Scientific Research Publishing

Open Journal of Social Sciences, 2022, 10, 467-488
https://www.scirp.org/journal/jss
ISSN Online: 2327-5960
ISSN Print: 2327-5952

Why Do Children Quit School in Tanzania?: Impact of Parental Preference on Schooling

Masoud Saleh Issa[1,2*], Maryam Issa Juma[3], Amran Said Suleiman[4]

[1]Research Institute of Finance and Management, South Western University of Finance and Economics, Sichuan, China
[2]School of Business, The State University of Zanzibar (SUZA), Zanzibar, Tanzania
[3]Beijing Institute of Technology, Beijing, China
[4]Department of Teachers Education, Ministry of Education and Vocational Training (MoEVT), Zanzibar, Tanzania
Email: *njiwali3@gmail.com

How to cite this paper: Issa, M. S., Juma, M. I., & Suleiman, A. S. (2022). Why Do Children Quit School in Tanzania?: Impact of Parental Preference on Schooling. *Open Journal of Social Sciences, 10,* 467-488.
https://doi.org/10.4236/jss.2022.1013033

Received: December 5, 2022
Accepted: December 27, 2022
Published: December 30, 2022

Abstract

This paper uses a Probit model to identify if parental preference in expenditure plays a significant role in children schooling. The study reveals that parental preference of education expenditure significantly influences child schooling, regardless of wealth or community characteristics. While the preference for alcohol and tobacco, health, and food expenditure have a negative influence on child schooling. However, when we control poverty and community characteristics, they show no influence. This signifies that the influence of increasing preference in alcohol, health, and food expenditure to child schooling will only affect poor families.

Keywords

Parental Preference, Child Schooling, Probit Model, Community Characteristics, School Dropout

1. Introduction

Out-of-school-children remain to be a global concern especially for the developing countries, from 2010 to 2013 their number rose by 2.4 million. It is estimated that there are more than 59 million out-of-school children; of those, 30 million live in Sub-Saharan Africa (Reuters, 2015). Tanzania as a Sub-Saharan African country, has taken different actions to improve its primary education: Tanzania started out a country ward program, Primary Education development (PEDP), both phases I and II between 2002-2006 and 2007-2011, to ensure that every eligible child gets the good quality of education. The program is an outcome of government efforts to translate Tanzania's education and train policy

(ETP) and the education sector development program (ESDP) goals into viable strategies and action for the development of primary education (Wabike, 2014). This is part of the government commitment to international conventions and agreement regarding improvement and access, equity and quality of basic education.

Indeed, Tanzania has made significant progress in primary enrollment (Mokoye, 2016), the survival to Grade 7; the final year of primary education for 10 to 19-year-old has increased steadily from 72.8 percent in 1991, 75.2 percent in 2004, to 82.1 percent in 2007 (Sabates, Akyeampong, Westbrook, & Hunt, 2011), 82.9 percent 2008/2009, 8.5 percent 2010/2011, 76.3 percent 2012/2013 and slightly decreased 73.6 percent 2014/2015 (National Bureau of Statistics, 2019). Funding from international bodies raises the percentage of children enrolled at primary school to reach nearly hundreds (Ngodu, 2009).

Despite the tremendous success in enrollment, drop out from primary schools remains to be a key constraint for achieving Universal Primary Education (UPE) in Tanzania (Sabates et al., 2011). Tanzania has one of the world's lowest rates of transition of both girls and boys from primary to secondary school; only 36 percent (Kati, 2013). Moreover, pupil drop up from primary education has become a measure of concern to Tanzania's authorities. The president Kikwete and the Deputy Minister of the Ministry of Education and Vocational Training show their concern about the 30% drop out from primary education (IRIN, 2007). In 2010, 19% of children between 7 to 14 years old were out of school (Education Policy and Data center, 2012). Indeed, the current government has gone further to use legislation to punish those parents whose children do not attend compulsory education (Reuters, 2015).

Tanzania has seven years of compulsory primary education, this education level is crucial since it prepares the young for adulthood, working life and further learning; primary education is the central for transmitting values for adult life, skills for work life and cognitive readiness to pursue in higher levels of learning (Ngodu, 2009). Therefore, it is very important to make sure that all the children pass through this education level, and understand the roots of the out-of-school-children problem and prevent it from its sources. Though there is no country-wise study dealing with the drop out, it is very important to identify appropriate modalities to build on the findings contained in national studies and reports to inform policy on the matter. Consequently, this work goes further to analyze, besides poverty, whether parents' preferences influence their children to quit from compulsory education.

2. Theoretical Background

Tanzania is a poor country with about 27% of its population under the poverty rate (World Bank, 2018) and with a large population under 14 ages. Improving the education system in Tanzania continues to be a challenging endeavor, as well as a major opportunity to alleviate poverty throughout the country (Read, 2011).

Even though different measures Tanzania has taken to improve its primary education, including waiving tuition at primary level in 2001 (Sabates et al., 2011), the drop out remains a challenge. For pupils to be either in school or out of school it will mainly depend on the cost benefit analysis. The cost of the family incurs for schooling including the opportunity cost for the time used for schooling (Zuilkowski, Jukes, & Dubeck, 2016), while the benefit in the future expectation of the education itself. Furthermore, out of school children can be either working or idle; if they are working means that the marginal utility from the child's contribution to the production of standard of living (through wages and lack of educational expenditure) is at least as large as the marginal utility of return to education (Edmonds, 2007a), whereas the child neither attend school nor working when the marginal utility associated with the returns to education is less than the foregone utility caused by schooling costs and the shadow value of child time. This happens when the marginal utility associated with extra leisure is at least as large as that of the contribution of the child's work to household welfare (Edmonds, 2007a).

The main obvious reason for children to quit school is poverty (Chaudry & Wimer, 2016). This may happen when household income from adult sources is below the subsistence income (Ranjan, 2001). Accordingly, the children's contribution to the household income will be used to pull the household out of poverty (Lieten, 2000; Ray, 2002) or when children neither afford schooling nor have opportunity to work. However, poverty is not only the major reason (UNICEF, 2013). On the contrary, some evidence shows that if the family has much more to do economically with more land and farm's animals to take care of, there would be greater need for children to help (Hedges, Borgerhoff Mulder, James, & Lawson, 2016).

