of different material wellbeing and/or sex, are these variations in children's market activity and household production time use associated with notable differences in their time spent on education activities. Our principal measure of education activities is time spent attending school or a technical institute. Once we account for the time spent on income-generating activities, household production, and personal maintenance, do certain children have enough time available for educational activities?

The motivation for this study is twofold. Currently, there are no empirical studies that have examined the issue of children's time use in Tanzania within a framework that allows for examination of the important dynamics that LIMTCP enables. Such are the interactions between

[1] Unless otherwise specified, the usage of Tanzania throughout this paper refers to mainland Tanzania. The analysis excludes Zanzibar.

children's engagement in income-generating activities, household production work, and education activities, and how these three activities relate to the labor force participation and household production shares of adult household members. Furthermore, two important declarations of children's rights (discussed below) ratified by Tanzania specify key articles on children's rights to education, leisure, play, and other angles of development and wellbeing. The stated guaranteeing of such rights for all children requires an understanding of the factors that influence children's time demands and the important dynamics that may exist between such factors at the household level.

The methodological approach taken is primarily tabular. First, we begin with a time accounting framework where thresholds are set to capture the minimum amount of time individuals need to spend on personal care and maintenance in a week. These thresholds serve as the temporal analogue of income or consumption poverty lines that specify the minimum amount of goods and services individuals need to survive. Then, we analyze time spent on three broad categories of activities, namely household production, commuting, and employment. Particular attention is given to variations in the incidence of being a working child across levels of household consumption expenditures, sex, age group, and area of residence. Individuals are said to be time-poor, i.e. suffer a time deficit, if their time commitments across these three activities coupled with their personal maintenance thresholds exceed the number of hours in a week. Time poverty rates, as well as observed hours of household production and income-generating activities, are analyzed by sex, age group, employment status, and area. As a further analysis of children's activities, schooling thresholds are defined to capture the minimum amount of time children need to spend on education-related activities based on the length of the school week specified in Tanzania's relevant education curricula. Observed hours of time spent in formal school attendance (including technical institutions) are examined within the context of the desired thresholds. The resulting school-adjusted time poverty rates and depths of time poverty (i.e. weekly hours of time deficits) are examined across the aforementioned strata.

The rest of the paper is organized as follows. Chapter two gives a brief overview of modern Tanzanian history and general trends in children's lived experiences. Two important pieces of legislation, the UN Convention on the Rights of the Child (CRC) and the African Charter on the Rights and Welfare of the Child (ACRWC), are discussed to establish legislative commitments made to ensure certain conditions in children's lives. Chapter three is the literature review, examining the literature on child labor, children's time use, education in the

Global South and education policies specific to Tanzania, and works related to the chosen methodology. Chapter four details key aspects and steps of the methodology, including the theoretical framework used and the subsequent analytical process. Chapter five covers the results, analysis, and accompanying policy recommendations, and chapter six concludes.

2. NATIONAL CONTEXT AND CHILD RIGHTS

2.1 Country Overview and Status of Children

The United Republic of Tanzania is an East African country formed in 1964 as a result of the merging of the two pre-colonial autonomous regions of Tanganyika and Zanzibar (Jingu 2017). In 1964, the anti-colonial activist and political theorist Julius Nyerere became the first president of the newly formed nation state (Ibhawoh and Dibua 2003). During his 21 years' rule, Nyerere strongly advocated a political philosophy called Ujamaa,[2] which was rooted in a blend of communal-based traditional African philosophies and Marxist principles, with the central objective of developing Tanzania into a self-reliant socialist state (Ibhawoh and Dibua 2003, 60–62). With its three key components of freedom, equality, and unity, where freedom was propagated as contingent on economic self-sufficiency outside of international loans and grants,[3] it is no surprise that education became a central focus of Ujamaa as a policy angle through which to influence, decolonize, and shape upcoming generations. As noted by Sifuna (2001), colonialism is not a developmental process but a system of extraction and exploitation, and as such, "colonial education was designed and implemented to serve the needs of the colonial state" (21). Tanzania declared education as a basic human right under the 1974 Musoma Declaration and made enrollment and attendance mandatory for all school-aged children under a subsequent 1978 act (Sifuna 2007, 694). Enactment of macroeconomic policies promoted by the World Bank in the 1980s brought changes to the implementation of universal primary education (UPE), where transition was made from free primary education to cost-sharing strategies (Sifuna 2007).

[2] Ujamaa is a Kiswahili term that roughly translates to familyhood or self-reliance.
[3] Nyerere is famously quoted as saying that "[i]ndependence cannot be real if a nation depends upon gifts…" (Nyerere, 1967).

Research and policy interest in the status of children in Tanzania has increased over the past few decades. According to the 2018 UNICEF report on Tanzanian out-of-school children, Tanzania is one of the fourteen countries who, in 2013, had over one million primary school-aged children who were out of school (UNICEF 2018, 6).[4] The report finds that in 2012, an estimated 23.2 percent of Tanzania's 8.5 million primary school-aged children (7–13 years) and 40.9 percent of the 3.7 million lower secondary school-aged children (14–17 years) were out of school. Economic status is a major dimension across which out-of-school children are clustered, with an estimated 60 percent of out-of-school children who are of primary school age concentrated in the bottom 20 percent of the material distribution of households. However, the low percentage of 2011/12 Household Budget Survey (HBS) respondents who indicated affordability as a dropout reason implies that the relationship between poverty and children's livelihoods is multifaceted (UNICEF 2018, 8). This ties well into the current research proposal of analyzing children's time use in Tanzania across multiple angles. Children's time deficits, which measure the amount of time a child has left in a week after accounting for time spent on personal care, household production, and income-generating activities, may play an important role in whether a child is enrolled in or regularly attends school.

Like many Sub-Saharan African countries, mainland Tanzania's population is quite young. Estimates from the Tanzanian Bureau of Statistics (NBS) and International Labour Organization (ILO) (2016, 6) report[5] indicate that half of the nation's 45 million people are under the age of 18, and school-aged children (5–17) account for nearly a third of the population. This makes the issue of Tanzanian children's time use an even more pressing matter.

2.2 The Rights of the Child

In addressing and exploring the research questions posed above, it is important to recognize the legality and commitment society gives to children's ability to play, learn, and be. Two major international declarations of the rights of children that are pertinent for the topic of Tanzanian children are the 1989 UN Convention on the Rights of the Child (CRC) and the 1990 African Charter on the Rights and Welfare of the Child (ACRWC or the Children's Charter). As detailed

[4] Children are considered out of school if they are within the age range of 7–17 and are not enrolled in primary or secondary school, or an equivalent educational institution.
[5] The report is based on data collected under the 2014 Integrated Labour Force Survey (ILFS).

in both the CRC and the Children's Charter, there are two primary reasons that necessitate a treaty specifically tailored to children's needs separate from existing legal frameworks such as the Universal Declaration of Human Rights. First, childhood constitutes an important phase of children's development across multiple dimensions, including their physical, social, and mental growth. Furthermore, children are vulnerable to certain ills such as economic, physical, mental, or sexual exploitation that are detrimental to their development and wellbeing (United Nations 1989; Organization of African Unity 1990). These two reinforcing features of childhood visibly serve as the guiding forces for the articles in both frameworks. The emphasis remains on upholding children's best interest in all situations, as well as the protection and promotion of their rights to life, safety, and growth.

The Children's Charter was crafted and ratified by the Organization of African Unity (now the African Union) shortly after the ratification of the CRC and includes many – if not all – of the articles of the CRC. However, ACRWC was designed specifically to capture the unique set of the cultures, needs, and challenges of children in the African context given the intricate set of socio-economic and political realities of their milieus. For example, the ACRWC article on education contains more specifications than the corresponding CRC article (Article 28). ACRWC incorporated additional details like the goal to take measures to attain gender equality in education access, and providing educational opportunities for pregnant girls who are yet to complete their education (Organization of African Unity 1990, Article 12).[6] Although both declarations specify similar rights against economic exploitation, ACRWC specifically uses the language of "child labor" and adds dissemination of information regarding its dangers. Tanzania is among 49 of the 55 African Union member states who have ratified the Children's Charter. At the national level, Tanzania passed legislation in 2009 called Law of the Child Act, which consolidates previous laws on children's rights and welfare, stipulates in detail children's education mandates, outlines conditions of employment, and prohibits several forms of exploitative labor.

[6] For example, in 2019, the Center for Reproductive Rights and the Legal and Human Rights Centre (LHRC) of Tanzania presented to the African Committee of Experts on the Rights and Welfare of the Child, the committee mandated to monitor enforcement of the ACRWC, a complaint against the Tanzanian government's 2017 ban of pregnant students in public schools (LHRC 2019). The ban, which is yet to be repealed as of writing, also prevents young mothers from returning to school after giving birth (Kottasová 2020).

3. LITERATURE REVIEW

3.1 Child Labor Literature

3.1.1 Seminal Underpinnings

The topic of child labor, more generally, children's time allocation, has continued to attract empirical research over the past several decades. To repeat an exercise done by Edmonds (2007), a search of the phrase "child lab*r" on EconLit returns ten academic journal entries for the publication years 1980-1990, 89 entries for the years between 1990 and 2000, and a remarkable 651 count between 2000 and 2019. A key area of divergence between researchers is their definition of child labor, which remains a particularly contentious question. Edmonds (2007) provides a detailed survey examination of the prevailing empirical research on the nature and consequences of children's work. The author notes that the difficulty in defining what "labor" is within the context of examining children's lives stems from both theoretical considerations and empirical challenges in specifying a measurable framework. The primary economic literature on "child labor" focuses on children who are working on family farms, in family businesses, and contributing to market-oriented production within households. Such areas of work all fit within the standard definition of being economically active and have more readily available data sources. Some studies on children's time allocation venture into broader and less well-defined areas of activity that fall outside of the United Nations System of National Accounts (SNA), i.e. non-economic work, the most prominent activity being domestic work.

Within the literature, there are two vibrant and related lines of inquiry. The first centers on modeling children's time allocation between the broad categories of labor, leisure, and education. The latter examines the cost-benefit analysis that is theorized to occur in the household decision-making process between child labor participation and formal education. Edmonds (2007) cites Schultz (1960), Becker (1965), and Rosenzweig and Evenson (1977) as seminal works in theorizing and applying what has become the modern human capital theory and its subsequent emphasis in the child labor research. Schultz (1960, 571) formulates education as an investment that culminates into a form of capital that is embodied by the recipients of education, hence the name human capital. Schultz argues that human capital accumulation contributes to economic growth and carries the two primary costs of forgone earnings and the resources needed to facilitate education. With the treatment of education as an investment that promotes human capital accumulation and the hypothesis that "some important

increases in national income are a consequence of additions to the stock of this form of capital" (Schultz 1960, 571), it is no surprise that human capital theory became a central guiding force of policies and research regarding children's time allocation in regions of the world conceptualized as developing countries.

Becker (1965) extends the analysis of the indirect cost of education through foregone wage earnings to a general case of accounting for the opportunity cost of time spent on non-income generating activities as separate from the market transactions that may occur to facilitate such activities. Rosenzweig and Evenson (1977) use 1961 Indian census data to carry out an empirical testing of a time allocation model rooted in utility maximization regarding the joint decision-making process of rural, agricultural populations. Households make interrelated decisions about child-rearing across the dimensions of family size, child labor force participation, and child education. The authors anchor their analysis by estimating decision-making parameters within the context of examining the economic contribution of children and wives in households. The authors also premise their definition of child labor on the definition of employment used by the Indian Census, thus considering as their measure of child labor the share of children aged 5–14 who "work at least one hour per day as hired laborers or as unpaid family labor during the relevant crop seasons" (1071).

3.1.2 Modern Child Labor Research

A key line of inquiry and justification for studying patterns in children's time allocation is exploring the relationship between children's engagement in labor activities and their educational and other developmental growth. In particular, an underlying yet empirically difficult question is whether children's work has negative consequences on their development, which, in the long run, outweigh their current economic contributions. Accounting for children's economic contributions remains the nucleus of understanding why children work. In their survey article of the multidisciplinary literature on child development in the Global South, Boyden, Dercon, and Singh (2015) pay particular attention to the contrast between the economic and skill development benefits that accrue from children's engagement in various forms of labor activities, including domestic work, unpaid family business contributions, and direct participation in the labor market, with the developmental risks that children become susceptible to through such activities. Children's work is seen to play a non-trivial role in certain

households' ability to withstand economic shocks. For example, Beegle, Dehejia, and Gatti (2006) test the hypothesis of whether children's work serves as a buffer for Tanzanian households facing agricultural shocks, and whether the existence of household assets dampen the effects of such shocks and thereby the reliance on increasing child labor. The authors focus on the Tanzanian region of Kagera, where farming is labor-intensive and wage labor is uncommon, and use calamitous crop loss as a measure of income shock. The authors define child labor as the number of hours spent by children aged 7–15 on economic activities – which are primarily farming related activities such as tending crops and livestock – and domestic work such as cooking and fetching firewood (85–86). The authors find that incidents of crop loss lead to sharp increases in child labor, which is accompanied by a decrease in school attendance, and that households with more assets are better positioned to withstand the shocks (81–82).

3.1.3 Child Labor in Tanzania

The phenomenon of working children is quite pronounced in Tanzania. In their report based on the child labor module within the 2014 Integrated Labor Force Survey, the Tanzanian National Bureau of Statistics (NBS) and the International Labour Organization (ILO) find that, using a definition of child labor primarily driven by national and ILO conventions, an estimated 29 percent of the 14.7 million mainland Tanzanian children aged 5–17 are involved in some form of child labor (2016). ILO broadly defines child labor as "work that deprives children of their childhood, their potential and their dignity, and that is harmful to their physical and mental development" (2016, iii). In its definition of child labor, the report incorporates Tanzanian legislation on prohibited and undesirable work by children, and international standards such as ILO's 1999 Worst Forms of Child Labour Convention and the 1973 Minimum Age Convention. The Minimum Age Convention set a minimum age of 15 for employment (with a lower limit of 13 years for "light work") and 18 years for hazardous work, which are considered employment or work the performance of which intrinsically exposes children to health, safety, or moral jeopardies.[7] Particular emphasis has been placed on eliminating the worst forms of child labor, which are defined under Article 3 of the 1999 ILO Convention No. 182 regarding individuals

[7] The report uses a specific definition of hazardous labor to establish subsequent percentage breakdowns. The primary criteria are whether a child works in an industry or occupation classified under Tanzania's 2004 Employment and Labour Relation Act as hazardous or whether a child works more than 40 hours in a week (2016, xxiii). The other conditions align with the broad specification of Article 3, paragraph 1 of the 1973 Minimum Age Convention.

below the age of 18 and include such specifications as all forms of slavery (including trafficking), prostitution of children, and engagement in illicit or harmful activities. For measurement purposes, the report considers as child labor cases where individuals aged 5–17 were engaged in activities classified under worst forms of child labor, are employed below the minimum age criterion, or are engaged in unpaid housework services that are hazardous and fall under the SNA production boundary (2016, 23–24).

Based on such, the report finds that among the 14.7 million Tanzanian children aged 5–17, about a third of them (5.1 million) are working children. Here, the term working children corresponds to our categorization of children engaged in income-generating activities. Among these employed children, over 80 percent (4.2 million) fall under child labor,[8] and over 60 percent (3.2 million) are considered cases of hazardous child labor. Among the 3.1 million working children classified under hazardous child labor, nearly half of them (1.5 million) are estimated to suffer injuries, illness, or poor health outcomes because of their job. The gender breakdown shows that boys are slightly more likely to be working children in all the categories described above, with boys making up 52.5 percent of the 5.1 million working children, 53.8 percent of the working children not considered as child labor instances, 52.3 percent among child labor cases, 51.6 percent of children in hazardous work, and 54.4 percent of the 1.1 million child laborers in activities not considered under hazardous work. However, some sectorial concentration by gender is observed, where over 80 percent of the estimated 131,741 children in domestic service – a sector that exposes children to notably high risks of physical, mental, and sexual abuse – are girls.

Children's engagement in employment progressively increases with age, with 22.6 percent of children aged 5–11 years participating in market-oriented work compared to 62 percent among children aged 14–17. The incidence of being a working child is particularly a rural phenomenon, where over 80 percent of the 5.1 million working children reside in rural areas.[9] Correspondingly, an estimated 93 percent of working children are unpaid family workers and 92 percent of them work in agriculture, forestry, and fishing. Child labor is also more pronounced in rural areas, where an estimated 35 percent of rural children are engaged in child labor relative to 3.6 percent and 18 percent of children in Dar-es-Salaam and other urban areas,

[8] All working children between the ages of 5–11 are considered cases of child labor.
[9] It is worth noting that 70 percent of Tanzania's population lives in rural areas.

respectively. In collaborating findings from the UNICEF (2018) report, working children make up a smaller share of children attending school, where only 29 percent of the 10.2 million children aged 5–17 attending school are working. Children engaged in hazardous child labor have a remarkably low school attendance rate of 49 percent on average, relative to an attendance rate of 80 percent among children engaged in child labor outside of hazardous work.

3.2 Literature on Children's Time-Use

Research by economists and other social scientists on children's time use [e.g. (Minge-Klevana 1980)] have long followed the prior research agenda in studying adults' time use, i.e. theorizing and studying time spent on activities believed to improve human productivity and economic gains (Larson and Verma 1999). In one of the first reviews of the surveys and literature on children's time use, Larson and Verma (1999) analyze surveys collected across various countries on how different children spend their time. Whereas studies on industrialized nations observe and emphasize how children spend their time outside of school on such activities as sports, watching television, and other leisure activities, studies on children in the Global South pivot on children's extent of school attendance (or lack thereof) and their engagement in various forms of work. In examining existing time use studies focused on children across regions and countries in Africa, Asia, Europe, and North America, Larson and Verma (1999) define two broad categories of time usage, namely work and leisure.[10] Work refers to goal-oriented, obligatory activities, and leisure captures activities children choose and "are typically noninstrumental" (1999, 702).

