Journal of Economics and Sustainable Development
ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online)
Vol.4, No.10, 2013

The Value and Time Allocation in Rural Tanzania

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Abstract
This study aim to analyze the rural household work, leisure and school time and how it is allocated among the various activities by socio-economic and demographic characteristics of individuals. The time spent on wages and a non-wages activity is almost the same while leisure time for women is reduced due to housework and child care activities. Male in the rural spends more time in wage economic activities while women spend more time on housework and child care. The time use patterns in rural Tanzania change depend on the season. Girls in rural spend more time on housework than boys. The paper revealed a statistical significant difference in the time use pattern rather than magnitude of gender. The gender distinction between men's and women's is observed in the non-wage activities
Keywords: Time allocation, leisure, housework, non-wage

1. Introduction

The value and determinants of time allocation have attracted a great deal of attention in both developed and developing countries. Evolution of time use surveys can be traced as early as the twentieth century when the need to understand the lifestyle of people, including their social life as the basis of the pattern of time use of household was in high class. Nevertheless, a few years later the interest of the researchers was to quantify and understand the invisible point of the unpaid work of men and women in order to estimate the contributions of unpaid work to human welfare. In the industrialized countries particularly in the North and several other countries in these areas depend on time use to estimate the value and time of unpaid work of women. Canada and Great Britain conducted such as a survey in the 1960s followed by Bulgaria, Norway, Japan, Finland and others in the 1970s and 1980s (Clermont and Aligisakis, 1995). These countries developed concepts and methodology to measure and to analyze an unpaid work of men and women in their respective societies.

In African countries, studies of time use are conducted very rarely. The time allocation data has appeared to be a useful statistical tool for gathering detailed information about how people spend their time on a daily and weekly basis as an input to estimating the value of paid and unpaid work. By 2005 only five African countries have conducted time use surveys, most of which have not provided timely and adequately the required gender disaggregation statistics, which are not fully comparable between and within countries and therefore, become difficult to replicate in other countries. For example Nigerian's time use survey was based on sample size of only100 households, while Morocco focused only on women time budget. Charms (1999) described that Algeria (1998), Chad and Mali (1994-1995) are only three countries that included the simple and light time use sections in the multipurpose surveys in relating the economic activities to women who declared themselves as inactive when they had, in fact engaged in economic activities.

Although the study relating time use in African countries have been hindered by different obstacles including lack of reliable data but the need to understand the time use in both rural and urban are of greater value. The use of time allocation which provides information about unpaid domestic and economic work is not collected by conventional surveys in most of African countries due to certain concepts and methodology limitations. Several other developing countries such as Nepal, India, South Africa, Benin, Mongolia and Cuba to mention a few have conducted surveys in 1990s and thereafter with the purpose of estimating the workforce accurately. The time use survey data collected from these countries are split up into three main parts (1) the independent time use conducted as a standard along survey example in India, (2) The time use survey in the labor force survey (Nepal) and (3) the time use survey as a part of the major multi-purpose survey (Mongolia).

In Tanzania, the time use survey appeared in 2006 when the Tanzanian's National Bureau of Statistics (NBS) added- on the module of time use in the integrated labor force survey conducted in 2006 after several years of advocacy led by Tanzania Gender Network program (TGNP). Unfortunately some of the data collected are not useful for direct comparison purposes. Women in Tanzania particularly those from low income groups and living in rural areas have limited facilities and spend many hours each day on water and fuel accumulation, food

preparation and other housekeeping activities. Children have also involved in unpaid work and girls are more vulnerable than boys (Natali et al, 2008). Malmberg-Calvo (1994) found that women account for about 65 percent of time spent on all transportation activities in the rural household and about 71 to 96 percent of the time spent on domestic travel activities. Men's main transport contribution time is associated with crop establishments, weeding and transporting harvested crops of which women are active too in both of these projects as well as in transport work associated with basic needs provisioning and crop marketing (Bryceson and Howe, 1993). Girls in Tanzania at every age have heavier work burdens than boys (Grant et al, 2004). Some surveys also found that there is a high correlation between the opportunity cost to the households of children's time and enrollment form. In Tanzania on average the opportunity cost for families to enroll girls in school is significantly higher than that of boys. When a boy aged between 13 and 15 years old attend a school, household lose about 25 hours of work per week. For girls of the same age they lose around 37 hours of work (World Bank, 1999). Boys drop out from school to herd, farm, fish, and hunt or to engage in petty trade. For girls the main reasons of drop out are pregnancy, parental concerns about toilet facilities, long distances and lack of security.