Once again, the supply side of schooling plays a more significant role; this includes availability of schools which are affordable not only financially but also with the adequate quality that will minimize the opportunity cost of schooling (Azim Premji Foundation, 2013; Hilowitz et al., 2004; UNICEF, 2015). The quality of school influences the household decision making concerning the cost benefit analysis on child schooling. Since poor quality will decrease the child's chance of finding a good job in future (Cardoso & Verner, 2006).

Furthermore, there are social economic factors which influence the household perception and preference which in turn affect the demand for schooling (Gibbs & Heaton, 2014). There is a high correlation between child labor and dropout with social deprivation (Jayaraj & Subrahamanian, 2002). Many children face physical social obstruction to elementary education; most out of school children are in a family with an uneducated mother (ILO, 2002; Ngodu, 2009). Also, the parent's occupation plays significant role (Motkuri, 2006) together with rural and low income household (Ngodu, 2009), early marriage and pregnancy (Mokoye, 2016) force many girls to drop out of school together with few opportunities with higher education (Hilowitz et al., 2004).

Moreover, cultural norms believe that labor is the most productive use of child time, and boys and girls are min-adults so they are supposed to perform certain roles as their duty even at the expense of formal schooling (Hilowitz et al., 2004). Peasant and rural poor in general often consider education irrelevant, when it conflicts with work they tend to value, school will bring bad habits or away from tradition (Alarcon & Salazar, 1998). Similarly, false consciousness especially for agrarian society that education is not only unnecessary to the agriculture community but also harmful in the way that man of the pen is incapable of agricultural work (Motkuri, 2006). Additionally, parents' preferences and interests also matter (Tilak, 2002). However, it is argued that the students themselves play a significant role in school dropout especially due to the poor baseline on numeracy and literacy (Zuilkowski et al., 2016).

Tanzania has a lot of Social and economic patterns that are known to result in higher rates of out of school children. It is among the poorest countries with the majority of its population living in poverty (AEO, 2016). Furthermore, it has a low quality education system especially in rural areas (Jones, Schipper, Ruto, & Rajani, 2014), other findings go further and mention that the quality of primary education in Tanzania is in crisis (Sumra & Katabaro, 2014). Further, most of its population is rural and more than 80% involved in agriculture (CIA, 2016; Reuters, 2015). Moreover, Tanzania has one of the world's highest adolescent pregnancy and birth rates (Mokoye, 2016). Despite numbers of researchers dealing on child labor, there are very little numbers deal with drop out of primary and insignificant records which include idle children. Burke and Beegle use attendance in a region of Northwest in Tanzania and find that demand factors within the context of households have influence on attendance. Additionally, in 2014, a literacy survey in Tanzania mainland was conducted as a pilot in three regions; Dar-es-Salaam, Mbeya and Mtwara, the findings discovered that, parental ignorance had been the major reason for drop-out by 63.5 percent, followed by poverty; 14.7%, parent's separation; 14.4%, distance and early marriages; 1.2% each while health problems and bullying contributed to the drop out by; 6.2% (MoeVT, 2015).

Since there is a gap for national-wise studies which deals with the drop out as well as including the idle children, within the context of these acquisitions, this study widens our understanding of why children quit from school by focusing on multiple determinants leading to push out from schooling. Specifically, attempt to find out if beside poverty, the household preference matters on their children' shunning from school under given social economic variables.

We use 2010 Tanzania Panel Survey data and employ Probit model to analyze if parental preferences play a significant role in child schooling. We find that parental preferences play a role in child schooling: Specifically, we show that the fraction of expenditure used for alcohol and tobacco has a negative impact on the child schooling while the fraction for education expenditure has a positive influence. This emphasis on the parental preferences to the child schooling, this finding is new as far as my knowledge is concerned. Again, households without

sustainable food, those use less reliable sources of light (such as lamp, candle, firewood) within their houses, and those live in houses freely without renting or earning those houses have statistically negative impact to their children's schooling however, those household which earn livestock or have a member who is fishing have positive influence to their children schooling, these represent the impact of the poverty on children schooling.

Furthermore, the study shows the education of the mother's head of the household has a clear impact on the child's schooling (grandchild). This is also the new findings. Again, the study uncovers the importance of marriage in the family; this finding is new and needs more exploration. Indeed, the study shows that a monogamy family is superior for stability which in-turn provide more care to the child's schooling while those families who stay together without marriage have the worst result! Additionally, the government expenditure on infrastructure is very important for child schooling; the study shows that electricity is crucial. Fifthly, the "false consciousness" to the agrarian society seems to exist in Tanzania, since those employed in the agricultural sectors have higher chances of out of school children. Lastly, the study reveals that the community major market has a negative impact on child schooling. This is due to the opportunities available in the market which in-turn increases the opportunity cost of the schooling.

2.1. Estimation Framework

In order to determine what factors influence the out of school children, we use the Probit Model with the following framework:

The Model framework can be written as

$$\text{Prob}\left(\text{being in school}=1\right)=X\beta+\varepsilon_i$$

$$y_i=\begin{cases}0 & \text{if } y^*>0\\ 1 & \text{if } y_i^*\le 0\end{cases}$$

y_i^* unobserved; y_i observed.

And ε_i is the disturbance term, encompassing factors that are specific to the individual i that are not captured by the covariates in the regression.

where y denotes the binary variable of either a child is at school or out of school and X vectors of explanatory.

The marginal effect of x is given by

$$\Pr\left(y_i=1/\overline{x}_{(d)},d=1\right)-\Pr\left(y_i=1/\overline{x}_{(d)},d=0\right)$$

where $\overline{x}_{(d)}$ is the sample mean of all the other variables in the model.

A complete set of all variables with their summary detail is available in the **Appendix 1**.

2.2. Variables Explanation

The following are variable explanations.

2.2.1. Child Characteristics

Age: we include the starting age of primary which is 7 years and we end with 14 years instead of 13 years. Since the average finishing year is 15.1 (Sabates et al., 2011) there is a high chance of a 14 years' child to be in primary school. There is a higher drop out in lower classes than children who reach standard six class. Gender: For the primary level, there are no significant differences between boys and girls, however, since most economically active children are involved in agricultural, forestry, and fishery (Edmonds, 2007b); more likely to have more boys out of school. More girls are affected by pregnancy; in 2011 alone 5157 girls drop out due to pregnancy (Citizens, 2013) so more likely to affect them in the secondary level. Relation to household head: This is the dummy variable consisting of whether a head of a household is a parent (father or mother), grand parent, sister or brother, relative or non-relative; we expect the closer the relation the higher the chance for child schooling. However, someone can send the child to the relative in order to get a conducive education environment. Parent's mortality: We expect the child whose parents are alive have more chances to be in school than the orphans (Ngodu, 2009).