In the examined late 20th century studies, the authors find that the amount of work some children do, both household production work and income-generating activities, are quite significant in certain regions of the world. In these regions, realities are such that universal schooling is not the de facto norm and technologies like indoor plumbing are scarce. In various types of surveys conducted in the 1980s and 1990s in small towns and rural regions in what the authors called "nonindustrial countries" such as the Philippines, Kenya, and Mexico, the number of hours children age 4–17 spent on household production in a day ranged from less than one hour for boys of various ages in rural Philippines, to a remarkable 8–9 hours of housework in a

[10] Interestingly, the authors note that time spent on personal maintenance such as sleeping varied too little across countries to be used as a category of analysis.

single day for girls as young as 9 in rural Nepal. Notable gender differences exist in children's household production hours. As the authors note, across "nearly all populations—regardless of economic development or schooling—girls spend more time in household labor than do boys" (1999, 707). This disparity is found to be reversed or minimized in the daily hours boys and girls who do not attend school spend on income-generating activities across similar countries. As a direct corollary, girls are unsurprisingly found to have less free time, i.e. leisure, outside of work and schooling for play, etc.

Gender disparities in children's time use and concerns about how prevalent household production and income-generating activities are in how children of the Global South spend their days have continued into the 21st century. As discussed in the next section, a primary line of concern is the impact of children's work engagements on their (formal) education, where, as covered above, education is seen as the primary mode of accumulating human capital and relatedly as a development strategy for countries of the Global South. As the discussions in Boyden, Dercon, and Singh (2015), Boyden et al. (2016), Edmonds (2007), and ILO (2018b) indicate, concerns about children's work exceed risks posed to their future economic security and include research and evidence regarding detriment to children's physical, mental, and other areas of development. These are certainly reflected in the legal conventions presented above that make a legal case for the protection of children's rights across several dimensions.

With economic hardships continuing to affect many subpopulations in Sub-Saharan Africa and economically similar countries elsewhere, children's contribution to maintaining the livelihoods of their households has remained nontrivial. As discussed in Boyden et al. (2016), studies show that in several African societies, children's ability to contribute in the heightened collective responsibility that accompanies economic hardship not only has material consequences, but also serves as children's showcase of respect within their households and a source of moral worth. Here, gender divergences exist in the types of work boys and girls "specialize" in – both inside and outside the home – from as young as age 5. Whereas girls concentrate on household production and its market counterparts, like domestic services and selling foodstuff in markets, boys tend to be concentrated in activities that are revenue-generating and often outside the home, such as herding livestock and farming. Children therefore come to spend time in ways that reproduce certain gender roles observed in adult populations. The expansion of formal education and mandatory school attendance has brought

some shifts to such patterns but has not fundamentally altered time demands, and the nature of work required of many children.

3.3 Education in the Global South

3.3.1 Overview of Conventional Narrative

Formal education remains a central topic within the developmental economics field. The standard treatment of education of children in the Global South has followed Schultz's arguments regarding human capital investment. Education as a development strategy becomes an avenue of investment whose payoffs are expected primarily in poverty alleviation, intra-nation inequality reduction, and economic growth, but also in other spheres such as social and political matters (Datzberger 2018). In viewing education as a poverty reduction development strategy, a natural course of inquiry within the development literature is evaluating the returns to different education policies as indicated by school enrollment and retention rates, earnings comparisons, and less frequently, the quality of learning as indicated by factors theorized to be tied to future earnings. In their chapter on education, Banerjee and Duflo (2012) examine several dozen studies evaluating the impact of various education programs and state policies across countries. Most of the studies examined follow the randomized control trial (RCT) methodology. The authors write mainly from the human capital conception of education, beginning by examining the weight given to education as a growth and development strategy, from the UN Millennium Development Goals (now the Sustainable Development Goals) years of completed education targets to state ratifications of universal primary education.

Banerjee and Duflo (2012) outline two positions within the mainstream approach. The first group emphasizes the supply of schooling resources as the key to getting and keeping children in school. Within this supply-side narrative, high student absentee and attrition rates are attributed to financial constraints faced by families, either to pay for schooling-related expenses or withstand the forgone earnings from having children in school rather than working, scarcity of accessible schools, and poor teaching quality provided by existing schools (73). The second position emphasizes the centrality of the demand for education as the key starting point. Here, the supply of schools is not the crucial issue but rather how education is perceived. The gaps to be filled lay in the need for families and children alike to recognize formal education as a

worthwhile investment the payoffs of which, through enhanced future earnings, outweigh its current direct expenses and the opportunity costs of being in school (76).

3.3.2 Education Policies in Tanzania

As noted earlier, education was an important policy tool in post-independence Tanzania's efforts to both decolonize and to achieve self-reliance. As was well elaborated in Nyerere's 1967 *Education for Self-Reliance*, Tanzania's education system was transformed to achieve key goals, including ending racial and religious discrimination in school attendance, systematically expanding the formal schooling systems to be available to children and young people, fostering positive attitudes towards a socialist state, and building agricultural and other competencies necessary for self-reliance (Nyerere 1968). The declaration of education as a basic human right along with the enactment of universal primary education came under the 1974 Musoma Declaration (Sifuna 2007).

Two consequential emphases were made during this period. In line with an effort to increase the usage, development, and official status of Kiswahili next to English, Kiswahili became declared as the medium of instruction (MOI) for primary education in 1968. However, English remained the medium of instruction for secondary education, creating challenges for the academic continuation of children who have little mastery over the English language. This incongruence has persisted into the 21st century, where only private primary schools use English as a MOI while both private and public secondary schools are taught in English, creating a sharp advantage for children who can secure and maintain attendance in private primary schools. Secondly, with its goal of eliminating adult illiteracy, the Musoma Declaration put greater emphasis on access rather than ensuring education quality. Amidst the mounting challenges of transforming a nation guided by a contrarian vision alongside recuperating from the violent and plundering encounter of colonialism, this emphasis on rapidly providing access to education came to have lasting effects on education quality. The contemporaneous sharp divide in the outcomes of education assessments between private and public-school students is well established, along with the observation that private schools educate a small but predominately elite share of Tanzanian children. Unfortunately, limitations prevent the examination of such an issue in the current paper.

3.3.3 Education and Work

General consensus intimates that children's engagement in labor force activities interferes with their likelihood or extent of schooling. According to the ILO (2018a, fig. 2) report[11] on child labor and youth work prospects, the disparity in school enrollment rates between children engaged in child labor and children who are not increases with age. Whereas about 90 percent of children aged 10 not engaged in child labor are enrolled in school, this compares to 76 percent among child laborers of the same age. These figures decrease to 75 percent and 44 percent by age 14, respectively, and further down to 55 percent and 16 percent by age 17, respectively. Such figures corroborate findings in the UNICEF (2018) report on out-of-school children. The UNICEF report indicates that being economically active is a common phenomenon among Tanzanian children in general, and an even more pronounced phenomenon for out-of-school children, where the share of out-of-school children who are economically active is notably high. As guided by the 2011/12 HBS questionnaire, individuals are defined as economically active if they have either worked at least one hour in the past 12 months in paid or unpaid labor or have looked for work in the past 4 weeks.[12] Based on the 2011/12 HBS, an estimated 84.2 percent of out-of-school children of lower secondary school age (14–17) are economically active, compared to 52.7 percent among lower secondary children in school (UNICEF 2018, 40). The UNICEF report additionally finds that even among the younger primary school-aged children (7–13), 55.4 percent of out-of-school children are economically active compared to 42 percent of in-school children.

Although we can note patterns in the dynamics between children's engagement in work and school attendance or other education activities, it is difficult to establish causality in one particular direction. For example, from a time accounting perspective, employed children have less available time they can devote to schooling relative to non-employed children, and subsequently may be too tired to go to school even if their employment and schooling schedules are not in direct conflict. However, we can imagine the incidence of being a working child may be related to factors that make one more or less likely to attend school or other educational institutions. One factor that is frequently analyzed is income (or consumption expenditures), where the main argument is that children from households on the lower ends of the income

[11] This report also uses data from the 2014 ILFS and a similar definition of child labor as the NBS and ILO (2016) report.
[12] Tanzania Mainland 2011/2012 HBS, Form III Section 12, questions 4-9, 13.

distribution have fewer resources to afford schooling and may need to engage in income-generating activities to help support their families. However, as touched upon earlier, the interactions of education and work of both forms (household production and income-generating activities) may not be as straightforward.

The aforementioned NBS and ILO (2016) report also analyzed data from the 2014 ILFS regarding respondents' main reason for dropping out of school. The report finds that, among boys aged 5–17 considered child laborers[13] who were previously attending school but subsequently dropped out, the most frequent responses given are: refusal to continue schooling (45.6 percent), financial constraints (16.2 percent), and school being too far away (13.4 percent). Among their non-working counterparts, 67.2 percent cite refusal as their primary reason for dropping out, 14.2 percent indicate illness, and 10.6 percent refer to financial constraints. For girls, financial constraint is a much more pronounced reason for dropping out and refusal is less stark among both non-working girls and girl laborers. Among the latter, refusal is the most common reason (37.7 percent) for dropping out, followed by financial constraint (25.6 percent), and school being too far away (16.5 percent). Among non-working girls, financial constraint is the most frequent reason (31.1 percent), followed by refusal (22.6 percent) and illness (20 percent). The category of "refusal" leaves ambiguity as to understanding why children leave school. Besides personal disinterest in learning, we could for example imagine children who do not see the quality of the schools available to them as institutions that prepare them for the economic circumstances they anticipate facing.

Unlike the ample focus on children partaking in income-generating activities next to schooling, research on the dynamics between children's engagement with education activities and household production is scarce. For example, in their regression-based analysis of primary-school aged children's hours of school attendance[14] in the Kagera region of Tanzania, Burke and Beegle (2004) use longitudinal data collected between 1991–1994 to assess the determinants of children's school attendance across a considerable list of explanatory variables. Such factors spanned household characteristics such as a child's relationship to the household head and the gender of the household head, school quality and presence characteristics ("supply-side" determinants) like teacher-to-pupil ratio and the existence of a nearby secondary school, and

[13] Remember that the report's definition of child labor classifies over 80 percent of the 5.1 million children engaged in income-generating activities (i.e. working children) as child laborers.
[14] Analyzing school attendance provides for richer analysis relative to only looking at enrollment rates.

community factors such as proxy measures of the extent of a child labor market. Even in this detailed variable list and available time use data on household activities, the authors did not incorporate children's share of household production work in their analysis. In this sense, the somewhat artificial distinction between children's engagement in income-generating activities versus household production is amplified and we fail to have a fuller understanding of the constraints that may prevent some children from engaging in educational institutions and impede their right to childhood. Even with its broad definition of employment, the ILO (2018a) report, which centers on detailing the links between education (discontinuation), child labor, youth human capital accumulation and subsequent labor market outcomes, does not treat the role of household production as a component of the overall work children do and how it may affect their engagement in other areas of life.

3.4 Methodology-Related Works

The proposed research topic follows the methodologies and concepts developed under the Levy Institute Measure of Time and Consumption Poverty (LIMTCP). LIMTCP is a multi-dimensional poverty measure that highlights the nexus of time and consumption (or income) in poverty analysis and measurement (Antonopoulos, Masterson, and Zacharias 2012). Building on such theoretical works as Vickery (1977), LIMTCP directly addresses the implicit assumption made by conventional poverty thresholds that households whose level of command of goods and services is close to the poverty line have the minimum amount of time to engage in unpaid household production work necessary to reproduce themselves (Zacharias 2011). Zacharias et al. (2018) apply the LIMTCP methodology to the country cases of Ghana and Tanzania, where the infrastructure limitations common to many Sub-Saharan African nations amplify the consequences of hidden poverty generated by time deficits. The LIMTCP Tanzania and its related works serve as the primary methodological basis to be followed for the current topic. Whereas LIMTCP focused on the working age Tanzanian population of 15 years and older, the proposed topic focuses on children aged 5–17 – how their livelihoods differ across households and their estimated contributions towards maintaining the time and/or consumption level status within certain households.

The primary focus of this paper is to examine the important dynamics which may exist in how different subpopulations of Tanzanian children spend their time across education-related

activities, household production work, and income-generating activities. Previous research and theory imply that high workloads can impede the extent and continuity of children's engagement with education-related activities, both in terms of the time limitations working presents, and perhaps other factors which may simultaneously drive decreased school attendance and higher workloads. Focusing solely on income-generating activities leaves a consequential analytical gap in understanding the full work burden some children face. In a nation like Tanzania where the state of infrastructure and limited presence of certain technologies translate to requiring a significant amount of physical labor for significant portions of the population to maintain their livelihoods,[15] not systematically treating household production as part of the work children do fails to present the complete picture necessary to understand the drivers and linkages between children's work demands and learning. This is precisely the gap in the literature that the current work aims to address.

As the methodology section below further details, LIMTCP gives us a framework to not only systematically treat children's work across both household production and income-generating activities, but also to observe the patterns that exist in children's shares in maintaining the livelihood of their households as the number of adults who are engaged in the labor force varies. The latter is especially important in thinking through some of the potential ramifications of growth strategies that emphasize increasing labor force participation rates. The different strands of literature discussed above highlight the importance of education as a tool and process to prepare children for futures where they are thoughtful, productive citizens and are economically secure, as well as guard them from the perils of child labor. There is the logic for our focus on education.

The basis of our argument here begins from a legal perspective. The CRC, ACWRC, and the Law of the Child Act, which, among other legislation, officially establish certain rights of Tanzanian children, serve two purposes here. They establish a legal framework that children do, in fact, have certain stated rights and protected provisions. Furthermore, they showcase a commitment by the international and national authorities to the importance of a particular agenda about striving towards and maintaining a world which not only protects children from

[15] Examples include collecting firewood and water from away, and cooking and cleaning with limited electronic appliances.

certain harms, but also promotes children's development across important dimensions (both economic and non-economic dimensions).

Previous literature on children's household production and market-oriented activities provides a starting point about important axes to explore. Key patterns have been noted regarding where children live (rural versus urban), whether they are in or out of school, the position of their households within the income or consumption distribution, their age, and their sex. Although more frequently studied in silos, we know that these dimensions interact in intricate ways and it is not the case that children, for example, drop out of school because of one given reason (e.g. tuition affordability). For example, research presented in Boyden et al. (2016) is based on rich longitudinal studies conducted by the Young Lives, a multinational study of childhood poverty based on 12,000 children in Ethiopia, India, Peru, and Vietnam. In a study of the dynamics of school and work, Boyden et al. (2016) note the complexities that exist in why some children are excessively absent from school or subsequently drop out. In their study on Ethiopian children, the authors note that while economic shocks, such as the illness or death of a family member, play a role in several students' absenteeism, administrative challenges in returning to school pivot many to drop out.

4. METHODOLOGY

4.1 Overview and Definition of Key Concepts

As described above, the proposed research follows the Levy Institute Measure of Time and Consumption Poverty (LIMTCP) methodological framework. The LIMTCP will be calculated for individuals aged 5 to 70. The analysis will center on children aged 5–17, including their dynamics with older household members. In general, the analysis follows a tabular approach, where the goal is to examine the distribution of children's time spent on three different activities across households that differ along two dimensions. Our three activities are time spent on income-generating activities, household production work, and education activities.

The definitions of income-generating activities and household production work follow the specifications of Zacharias et al. (2018). Income-generating activities refer to the types of activities we typically consider as "work," and primarily consist of engagements with the labor

force, such as working for wages or running one's own business, and commuting time. Less pronounced activities include other types of work done towards the production of goods and services that are sold for revenue, such as working as an unpaid worker on a family farm. Children who engage in income-generating actives are referred to as working or employed children. Children are considered to be engaged in income-generating activities if they have positive hours of employment.

Household production refers to activities where provisioning of goods and services is unpaid and for own use. Two common activities in a Sub-Saharan African country such as Tanzania that somewhat fall within the SNA non-market economic work or production category for own consumption are fetching wood and water. Following the categorization of Zacharias et al. (2018, 18–19), such activities will be considered as part of household production given they are crucial for the survival of many households. Also, individuals who only participate in such activities do not fall under the general definition of labor force participation as guided by the HBS questionnaire.[16] In addition to water and firewood collection, household production consists of three broad categories: time spent caring for other household members (care), principal housework activities such as cooking and cleaning (core), and shopping and its related traveling (procurement).[17] Learning activities consist of time spent on education or knowledge-related activities, such as attendance of various learning institutions including conventional school and technical institute, homework, and non-formal education.

4.2 Data Sources

Data needed to explore these questions come from two sources, the Household Budget Survey (HBS) and the Integrated Labor Force Survey (ILFS). Consumption data for Tanzania are collected under the HBS. Unfortunately, time use data have historically been collected under the Time Use Survey (TUS) module within the ILFS, which is a separate survey. Because the premise presented above requires both detailed consumption and time use data, the thesis analysis uses a synthetic data set previously created to formulate the LIMTCP for Tanzania (Zacharias et al. 2018). The synthetic data set was created using a statistical matching technique where records in the 2011/12 HBS (recipients) were matched with observations that they are

[16] Tanzania Mainland 2011/2012 Household Budget Survey (HBS), Form III Section 12, questions 4–13.
[17] In the text, the usage of the terms housework and unpaid care work both refer to household production.

statistically similar to in the 2006 TUS data set (donors). Time use data were imputed for HBS respondents from their TUS matches (Rios-Avila 2016; Zacharias et al. 2018, 14–16).

4.3 LIMTCP Time Accounting Foundations

To calculate time deficits, we begin by establishing some time accounting frameworks that guide the LIMTCP calculation. As previously described, the multidimensional nature of LIMTCP directly addresses an implicit assumption made by conventional poverty measures that households near the poverty threshold have the minimum amount of time necessary to engage in unpaid household production work. The first step in constructing LIMTCP involves calculating the amount of time available to individual i in household j, A_{ij}, as follows:

$$A_{ij} = 168 - M - \alpha_{ij} R_j.$$

Here, 168 represents the number of hours in a week, M is the minimum required time for personal maintenance and non-substitutable household activities, R_j quantifies the minimum amount of time a household needs to spend on substitutable household production to subsist with the poverty-level of consumption, and α_{ij} is the share of individual i in R_j. The variables M and R_j are the personal maintenance and household production thresholds, respectively, which are discussed in sections 5.1.1 and 5.1.2 below, where R_j is set at the household level. After accounting for these two essential time categories, we then calculate time deficits or surpluses by accounting for time spent on income-generating activities as follow:

$$X_{ij} = A_{ij} - L_{ij}.$$

Here, X_{ij} is the time surplus or deficit of individual i in household j and L_{ij} is time spent on income-generating activities by individual i in household j, including both commuting and employment hours. An individual is time-poor or has a time deficit if X_{ij} is less than zero. Time deficit at the household level, i.e. X_j, is obtained by summing up X_{ij} for all the household members with time deficits; we do not assume that individuals with time surpluses "donate" their available time to the household's needs.