Although there is a wide range of studies examining the value and time allocation in Tanzania, some important gaps remain unfilled and significant in the literatures. Therefore, this paper addresses an understanding of the value and time allocation in rural of Tanzania.

2 Review of the literature

Time allocation refers to strategy that involves determining the most productive means of assigning or allocating blocks of time to each task or activity that must be implemented during the course of the day (at certain period of time). The idea behind of time allocation is to make sure that enough time is set aside for each task to be completed properly, while limiting the opportunity for time to be wasted on non-essential activities.

The theory describing the amount of time spent at work or certain activities is well known in the history of human life. The theory of maximum utility of choice developed by economists in order to relate the production and demand for goods and services, also the same theory is used to relate the time allocated to different kinds of human activities. Mincer (1962) employed the theory of maximization utility of choice for estimation of income elasticity of demand for different commodities and stated that by ignoring the time in the relationship between income and different kind commodities are biased. Owen (1964) used the theory to examine how the demand for leisure can be affected. The allocation of time between subsistence work and market participation in some Africans economies using similar theory was conducted by Dean (1964). The theory of time allocation relating the time use in education, training and other kinds of human capital was studied by Becker (1965).

Apart from theoretical literatures, there is a vast amount of empirical studies concerning the allocation of time in rural developing countries. Time allocation in developing countries shows that the overall burden of work varies greatly, with much higher work burden in rural than urban areas and women work more hours than men. The amount of time spent by women in economic work is less than one third while that of men is three quarters of the total time respectively (UNDP, 1995). Acharya (1999) compared the amount of time used for leisure by individuals and society's engagement in the subject field to assess the welfare occurs in micro and micro level. The activities taking place in regions where non-market work is dominant has been studied by (Acharya and Bennett, 1981) and more recently the study to assess the extent of involvement for unpaid labor with age/gender has been conducted by different authors.

The statistical study indicates that the contribution of women is about 41 percent in the non-agricultural labor force in OECD countries, 62 percent of them are service workers and only 15 percent are in production work (Elson, 1999). The survey indicates that in professions such as nursing the proportion of females has been increasing and reached to 82 percent. This means the degree job of segregation by gender is very high in these countries and the uneven distribution of the labor force across broad sectors observed hinders the comparison across sexes and usually subject women to low paid occupation sectors.

The role of children and women in self-employment (non-wage work) activities in developing countries has been increasing and will continue to increase in every year. In studies relating to peasantry, the family farm is used as the basic unit of production and consumption. The experience show that family farm are coordinated by male as the head of the household with respect to non-wage activities (agriculture) also men's are regarded as the main farmers subordinated by women and children (Deere, 1995). However, many authors have disputed the assumption that the distinction between male and female led non-economic system farm family has to be considered (Stephens 1991; Bachman 2000 and Kim and Zepeda 2004).

Alexander and Baden (2000) stated that the gender dimension of labor usually allocates both male and female to different tasks and works due to tradition and customs. In Kenya, Collier (1993) reported that the adoption of tea culture is dominated by gender issues. Tibaijuka (1994) used the linear programming model and input-output data for one year period in Tanzania to demonstrate the liberation of gender roles in the production of coffee and banana for export, the villages would increase their cash income to 10 percent while the productivity of labor and

capital would be improved by 15 and 44 percent respectively. Finally, she said that the barriers existing to such a change were significantly notable in most of the regions of Tanzania. Turner (2000) conducted a study in Sahelian households which, intended to examine the gender differences in labor force. He argued that men and women tend to assign greater secondary responsibility according to their gender of the head of household. Further, he noted that the general adherences of responsibilities in the Islamic households are regarded by gender and seniority of categories.

Ruben and Ruiter (2002) used an empirical assessment of time allocation of labor and the composition of farm household income in a sample of peasant households located in different types of agrarian settlement in the Atlantic Zone of Costa Rica. They found that small farms in organized settlement rely in crop production systems which, gives assurance of high income at the expenses of leisure while farms in the remote settlement still maintain labor-extensive production with reliance on wage labor. Empirical evidence evaluates the trade-off between the leisure time and marginal income as well as possibilities for substitution of the family hired labor to increase leisure. Personal information such as education, age, work attitude and farm characteristics which include location, size and lifetime is among the important factors used to identify the leisure time of individuals. The survey conducted in Burkina Faso by Thorsen (2002) pointed out the division of responsibilities in the households. Women in Burkina Faso maintain that they are simply serving their area of responsibility and keep within norms of showing respect for their husband at the same time they have to live up to the pressure from their husband to fulfill the obligations. Kevane and Wydick (2001) stated that the major determinants of allocations of women's time are social norms that determine the economic activities of women. By using the same data from Burkina Faso, it is found that the social norms significantly give a clear difference in patterns of time allocation.