2.2.2. Household Characteristics

Gender of household head: The male household head may have more influence on the child schooling since he can easily use enforcement. However, the female household may have influence since females are more concerned for their children. Household head occupation: The households involved in agriculture and fishery are more likely to transfer their skills to their children and so have less preference for formal education. Household head education: Household head and parent's education increase the awareness and then preference for their children's education plays a vital role for children's education. We have also included the education of grandfathers and mothers to see if the impact is within the generation. Household size: Theoretically the family with the larger size is expected to have disadvantage for schooling due to the distribution of the resources, however some empirical results give contrast results.

2.2.3. Community Characteristics

Community play a significant role on children schooling, it provides environment that can either increasing or decreasing the demand for schooling: Location which can control for rural and urban areas, distance to the head quarter which proxy for availability of schools, distance to the market which influence the availability of the job opportunities, then influence preferences, distance to the border and to the trunk road, time taken for fetching water (Ray, 2002) which may affect the time for schooling and then increasing drop out.

2.2.4. Poverty Proxy

These are variables which proxy for household income; availability of food, sources of light in the house, earning of house, plot and animals, and if a member of the household is involved in fishing.

2.2.5. Parental (Household) Preference

Public expenditure in general and social sector in particular have influence on children schooling in a given society (Ray, 2002). We extend the concept of household expenditure with emphasis on household preferences. These variables measure the fraction of expenditures to the total expenditure. Increasing spending in education relative to other expenditures means giving more priority to it, while increasing the fraction of alcohol consumption is to give priority to alcohol. We expect increasing the fraction of consumption on education will increase the schooling of a child while increasing the fraction of consumption on alcohol will reduce the schooling chance.

3. Data and Descriptive Statistics

To determine whether the preference of household decisions affect the child schooling beside poverty, we use 2010 data from the National Panel Survey. This data covers the whole country, indeed, this data set has rich information of the household characteristics which enable us to control a lot of variables. The data have about 20,554 observations, after cleaning and removing observations out of the universe, like the age before 7 years and above 14 years, sick and children who cannot attend school due to disability, and finally, we remain with 4127 observations. Furthermore, since we are focusing on primary education; which is free and compulsory, there is no academic barrier within the seven years of primary school that will force a child to be out of school for failing the examination. Thus, we minimize the direct cost of schooling as well as controlling the ability of the child.

Appendix 1 represents the variable definitions together with the descriptive statistics of all variables used in the estimation. In the following subsection, we present some of the descriptive statistics for those most important variables.

The sample consists of 4127; 2072 are girls and 2055 are boys who are about 10 years' average and 664 of them are out of school. Again, those children who are out of school about 25% employed in the agricultural sector, 27% are unpaid family workers, 14% are idle, and 2% are those who are employed in private sector and unemployment, while 32% consider themselves too young for the job. However, they are out of school while they have already reached the age for primary school.

Table 1 shows the correlation between children at school and some of the key variables. The poverty proxy variables clearly indicate the negative correlation between the poverty and the child's schooling: Those who use firewood as source of their light indicating that they are in extremely poverty, additional to that, time taken to fetch water, worry for the food within a week and facing food difficulties within a year all are indicators for poverty which have negative correlation to the child schooling. Again, unpredictably, the households who rent the house have positive correlation to the child schooling while those who stay freely and those who earn houses have the negative one! This may signify that the one

Table 1. Correlation between the children at school and some of the variables.

	student	Time for water	Food shortage	Food shortage 2	Electric light
Student	1.000				
Time for fetching water	−0.072***	1.000			
Food worry within a week	−0.0712***	0.056***	1.000		
Food difficulties within	−0.039**	0.063***	0.315***	1.000	
Electric light	0.159***	0.159***	−0.209***	−0.104***	1.000
Lamp light	−0.007	0.086***	0.083***	0.051***	−0.761***
Firewoo light	−0.100***	0.102***	0.114***	0.092***	−0.062***
Other light	−0.172***	0.086***	0.014	0.025	−0.150***
Own house	−0.041***	0.093***	−0.047***	0.052***	−0.231***
Hh rent house	0.071***	−0.069***	0.034**	−0.023	0.228***
Hh free house	−0.022	−0.057***	0.030*	−0.050***	0.075***
Hh cult plot	−0.137***	0.184***	0.042***	0.087***	−0.497***
Hh fishing	0.024	−0.016	0.065***	0.001	−0.024
Hh earn livestock	−0.059***	0.196***	−0.044***	0.070***	−0.348***
Hh un uncultivated land	−0.029*	0.049***	0.032**	0.010	−0.097***
Food expe	−0.161***	0.125***	0.036**	0.053***	−0.365***
Health exp	0.000	0.025	0.130***	0.034**	−0.036**
Educexp	0.184***	−0.116***	−0.062***	−0.094***	0.302***
Recrexp	0.012	0.003	−0.034**	0.004	0.048***
Alcohol exp	−0.080***	−0.007	0.018	0.038**	−0.107***
Transpexp	0.071***	−0.025	0.079***	−0.013	0.149***
Communexp	0.103***	−0.121***	−0.142***	−0.109***	0.304***

*, **, and *** Denote $p < 0.1$, 0.05, and 0.01 respectively.

who is capable of renting a house could probably have reasonable work for paying for the children and again be more likely to be aware of the child's schooling.

Lastly, the expenditure preferences indicate that there is a negative correlation between the fraction of the food expenditure and the child schooling. This result may signify that those who spend most of their income on food means that they are just struggling to survive so that they are poorer.

Again the fraction of alcohol and tobacco consumption negatively correlated with the child schooling; the preference of the house in alcohol spending decreased schooling. Definitely, represents the ignorance of the people who comparatively spend much more on alcohol.

While, fraction of education, recreation, utilities, communication and transportation all have positively correlated with the child schooling these show how expenditure preference correlates to the child schooling.