4.4 Analytical Blocs

The hypothesis at hand is that how children spend their time is influenced by their sex and the type of household to which they belong. For our purposes, a household type is determined

along two dimensions: the total monthly consumption expenditures of a household and its time poverty status. Findings in Zacharias et al. (2018) show that individual and household time poverty rates differ substantially along employment lines. Whereas the time poverty rates among non-employed Tanzanian men and women aged 15–70 were 0 percent and 2 percent, respectively, time poverty rates among employed men was 38 percent and an astonishing increase to 61 percent for employed women (50). The authors further find that time poverty is more pronounced at the household level, where a household is time-poor if at least one individual aged 15–70 in the household is time-poor. Defining as employed households the households where the head or the spouse of the head (or both) is (are) employed captures 98 percent of the 8.27 million Tanzanian households. Among these employed households, 78 percent were time-poor (98).

These figures do not incorporate time deficits among children (age 5–15). At this stage, they give some insight that the employment status of adults in a household are consequential for time poverty rates. We suspect that this may in turn have consequences on the patterns of time use among children under 15. This can play out along two lines of labor-generating activities or household production, which follows our multidimensional framework of analyzing poverty along the nexus of both time and consumption. On the one hand, children of time-poor households, which are more likely to have employed individuals, may bear higher shares of household production relative to their counterparts of similar economic wellbeing in time non-poor households. On the other hand, children may also provide higher shares to maintaining the consumption levels of certain households, which would translate into higher amounts of income-generating activities.

Besides their family type, children themselves differ along the dimensions of age, area of residence, and sex. Previous research by the current author shows that there is a large disparity in the amount of household production hours completed by Tanzanian boys and girls even after controlling for relevant variables such as education level and household size (Sawo 2019). Furthermore, these sharp differences not only hold at the means but at various quantiles of both the unconditional distribution of household production and its distribution conditioned on variables we believe affect the number of hours a child spends on household production. Age was noted to play an important role for girls only, where getting one year older corresponded with a sharp increase in a girl's amount of household production hours.

4.5 Analytical Process

Upon establishing the dimensions across which to subdivide children, we proceed to pattern identification and examining differences observed in the number of hours children spend on our three categories across area, age, and sex. The core of the analysis focuses on the distributions of household production, income-generating activities, and education-related activities across these axes and the patterns that exist across the distributions. Evidence of a work burden on children's ability to fully engage in learning activities is determined by comparison to a threshold for the desired time dedication to school attendance based on Tanzania's mandatory and recommended school-attendance policies. Our threshold is compared to children's time deficit or surplus which remains after accounting for their time spent on household production and income-generating activities, and the personal maintenance thresholds. Comparison is then made to the observed number of hours children spend on education-related activities and differences observed across our axes. Similarly, a constraint is defined for leisure, the goal of which is to examine children's space or deprivation in being children – to partake in the factors of childhood and development we believe are important and worthwhile. This is accounted for in the age-specific personal maintenance thresholds, where younger children have higher personal care thresholds which reflect higher levels of weekly leisure time incorporated for them. Where informative, the statistical significance of observed differences between certain groups is tested for at the means.

As the discussion here suggests, emphasis is on working children (i.e. children engaged in income-generating activities) versus establishing and measuring a specific definition of child labor. Previous sections showcased the differences and difficulties which exist in the literature and legal arena about which activities to classify as child labor and its further subdivision(s) (hazardous child labor or worst forms of child labor). As a secondary area of commentary, the ILO's general definition of child labor and the specifications provided under Tanzanian legislation and official reports is used.

5. RESULTS AND ANALYSIS

5.1 Time Thresholds and Distributions

To estimate time deficits, we begin by defining categories of activities on which individuals can spend the 168 hours available to them in any given week. We specify the following four broad categories across which individuals can spend their time: personal maintenance and non-substitutable household activities; household production; commuting; and employment. We set thresholds (required hours) for the first three categories as guided by averages observed in the time use survey (TUS) for the corresponding activities and subcategories.[18] These thresholds are analogous to the consumption threshold, i.e. the poverty line, in that they estimate the minimum amount of time households need to reproduce themselves. This is explicitly seen for the household production thresholds, which are set at the household level for a reference group of households whose consumption levels are near the money poverty line. For employment, we use the actual hours of employment obtained from the Household Budget Survey (HBS). Individuals whose total time commitment across these four categories exceeds the 168 hours available to them in a week are said to have a time deficit (Zacharias et al. 2018, 17).

5.1.1 Personal Maintenance

We estimate and set personal maintenance thresholds to capture the minimum amount of time individuals need to attend to personal matters. Our categories are personal care, minimum amount of leisure time, and the minimum amount of non-substitutable household activities, all estimated for the week's timespan. Thresholds for these three categories and their subcategories (in the case of personal care) are reported in Table 1. Figures in the rows of each of our three categories give the thresholds for everyone (both male and female) in the age range that corresponds to each of the age category columns. For example, for children age 10–14, the necessary minimum number of leisure hours in a given week is set at 13.0 hours. The rows labeled by sex in the first column report the average number of hours observed in the TUS by sex for the corresponding activity. For the personal care subcategories, little difference exists in the observed average hours by sex. This is not the case for leisure activities, where girls

[18] As detailed in a later section, the exception is the calculation of the household production thresholds, which involved using consumption and poverty status data from the HBS and time use data imputed from the TUS.

progressively spend less time on leisure activities compared to boys, with a peak gap of 6.3 hours of leisure against women in the general working age population.

The overall personal care threshold is set based on the calculated averages of its subcategories from the time use survey (TUS). It consists of weekly hours spent on sleeping, personal hygiene, and eating and drinking. Looking across age, children unsurprisingly have higher averages of weekly personal care hours. This is primarily driven by the higher number of hours children spend sleeping on average. Whereas all children age 5–9 spent 69.9 hours on average sleeping in a week, the general working age population (age 15–70 years) averaged 61.3 hours. Young children (age 5–9) also spent 1.7 more hours on eating and drinking activities relative to the general working age population.

Table 5-1: Personal Maintenance Thresholds (Weekly Hours)

	Age Categories		
	Young Children (Age 5–9)	**Older Children (Age 10–14)**	**Working Age (Age 15–70)**
Total	**123.0**	**102.7**	**97.1**
Personal Care	91.0	82.7	80.1
Male	*91.2*	*82.6*	*80.2*
Female	*90.8*	*82.7*	*80.0*
Sleep			
Male	*69.8*	*64.2*	*60.8*
Female	*69.9*	*64.0*	*61.7*
Hygiene			
Male	*8.6*	*7.9*	*8.5*
Female	*8.6*	*8.0*	*7.6*
Eating and Drinking			
Male	*12.8*	*10.6*	*10.9*
Female	*12.3*	*10.6*	*10.7*
Leisure	25.0	13.0	10.0
Male	*29.9*	*15.9*	*15.0*
Female	*27.7*	*12.5*	*8.6*
Non-substitutable Household Activities	7.0	7.0	7.0

Besides the differences by sex noted above, time spent on leisure also differ by age, where the average amount of time spent on leisure activities decreases with age.[19] The sharp

[19] Leisure is the sum of weekly hours spent on socializing, cultural and entertainment activities, hobbies, games, sport activities, and mass media.

differences in observed leisure hours by age is mostly driven by differences in time spent on hobbies, games and other pastime activities (20.4 hours across all young children versus 2.3 hours for the general working age population.) The threshold for non-substitutable household activities is assumed to be 7.0 hours per week for all individuals. Differences in the overall personal maintenance threshold by age are driven by differences in personal care and leisure hours across age. The personal maintenance threshold in fact decreases with age, with the two bounds of 123.0 hours for children aged 5–9 and 97.1 hours for the general working age population.

5.1.2 Household Production Distribution and Thresholds

Calculating thresholds for weekly hours of household production is the most involved of the four activity categories detailed at the beginning of the chapter. Further details about the methodology behind establishing the household production thresholds can be found in Zacharias et al. (2018, 18–24). Throughout this research, our focus is on households whose material wellbeing is near our consumption poverty line. As such, the methodology behind our household production thresholds is guided by capturing the amount of time needed for households whose consumption expenditures are near the money poverty line to maintain their livelihoods.

Thus, we construct a poverty band of households whose monthly expenditures are no less than 75 percent and no more than 150 percent of the nominal poverty line. Among these households, we create a reference group by selecting households with at least one non-employed adult member (18 years or older) in an effort not to overestimate the burden of unpaid work by including households where all adults are employed, who likely face higher time deficits. We then divide this reference group into 12 subgroups based on the number of children and adults in a given household, and calculate average hours spent on household production work for each of the clusters. As the description above suggests, calculation of the household production thresholds involves both time use and consumption data. Because no single available survey contains all these data, the household production thresholds were estimated using the matched data set described in Section 4.2.

Furthermore, because the original research questions which necessitated the matched data set were centered on the general adult working age population (age 15–70), the quality of match for our three groups of children (ages 5–9, 10–14, and 15–17) is not ideal. However, because the

problems with the match quality follow two broad patterns, we can anticipate how our measures of time poverty will be over or underestimated for different classes of children. In particular, the quality of match for our purposes is evaluated by quantifying how the distribution of hours spent on household production in the matched data set compares to the observed distribution in the TUS (the donor data set) for different age groups. This is presented in Table 5–2 below, where we look at the quality of match at the mean and median of the distribution.

For each of these two statistics, the ratio row tells us how big the imputed time use statistic in the match data set for the age–sex cluster given by the column header is, relative to the estimated statistic for that cluster in the TUS. In particular, a ratio of 1 implies that the mean or median for a given age–sex group is exactly replicated in the matched data, a ratio greater than 1 implies the statistic is overstated, and a ratio less than 1 implies the statistic is understated. Table 5–2 tells us that the hours of household production work are generally overstated for younger children (age 5–9) in the matched data, understated for older children (age 15–17), and accurately reflected for children aged 10–14. These trends prevail at other points of the distribution not reported here. We consider as problematic ratios higher than 1.1 (the entries shaded bright red) or lower than 0.9 (the darker red). As such, when we interpret the rates of time poverty in later sections, we would note that the time poverty rates are likely overstated for younger children and underestimated for older children.

Table 5-2: Quality of Match for Household Production Hours by Age and Sex

		Age 5–9		Age 10–14		Age 15–17		Age 18–70	
Statistic	**Source**	Female	Male	Female	Male	Female	Male	Female	Male
Mean	Matched Data	17.2	9.0	18.9	9.2	20.1	9.2	32.5	8.7
	TUS	12.2	8.0	18.7	9.6	25.2	10.8	33.7	8.8
	Ratio	***1.4***	***1.1***	*1.0*	*1.0*	***0.8***	***0.9***	*1.0*	*1.0*
Median	Matched Data	15.0	6.9	16.3	7.0	17.5	7.0	31.7	5.3
	TUS	9.7	5.0	16.5	8.2	23.1	9.3	32.9	5.5
	Ratio	***1.6***	***1.4***	*1.0*	*0.9*	***0.8***	***0.7***	*1.0*	*1.0*

We now turn to the distribution of household production hours based on time use data collected under the TUS. Figures 5–1 and 5–2 below breakdown the distribution by age, sex, and area of resident, where Figure 5–1 shows the distribution for girls by age and area and the latter depicts the same for boys. The distributions are represented by box plots, which are a visual way of inspecting multiple points of a given distribution. The line in the middle of the

boxes tell us the median value of the distribution whereas the bottom and top edges of the box give the 25th and 75th percentiles, respectively. This distance given by the edges of the box is referred to as the inter-quartile range (IQR). The whiskers tell us the range within which most of the data lie. The bottom whisker marks the smallest value that is within 1.5 times the value of the distribution at the 25th percentile and the top whisker gives the largest value that is within 1.5 times the 75th percentile. Observations outside the whiskers are represented by dots and are considered uncommon.[20]

Comparing the heights of the box plots across the two figures shows a sharp difference in the placement of the burden of household production between boys and girls. For example, across all boys in all areas, the highest number of household production hours at the upper quartile is universally below 20 hours. Among girls, this is only true for the youngest children, age 5–9, living in Dar es Salaam or other urban areas. Whereas age and area of residence have little effect on the hours of household production completed by boys, the amount of unpaid care work borne by girls increases sharply as they get older. The impact of area of residence is most noticeable among young girls, where rural girls aged 5–9 tend to complete more hours of household production relative to their urban counterparts. Secondly, older girls in Dar es Salaam (age 15–17) generally have lower weekly hours of housework relative to older girls in other urban and in rural areas, and their IQR has a wider range.

[20] In comparing working and non-working girls of the same age and area, the median working girl tends to have slightly higher hours of household production for clusters with a sufficiently large sample size of working children. This pattern also holds at the upper quartile and whisker but is sharper at these ends of the distributions. No clear pattern is observed between working and non-working boys.

Figure 5-1: Distribution of Household Production Hours for Girls by Age and Area

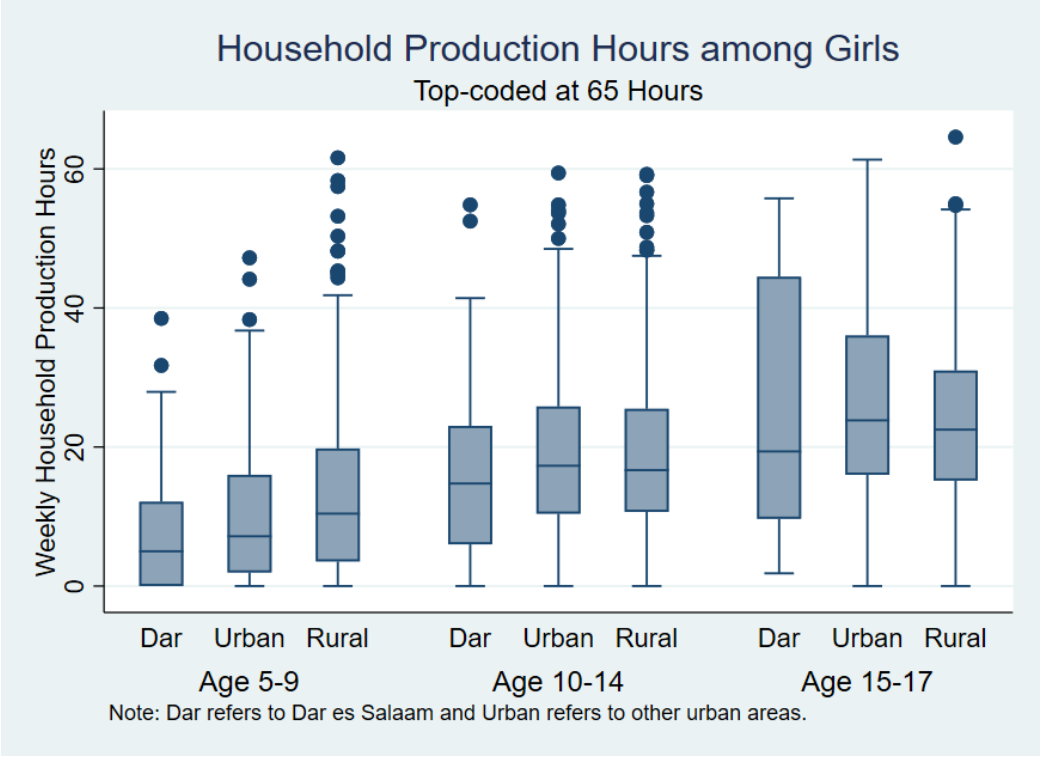
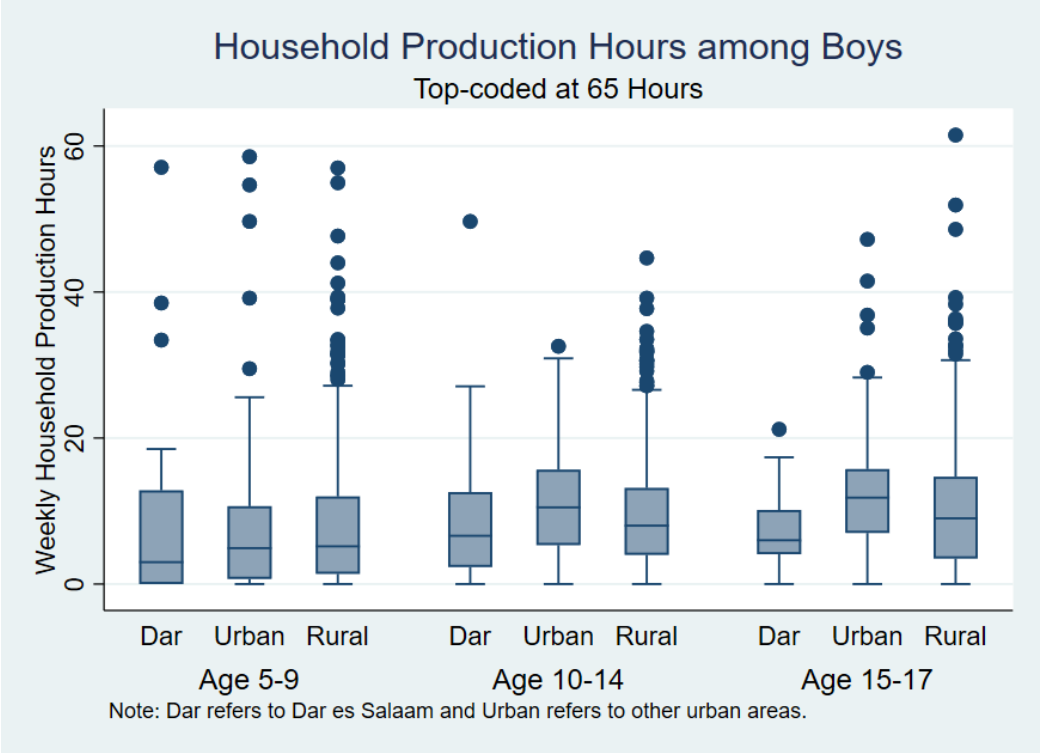


Figure 5-2: Distribution of Household Production Hours for Boys by Age and Area



5.1.3 Commuting Thresholds

Similar to the personal maintenance thresholds, we estimate and set commuting thresholds to capture the necessary amount of time individuals need to commute to work. Commuting thresholds are set based on observed weekly hours of commuting in the TUS. The subcategories for establishing commuting thresholds differ by area (Dar es Salaam, other urban areas, and rural areas), age, and employment status. For children aged 5–14, the commuting thresholds are set based on the average hours of commuting for those who were considered active in the labor force. For individuals aged 15 and older, the distinction was made along full time employment status, where individuals who work 36 or more hours in a week are considered full-time employees and those who work positive hours up to 35 hours are considered part-time workers. Four age categories were created to reflect notable distinctions in observed commuting hours even within the same locality and employment status.