App (2003) analyzed the South Africa and Nicaraguan time use survey and found that women are engaged more in work compared to men and there is a high degree of specialization in housework and child care by females. The market and house work tends to be closer substitutes as per capital consumption increases. Rose (2000) examined the impact of a child's gender on time allocation of rural household of Indian households. The study revealed that women work less subsequently for the birth of a boy relative to a girl which shows the gender biases in the households. In rural of Zambia, Whitehead (1999) proves that the time use survey may provide inadequate understandings of women's work in the absence of an understanding of the significance of the local context in which the work is performed, including the relationship between the farm and off-farm employment and labor market. The study explains that many African women have heavy load compared to men. The study claimed that by naming the women work visible, where once it was not, it creates the environment to slip into the thinking that African rural men are not doing very much at all.

Deere (1995) demonstrated that there is a clear evidence to indicate that "over-time", rather than decreasing the women's participation in peasant agriculture in Latin American countries have been increasing the productivity of growing land shortage and male migration in searching of wage employment and women's lower opportunity cost in the labor market, among other factors. Research in Latin American reported that females are the head of the households and economic activities particularly managing farms due to the historical features of many regions which associate the capitalist exploitation and male migration to other states. Jacoby (1993) conducted the study in Peru to estimate the structural time allocation using the general methodology models to households whose members do not work for wages. The results showed that there are significant gender differences in shadow wages and peasant family labor supply.

Guatemalans rural household, Paǵan (1998) analyzed the causes and the consequences of male-female difference in the labor force participation and self-employment. Significant differences are observed in the labor force participation rate of men and women in non-wage employment. Gender differences in individual endowments and human capital contribute to increase the male-female self-employment gap while structure factors help to reduce gender differences in rural entrepreneurship.

The study relating the time allocation among the elderly conducted in rural of Bangladesh (Cain, 1999). By comparing the total hours worked with elderly in different economic classes, interesting facts were obtained. Among the notable facts is that total hours worked by men declined as the wealth increases, but for women the situation is opposite. This inverse relation probably has been accelerated by cultural restrictions on women's employment and the increase of household wealth which does not allow women to participate in work to the same extent as men. Findings indicate that the specialization by men on income earning work and adult females in household work is preserved across age and class. Reardon (1997) investigated the household income diversification for non-farm rural in 18 African countries. He found the inter-households differentiation has initial endowments that create the differential capacity to introduce the non-farm labor market can affect families and gender income over time. He discovered that the income from non-farm jobs can be spent to purchase more land, when the value of the soil is higher than any other assets which give further advantage in farm productivity and non-farm labor market. Such situation has significant implications on time use in terms of gender. It is not

hard to notice that usually men stay in non-farm jobs while women tend to engage in farming activities.

In Nepal the census conducted in 1971 show that 35 percent of activities are held by women compared to 83 percent for men. Nevertheless, the time use revealed that women work 4.62 hours a day compared to 5.81 hours per day for men. The study included only those activities which fall into conventional definitions of work. Overall men worked hours were 7.51 per day compared to 10.81 hours for women (Acharya, 1999). Adeyonu (2012) conducted a study in the rural of south west of Nigerians to examine the gender dimensions of time allocation of rural farming households. He found that the time allocated in the farm activity sectors, non-farm activity sector and housework activity differs by gender and season of the year. Further, he noted that the time allocated for leisure by households in these sectors is regarded as a residual.

Larson and Verma (1999) conducted studies to review the time use among adolescent documents among the widespread tendency for boys to have more leisure time compared to girls; they found that boys typically spend less time in domestic employment. The study included few data from developing countries. Chobokoane and Budlender (2002) in a study of time use in South Africa found slightly proportion of boys than girls engage in social and cultural leisure activities, among those who report leisure activities boys and girls spend about the same amount of time on them.