4. Results and Discussion

To estimate the impact of parental preferences on a child's schooling, we employ the Probit model and use the linear probability model (LPM) as the baseline. The model is well fitted and the detailed results which include all the control variables shown in **Appendix 2**. The results show that boys have more than 3% chance of quitting compared to girls. This is factual at the primary level since most girls drop out from schooling after primary due to the early marriage and early pregnancy as described earlier.

Again, the question of who takes care of the child beside the parents, does not seem much important for the child schooling except for the non-relative to the head of the household on which the child has more than 15% chance of being out of school compared to the parents as head of the household. Additionally, compared to the deceased father of a child, the results show that other states of father show no significance different as shown by the literature except if the father is unknown. The possible explanation is due to the fact that most of the parents take care of their grandchildren when their young daughters have children without known fathers (according to this finding, the child whose head of the household is grandparents have slightly higher schooling chances compared to the parent's head of the household). This indicates that the physical appearance of the father in the household is not so significant for a child's schooling but a child who from the beginning does not know his/her father has a greater chance of being in school compared to that child whose father has died.

However, in case of mother's state with reference to the deceased, only those who are out of the household have positive significance to the child schooling; the child whose mother is outside the household has significantly higher chance of being in school compared to the child whose mother is deceased. This may signify the effect of empowering women to child schooling regardless if they are out of the household and still can have a strong contribution to their children's education.

Furthermore, a child's father who has primary and secondary education have about 6% and 10% respectively high chance of schooling compared to the child's father without education, while for mothers, only secondary level influence to the child's education with about 8% more chance which is slightly less than that of the father. Unexpectedly, the education of the mother of the household head is about 5% and 9% for primary and secondary respectively, compared to the uneducated head of the household mother. This shows how far the long run mother education impacts the parent preference on education.

Household family size shows no influence on child schooling, as explained in the introduction that the literature has different results for that. Additionally, household age and gender have no influence on child schooling. Surprisingly, the family stability plays a very significant impact to the child schooling, the marriage state of the house head represents that stability; compare to the head of the household who have a monogamy marriage, there is about 3% less chance on

child schooling for the polygamist and the single, widower/widow and divorced house head, and 11% for those who live together without marriage. These results indicate that the household state of marriage is crucial for bringing family values which have a direct impact on child schooling.

Additionally, compared to the agricultural sector of employment, household head employees in government sectors and other forms of employment besides the private sectors, their children have about 7% more chance to be in school. Surprisingly, without controlling the household head, poverty and community characteristics, even unemployed households' head their kids have a 4% chance of being in school compared to those employed in agriculture. The result emphasizes on the parent's education preferences which have been affected by the agricultural society beside their poverty.

Furthermore, the community characteristics may proxy for the quality of school and job opportunities which impact the opportunity cost of schooling and then the parent's decision making of their children's schooling. The results show that the distance to the district headquarters and that to the trunk road have no influence on the child schooling. However, distance to town and the border has a negative effect on child schooling. This is to say that the closer the town and borders to the household the higher the chance of schooling, since, as expected the better school to be in town, and better environment to the border. In contrast, the distance to the market has a positive influence, this means that, the closer the market, the less the schooling due to the job opportunity which affects the parental preference due to increasing school opportunity cost. Additionally, there is about 49% more schooling chance for urban households compared to the rural, however there is no difference between Tanzania mainland and Zanzibar.

Additionally, Table 2 shows the effect of poverty on the school of children, poverty associated with the government infrastructure plays a crucial role. The source of light used within the household is a good proxy for that in Tanzania's environment, compared to those households which use electricity or solar. The schooling chance for the children whose household uses lamps, firewood and other sources are about 4% and 19% less, respectively. This finding is very important for achieving the Universal Primary Education goals.

Further, households who worry about their food within a week, show about 2% less chance for their children to be in school while those who face the food difficulties within a year, found no significance at all. Also, compared to those earning a house, statistically there is no difference to those who rent, however, there is about 7% less chance for the children schooling to the household who stay freely in the house, which may be signaling the poverty state. Once again, there is about more than 3% higher schooling chance for the kids whose member of the household earns livestock or fishing which signify extra income within a household. However, there is no influence for the members of the household who cultivate or earn uncultivated plots.

Table 2. Probit results shows the impact of the poverty to the child schooling.

Variables	(LPM)	Probit Model 3	Probit Model 4
Food worry for past 7 days	−0.025* (0.061)	−0.023** (0.051)	−0.022* (0.060)
Lamp as source of light	−0.008 (0.577)	−0.045** (0.029)	−0.036* (0.095)
Firewood as source of light	−0.191*** (0.002)	−0.207*** (0.007)	−0.180** (0.032)
Other sources of light	−0.169*** (0.000)	−0.201*** (0.000)	−0.180*** (0.000)
Hh live in the house freely	−0.067** (0.015)	−0.067** (0.023)	−0.074*** (0.014)
A member of hh fishing	0.056** (0.025)	0.039** (0.035)	0.040** (0.029)
Hh earn livestock	0.055*** (0.001)	0.031** (0.024)	0.038*** (0.011)
Number of obs	3860	3854	3854
Log likelyhood	-	−1460.8	−1449.0
Prpb > chi2/Prob > F	0.000	0.000	0.000
Pseudo R^2/R^2	0.138	0.166	0.173

Note: LPM = Linear Probability Model (LPM), E = Expenditure, TE = total expenditure, The first column (LPM) shows a linear Probability Model with heteroskedasticity robust error. Probit model 3 including child and household characteristics while model 4 including the community characteristics. *Significant at 10%, **5% and ***1%, and under parentheses are p values.

Table 3 shows the effect of the fraction of different expenditures to the total expenditures on children dropout. It can be clearly observed that education priority of the household expenditure plays a significant role in child schooling, regardless if the person is poor or rich. Without controlling poverty, food shows a negative impact since, higher food fraction to the total expenditure the poorer the household, due to the fact that food is an immediate necessity. Households who spend much proportion for food will be more likely to have below substantial income; so that they may use children for labor or fail to cover their schooling costs.