The thresholds are based on the average number of observed hours spent on commuting in a week by individuals within the classification across age, area, and employment status. Calculations were carried out in the TUS. Unlike in the case of calculations that guided the personal maintenance thresholds described in the previous section, here we do face concerns of small sample distortions. Overall, there were only 33 observations aged 5–17 living in Dar es Salaam who were active in the labor force. As such, a single commuting threshold was set for all children aged 5–17 living in Dar es Salaam based on the average weekly hours of commuting for these 33 observations. All other subcategories had at least 30 observations in the TUS, with most exceeding 50 observations.

The results are presented in Table 5–3 and 5–4 below. Table 5–3 reports the thresholds for younger children (age 5–14). Children in the two age categories in this age range only differ along locality and the two age sub-categories. As can be seen below, children aged 10–14 tend to commute for longer hours relative to their younger counterparts (age 5–9). Secondly, children in rural areas travel much longer hours on average relative to their counterparts in Dar es Salaam and other urban areas, commuting almost twice the number of hours of those in Dar es Salaam. As seen in Table 5–4, this locality trend persists among older children (age 15–17) and older working individuals. For the two age subcategories within the general working age population detailed in this table, we make a further distinction along full time employment status. As previously stated, full time here refers to individuals with 36 or more usual hours of employment in a week. In both age subcategories, those who work full time unsurprisingly

commute for longer hours than those who work part time.[21] Those aged 18–70 tend to travel longer hours to work relative to older children in their area and thus have higher commuting thresholds. The exception revealed in Table 5–4 is for adults aged 18–70 in rural areas working full time, whose average commuting hours is an hour less than older children in rural areas working full-time. Given that the 10.4 hours estimate for older children is based on the average commuting hours for 143 observations, we consider the estimate reliable and suspect the pattern reversal here is driven by the observation that full-time employed 15–17 year-olds in rural areas commute long hours relative to the other commuting threshold clusters.

Table 5-3: Commuting Thresholds for Children (Weekly Hours)

Area	Age Categories	
	Age 5–9	**Age 10–14**
Dar es Salaam	3.5	3.5
Other Urban	3	4.3
Rural	6.5	6.7

Table 5-4: Commuting Thresholds for Working Age Population (Weekly Hours)

Area	Status	Age Categories	
		Age 15–17	**Age 18–70**
Dar es Salaam	Full Time	3.5	8.4
	Part Time	3.5	3.8
Other Urban	Full Time	8.4	7.7
	Part Time	5.4	5.6
Rural	Full Time	10.4	9.4
	Part Time	6.5	7.5

5.1.4 Distribution of Employment Hours

Employment is the remaining piece needed to calculate time deficits. As noted earlier, we do not set employment thresholds but rather use the actual hours of employment observed in the HBS. Recall that time use data are what are imputed from the TUS into the recipient file of the HBS to create the matched data set. As such, there are no additional quality of match concerns to address in using observed employment hours from the HBS. For our purposes, it is important to examine not just how many hours children work, but the incidence of working children across

[21] The exception is for children living in Dar es Salaam, where, as noted earlier, there were too few working children in the TUS to make reliable estimates by making finer clusters along the age subcategories and the full-time employment status for older children (age 15–17).

our key demographic dimensions of age, sex, and area. Such a breakdown is presented in Table 5–5 below, where working children are children who have positive usual hours of employment in the HBS.[22] For each combination of age, area, and sex, the table tells us the percentage of children in that cluster who are working children and the number of children in the Tanzanian population that the percentage weighs to represent (N). for example, among girls aged 10–14 living in other urban areas, an estimated 28.9 percent are working children, representing 139,866 children in the population.

Table 5-5: Incidence and Number of Working Children by Age, Sex, and Area

Age Group	Area	Female		Male	
		N	**Incidence**	**N**	**Incidence**
Age 5–9	Dar es Salaam	5,889	2.9%	4,160	2.1%
	Other Urban	53,928	11.7%	49,739	10.1%
	Rural	758,005	34.7%	753,450	33.8%
Age 10–14	Dar es Salaam	15,390	7.0%	11,254	5.6%
	Other Urban	139,866	28.9%	129,686	26.4%
	Rural	1,237,954	64.3%	1,267,163	64.2%
Age 15–17	Dar es Salaam	37,302	24.6%	19,484	15.0%
	Other Urban	135,663	43.7%	127,805	43.3%
	Rural	710,238	78.9%	797,345	81.3%
Total: Age 5-17	*Dar es Salaam*	*58,581*	*10.2%*	*34,898*	*6.6%*
	Other Urban	*329,457*	*26.2%*	*307,230*	*24.0%*
	Rural	*2,706,197*	*54.0%*	*2,817,958*	*54.4%*

There are a few strong patterns to note here. Rural children tend to be much more likely to be working children relative to children of the same age and sex in other areas. Children living in Dar es Salaam are on the other end of the spectrum, with children in other urban areas being somewhere in between but primarily closer to the working incidence rates for those in Dar es Salaam. Varying differences exist in the likelihood of being a working child between boys and girls across different age and locality clusters, but no notable overall differences are observed. The sharpest difference is observed between older children living in Dar es Salaam, where girls

[22] In breaking down all working children across the dimensions of age, sex, and area, there are three clusters for which the sample size fell below 30. They are boys and girls aged 5–9 in Dar es Salaam, and boys aged 10–14 in Dar es Salaam.

aged 15–17 are almost ten percentage points more likely to be working children than their male counterparts.

These regional patterns in the likelihood of being a working child are reversed when we consider the number of hours worked by working children. Although they are less likely to be employed, children in Dar es Salaam who do work tend to work a lot of hours by the time they reach age 10–14.[23] This is shown in Figures 5–3 and 5–4 below, where the distributions of employment hours among working children are broken down by sex, age, and area. Differences here are more pronounced across age and area than by sex. The locality difference is more pronounced in Dar es Salaam, where the median employed girl works more than twice the weekly number of hours of employed girls in rural areas. Most notably, the median working girl aged 15–17 in Dar es Salaam is estimated to work over *forty* hours in a week. The median working boy in Dar es Salaam of the same age group is estimated to work around 25 hours in a week.

This seeming oddity in the regional differences in hours of employment is in line with the insights from the UNICEF (2012) report on the livelihood of Tanzanian children living in urban areas. Although urban areas are generally characterized as having better resources and educational opportunities for children than in rural areas, the reality is more nuanced for some children. Urban areas do in general have better provisions. However, inequality tends to be sharper in urban areas, and children from poorer households tend to face precarious challenges. The circumstances that make urban areas hubs of investment, infrastructure development, and service provisioning also make them quite hostile to materially poor households. This is driven by the fact that almost everything is monetized in urban areas (e.g. food, health services, education, and housing). Thus, the perceived urban advantage of more readily available services than rural areas holds in reality only to those who have the income and wealth to *access* them.

[23] As noted earlier, there were too few younger working children residing in Dar es Salaam in the survey, thus preventing us from having reliable estimates for the 5–9 age range.

Figure 5-3: Distribution of Employment Hours for Girls by Age and Area

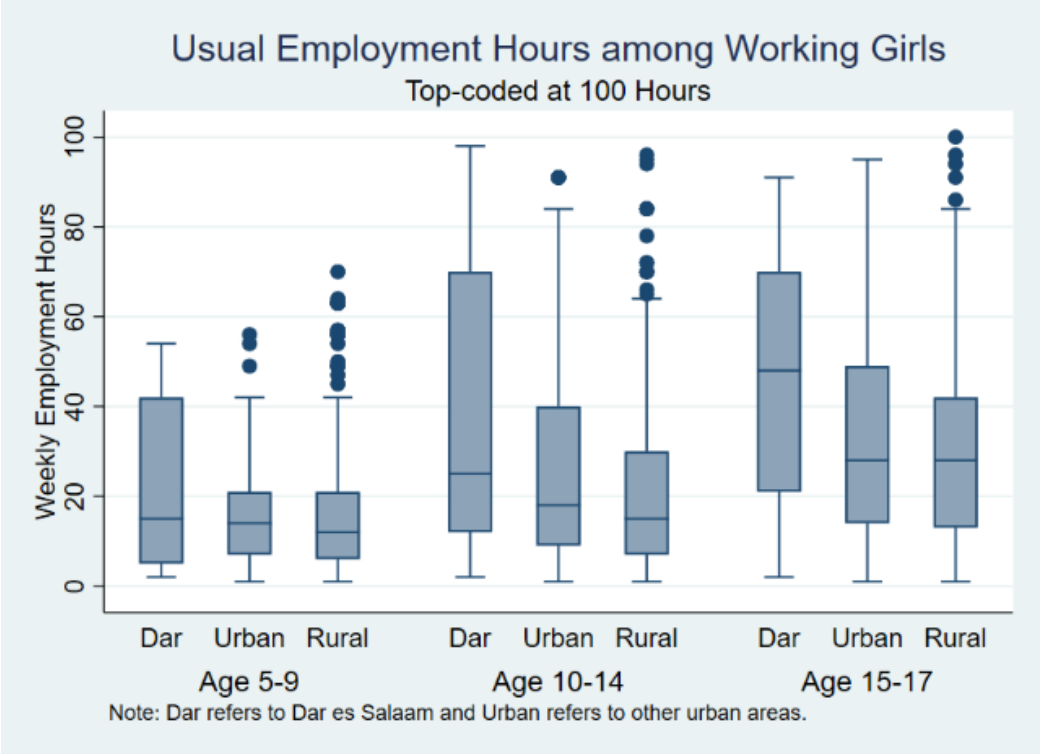
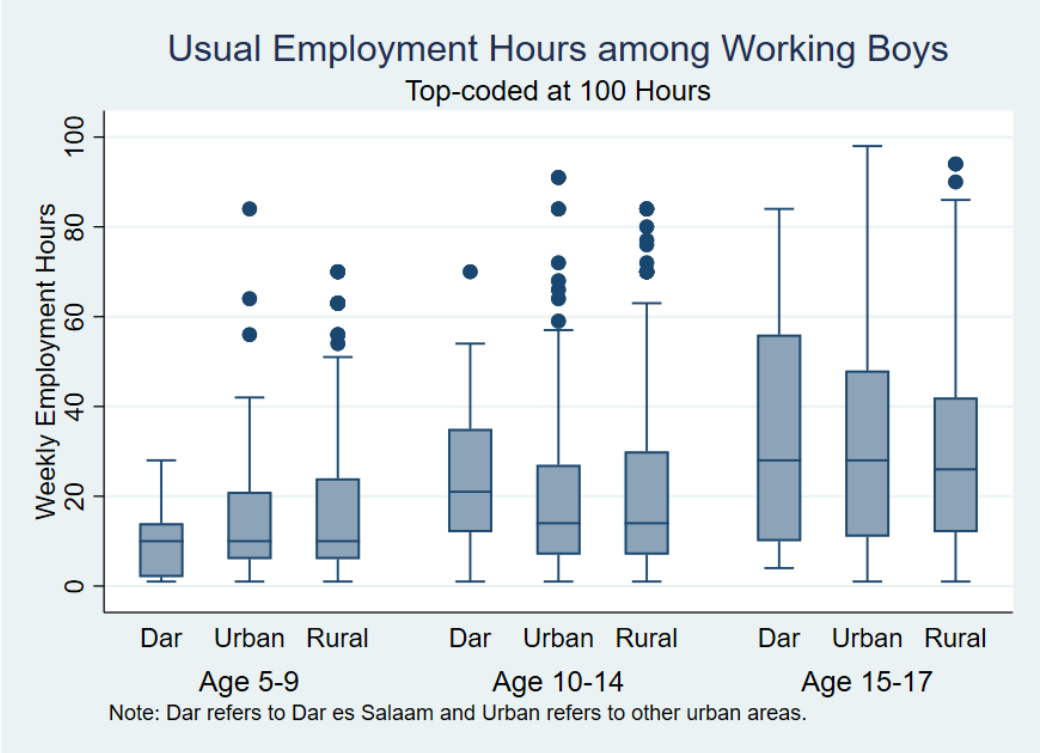


Figure 5-4: Distribution of Employment Hours for Boys by Age and Area



5.1.5 Importance of Consumption Expenditures

We now turn to the patterns between household consumption expenditures and the likelihood of being a working child. We begin by defining a measure that captures the two dimensions of poverty analysis we started with, namely time and consumption expenditures. To do so, we take a ratio of the reported household consumption expenditures detailed in the HBS to the official poverty line adjusted to account for the monetized value of time deficits.[24] We will refer to the latter as the LIMTCP-adjusted poverty line. The consumption ratio is divided into five tiers. The first tier reflects households who are at or below the LIMTCP-adjusted poverty line. Tier 5 reflects households whose consumption expenditures are more than three times the LIMTCP-adjusted poverty line.[25] Less than 5 percent of all children aged 5–17 live in households whose consumption expenditures fall into this category. On the other end of the spectrum, an estimated 42.4 percent of all children live in households at or below the adjusted poverty line (tier 1). At 47.1 percent, rural children are most likely to live in such households. The estimated share of children in Dar es Salaam living in a household with a consumption level corresponding to tier 1 stands at 19.6 percent, compared to 33.6 percent in other urban areas.

Table 5–6 below gives a breakdown of the incidence of being a working child across the five consumption tiers described above by area, along with the number of children each percentage represents.[26] Because of sample size concerns, there is no age breakdown here and the figures represent the estimates from looking at all children aged 5–17 within the specific cluster. [27] Although there is a general negative relationship between the likelihood of being a working child and the consumption tier of a child's household, a strong pattern is not observed. When looking across all areas and only breaking down by consumption tier (the last two columns of the table), there is a clear difference in a child's likelihood of being a working child depending on whether the household the child belongs to has consumption expenditures that fall

[24] Time deficits are monetized based on the average hourly wage for domestic workers estimated at the regional level. See Zacharias et al. (2018, 29–31) for more details.
[25] In tier 2 are households which are above the LIMTCP-adjusted poverty line but have consumption expenditures no more than 1.5 times the adjusted poverty line. In tier 3 are households between 1.5 times and twice the adjusted poverty tine, and tier 4 captures households between twice to three times the adjusted poverty line.
[26] The estimates here exclude children who are live-in domestic employees (i.e. children who belong to households where they are domestic employees). There were 186 such children aged 5–17 out of 14,377 children (1.29%) in the HBS sample. Most of them resided in urban areas, and their elimination had the largest impact on the estimates for Dar es Salaam.
[27] There were 3 clusters in the sample with fewer than 30 working children in a specific consumption tier, namely tiers 3 through 5 in Dar es Salaam.

in tier 1 or the upper tiers of 4 or 5. Children living in tier 1 households are estimated to be 24 percentage points more likely to be working children than children in tier 5 households.

There are regional differences in the point of the distribution where the likelihood of being a working child drops the sharpest. In Dar es Salaam, there is little difference in the incidence of being a working child between households at or below the adjusted poverty line (tier 1) and consumption non-poor households with no more than 1.5 times the adjusted poverty line (tier 2). While this holds in rural areas as well, children in tier 2 households in other urban areas are almost 8 percentage points less likely to be working children than those in tier 1 households. The biggest drop comes at tier 3 for children in both urban areas, after which there is a surprising reversal in the overall pattern noted earlier. In rural areas, there is a steady and more moderate decline in the incidence of child employment as consumption expenditures increase after tier 2, although the rate remains persistently high relative to urban areas.

Table 5-6: Incidence and Number of Working Children aged 5–17 by Area and Consumption Tier

Consumption Tier	Dar es Salaam		Other Urban		Rural		*All Areas*	
	N	**Rate**	**N**	**Rate**	**N**	**Rate**	***N***	***Rate***
1	17,577	8.3%	254,664	30.1%	2,605,694	54.3%	*2,877,935*	*49.1%*
2	22,372	8.0%	166,426	22.8%	1,834,523	56.7%	*2,023,321*	*47.6%*
3	8,381	3.7%	82,399	18.2%	681,159	52.2%	*771,939*	*38.9%*
4	10,201	4.5%	59,577	19.6%	285,896	48.3%	*355,674*	*31.7%*
5	5,233	4.2%	32,351	20.8%	91,953	39.0%	*129,537*	*25.1%*
All Tiers	*63,764*	*6.0%*	*595,417*	*23.9%*	*5,499,225*	*54.1%*	*6,158,406*	*44.9%*

Although there is a notable difference in the incidence of being a working child between the top and bottom tiers, it is surprising that children belonging to households with the highest consumption ratios are still estimated to have a 25.1% working incidence rate. This raises the question as to whether household expenditures are an ambiguous measure to use here. Although we would expect children from poorer households to be more likely to work, households with working children may have higher consumption levels than households similar in other characteristics due to additional resources likely coming in as earnings for the employed children, thereby increasing overall household consumption. In addition, larger households would tend to have higher consumption expenditures simply to meet basic needs. Although not

addressed here, examining parental income in lieu of household expenditures may prove informative. Furthermore, it would be worth examining the relationship of working children in consumption-rich household to the household head. Such children may be more likely to be extended family members or other relatives rather than children of the household head.