In Tanzania, Katapa (1993) conducted a study of time use of unemployed female in two cities in Tanzania. The study reported that the household headed by females normally women are working on average sixteen hours daily and spend more time in informal sector activities than in household work and child care. The time use and gender differences found that the unpaid work in Tanzania is very large which subject women to work in difficult environments with low payment (Natali et al, 2008). Mniachi (2006) studied the time use differentials by associating the hierarchy of household members. The study showed that the household headed by a male in the urban spend more time almost in every activity compared to female. Furthermore, male in rural areas spends less time in education activities than their rural female.

There is no study in the countries which examine the value and time allocation rural of Tanzania. It is estimated that 80 percent of Tanzanians live in rural areas. In view of this, it is very important to examine the allocation of time in rural of Tanzania in order to create awareness to household members to categorize task according to the time. This study throws light to the government and policy makers to understand the value and time allocation of paid and unpaid work of men and women (estimating the contribution of unpaid work to human wellbeing) which, will serve to integrate paid and unpaid work in national policies. Furthermore, the time allocation provides complete picture and better estimates of employment and workers as well as a national income contribution towards improvement in the conventional economic statistics. Eventually, the time allocation awakens the parents to commit more time to their children to engage in schooling and leisure rather than involving them in wage and non-wage economic activities.

3. Methodology and Data

The determinants of time use in rural of Tanzania were estimated by means of regression analysis. The dependent variable denoted by t_{ij} is the analysis of time allocations which, provides the amount of time expended by individuals on activity. In this study four categories of actions are considered: (1) Economic activities (2) Housework and child care (3) Schooling for age groups 7-20 (4) Leisure. Housework and child care are grouped together since they are parallel activities and the unit measurement of time allocation is the total number of hours spend in each activity category summed over the five days.

The independent exogenous variables include human and non-human assets, and demographic characteristics of the family. These variables are calculated in the following regression equation;

$$t_{ij} = \alpha_0 + \alpha_1 Edu_{own} + \alpha_2 Edu_{high} + \alpha_3 A_x + \alpha_4 Inc + \mu_{ij}$$

By calculating the linear model and applying the same explanatory variables for each of the four time uses, the comparison of regression coefficient across equations was achieved in order to identify the possibility of substitutions between one time and another.

The asset holdings act in this regression is used as a proxy for both earned income and price effects. In this study the assets of the households include the area of land cultivated. The ownership of human capital is separated into main sections. First, the education of the person whose time allocation is being analyzed as Edu_{own}.Second, higher education among the adults in the household denoted as Edu_{high}.

The household transfer income (Inc) is directly measured source of income that is inserted into the equation as a predetermined variable. Household size is represented by a series of variables reflecting the size of the each age/sex. This allows different kinds of household members to behave differently in time allocation. The

remaining independent variables control for age. Separate equations are used for estimation of males and females by age group 21-64.Children with age group 7-20 are divided by sex since the sexual parts of the labor lead boys and girls to pursue quite different activities. Young people aged 15-20 are combined in the same group with children rather than adults since most of them they do little wage labor and still required a fair amount of school attendance. The results for adult male are presented in table 1 and for females in table 2 and for boys and girls in table 3 and table 4 respectively. School time is not shown in table 1 and 2 since it is not common for adults in rural Tanzania to go to school; most of them receive at least agriculture and animal husbandry and religions instructions. For adults, economic activities are divided in two parts including the wage work and non-wage work time because the expectation of the independent variables has quite different relations to these two subcategories. Time is measured by the complete series of wage labor (data obtained from integrated labor force survey conducted by the National Bureau of Statistics in 2006) and refers to hours worked during the whole year instead of the minutes worked on the five days. For children rarely work for a wage in Tanzania, the wage equation is omitted in table 3 and table 4 respectively.

4. Results

The education coefficients indicate that more educated males spend more time in wage work labor and less time in self-employment (non-wage employment) than males with less education. The education effect on the adult female's time allocation is similar, except that women reduce housework in favor of wage employment. In some cases the households with servants help particularly in the most educated households. For adults of both sexes, leisure time is not significantly influenced by education. It appears that the negative effect of education on leisure through higher labor productivity and the positive effect of education on leisure by higher income roughly offset one another.

Boys who spend more time in school devote less time to economic work, while girls do less work. Children of both sexes also reduce their leisure time. This finding shows that the more educated household boys do more housework which , implies that boys substitute to some extent for their sisters who spend at least much time in school than they do. Generally, children's economic work is significantly reduced by school attendance when compared to housework and leisure, although the latter activities are partially considered.