Further, the fraction of expenditure used for alcohol and tobacco has a significant negative impact on child schooling; higher fraction, less the chance of child schooling. Normally, those people who are not responsible to their family spend more on alcohol and tobacco. However, when we control for poverty and community characteristics, alcohol consumption shows no impact; these results may be interpreted that, those poor people who consume alcohol, more likely they use the local one which is cheaper but stronger, which will have more influence

Table 3. Probit results show the impact of the expenditures preference to the child schooling.

Variables	LPM	Probit Model1	Probit Model2	Probit Model3	Probit Model4
Fraction of education E to the TE	0.455*** (0.001)	1.103*** (0.000)	1.037*** (0.000)	1.248*** (0.000)	1.182*** (0.000)
Fraction of health E to the TE	0.029 (0845)	−0.385*** (0.002)	−0.190* (0.130)	0.038 (0.777)	0.064 (0.639)
Fraction of the food E to the TE	−0.088 (0.488)	−0.453*** (0.000)	−0.230** (0.025)	−0.055 (0.621)	−0.023 (0.836)
Fraction of the recreation E to the TE	−0.234 (0.671)	0.022 (0.987)	−0.385 (0.779)	0.186 (0.911)	0.326 (0.851)
Fraction of the alcohol and tobacco E to the TE	−0.337** (0.047)	−0.627*** (0.000)	−0.362*** (0.006)	−0.211* (0.133)	−0.157 (0.266)
Fraction of the transportation E to the TE	0.097 (0.493)	−0.183 (0.141)	−0.011 (0.926)	0.121 (0.364)	0.156 (0.242)
Fraction of the communication E to the TE	−0.086 (0.718)	−0.014 (0.941)	−0.120 (0.560)	−0.095 (0.630)	−0.107 (0.587)
Number of obs	3860	4120	4118	3854	3854
Log likelihood		−1608.5	−1551.7	−1460.8	−1449.0
Prpb > chi2/Prob > F	0.000	0.000	0.000	0.000	0.000
Pseudo R^2/R^2	0.138	0.117	0.148	0.166	0.173

Note: LPM = Linear Probability Model (LPM), E = Expenditure, TE = total expenditure, The first column (LPM) shows a linear Probability Model with heteroscedasticity robust error. Probit model 1 only controlled for child characteristics, model 2, and model 3 including household characteristics and poverty proxy respectively, while the model 4 involved all control variables including community characteristics (proxy for school quality). *Significant at 10%, **5% and ***1%, and under parentheses are p values.

on children who drop out.

Then they will be not aware of their children's education, and regarding the income they have their children will have less chance for education. While spending on communication and transportation show no influence on child schooling.

5. Summary and Recommendations

This study uses the Probit model to analyze if parental preference plays a significant role in children's school dropout. Child dropping out of primary school is a major concern to the Tanzania authority due to poverty and ignorance of some parents in enrolling their children. To the best of my knowledge this is the first study to cover the whole country by using the national panel survey data. We

make the following contribution:

Firstly, it statistically shows that the fraction of expenditure used for alcohol and tobacco has a negative impact on child schooling while the fraction of expenditure used for education has a positive influence. However, when we control for the poverty and community characteristics, alcohol consumption shows no influence on children's schooling; this emphasis on the parent's education preferences to the child's schooling. This finding is new to the best of my knowledge. Additionally, the study shows the impact of poverty on child schooling; those households without sustainable sources of light, uncertainty of food availability, and inability to rent or own a house, have negative impacts on child's schooling. In contrast, a household who earns livestock or has a member who is fishing (as a source of earning) has shown a positive impact to the school of a child, emphasizing on the wealth contribution to the child schooling.

Secondly, the study shows the education of the household head's mother (grandmother) has a clear impact on the child's (grandchild) schooling. Thirdly, the finding of this study uncovers the importance of marriage in the family; this finding is new and needs more exploration. Indeed, the study shows that a monogamy family is superior for stability which in-turn provide more care to the child schooling while those families who stay together without marriage have the worst result! Fourthly, the government expenditure on infrastructure is very important to child schooling; the study shows that electricity is crucial.

The Fifth contribution, the "false consciousness" to the agrarian society seems to exist in Tanzania, since those employed in the agricultural sectors have higher chances of out of school children.

Lastly, the study reveals that the community major market has a negative impact on child schooling. This is due to the opportunities available in the market which in-turn increases the opportunity cost of the schooling.

The study recommends that, instead of enforcing parents or threatening them to jail (as some authority orders) the policy makers should focus on the infrastructure to reduce the quality gap between rural and urban, especially to provide electricity services to the whole country. Additionally, policy makers should concentrate on bringing awareness to the people on the importance of education. Emphasizing family stability through marriage, discouraging alcohol and tobacco consumption, and encouraging household's self-contribution to education despite the fact that primary education is provided freely.

Acknowledgements

I would like to acknowledge the support and motivation of my supervisor, Professor Shihe Fu and my colleague Wang Rong. Special thanks also go to the Chinese Scholarship Council (CSC) for the scholarship awarded to me to pursue my PhD in the Research Institute of Finance and Management, South western University of Finance and Economics-China. The authors declare no conflicts of Interest to disclose this paper.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

AEO (2016). *Tanzania Economic Outlook.* https://www.afdb.org/en/countries/east-africa/tanzania/tanzania-economic-outlook/

Alarcon, G., & Salazar, M. (1998). *Child Work and Education.* UNICEF Ashgate Publishers.

Azim Premji Foundation (2013). *Who Drops out of School? Evidence from an Action Research Study in Yadgir District, Karnataka.*

Basu, K. (1999). Child Labor: Cause, Consequence, and Cure, with Remarks on International Labor Standards. *Journal of Economic Literature, 37,* 1083-1119. https://doi.org/10.1257/jel.37.3.1083

Cardoso, A. R., & Verner, D. (2006). *School Drop-out and Push-out Factors in Brazil: The Role of Early Parenthood, Child Labor, and Poverty.* IZA Discussion Paper No. 2515, IZA-Institute of Labor Economics. https://doi.org/10.2139/ssrn.955862

Chaudry, A., &Wimer, C. (2016). Poverty Is Not Just an Indicator: The Relationship between Income, Poverty, and Child Well-Being. *Academic Pediatrics, 16,* S23-S29. https://doi.org/10.1016/j.acap.2015.12.010

CIA (2016). *Tanzania Economy Profile.* http://www.indexmundi.com/tanzania/economy_profile.html

Citizens, T. (2013). *Dropout Rate Unacceptable.* The Citizens. https://www.thecitizen.co.tz/tanzania/oped/editorial-school-dropout-rate-a-cause-for-concern-2490240

Edmonds, E. V. (2007a). Chapter 57 Child Labor. In T. Schultz, & J. Strauss (Eds.), *Handbook of Development Economics* (Vol. 4, pp. 3607-3709). North Holland. https://doi.org/10.1016/S1573-4471(07)04057-0

Edmonds, E. V. (2007b). *Child Labor.* NBER Working Paper Series, National Bureau of Economics Reserach.