We now turn to examining the official and LIMTCP-adjusted poverty rates by sex, area, and employment status. These estimates are shown in Table 5–7 below. Both poverty rates are calculated at the household level. All individuals who live in a consumption-poor household are considered consumption-poor. The rows labeled "Hidden Poor" refer to individuals who fall into poverty under the LIMTCP-adjusted poverty line but are considered non-poor under the official poverty line. The hidden poor figures are obtained by subtracting the official poverty rates and number of poor from the LIMTCP-adjusted estimates. Across all areas, accounting for the monetized value of time deficits at the household level increases the number of poor children by approximately nine percentage points. A notable 1.2 million additional children become classified as poor when time is taken into account.

Looking across Table 5–7 by sex, small differences are observed in the poverty rates and number of poor children between boys and girls. This primarily reflects the balanced distribution of boys and girls across households given that our measures here are taken at the household level. Across employment status, working children are consistently more likely to belong to poor households as defined by both measures. The difference appears sharpest between the LIMTCP-adjusted poverty rates for working and non-working boys in Dar es Salaam and other urban areas. In line with the above discussion on the differences in the incidence of being a working child across different tiers of household consumption expenditures, the differences in poverty rates between working and non-working children is not as sharp as otherwise expected.

Table 5-7: Official and LIMTCP-Adjusted Poverty Rates for and Number of Consumption-Poor Children aged 5–17 by Area, Sex, and Employment Status

Area	Poverty Measure	Sex	Non-Employed Children		Employed Children	
			N	Rate	N	Rate
Dar es Salaam	Official	Female	27,111	5.2%	3,563	6.1%
		Male	31,661	6.4%	1,434	4.1%
	LIMTCP-Adjusted	Female	93,904	18.2%	10,523	18.0%
		Male	99,640	20.3%	10,304	29.5%
	Hidden Poor	Female	66,793	12.9%	6,960	11.9%
		Male	67,979	13.8%	8,870	25.4%
Other Urban	Official	Female	215,205	23.2%	88,039	26.7%
		Male	218,929	22.5%	107,250	34.9%
	LIMTCP-Adjusted	Female	284,760	30.7%	114,369	34.7%
		Male	304,047	31.3%	136,352	44.4%
	Hidden Poor	Female	69,555	7.5%	26,330	8.0%
		Male	85,118	8.8%	29,102	9.5%
Rural	Official	Female	884,772	38.4%	1,015,266	37.5%
		Male	914,374	38.7%	1,077,232	38.2%
	LIMTCP-Adjusted	Female	1,062,605	46.1%	1,230,118	45.5%
		Male	1,116,603	47.2%	1,365,882	48.5%
	Hidden Poor	Female	177,833	7.7%	214,852	7.9%
		Male	202,229	8.6%	288,650	10.2%
All Areas	*Official*	*Female*	*1,127,088*	*30.1%*	*1,106,868*	*35.8%*
		Male	*1,164,964*	*30.4%*	*1,185,916*	*37.5%*
	LIMTCP-Adjusted	*Female*	*1,441,269*	*38.4%*	*1,355,010*	*43.8%*
		Male	*1,520,290*	*39.7%*	*1,512,538*	*47.9%*
	Hidden Poor	*Female*	*314,181*	*8.4%*	*248,142*	*8.0%*
		Male	*355,326*	*9.3%*	*326,622*	*10.3%*

5.1.6 Time Poverty Rates

We have now covered all the pieces needed to calculate time poverty rates, the theoretical layout of which was covered in Section 4.3. Our results are presented in Table 5–8 below. Female time poverty rates average double that of their male counterparts of the same age and working status. Employment increases the likelihood of being time-poor for all groups, but this effect is much sharper for girls and women than their male counterparts. We observe that younger children aged 5–9 have higher time poverty rates than those aged 10–14 of the same sex and working status. This likely reflects the overestimation of household production hours for younger children discussed in Section 5.1.2. Because we also know that household production hours were understated for older children 15–17 in the matched data, there is strong

reason to believe that the time poverty rates reported for clusters within this age range are understated. Among all boys and girls aged 5–17, there are an estimated 1.2 million time-poor children.

Table 5-8: Time Poverty Rates and Number of Time-Poor by Age, Sex, and Employment Status

Age Group	Sex	Non-Employed		Employed	
		N	Time Poverty Rate	N	Time Poverty Rate
Age 5–9	Female	46,015	2.3%	285,903	35.0%
	Male	16,000	0.8%	150,378	18.6%
Age 10–14	Female	5,476	0.4%	229,525	16.5%
	Male	4,617	0.4%	104,659	7.4%
Age 15–17	Female	1,376	0.3%	244,361	27.7%
	Male	0	0.0%	126,774	13.4%
Age 18–70	Female	42,486	2.4%	5,458,157	62.6%
	Male	5,149	0.6%	3,392,864	39.5%
Total: Age 5-17	*Female*	*52,867*	*1.4%*	*759,789*	*24.6%*
	Male	*20,617*	*0.5%*	*381,811*	*12.1%*

For employed individuals, we can examine a further breakdown of the incidence of time poverty by area. As was the case of such a fine breakdown in the TUS, we also encounter some sample size concerns in this breakdown within the matched data based on HBS employment data. Specifically, among working children across the sex–age–area breakdown, 3 clusters fall below 30 observations. They are boys and girls aged 5–9 in Dar es Salaam, and boys aged 10–14 in Dar es Salaam. In general, working children in Dar es Salaam have notably higher time poverty rates relative to their counterparts of the same sex and age group in other urban areas and in rural areas. Overall, across all children aged 5–17, girls have higher time poverty rates than their male counterparts of the same locality, thus mirroring the patterns by sex observed in the general adult population aged 18–70. Previous discussions on the distributions of the time variables involved in the calculation of time poverty rates imply this difference by sex stems from girls and women doing more hours of household production work relative to their male counterparts.

Table 5-9: Time Poverty Rates and Number of Time-Poor among Employed Individuals by Age, Sex, and Area

Age Group	Locality	Female		Male	
		N	Time Poverty Rate	N	Time Poverty Rate
Age 5–9	Dar es Salaam	2,752	46.7%	403	9.7%
	Other Urban	19,451	36.1%	5,233	10.5%
	Rural	263,700	34.8%	144,742	19.2%
Age 10–14	Dar es Salaam	5,740	37.3%	1,709	15.2%
	Other Urban	30,626	21.9%	8,598	6.6%
	Rural	193,159	15.6%	94,352	7.4%
Age 15–17	Dar es Salaam	17,083	45.8%	5,191	26.6%
	Other Urban	32,558	24.0%	20,457	16.0%
	Rural	194,720	27.4%	101,126	12.7%
Age 18–70	Dar es Salaam	436,915	68.8%	608,425	61.8%
	Other Urban	972,832	62.1%	742,821	48.2%
	Rural	4,048,410	62.1%	2,041,618	33.6%
Total: Age 5–17	*Dar es Salaam*	*25,575*	*43.7%*	*7,303*	*20.9%*
	Other Urban	*82,635*	*25.1%*	*34,288*	*11.2%*
	Rural	*651,579*	*24.1%*	*340,220*	*12.1%*

Furthermore, across all children, we see a sharp difference between time poverty rates in Dar es Salaam and the two other areas by sex. (These correspond with the figures reported in the last three rows of Table 5–9 labeled “Total: Age 5–17.”) Among the almost 60,000 working girls in Dar es Salaam, a remarkable 43.7 percent of them are time-poor (over 25,000 girls), compared to a time poverty rate of 20.9 percent among their male counterparts. Although rural girls have relatively lower time poverty rates, our estimate of a quarter of them being time-poor is still noteworthy. In addition, because rural areas are more populous overall and have higher incidence of working children, this rate implies an estimate of over 650,000 time-poor rural girls. It is important to note that at this stage of the analysis, we have not accounted for time spent on learning activities at all. And already, there are over a million children who are estimated to be time-poor.

From section 5.1.4, we know that working children in Dar es Salaam tend to have much higher number of employment hours relative to their counterparts in other areas. We also saw that children in Dar es Salaam did not tend to have higher hours of household production work relative to the counterparts in other urban and rural areas. Furthermore, children residing in the two other areas had higher commuting thresholds than those in Dar es Salaam, and our personal

maintenance thresholds did not vary by area. This suggests that the higher time poverty rates observed for working children in Dar es Salaam are a result of their higher number of employment hours.

A few patterns at the household level warrant some comments. The likelihood of being a working child varies little across the number of employed and non-employed adults in a child's household. Nonetheless, looking across the time poverty status at the household level reveals a notable difference in the number of hours worked by employed children. Working children who live in time-poor households are estimated to work 12.8 more weekly hours of employment on average than working children who live in time non-poor households.[28] To put the size of this difference in perspective, employed children in time non-poor households work 13 weekly hours on average. This pattern is fitting because working children who work a lot of weekly hours are more likely to be time-poor at the individual level. And provided that no other household member is already time-poor, these children's time poverty status will also make their households time-poor. Although not explored here, it can also be the case that children from time-poor households differ from those in non-poor households in ways that are important for their level of engagement in income-generating activities.[29] Regarding our second work category, i.e. household production, Differences in required hours of household production across household time poverty status (by sex) are quite small.

5.1.7 Time and Consumption Poverty Rates

We can now look at the distribution of children across the four LIMTCP classifications by area, sex, and employment status. Given that LIMTCP is a multidimensional poverty measure across time and consumption, there are four possible combinations for the poverty status of individuals and households, namely: consumption and time-poor; consumption-poor and time-nonpoor; consumption-nonpoor and time-poor; consumption-nonpoor and time-nonpoor. Figures 5–5 and 5–6 below detail the shares of children across these four classifications for non-employed and employed children, respectively. Of particular concern are children who are both time-poor and consumption-poor, facing a dual burden in their livelihoods. Across all areas and

[28] This difference is statistically significant at the 1% level.

[29] Figures not presented here indicate that household time poverty rates change by little when we introduce children aged 5–15 into the time poverty rate calculations compared to the results in Zacharias et al. (2018), which were based on the general working age population (age 15–70).

employment status, girls are several times more likely to face this double burden. These results are in line with what was already detailed above of similar consumption poverty rates across boys and girls and significantly higher time poverty rates among girls. Among all non-working children, the share of girls who are both time and consumption poor is almost four times the share for boys. This amounts to an estimated 16,041 more time and consumption-poor girls than boys. Among employed children, this difference increases to over 160,000 more time and consumption-poor girls.

Relative to their non-employed counterparts, employed children are unsurprisingly more likely to be both consumption and time-poor as well as being consumption nonpoor but time-poor. This again mirrors previous findings on time and consumption poverty discussed separately above. These differences are sharpest for employed girls. On the other end of the spectrum, employed children are overall approximately 15 percentage points less likely to be both consumption and time non-poor than their non-employed counterparts.

Figure 5-5: LIMTCP Classifications across Non-Employed Children by Area and Sex

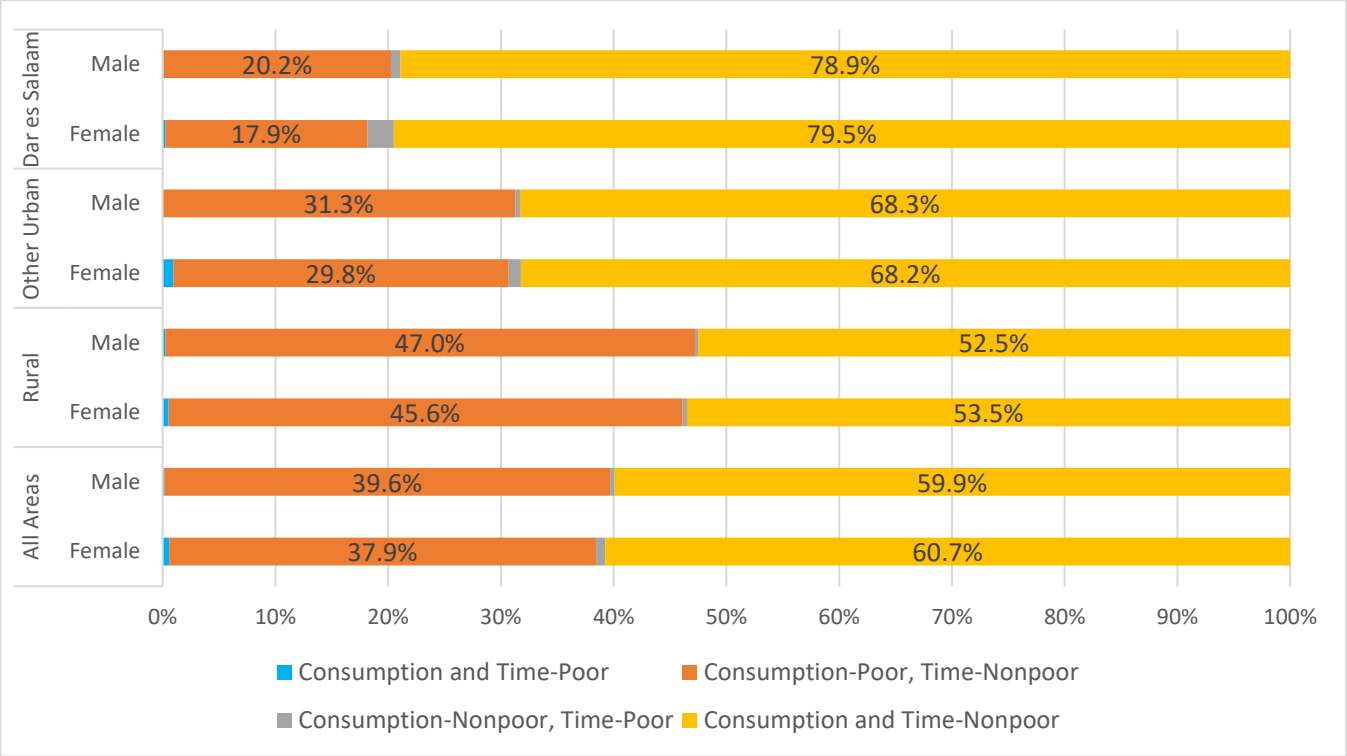
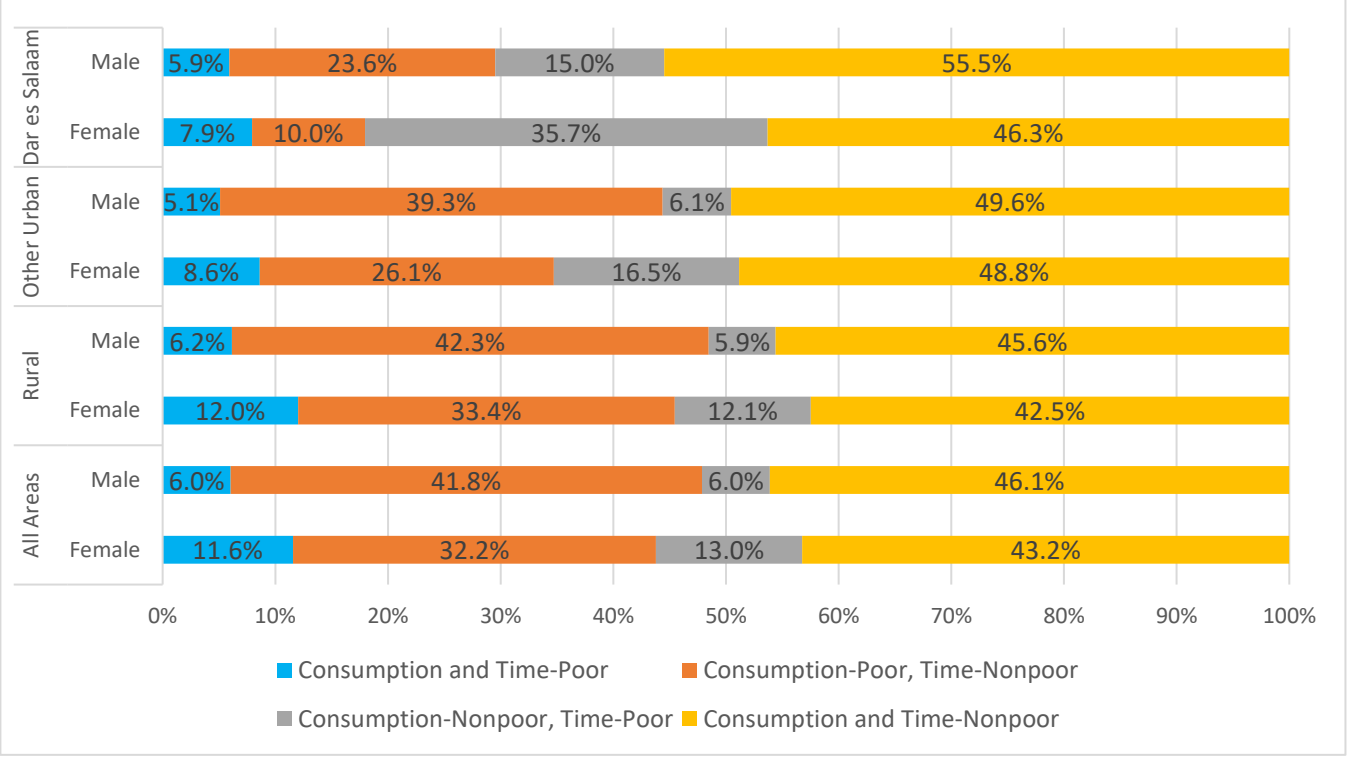


Figure 5-6: LIMTCP Classifications across Employed Children by Area and Sex



5.2 Time Spent in School: Legislation versus Empirics

The final component in our analysis is accounting for the minimum amount of time children need to spend in school. Tanzania's current education system is based on the Education and Training Policy (ETP) of 2014, which specifies 11 years of free and compulsory basic education beginning with one year of pre-primary education (Sumra 2015). For our purposes, it is important to note that the previous Education and Training Policy of 1995 only mandated 7 years of primary education beginning at age 7. Both the HBS and TUS data in use here were collected before the 2014 ETP was implemented. As such, the notably low observed schooling hours for young children aged 5-6 in the TUS, which are discussed below, may partly reflect this previous absence of a compulsory nature to school attendance at that age. Of course, whether the 2014 ETP has impacted school attendance requires examining more recent data. The current ETP specifies that 1 year of pre-primary education should be completed by Tanzanian children aged 3-5. Basic primary education is divided into two categories, Standard I–VI and Form I–IV, where Forms I–IV correspond with lower-secondary education (Martínez 2017). Primary school students tend to be within the age range of 6–12 years old, whereas students in lower secondary school tend to be 13–17 years old.