Education Policy and Data Center (2012). *EPDC Spotlight on Tanzania.* https://www.epdc.org/node/5941.html

Gibbs, B. G., & Heaton, T. B. (2014). Drop out from Primary to Secondary School in Mexico: A Life Course Perspective. *International Journal of Educational Development, 36,* 63-71. https://doi.org/10.1016/j.ijedudev.2013.11.005

Hedges, S., Borgerhoff Mulder, M., James, S., & Lawson, D. W. (2016). Sending Children to School: Rural Livelihoods and Parental Investment in Education in Northern Tanzania. *Evolution and Human Behavior, 37,* 142-151. https://doi.org/10.1016/j.evolhumbehav.2015.10.001

Hilowitz, J., Kooijmans, J., Matz, P., Dorman, P., de Kock, M., & Alectus, M. (2004). *Child Labour: A Textbook for Uniersitystdents.* International Labour Organization.

ILO (2002). *Towards a Future without Child Labour.* International Labour Organization.

IRIN (2007). *The Inside Story on Emergencies Concern over School Drop-Out Rate.* United Nations/OCHA. http://www.irinnews.org/report/72628/tanzania-concern-over-school-drop-out-rate

Jayaraj, D., & Subrahamanian, S. (2002). Child Labor in Tamil Nadu in the 1980's: A Pre-

liminary Account of its Nature, Extent and Distribution. *Economic and Political Weekly, 37,* 941-954.

Jones, S., Schipper, Y., Ruto, S., &Rajani, R. (2014). Can Your Child Read and Count? Measuring Learning Outcomes in East Africa. *Journal of African Economies, 23,* 643-672. https://doi.org/10.1093/jae/eju009

Kati, M. (2013). *55,000 Tanzanian Schoolgirls Pinched, Prodded and Expelled for Pregnancy.* Thomson Reuters Foundation. http://news.trust.org//item/20130926134331-sh1dt/?source=hptop

Lieten, G. K. (2000). Children, Work and Education-I: General Parameters. *Economic and Political Weekly, 35,* 2037-2043.

MoeVT (2015). *Education for All 2015 National Review: United Republic of Tanzania—Mainland.* The United Republic of Tanzania, Ministry of Education and Vocational Training. http://unesdoc.unesco.org/images/0023/002314/231484e.pdf

Mokoye, K. (2016). *Early Marriage, Pregnancy Force Tanzanian Teenage Girls to Drop Out of School.* Thomson Reuters Foundation. http://www.reuters.com/article/us-tanzania-girls-education-idUSKCN0YH1FQ

Motkuri, V. (2006). *Child Labour and Educational Deprivation of Children: A Review of Literature.* Munich Personal RePEcAcrchie.

National Bureau of Statistics (2019). *National Panel Survey 2014-2015, Wave 4.* (1-104). National Bureau of Statistics, Ministry of Finance and Planning.

Ngodu, S. (2009). *Alarming Drop-out Rate: A Threat of Internal Efficiency in Tanzania Primary Education.* http://www.natcomreport.com/Tanzania/pdf-new/alarming.pdf

Ranjan, P. (2001). Credit Constraints and the Phenomenon of Child Labor. *Journal of Development Economics, 64,* 81-102. https://doi.org/10.1016/S0304-3878(00)00125-5

Ray, R. (2002). The Determinants of Child Labour and Child Schooling in Ghana. *Journal of African Economies, 11,* 561-590. https://doi.org/10.1093/jae/11.4.561

Read, R. to. (2011). *Our Work in Tanania.* https://www.roomtoread.org/media/633977/tanzania.pdf

Reuters (2015). *Tanzania to Punish Parents of Children out of School in Fresh Push to Education.* Standard Group Limited. http://www.standardmedia.co.ke/article/2000185515/tanzania-to-punish-parents-of-children-out-of-school/?articleID=2000185515&story_title=tanzania-to-punish-parents-of-children-out-of-school-in-fresh-push-to-education&pageNo=2

Sabates, R., Akyeampong, K., Westbrook, J., & Hunt, F. (2011). *School Dropout: Patterns, Causes, Changes and Policies.* Education for All Global Monitoring Report 2011, United Nations Educational, Scientific and Cultural Organization.

Sumra, S., & Katabaro, J. K. (2014). *Declining Quality of Education: Suggestions for Arresting and Reversing the Trend* (pp. 1-62). ESRF Discussion Paper 63, The Economic and Social Research Foundation. http://www.thdr.or.tz/docs/THDR-DP-63.pdf

Tilak, J. B. G. (2002). Education Poverty in India. *Review of Development and Change, 7,* 1-44. https://doi.org/10.1177/0972266120020101

UNICEF (2013). *Global Initiative on Out-of-School Children.*

UNICEF (2015). *Fixing the Broken Promise of Education for All: Findings from the Global Initiative on Out-of-School Children.* https://eric.ed.gov/?id=ED560017

Wabike, P. (2014). Educating a Nation towards Self-Reliance: Tanzania's Journey in Search for an Education That Is Meaningful to Its People. *Educational Research for*

Policy and Practice, 14, 19-32. https://doi.org/10.1007/s10671-014-9169-5

World Bank. (2018). *Tanzania Overview.*

Zuilkowski, S. S., Jukes, M. C. H., & Dubeck, M. M. (2016). "I Failed, No Matter How Hard I Tried": A Mixed-Methods Study of the Role of Achievement in Primary School Dropout in Rural Kenya. *International Journal of Educational Development, 50,* 100-107. https://doi.org/10.1016/j.ijedudev.2016.07.002

Appendixes

Appendix I

Table A1. Descriptive statistics.

Variable	Mean	Standard deviation	minimum	maximum
Child Characteristics				
Child at school stud = 1 if a child is at school and 0 if the child is out of school	0.839	3.368	0	1
Gender of the child male = 1 if a child is boy and 0 if otherwise	0.498	0.500	0	1
Age of the child (age)	10.391	2.265	7	14
Relation to the household head				
Child (rhhh_child) if the head is father or mother	0.702	0.457	0	1
Step Child (rhhh_schild)	0.036	0.187	0	1
Sister (rhhh_sister) if the head is brother or sister	0.007	0.085	0	1
Grandchild (rhhh_gchild)	0.176	0.381	0	1
Relative (rhhh_rel) if the head is other relative	0.070	0.256	0	1
Non relative (rhhh_nonrel) if the head is non relativ	0.008	0.088	0	1
State of the parents				
Father in the household (fath_in)	0.611	0.488	0	1
Father dead (fath_dead)	0.097	0.296	0	1
Father out of the household (fath_out)	0.281	0.450	0	1
Father unknown (fath_unkn)	0.011	0.103	0	1
Mother in the household (moth_in)	0.724	0.445	0	1
Mother out of the household (moth_out)	0.221	0.415	0	1
Mother dead (moth_dead)	0.052	0.222	0	1
Mother unknown (moth_unknown)	0.002	0.049	0	1
Parents education				
Father without education (fath_noed)	0.066	0.249	0	1
Father with primary education (fath_primed)	0.225	0.417	0	1
Father with secondary education (fath_seced)	0.044	0.206	0	1
Father above secondary education (fath_highed)	0.006	0.074	0	1
Father's education unknown (fath_unknwed)	0.659	0.474	0	1
Mother without education	0.055	0.155		
Mother with primary education (moth_primed)	0.168	0.374	0	1
Mother with secondary education (moth_seced)	0.025	0.155		
Mother above secondary education (moth_highed)	0.002	0.041		
Mother's education unknown (moth_unked)	0.028	0.164	0	1
Mother's education missed (moth_edmiss)	0.723	0.448		

Continued

Major fuel use for lighting				
Electric_light	0.195	0.396	0	1
Lamp_light	0.704	0.456	0	1
Firewood_light	0.016	0.124	0	1
Other_light	0.085	0.279	0	1
Ownership of the house				
Household lie free in the house (free_house)	0.060	0.238	0	1
Household rent the house (rent_house)	0.082	0.275	0	1
Household own the house (own_house)	0.857	0.350	0	1
Household member cultivate plot (hhcult_plot)	0.777	0.416	0	1
Household member fishing (hh_fishing)	0.049	0.216	0	1
Household member own livestock (hhearn_livest)	0.632	0.482	0	1
Household member earn a farm plot that do not cultivated plot (hhearn_uncultplot)	0.142	0.350	0	1
Community Characteristics				
Percentage under agricultural within 1 km buffer (perc_agr)	28.056	24.277	0	100
Household distance to the nearest trunk road (dist_road)	20.194	24.682	0	135.3
Distance to the nearest town (dist_town)	44.150	41.021	0.5	192.8
Distance to the nearest major market (dist_market)	76.022	55.629	0.4	255.2
Distance to the nearest border (dist_border)	173.287	96.998	2.4	250.3
Distance to the headquarters of the district of the residents (dist_distheadquat)	36.664	73.334	0.1	1104.3
Those from Tanzania mainland (mainland)	0.845	0.362	-	1
Household preference (fraction of the total expenditure)				
Food and nonalcoholic beverage (exp_food)	0.736	0.143	0.171	1
Alcohol and tobacco (exp_alctob)	0.021	0.054	0	0.663
Education (exp_ed)	0.047	0.066	0	0.572
Health (exp_health)	0.037	0..064	0	0.604
Recreation (exp_recr)	0.000	0.005	0	0.118
Utilities: water, kerosene lighting (exp_utilities)	0.040	0.042	0	0.333
Communication (exp_comm)	0.028	0.037	0	0.413
Transportation (exp_trans)	0.041	0.071	0	0.731

Appendix II: Probit Results,

Table A2. Factors affecting Child's schooling.

Variables	(LPM)	Probit Model 1	Probit Model 2	Probit Model 3	Probit Model 4
Fraction of education expenditure (E) to the total expenditure (TE)	0.455*** (0.001)	1.103*** (0.000)	1.037*** (0.000)	1.248*** (0.000)	1.182*** (0.000)
Fraction of health E to the TE	0.029 (0845)	−0.385*** (0.002)	−0.190* (0.130)	0.038 (0.777)	0.064 (0.639)
Fraction of the food E to the TE	−0.088 (0.488)	−0.453*** (0.000)	−0.230** (0.025)	−0.055 (0.621)	−0.023 (0.836)
Fraction of the recreation E to the TE	−0.234 (0.671)	0.022 (0.987)	−0.385 (0.779)	0.186 (0.911)	0.326 (0.851)
Fraction of the alcohol and tobacco E to the TE	−0.337** (0.047)	−0.627*** (0.000)	−0.362*** (0.006)	−0.211* (0.133)	−0.157 (0.266)
Fraction of the transportation E to the TE	0.097 (0.493)	−0.183 (0.141)	−0.011 (0.926)	0.121 (0.364)	0.156 (0.242)
Fraction of the communication E to the TE	−0.086 (0.718)	−0.014 (0.941)	−0.120 (0.560)	−0.095 (0.630)	−0.107 (0.587)
Child characteristics					
Male	−0.035*** (0.002)	−0.037*** (0.000)	−0.035*** (0.000)	−0.032*** (0.002)	−0.031*** (0.003)
Age	0.017*** (0.000)	0.014*** (0.000)	0.014*** (0.000)	0.014*** (0.000)	0.014*** (0.000)
Grandchild of the hhh	0.041* (0.120)	0.020 (0.233)	0.035* (0.061)	0.036* (0.066)	0.034* (0.086)
Sister or brother of hhh	0.022 (0.772)	0.036 (0.441	0.025 (0.604)	0.022 (0.626)	0.024 (0.643)
Other relative of the hhh	0.014 (0.613)	0.018 (0.445)	0.010 (0.671)	0.013 (0.621)	0.011 (0.666)
Non relative of the hhh	−0.110 (0.241)	−0.172** (0.051)	−0.162* (0.065)	−0.168* (0.073)	−0.160* (0.084)
Father in the hh	0.156* (00098)	0.873 (0.963)	0.808 (0.953)	0.833 (0.974)	0.852 (0.977)
Father out of the hh	0.018 (0.415)	0.030* (0.085)	0.026* (0.127)	0.019 (0.318)	0.018 (0.320)
Father unknown	0.095** (0.053)	0.076*** (0.011)	0.065** (0.047)	0.076** (0.015)	0.074** (0.022)