Under the 2016 Curriculum and Syllabus for Pre-Primary Education put forth by the Ministry of Education, Science and Technology, the school week for pre-primary education should total 17.5 hours (Tanzania Ministry of Education, Science and Technology 2016b, 10–11). Although this curriculum was formulated under the 2014 ETP, it will be used as a threshold for the desired number of formal schooling hours for younger children in the absence of access to the previous curriculum for pre-primary education.[30] Since primary school entry under the 1995 ETP was specified at 7 years of age, this threshold will be applied to children aged 5–6. For older children, we turn to the 2016 Basic Education Curriculum Standard III–VI, which specifies a school week of 25.3 hours for students in Standards III–VI (Tanzania Ministry of Education, Science and Technology 2016a, 27–29). In the absence of access to the current curricula for the other school grades or to any of their earlier versions, this hour specification will be used as a threshold for all children aged 7–17. These thresholds are summarized in Table 5–10 below.

[30] It is reasonable to assume that curriculum for pre-primary education under the 1995 ETP will be comparable to the current curriculum, where the big difference remains that the current legislation makes pre-primary school attendance mandatory.

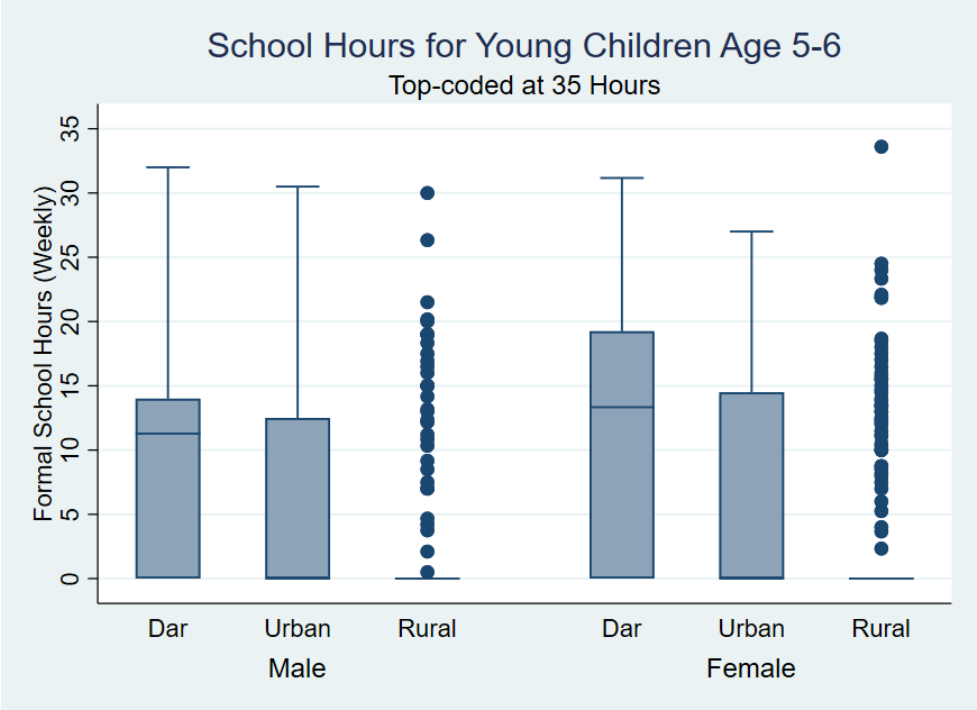
Table 5-10: Thresholds for Weekly Hours of Formal Schooling by Age

Age Group	Threshold (Weekly Hours)
Age 5–6	17.5
Age 7–17	25.3

We now look at the distribution of observed hours of formal school attendance in the TUS. Given the entry ages for the various stages of pre-primary and primary education, we look at four age categories. The first is children aged 6–7, which aligns with pre-primary education.[31] The distributions are shown in Figure 5–7 below. As is readily notable from the figure, very few young children in rural areas attend school, to the point that all those who have positive weekly school attendance hours are considered rare observations. The 75th percentile for school hours among rural children of this age is zero, and the observed positive cases are marked as dots in the figure to indicate their rarity. In fact, pre-primary school-aged children in other urban areas also do not frequently attend school. For both boys and girls, their median number of weekly school hours is 0. With the caveat that we have a limited sample of boys and girls living in Dar es Salaam for this age group, Dar es Salaam is where we see a large share of pre-primary school-aged children attending school.

[31] In this breakdown by sex and area for children aged 5–6, two clusters had observations below 30, namely boys and girls in Dar es Salaam.

Figure 5-7: Distribution of School Hours for Young Children by Age and Area



We now turn to primary education-aged children in other urban and rural areas in Figures 5–8 and 5–9 below, respectively.[32] Overall, we observe two broad patterns. First, hours of school attendance tend to increase in age and then decrease. Secondary school children aged 15–17 at the median generally have higher hours of schooling than primary school children aged 7–12 within the same locality, sex, and employment status but less hours than those aged 13–14. Secondly, non-employed children tend to have higher weekly school hours than their employed counterparts. In particular, the median employed older girl (age 15–17) has zero weekly hours of schooling in both rural and other urban areas. Most strikingly, being a working 15–17 girl in other urban areas likely means not attending school at all. A working 15–17 girl in rural areas is much more likely to attend school than her counterparts in other urban areas. Interestingly, this pattern is reversed for older employed rural boys. More generally, working girls in rural areas have higher observed positive hours of schooling relative to those in other urban areas. We know from earlier that rural children consistently have the highest rates of working children and that urban working children have similar employment distributions as their rural counterparts. It would be interesting to see whether the types of jobs rural girls have or their community system

[32] Among employed children in other urban areas, the clusters for boys and girls aged 7–12 and 13–14 fall below 30 observations.

make them more likely to attend school than their counterparts in other urban areas. These matters, however, are not explored here.

Figure 5-8: Distribution of School Hours in Other Urban Areas by Age and Working Status

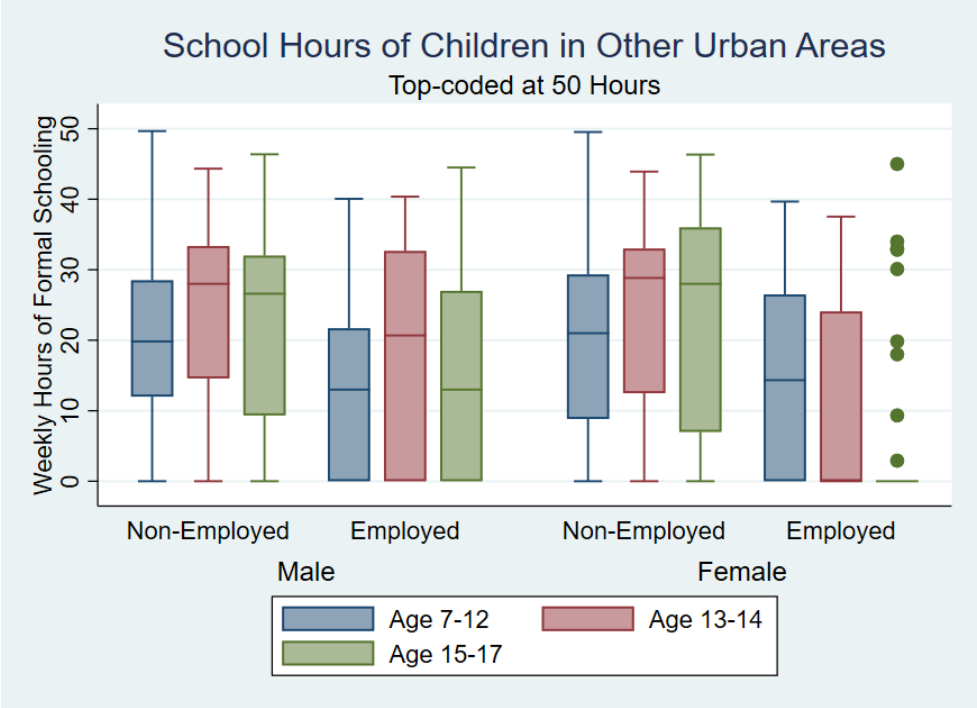
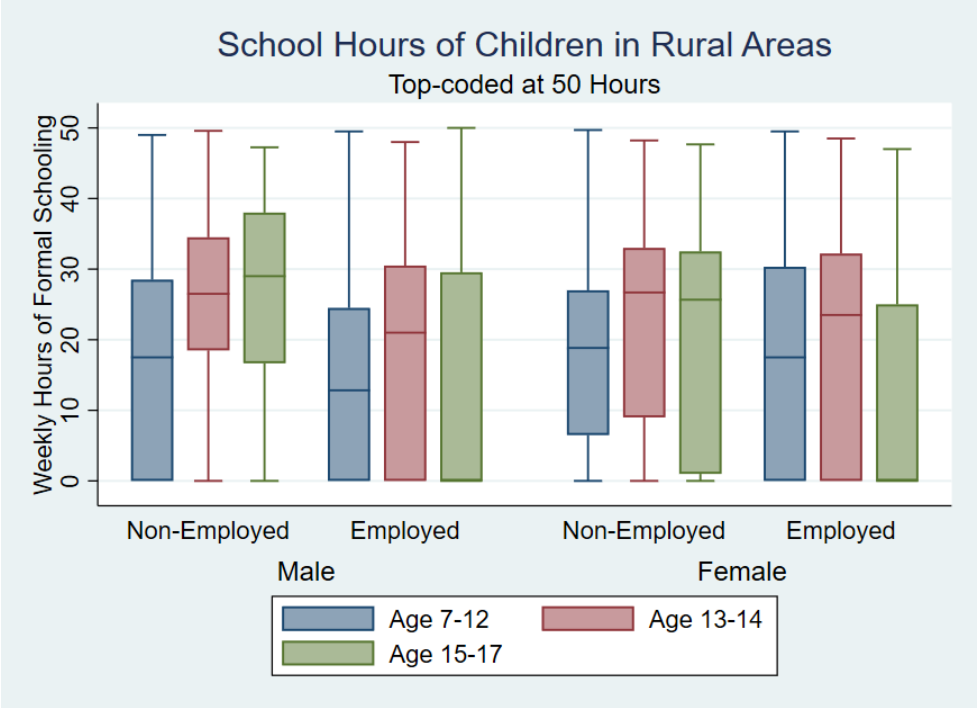


Figure 5-9: Distribution of School Hours in Rural Areas by Age and Working Status



Focusing specifically on rural children, the divide in school attendance between non-employed and employed children becomes more pronounced given that we estimated that the majority of rural children aged 5–17, over 5.5 million in number, are working children. Even if we focus on only the estimated 4.4 million working children aged 5–14 across mainland Tanzania, over 4 million of them live in rural areas. Given these numbers, the median employed child aged 7–12 only going to school for 14 hours per week and not attending school at all at the 25th percentile raise concerns with regards to policy goals of universal basic education. Furthermore, even among non-employed children, teenage rural girls have much greater variability in their hours of school attendance relative to teenage boys. Whereas a non-employed teenage boy between the ages of 13 and 17 at the first quartile already attends school for nearly 20 hours, we observe less than half that figure among non-employed teenage girls. In particular, among older girls, although the median number of school attendance hours is near our desired threshold of 25 hours, girls near or below the 25th percentile practically do not go to school. These figures are lower for both working boys and girls, where we see less difference by sex.

Next, we turn to children in Dar es Salaam. Given the few number of working children living in Dar ss Salaam in the TUS, the distribution of their schooling hours is presented together in Table 5–11 below. With the exception of girls aged 15–17, non-working children in Dar es Salaam consistently hover around the threshold of 25.3 hours of weekly formal school attendance. Moreover, as shown by the short-length inter-quartile ranges (IQRs) in Figure 5–10, which are well above zero, the majority of children have high weekly school hours. Compared to the Non-Employed panels of the preceding two figures, non-working children in Dar es Salaam tend to have higher hours of school attendance relative to their counterparts in other urban and rural areas. The sharp contrast is with girls aged 15–17. In addition to the observation that the median older non-working girl in Dar es Salaam attends about 6 hours of school in a week, the IQR is very wide and begins at zero. For example, the girl(s) at the 25th percentile have zero schooling hours. This contrasts very sharply with their male counterparts whose IQR schooling hours are very concentrated above 25 hours.

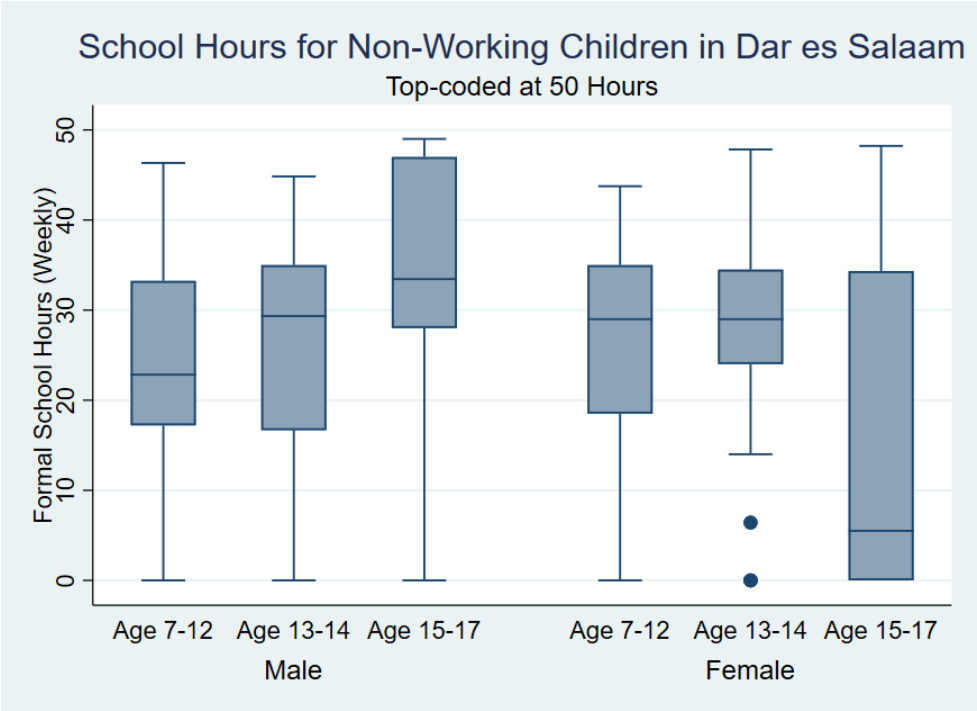
School attendance among employed children living in Dar es Salaam is more limited. This adds to the observation that although an exceedingly small share of children in Dar es Salaam are working children relative to other localities, those who are employed seem to face precarious

livelihoods. School attendance seems even more rare among working girls, where 75% of them have zero weekly hours of school.

Table 5-11: Weekly School Hours of Working Children in Dar es Salaam

Sex	Mean	Min	p25	p50	p75	p90	Max
Male	12.6	0.0	0.0	9.0	25.3	31.2	34.0
Female	4.3	0.0	0.0	0.0	0.0	24.5	28.0
Total	*7.7*	*0.0*	*0.0*	*0.0*	*11.2*	*30.3*	*34.0*

Figure 5-10: School Hours of Non-Working Children in Dar es Salaam by Age and Sex



5.2.1 School-Adjusted Time Poverty Rates

Next, we examine time poverty rates among children after accounting for education thresholds. Unsurprisingly, estimated time poverty rates increase relative to the rates presented in the previous section, which did not account for school requirements. Time poverty rates are remarkably high for employed and non-employed girls aged 5–9 and employed boys aged 5–9. There are three primary drivers for these, namely the overestimation of household production hours for girls aged 5–9, higher personal maintenance thresholds for children aged 5–9, and remarkably high amounts of weekly household production hours completed by some young girls. As stated earlier, the matched data overestimates weekly hours of household production

relative to the actual hours observed for girls aged 5–9 in the TUS by approximately 40% at the mean, which translates to 5 hours (compared to 5.3 hours at the median).[33] Among the estimated 422,390 non-working girls aged 5–9 who are time-poor after accounting for school time, the mean time deficit is -10.3 weekly hours and the median is -7.8 hours. This gives some evidence that a non-negligible share of non-working young girls who are included in our estimated time poverty rate may not be time-poor (i.e. have a time deficit of at least zero hours) in the absence of overstated household production hours.[34] But it does not give the full picture.

A key reason for that is that time-poor non-working girls are concentrated at the high end of required hours of household production. [35] Among the estimated 99,064 non-working girls aged 5–6 who are time-poor after accounting for school hours, the mean estimate of required hours of household production is 37.2 hours and the median is 34.6 weekly hours. Among the estimated 323,326 aged 7–9, the mean is 30.1 hours and the median estimate is 26.5 weekly hours. Contrasting these figures with our thresholds for personal maintenance and schooling completes the puzzle. For children aged 5–6, summing their personal maintenance threshold of 123 weekly hours with 15.7 hours of school leaves 27.5 hours of available time in a week, compared to 19.7 of leftover time for those aged 7–9. This implies that, even among non-employed young children, only moderate levels of household production hours can be completed without being classified as time-poor. It appears that for the majority of non-employed young girls calculated to be time-poor, high amounts of unpaid care work are the reality even after allowing for matched data overestimation. And for girls aged 15–17, we face the opposite problem, where the estimated time poverty rate is likely an understatement. The degree of overestimation of household production hours for young girls in the matched data is mirrored by the extent of underestimation of housework for older girls.

[33] Imputed household production hours are central in calculating the required hours of household production, i.e. thresholds, discussed earlier. In particular, they give the share of hours completed by an individual out of the total hours of household production at the household level.

[34] Such children are more likely to be at moderately high points in the distribution of household production. The overestimation in the matched data seems to be higher at higher ends of the distribution, where weekly hours of household production for young girls at the 25th percentile are overestimated by only 4.2 hours (compared to 5.3 hours at the median).

[35] Since we are looking at higher ends of the distribution of hours of household production, it is worth noting that the overestimation of household production hours for girls aged 5–9 in the matched data at the 75th percentile is only slightly higher than the mean and median figures stated earlier, standing at 5.9 hours.

Table 5-12: Initial and School-Adjusted Time Poverty Rates and Number of Time-Poor by Age, Sex, and Employment Status

Age Group	Employment Status	Sex	Initial Time Poverty		School-Adjusted Time Poverty	
			N	Rate	N	Rate
Age 5–9	Non-Employed	Female	46,015	2.3%	422,390	20.8%
		Male	16,000	0.8%	184,114	8.7%
	Employed	Female	285,903	35.0%	693,347	84.8%
		Male	150,378	18.6%	534,670	66.2%
Age 10–14	Non-Employed	Female	5,476	0.4%	48,664	3.9%
		Male	4,617	0.4%	17,218	1.4%
	Employed	Female	229,525	16.5%	747,435	53.7%
		Male	104,659	7.4%	476,994	33.9%
Age 15–17	Non-Employed	Female	1,376	0.3%	18,159	3.8%
		Male	-	0.0%	2,429	0.5%
	Employed	Female	244,361	27.7%	551,175	62.4%
		Male	126,774	13.4%	413,229	43.7%
Total: Age 5-17	*Non-Employed*	*Female*	*52,867*	*1.4%*	*489,213*	*13.1%*
		Male	*20,617*	*0.5%*	*203,761*	*5.3%*
	Employed	*Female*	*759,789*	*24.6%*	*1,991,957*	*64.4%*
		Male	*381,811*	*12.1%*	*1,424,893*	*45.1%*

Among time-poor employed boys and girls aged 5–9, the issue of time deficits is more pronounced. Such children on average complete less hours of household production relative to their non-employed counterparts of the same sex. However, adding their hours of employment and required hours of commuting pushes them above the limited amounts of hours that, by construction, we have allowed for young children to allot in either type of work without becoming time-poor. For example, among the estimated 693,347 time-poor employed girls aged 5–9, the median girl is estimated to spend 14 weekly hours in income-generating activities, 3.5–6.5 hours commuting, and 21.8 hours in household production work. This compares to just 19.7 or 27.5 weekly hours of available time after accounting for personal maintenance and schooling thresholds.

Table 5–13 below gives us a further breakdown of the incidence of time poverty among working children by sex, age, and area. We again observe the persistent trend that girls have higher rates of time poverty relative to boys of the same age and locality. This directly relates to the higher hours of household production that girls work coupled with similar incidences of employment by sex. Here, however, the sharpness in the gap by sex has decreased for some

clusters relative to the time poverty rates before accounting for schooling hours. This is because there are more girls who are at the sharpest depths of time poverty relative to boys, which is further discussed below. These were the children who we already estimated as time-poor before even accounting for time needed to be spent in school.

Table 5-13: School-Adjusted Time Poverty Rates and Number of Time-Poor among Employed Children by Age, Sex, and Area

Age Group	Locality	Female		Male	
		N	Time Poverty Rate	N	Time Poverty Rate
Age 5–9	Dar es Salaam	3,721	63.2%	1,602	38.5%
	Other Urban	41,484	76.9%	29,376	59.1%
	Rural	648,142	85.5%	503,692	66.9%
Age 10–14	Dar es Salaam	11,278	73.3%	4,076	36.2%
	Other Urban	71,112	50.8%	35,703	27.5%
	Rural	665,045	53.7%	437,215	34.5%
Age 15–17	Dar es Salaam	28,270	75.8%	9,620	49.4%
	Other Urban	68,254	50.3%	59,738	46.7%
	Rural	454,651	64.0%	343,871	43.1%
Total: Age 5-17	*Dar es Salaam*	*43,269*	*73.9%*	*15,298*	*43.8%*
	Other Urban	*180,850*	*54.9%*	*124,817*	*40.6%*
	Rural	*1,767,838*	*65.3%*	*1,284,778*	*45.6%*

We now turn to the depths of time poverty faced by children who are time-poor. Tables 5–14 and 5–15 below detail the mean and median time deficits faced by non-employed and employed children who are time-poor, respectively, before and after accounting for school thresholds. Similar to the sharp differences in time poverty rates along employment status, here too we see that employed children have time deficits of much higher magnitudes relative to non-employed children. Furthermore, accounting for time to be spent in school worsens the time deficit of time-poor children by a similar number of hours at the mean and median.

The children we already estimated as time-poor before accounting for schooling hours constitute the share of time-poor children whose depths of time poverty are the sharpest. Among the estimated 1.2 million children who were already time-poor before even accounting for schooling hours, two-thirds of them are girls and 94.0 percent are working children. Among the estimated 261,000 aged 7–17, almost a quarter of them responded as having never attended

school. This compares to 12 percent among all children of the same. These children are pushed into the sharpest ends of the distribution of time deficits once we incorporate school thresholds, where their mean and median time deficits are much higher in magnitude than those reported for all newly time-poor children in Table 5–14 and 5–15 below. The new distribution of time deficits is mostly driven by these newly time-poor children. For example, the number of time-poor non-employed children increased almost tenfold after accounting for schooling hours.

Table 5-14: Initial and School-Adjusted Time Deficits among Time-Poor, Non-Employed Children Age 5–17 by Sex (Weekly Hours)

Sex	Time Deficit	Mean	p25	Median
Female	Initial	-11.0	-15.9	-8.0
	School-Adjusted	-10.4	-14.3	-7.1
Male	Initial	-10.2	-16.2	-10.9
	School-Adjusted	-10.2	-15.1	-6.7

Table 5-15: Initial and School-Adjusted Time Deficits among Time-Poor, Employed Children Age 5–17 by Sex and Area (Weekly Hours)

Sex	Area	Initial Time Deficits			School-Adjusted Time Deficits		
		Mean	**p25**	**Median**	**Mean**	**p25**	**Median**
Female	Dar es Salaam	-31.1	-41.3	-29.2	-38.9	-59.3	-38.2
	Other Urban	-22.5	-34.3	-17	-27.5	-39.8	-20.6
	Rural	-16.7	-23.4	-12.2	-22.2	-31.3	-17.9
Male	Dar es Salaam	-15.9	-25.1	-15.5	-25.9	-37.3	-24.1
	Other Urban	-18.4	-25	-13	-20.9	-27.3	-18.1
	Rural	-15	-20.2	-10.4	-18.1	-25.2	-14.1

5.3 Analysis and Policy Recommendations

The evidence presented above showcases a narrative where a Tanzanian child's life looks vastly different depending on the child's sex and working status. A child's sex comes to matter in their time commitments primarily through the reproduction of gendered division of unpaid care work, which begins quite early among children. Such unpaid care work, referred to as household production above, is weighed heavily on girls relatively to their male counterparts starting from the 5–9 age group, the youngest children for which we have time use data. This asymmetry is seen in the box plots that depict the distribution of household production hours disaggregated by age, sex, and area of residence. Furthermore, it mirrors what we see in the general adult population as discussed in Zacharias et al. (2018). Despite this sharper work burden on girls in the household, we do not observe any notable differences in the incidence of

engaging in income-generating activities between boys and girls or in the number of hours worked by employed children.[36] In fact, we observe that employed girls in Dar es Salaam tend to work higher weekly hours than their male counterparts.[37]

The combination of these two patterns of time use unsurprisingly resulted in girls having higher incidences of time poverty. In addition, working children have remarkably higher rates and depths of time poverty relative to non-working children of the same sex and age group. Among non-working children, we observe that time poverty rates tend to be notably low before we account for schooling hours. This is unsurprising and almost by construction because for these children, their only time commitments that go into the calculation are threshold hours for personal care and maintenance and time spent on household production activities. Yet, with such a small number of activities accounted for, we still observe that over 50,000 girls aged 5–17 are estimated to be time-poor, relative to 20,000 boys of the same age group.

Area of residence also has some consequences for children's livelihoods. Here, the conventional narrative of the rural-urban divide and its accompanying urban advantage are met with some nuance. Rural children undoubtedly have higher likelihoods of being working children. According to the HBS data, although 74% of children aged 5–17 live in rural areas, rural children make up 88% of all working children. Looking only at children below the general working age population, i.e. ages 5–14, rural residency stands at 75% compared to constituting 91% of all working children aged 5–14. However, employed rural children have fewer hours of employment in a week relative to children of the same age group and sex living in Dar es Salaam and other urban areas. In particular, although the incidence of being a working child in Dar es Salaam is exceptionally low, employed children in Dar es Salaam have the highest number of weekly employment hours.

Education also presents mixed observations. In general, employed children tend to spend fewer hours in school relative to their non-employed counterparts. However, because of both the high percentage and number of working children in rural areas, the upend of this pattern between employed and non-employed rural children becomes even more concerning.

[36] Looking across all children aged 5–17, the difference in the incidence of being a working child at the means by sex is not statistically different from zero at any conventional level of significance. For differences in hours of employment among working children, we find that girls on average work 1.1 more weekly hours than boys and this difference is statistically significant at the 5 percent level.

[37] Among urban working children (i.e. those living in Dar es Salaam or other urban areas), girls are estimated to work 5.9 more weekly hours than boys at the means and this difference is statistically different from zero at the 1 percent significance level.

Furthermore, school attendance among pre-primary school aged rural children (age 5–6) is more a rarity than the norm. In fact, Dar es Salaam is the only locality where we see the majority of pre-primary school-aged children attending school. Given the important edge that pre-primary education is predicted to have on attendees, this disparity likely carries consequences for children's educational success in primary and secondary school. The urban advantage seems to dwindle when we look at school attendance among older employed girls (age 15–17). Considering employed girls aged 15–17 living in Dar es Salaam or other urban areas, 75% of them are estimated to attend zero hours of weekly schooling. Among older employed rural girls, about half of them are estimated to not attend school at all.

The findings here suggest that household consumption expenditures are not a strong predictor for differences in the incidence of being a working child. As previously noted, this may relate to a few issues. Firstly, household expenditures likely increase with household size, where higher levels of household expenditures to some degree may not reflect greater material wellbeing. Secondly, working children likely contribute their earnings or value-generating labor to their households' consumption, making the relationship between household consumption and the likelihood of being a working child more nuanced. Furthermore, in rural areas, we observe not only the highest shares and number of working children, but also the lowest effects of increasing household expenditures on the likelihood of being a working child. This suggests that the majority of rural children work (mostly on family farms) even in richer households.

The evidence here also showcases the intersecting nature of forces that affect children's livelihood, calling for a multidimensional approach in policies aimed at influencing observed outcomes. The long-term consequences of strong education policy for both the fostering of individual capabilities and cultivating material growth at the national level are well noted. These effects are echoed in Tanzania's education legislations and policies discussed earlier. In particular, the current Education and Training Policy (ETP) targets 11 years of free and compulsory basic education beginning with one year of pre-primary education. The findings here point to a number of areas requiring attention to achieve this outcome for all Tanzanian children. We observed that pre-primary school attendance during its legislatively stated age of 5–6 is not the norm among rural children but rather a rarity. Although the data that inform these observations were collected before the enactment of the 2014 ETP, it is unlikely that the legislation by itself will bring substantial change without intentional and targeted efforts.

Furthermore, it is worth noting that universal primary education (UPE) has been a prevailing policy for decades and we still observe important regional variations in school attendance among children of primary school age.[38] With the majority of children living in rural areas, the expansion of pre-primary education in these areas is a worthwhile endeavor. Children who enter primary school without pre-primary education begin with a disadvantage where not only are their classmates likely to be academically ahead of them, but they will also be trying to follow curricula that presuppose a year's worth of schooling which they never completed. Alternatively, children could be beginning school at a relatively older age, which can have consequences later on in terms of when individuals enter the labor force and with what level of education, along with the pedagogical difficulties that may arise in having a mixed-age classroom.

The final school-specific recommendation comes from The Children and Young People's Agenda (2019), the codified outcome of a yearlong campaign spearheaded by UNICEF and others to commemorate the 30th anniversary of the CRC as well as to educate Tanzanian youth about their rights and solicit their input on progress made and changes necessary to better serve them. Among the many insights from the nine million youth reached is the call for an improvement of technical and entrepreneurial education to tailor the education curriculum to the skills and knowledge students need to enter the job market (2019, 9). We know that there are likely immediate material costs that accompany children disengaging from income-generating activities. We also know of arguments regarding the potential benefits of children engaging in (some degree of) employment, including skill attainment and a quasi-apprenticeship experience. Both of these highlight the urgency for formal education to adequately equip students with the skills and experiences that are necessary to secure meaningful employment in their milieu. This is not an argument against the many things we aspire for education to provide, including expansion of children's general knowledge, sensitivity to civic engagement, and preparedness and interest in higher education. Rather, it is a call for a practical angle as one of the dimensions

[38] Although not explored here, UPE overall brought significant increases in the share of the population who gained access to and completed primary education. For example, according to data collected under the World Bank Education Statistics Data Bank, the average years of education among individuals aged 15–19 in 1970 was 2.78 years (1.93 years among women). By 2010, this number had risen to 6.01 years (6.18 years among women). The introduction of cost-sharing policies in the 1980s that lasted for a couple of decades brought sharp decreases in new primary school enrollments and rates of completion.

of the curriculum that is informed by and aims to improve the circumstances and choices children face.

Conditional cash transfers (CCTs) have become a common policy tool in various regions of the Global South after gaining much popularity in the past two decades (Brooks 2015). The central logic of CCTs is to promote desired outcomes in poverty reduction, primarily in health and education, by inducing behavioral changes through financial rewards. Receiving transfers is conditioned on certain behaviors, such as vaccinating one's children and maintaining school attendance. In our context, the purpose of a cash transfer in addressing some of the consequences of child employment can be two-fold. Firstly, a CCT tied to school attendance and eliminating child employment can assist households with funds to maintain their livelihoods in light of the immediate costs they would face, namely the lost earnings of their previously working children. Secondly, the CCT could alter the current economic rewards to child employment, reducing the trade-off between attending school and working. This is important because the costs associated with reduced formal education are not readily incurred, creating a temporal mismatch in the trade-off without intervention.

In 2012, the Tanzanian government, in collaboration with its international agency partners, initiated the Productive Social Safety Net program (PSSN) as part of phase III of the Tanzania Social Action Fund (TASAF), a poverty reduction strategy enacted in the early 2000s (Jacob and Pedersen 2018). PSSN combines a cash transfer scheme with a Public Work Program and a livelihood enhancement component (The Tanzania Cash Plus Evaluation Team 2018). PSSN, which ended in December of 2019, specifically targeted the most financially vulnerable households, combining a baseline unconditional cash transfer to identified households with additional transfers conditioned on school attendance and health check-ups for children aged 0–5 and the elderly. In 2018, the UNICEF Office of Research – Innocenti and the Policy Research for Development (REPOA) put forth findings from a joint evaluation of the impact of PSSN on Tanzanian youth using a randomized control trial (RCT) framework over the course of an 18-month endline survey period.[39] Several of the authors' findings are of relevance here. PSSN is credited to significantly improve school attendance rates among children (The Tanzania Cash Plus Evaluation Team 2018, 38) but has mixed effects on child employment (2018, 38).

[39] Expansion of PSSN itself in 2015 from 39,473 households to reaching 1.1 million households – about 10 percent of the population – was based on an RCT design.

Whereas children's engagement in paid work outside of the household reduced, there was an increase in their economic work within the household, thereby constituting a shift in children's employment activities rather than a reduction. The authors attribute this shift to the increase in households' investment in livestock from PSSN proceeds, thereby increasing employment demand within the household. Furthermore, PSSN was not observed to have any statistically significant impact on the level of housework completed by children.

These findings shed some light on the need for interconnected policies to fully affect children's livelihoods. Although moderate-sized cash transfer programs mitigate some of the financial loss associated with decreased child employment, they do not necessarily address the impact of reducing or eliminating the economically productive labor working children previously provided. Among all working children aged 5–17, an estimated 82.3 percent of them are children living in rural areas who work on the household farm or shamba.[40] As such, two additional policy recommendations are proposed regarding child employment. Firstly, provisioning of and investment in labor-saving technologies in the agricultural sector can help alleviate the amount of labor needed to yield a certain level of output. This should lessen the need for children's labor on the farm, where we know most working children's efforts are concentrated. Along with this, macro employment policies that use inter-generational farming knowledge and best practices to address labor requirements efficiently and equitably can strengthen the gains that can be made from increased farming capital. Certainly, these recommendations both call for ample effort by public officials and communities to increase initiatives to support agriculture in a manner that simultaneously edifies communal methods in sustaining livelihoods while also using technological advancements to enhance food security and overall production.

Reinforcingly, curating academic calendars that are more tailored to agricultural seasonality can allow for degrees of children's engagement in farming that is deemed beneficial for them and their households without coming at the expense of their level of engagement in education-relative activities, including homework and school attendance. Having more intense academic terms during the lean agricultural season can lessen the amount of competing demands on children's time and energy. The evidence here does not suggest that simply banning child

[40] Across all areas, this figure rises to approximately 90% of all employed children working on the household farm or shamba.

employment is an effective solution. From the previous discussion of child labor legislations enacted both at the national level and multinational legislations ratified by Tanzania, we know that all employment for children under the age of 13 is prohibited. Yet, we have sufficient findings indicating violations of such legislations. Rather, policies and initiatives that account for the different gaps that arise when we remove child employment are crucial to making stated legislations prevailing reality.

Two additional groups of children call for special attention in addressing some of the conditions this paper highlights, namely girls and certain urban children. Although they constitute a small share of all employed children, working children in Dar es Salaam and other urban areas seem to face certain precarities. From the current analysis, working children in urban areas are seen to work the longest hours. The locality difference is most pronounced in Dar es Salaam, where the median employed girl works more than twice the weekly number of hours of employed girls in rural areas. In the sharpest case, the median working girl aged 15–17 in Dar es Salaam is estimated to work over *forty* hours in a week. Furthermore, we observe in the TUS that educational opportunities, as indicated by hours of formal school attendance (including technical institutions), are not accessible to all children, most notable among working girls aged 15–17.