Continued

Mother out of the household	0.066** (0.029)	0.055*** (0.005)	0.048*** (0.013)	0.049** (0.017)	0.049*** (0.008)
Mother in the household	0.084 (0.612)	0.109 (0.518)	0.108 (0.496)	0.079 (0.613)	0.071 (0.640)
Mother unknown	−0.182 (0.209)	−0.161 (0.362)	−0.171l (0.345)	−0.213 (0.293)	−0.227 (0.274)
Father primary education	0.094*** (0.003)	0.078*** (0.000)	0.069*** (0.000)	0.064*** (0.000)	0.058*** (0.001)
Father secondary education	0.150*** (0.000)	0.120*** (0.000)	0.120*** (0.000)	0.105*** (0.000)	0.101*** (0.000)
Father > secondary education	0.079 (0.333)	0.095*** (0.003)	0.073* (0.116)	0.048 (0.502)	0.042 (0.561)
Mother primary education	0.037 (0.170)	0.029* (0.118)	0.025 (0.171)	0.010 (0.613)	0.012 (0.550)
Mother secondary education	0.061* (0.087)	0.089*** (0.000)	0.087*** (0.000)	0.074*** (0.014)	0.077*** (0.007)
Mother high education	0.097** (0.040)	-	-		
Household size	0.000 (0.726)		0.000 (0.926)	−0.000 (0.729)	0.000 (0.849)
Household head (HHH) age	−0.001* (0.112)		−0.000 (0.660)	−0.000 (0.387)	−0.001 (0.331)
HHH male	−0.020 (0.456)		−0.008 (0.729)	−0.016 (0.476)	−0.018 (0.424)
HHH polygamy	−0.035** (0.052)		−0.034** (0.038)	−0.034** (0.048)	−0.031* (0.070)
HHH living together	−0.122*** (0.000)		−0.116*** (0.000)	−0.108*** (0.000)	−0.105*** (0.000)
HHH separate or single	−0.042* (0.104).		−0.036 (0.157)	−0.032 (0.227)	−0.036 (0.179)
HHH government employee	0.068*** (0.001)		0.064*** (0.001)	0.076*** (0.000)	0.080*** (0.000)
HHH private sector employee			−0.004 (0.847)	−0.018 (0.552)	−0.021 (0485)
HHH other employee			0.069*** (0.000)	0.068*** (0.000)	0.066*** (0.000)
HHH unemployment	0.040 (0.167)		0.044** (0.025)	0.033 (0.165)	0.029 (0.232)

Continued

HHH father primary education	0.014 (0.347)	0.018* (0.138)	0.015 (0.242)	0.014 (0.275)
HHH father secondary ed	−0.005 (0.877)	0.002 (0.954)	−0.006 (0.893)	−0.001 (0.988)
HHH father > secondary ed	0.055 (0.287)	0.064 (0.239)	−0.006 (0.893)	0.088** (0.019)
HHH mother primary education	0.046*** (0.005)	0.051*** (0.000)	−0.055*** (0.000)	0.051*** (0.000)
HHH mother secondary education	0.084*** (0.013)	0.078*** (0.005)	0.098*** (0.000)	0.096*** (0.000)
HHH mother > secondary education	0.016 (0.829)	-	-	-
Food worry for past 7 days	−0.025* (0.061)		−0.023** (0.051)	−0.022* (0.060)
Food difficulties within a year	0.010 (0.538)		0.008 (0.508)	0.010 (0.431)
Hh minutes for fetching water				0.000 (0.588)
Lamp as source of light	−0.008 (0.577)		−0.045** (0.029)	−0.036* (0.095)
Firewood as source of light	−0.191*** (0.002)		−0.207*** (0.007)	−0.180** (0.032)
Other sources of light	−0.169*** (0.000)		−0.201*** (0.000)	−0.180*** (0.000)
Hh live in the house freely	−0.067** (0.015)		−0.067** (0.023)	−0.074*** (0.014)
Hh rent a house	0.020 (0.305)		0.031 (0.166)	0.027 (0.256)
A member of hh fishing	0.056** (0.025)		0.039** (0.035)	0.040** (0.029)
Hh cultivate plot	−0.0.13 (0.470)		−0.011 (0.591)	−0.001 (0.973)
Hh earn uncultivated plot	−0.008 (0.643)		−0.004 (0.792)	−0.007 (0.620)
Hh earn livestock	0.055*** (0.001)		0.031** (0.024)	0.038*** (0.011)
Percentage of agricultural land near hh	−0.000* (0.087)		−0.000 (0.145)	0.000* (0.057)

Continued

Distance to town (Km)	−0.001*** (0.006)				−0.000*** (0.007)
Distance to the market	0.000* (0.098)				0.000* (0.069)
Distance to border	−0.000*** (0.003)				−0.000*** (0.010)
Distance to the trunk road	0.000 (0.689)				0.000 (0.489)
Distance to the district headquarter	0.000 (0.476)				0.000 (0.749)
urban	0.048*** (0.000)				0.049*** (0.002)
mainland	0.022 (0.369)				0.035 (0.188)
Number of obs	3860	4120	4118	3854	3854
Log likelyhood	0.000	−1608.5	−1551.7	−1460.8	−1449.0
Prpb > chi2/Prob > F	0.138	0.000	0.000	0.000	0.000
Pseudo R2/R2		0.117	0.148	0.166	0.173

Note: LPM = Linear Probability Model (LPM), E = Expenditure, TE = total expenditure, The first column (LPM) shows linear Probability Model with heteroscedasticity robust error, Probit model1 only controlling for child characteristics, model 2, and model 3 including household characteristics and poverty proxy respectively, while the model 4 involving all control variables including community characteristics (proxy for school quality). *Significant at 10%, **5% and ***1%. And under parentheses are p values.