Richer analysis is provided by the UNICEF (2012) report discussed earlier, which specifically focuses on the challenges faced by urban children as urbanization persists. Unlike the composition for employed rural children, a significant share (43.1 percent) of working children in Dar es Salaam and other urban areas work outside of household farms or shambas. According to the 2011 HBS, an estimated 26.2 percent of them are unpaid family helpers in non-agricultural sectors and 13.7 percent are paid employees. Furthermore, almost everything is monetized in urban areas (e.g. food, health services, education, and housing), making access to income vital. These call for area-specific approaches to mitigate child employment as well as protecting children who are, in fact, employed. As the UNICEF (2012) report emphasizes, the relatively low poverty rates in urban areas imply that children from materially poor urban households likely face more precarious living circumstances than average statistics reveal. Moreover, with an urbanization rate that outpaces the population growth rate, the estimate of almost a quarter of mainland Tanzanian children living in urban areas based on the 2011 HBS will likely steadily increase. Accordingly, the conditions of urban areas for children's livelihoods will become increasingly important.

The final policy recommendation pertains to one of the starkest insights from the data, namely the sharp disproportionate share of household production work borne by girls. Given how pervasive this phenomenon is across all areas and ages as well as the complex set of socioeconomic dynamics that ensure its establishment starting at a young age in children's lives and persistence through time, a multifaceted approach is necessary to mitigate it. One part of the approach is technical in nature and is by itself an important but insufficient solution. Improved infrastructure in access to water and fuel will have a significant effect in reducing the overall amount of time and effort that households need to spend on household production. However, based on what we know about the gendered division of labor in advanced capitalist countries (e.g. Álvarez and Miles 2003; Coffey et al. 2020; Connelly and Kongar 2017), technological advancement by itself is not a sufficient condition for equitable distribution of unpaid care work. The sociological norms that legitimatize and sustain this gendered maldistribution of household production work must be addressed. Unless unpaid care work is equitably distributed across the sexes, the adverse outcomes endured by girls will persist even if lessened by technical improvements.

For Tanzanian children, we have seen that girls are no less likely to be working children nor do employed girls work less hours than their male counterparts. As previously stated, the combination of these two patterns put reinforcing work burdens on girls, jeopardizing their health, leisure, and concentration on education. To place this within the broader global context, according to Oxfam's most recent report, unpaid care work is a primary driver of the observed material disparities between men and women (Coffey et al. 2020). Unpaid care work is described as simultaneously being the "hidden engine" that keeps the world running and yet is also the cornerstone in an inequitable global economic system which especially marginalizes and impoverishes girls and women in the Global South.

6. CONCLUSION

What does it mean for a child to have a time deficit of twenty hours in a week? She likely spends less time in leisure and other personal care activities and subsequently, less time in school. The number of hours in a week are fixed, meaning some things give and work burdens

intensify to squeeze in all the commitments time-poor children face. The analysis above begins by identifying key categories of time use which individuals need to maintain themselves at a basic level, including sleep, personal hygiene, and leisure. We define thresholds for these activities, serving as the temporal counterparts of defining a consumption or income poverty line in a one-dimensional measure of poverty. Within these thresholds, we differentiate by age to reflect certain conditions generally deemed essential for children's growth and development. For example, the youngest group of children, aged 5–9, have higher thresholds for sleep and leisure. This differentiation reflects the physiological and cognitive needs for development believed to be crucial for children's growth across multiple dimensions, including the role of play as an avenue for fostering creativity and learning outside of the classroom.

Next, we examine two kinds of work. First, we look at time individuals spend on household production activities such as cooking, cleaning, caring for others, and fetching firewood and water. The other type of work involves time spent on income-generating activities, as well as thresholds for time spent commuting to such work. From data collected under the TUS, we observe that time spent on household production by children differs sharply by sex, where girls spend manifold the amount of time their male counterparts of the same age group and locality spend on unpaid care work. For example, girls aged 10–14 in other urban areas spend approximately 18 hours a week at the median on household production. This is higher than the number of hours observed among boys of any age group in any locality at the *75th percentile*.

This disparity does not persist when we look at children's engagement in income-generating activities, where girls are no less likely to be working children, nor do employed girls work fewer hours than employed boys. The phenomenon of being a working child appears pervasive across mainland Tanzania, where even among households of high consumption expenditures, the incidence of being a working child is approximately 25 percent. Nonetheless, the likelihood of being a working child is highest among rural children, where over two-thirds of children aged 10–14 are employed. This figure is even higher among older children aged 15–17. Yet, when we consider the number of hours worked by employed children, rural children tend to work much fewer hours than their urban counterparts. This difference is most pronounced for working children in Dar es Salaam. In particular, working children aged 5–17 in Dar es Salaam work an estimated 36.8 hours per week on average, which amounts to 11.2 more

weekly hours than children in other urban areas and 15.0 more hours than those in rural areas.[41] These figures imply a certain level of precarity in the lives of the over 90,000 working children in Dar es Salaam and the over 600,000 in other urban areas.

After accounting for these three activities, we calculate the shares and number of children who face a time deficit, i.e. children whose weekly employment and household production commitments coupled with the threshold for personal maintenance exceed the 168 hours available in a week. In examining differences by sex, area, and employment status, girls and working children unsurprisingly have the highest time poverty rates. Astonishingly, over 1.1 million employed children and over 70,000 non-employed children were estimated to be time-poor before even accounting for time needed for education. After incorporating thresholds based on the number of schooling hours specified in relevant education curricula, the number of time-poor children unsurprisingly increases, where over 4.1 million children are now estimated to be time-poor. Over 80 percent of these time-poor children are employed, where working children are 45.5 percentage points more likely to be time-poor than non-employed children. Looking by sex, non-employed girls were 7.7 percentage points more likely to be time-poor than non-employed boys, and this difference magnifies to 19.3 percentage points against girls among employed children. Taken together, employed girls are particularly burdened: an estimated 64.4 percent of them are time-poor.

These findings motivate a set of policy recommendations meant to collectively impact the lives of children to equitably resemble the declaration society has made to avow and protect children's right to health, development, and play. Being a working child is correlated with several observations which we believe undermine such rights, including not having enough time to fully engage in education activities. Even with a minimal threshold for schooling, which does not account for education-related activities outside of school (e.g. homework), an impressive number of children are revealed to be time-poor. The pervasiveness of being a working child across the distribution of consumption expenditures implies that it is driven by more than income constraints. Although it is important to account for the immediate impact of lost earnings in households' livelihoods – an issue addressed above with the proposal for a cash transfer scheme, effectively reducing child employment calls for a multidimensional approach. This includes policies to address the labor gaps that arise when children cease or reduce their

[41] Both of these differences are statistically significant at the 1 percent level.

employment, such as labor-saving technologies in agriculture and strengthening labor market conditions that promote the substitution of child employment with adult employment. With approximately 90% of all employed children working on the household farm or shamba, such policies could go a long way in reducing the demand for children's economically productive labor. Furthermore, academic calendars that are tailored to more closely follow Tanzania's lean agricultural season to reduce the tradeoff between spending time on education activities or working on the family farm are recommended.

Another policy area regards working children in Dar es Salaam and other urban areas, whose observed hours of schooling and employment raise concerns. More effort should be made to remedy the precarities faced by these children. The severity of their conditions can easily be dwindled in average statistics due to their relatively low share of the population and residency in the margins of the most affluent regions of the country. Furthermore, as urbanization outpaces population growth, conditions in urban areas for vulnerable children will magnify in time and grow in importance. Further research along more ethnographic lines or qualitative studies similar to the UNICEF (2012) report are necessary to enrich our understanding of the livelihood of marginalized urban children and how to and actually make cities more child friendly.

Lastly, the double work burden faced by girls from their excessively high shares in household production coupled with comparable employment incidence and hours calls for urgent action. More than any other area discussed, this problem calls for more than just a technical solution but a sociological one as well. Ceteris paribus, infrastructure development, such as readily accessible water and fuel sources, should reduce the overall level of household production work. Nonetheless, the inequitable burden of unpaid care work borne by girls and women is a more pervasive phenomenon which is deeply rooted in sociological norms that legitimize and sustain its persistence.

Changing the observed outcomes for girls and the implied effects on their health, development, educational prospects, and other protected rights call for more collective action and interrogation of specific norms often taken as givens. Infrastructure developments must be coupled with equitable distribution of care work across both sexes in the household to be effective. Further research is needed about how to effectively hold communities accountable to recourse this burden systematically placed on girls from a noticeably young age well into adulthood. The CRC, ACRWC, and related legislations declare equality of rights for all children regardless of their sex, material level of the household they belong to, and other dimensions of

social stratification. As a society, declaration of such rights obliges us to attend to the material conditions that secure and foster realities and outcomes in which they are reflected.

REFERENCES

Álvarez, Begoña, and Daniel Miles. 2003. "Gender Effect on Housework Allocation: Evidence from Spanish Two-Earner Couples." *Journal of Population Economics* 16 (2): 227–42.

Antonopoulos, Rania, Thomas Masterson, and Ajit Zacharias. 2012. "It's about 'Time' Why Time Deficits Matter for Poverty." Annandale-on-Hudson, NY: Levy Economics Institute of Bard College. http://www.levyinstitute.org/publications/?docid=1585.

Banerjee, Abhijit V., and Esther Duflo. 2012. *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*. Paperback first published. New York: PublicAffairs.

Becker, Gary S. 1965. "A Theory of the Allocation of Time." *The Economic Journal*, 493–517.

Beegle, Kathleen, Rajeev H. Dehejia, and Roberta Gatti. 2006. "Child Labor and Agricultural Shocks." *Journal of Development Economics* 81 (1): 80–96. https://doi.org/10.1016/j.jdeveco.2005.05.003.

Boyden, Jo, Stefan Dercon, and Abhijeet Singh. 2015. "Child Development in a Changing World: Risks and Opportunities." *The World Bank Research Observer* 30 (2): 193–219. https://doi.org/10.1093/wbro/lku009.

Boyden, Jo, Catherine Porter, Ina Zharkevich, and Karin Heissler. 2016. "Balancing School and Work with New Opportunities: Changes in Children's Gendered Time Use in Ethiopia (2006-2013)." Working Paper 161. Oxford: Young Lives.

Brooks, Sarah M. 2015. "Social Protection for the Poorest: The Adoption of Antipoverty Cash Transfer Programs in the Global South." *Politics & Society* 43 (4): 551–82. https://doi.org/10.1177/0032329215602894.

Burke, Kathleen, and Kathleen Beegle. 2004. "Why Children Aren't Attending School: The Case of Northwestern Tanzania." *Journal of African Economies* 13 (2): 333–55. https://doi.org/10.1093/jae/ejh011.

Children and Young People of Tanzania, UNICEF, and Government of Tanzania. 2019. "The Children and Young People's Agenda: Hopes and Dreams for Tanzania." Dar es Salaam, United Republic of Tanzania: UNICEF.

Coffey, Clare, Patricia Espinoza Revollo, Rowan Harvey, Max Lawson, Anam Parvez Butt, Kim Piaget, Diana Sarosi, and Julie Thekkudan. 2020. "Time to Care: Unpaid and Underpaid Care Work and the Global Inequality Crisis." Oxfam. https://doi.org/10.21201/2020.5419.

Connelly, Rachel, and Mesude Ebru Kongar, eds. 2017. *Gender and Time Use in a Global Context: The Economics of Employment and Unpaid Labor*. New York: Palgrave Macmillan.

Datzberger, Simone. 2018. "Why Education Is Not Helping the Poor. Findings from Uganda." *World Development* 110 (October): 124–39. https://doi.org/10.1016/j.worlddev.2018.05.022.

Edmonds, Eric V. 2007. "Child Labor." In *Handbook of Development Economics*, 4:3607–3709. Elsevier. https://doi.org/10.1016/S1573-4471(07)04057-0.

Ibhawoh, Bonny, and Jeremiah I. Dibua. 2003. "Deconstructing Ujamaa: The Legacy of Julius Nyerere in the Quest for Social and Economic Development in Africa." *African Journal of Political Science* 8 (1): 59–83.

International Labour Organization (ILO). 2018a. "Child Labour and the Youth Decent Work Deficit in Tanzania." Geneva: International Labour Organization. https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---ipec/documents/publication/wcms_651779.pdf.

———. 2018b. "Ending Child Labour by 2025: A Review of Policies and Programmes." Geneva: International Labour Organization. https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---ipec/documents/publication/wcms_653987.pdf.

Jacob, Thabit, and Rasmus Hundsbaek Pedersen. 2018. "Social Protection in an Electorally Competitive Environment (1): The Politics of Productive Social Safety Nets (PSSN) in Tanzania." Working Paper 109. GDI, The University of Manchester.

Jingu, John. 2017. "The Union of Tanganyika and Zanzibar: In Search of a Viable Structure." *The African Review* 41 (1): 92–115.

Kottasová, Ivana. 2020. "World Bank to Consider Giving Tanzania $500 Million Education Loan despite Ban on Pregnant Schoolgirls - CNN," January 24, 2020. https://www.cnn.com/2020/01/24/africa/tanzania-pregnant-girls-world-bank-loan-asequals-intl/index.html.

Larson, Reed W., and Suman Verma. 1999. "How Children and Adolescents Spend Time across the World: Work, Play, and Developmental Opportunities." *Psychological Bulletin* 125 (6): 701–36. https://doi.org/10.1037/0033-2909.125.6.701.

LHRC. 2019. "LHRC | Center for Reproductive Rights and the Legal and Human Rights Centre File a Complaint Challenging the Expulsion and Exclusion of Pregnant School Girls in Tanzania." 2019. https://www.humanrights.or.tz/posts/b/News/center-for-reproductive-

rights-and-the-legal-and-human-rights-centre-file-a-complaint-challenging-the-expulsion-and-exclusion-of-pregnant-school-girls-in-tanzania.

Martínez, Elin. 2017. *"I Had a Dream to Finish School": Barriers to Secondary Education in Tanzania*. New York, N.Y.: Human Rights Watch.

Minge-Klevana, Wanda. 1980. "Does Labor Time Decrease With Industrialization? A Survey of Time-Allocation Studies." *Current Anthropology* 21 (3): 279–98. https://doi.org/10.1086/202455.

National Bureau of Statistics (NBS) (Tanzania), and International Labour Organization (ILO). 2016. "Tanzania Mainland Child Labour Survey 2014: Analytical Report." Geneva: National Bureau of Statistics.

Nyerere, Julius K. 1968. "Education for Self-Reliance." *CrossCurrents* 18 (4): 415–34.

Organization of African Unity. 1990. "Twenty-Sixth Ordinary Session of the Assembly of Heads of State and Government of the OAU, African Charter on the Rights and Welfare of the Child." https://au.int/sites/default/files/pages/32903-file-african_charter_on_the_rights_welfare_of_the_child_english.pdf.

Rios-Avila, Fernando. 2016. "Quality of Match for Statistical Matches Used in the Development of the Levy Institute Measure of Time and Consumption Poverty (LIMTCP) for Ghana and Tanzania." Working Paper 873. Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.

Rosenzweig, Mark R., and Robert Evenson. 1977. "Fertility, Schooling, and the Economic Contribution of Children of Rural India: An Econometric Analysis." *Econometrica* 45 (5): 1065. https://doi.org/10.2307/1914059.

Sawo, Marokey. 2019. "Gender Disparities in Tanzanian Children's Housework: Insights from Conditional and Unconditional Quantile Regression Methods." Unpublished Manuscript. Annandale-on-Hudson, NY.

Schultz, Theodore W. 1960. "Capital Formation by Education." *Journal of Political Economy* 68 (6): 571–83. https://doi.org/10.1086/258393.

Sifuna, Daniel N. 2001. "African Education in the Twenty-First Century: The Challenge for Change." *Journal of International Cooperation in Education* 4 (1): 21–38.

———. 2007. "The Challenge of Increasing Access and Improving Quality: An Analysis of Universal Primary Education Interventions in Kenya and Tanzania since the 1970s." *International Review of Education* 53 (5–6): 687–99. https://doi.org/10.1007/s11159-007-9062-z.

Sumra, Suleman. 2015. *Will the "2014 Education and Training Policy" Prepare Tanzanian Children to Face Challenges of the 21st Century? HakiElimu Position Paper on the Education and Training Policy 2014*. Dar es Salaam: HakiElimu.

Tanzania Ministry of Education, Science and Technology. 2016a. *Basic Education Curriculum Standard III – VI*. Dar es Salaam, United Republic of Tanzania.

———. 2016b. *Curriculum and Syllabus for Pre-Primary Education*. Dar es Salaam, United Republic of Tanzania.

The Tanzania Cash Plus Evaluation Team. 2018. "Tanzania Youth Study of the Productive Social Safety Net (PSSN) Impact Evaluation: Endline Report." Florence, Italy: UNICEF Office of Research - Innocenti.

UNICEF, ed. 2012. *Cities and Children: The Challenge of Urbanisation in Tanzania*. Dar es Salaam, United Republic of Tanzania: UNICEF Tanzania.

———. 2018. "Global Initiative on Out-of-School Children: Tanzania Country Report." UNICEF. https://www.unicef.org/tanzania/media/596/file/Tanzania-2018-Global-Initiative-Out-of-School-Children-Country-Report.pdf.

United Nations. 1989. "General Assembly Resolution 44/25, Convention on the Rights of the Child, November 20." https://www.unicef.org/sites/default/files/2019-04/UN-Convention-Rights-Child-text.pdf.

Vickery, Clair. 1977. "The Time-Poor: A New Look at Poverty." *The Journal of Human Resources* 12 (1): 27. https://doi.org/10.2307/145597.

Zacharias, Ajit. 2011. "The Measurement of Time and Income Poverty." Working Paper 690. Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.

Zacharias, Ajit, Thomas Masterson, Fernando Rios-Avila, Kijong Kim, and Tamar Khitarishvili. 2018. "The Measurement of Time and Consumption Poverty in Ghana and Tanzania." Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.