The land holdings induced show a small increase in male time spends on farm activities since crop production in rural Tanzania is largely women work. The women spend much time on farm activities. Notwithstanding, the land holdings are weak variables to specify the time allocation in rural of Tanzania because the data compiled by the National Bureau of Statistics in the survey of integrated labor force indicated that one-third of the households did not mention whether they owned no land or they own the area but is unknown. Moreover, no clear information is available to show the quality and the value of the land .The possibility of owning a poor quality piece of land is very high and probably only a small percent of that land is suitable for agriculture production. The leisure time of males definitely is insensitive to land holdings of productive assets as it is to educate while for women the leisure time is cut to balance when land holdings become relatively large. The interaction of the land holdings and children's work is weaker and less consistent in sign. For girls land holdings seem to link up with housework, probably freeing the mother for crop production. For that case land holdings enhance the economic role of girls and shorten their leisure hours.

Household transfer income usually is required to produce a pure income effect but is not the same in the case of Tanzania since a substantial part of the transfer income comes from adult males who are in the towns of Tanzania. On the other hand a displacement effect may occur when all other factors are being held constant, family members who are left behind must substitute in economic or housework for the absence of the member. The estimated coefficients indicate that level of transfer income rises in economic work among the males adult and decreases among the women and leisure increases. The shift appears to affect boys as transfer income rises; boys do more economic work, in which the performance in school attendance is reduced.

Findings from this study show that the age and age squared of adults of both sexes does not reveal any pattern in time allocation as measured in the regression equation. The children economic work increases with age and less time for leisure. In Tanzania, school time peaks at age of 10-12. Babies in the household usually add demand on the mother's household time (which includes child care) and that of other family members who can assist her. Furthermore, the amount of time allocated to household work by each woman aged between 21-64 raises modestly when a baby is present, while the leisure and economic work are reduced. Girls likewise spend more time on housework and have less leisure time when the baby is present in that house. Men's leisure time is curtailed somewhat in this circumstance, when compared to housework and non-wage work which rises and the economic work is not important.

A household with males headed, women spend more time on household work than females headed households. This finding implies that the female headed households are engaged more in economic activities. Females headed households have lower income compared to male headed households resulting from the lack of male

labor in these households hence raise the probability of marginal productivity to women workers. Boys in females headed households do less economic work and therefore more time is dedicated in leisure compared to male headed households. Girls do more housework and less leisure time in order to replace their mothers work.
The households with a large number of members have less leisure time. This result is consistent for both males and females aged 21-64 and children aged 7-20 of both sexes and statistically significant for each age/gender category. It is clear, that the household with large number of members have a large number of depends group (children, sick and old people) other have to work harder or longer time in order to provide sufficient income and household services. The large members of the households influence each man, woman and boy to work in family enterprises but not wage work. The large number of members in the household has tended to associate with specialization of children's formation along the sex lines. In the larger households, boys show more school attendance and more economic work but less on housework while girls do more housework and less economic work. In the house with fewer family members where the labor supply for children may not be well balanced by sex, there is more flexibility in the sexual division of labor

Table1: Determinants of Individual Time Use, Male Aged 21-64

	Wage work			Non-wage work			Housework			Leisure		
	B	Beta	t	B	Beta	t	B	Beta	t	B	Beta	t
Constant	1.299		11.442	1.379		12.104	1.662		5.904	1.712		9.192
Land Cultivation	.023	.024	1.819	.031	.031	2.313	.076	.083	1.942	.043	.054	2.059
Own education	.052	.093	6.184	.030	.053	4.576	.036	.069	1.875	-.012	-.026	-1.152
Highest education	.027	.108	6.460	.018	.067	5.119	.009	.042	1.003	-.005	-.025	-.973
Age	-.002	-.041	-2.705	-.002	-.045	-3.929	-.006	-.174	-4.788	-.002	-.072	-3.224
Age squared	.000	-.046	-3.064	.000	-.052	-4.483	.000	-.193	-5.328	.000	-.081	-3.634
Baby present	-.005	-.010	-.670	.002	.004	.300	.037	.086	2.113	.020	.051	2.011
Hh members	.001	.006	.597	-.008	-.036	-2.760	-.001	-.004	-.092	-.004	-.020	-.773
BOYS 7-20	.160	.178	1.428	.168	.177	1.346	.333	.333	.500	-.010	-.009	-.051
GIRLS 7-20	-.248	-.308	-1.621	-.209	-.263	-1.308	.000	.000	.000	-.099	-.132	-.777
Men 21-64	-.007	-.032	-2.587	.002	.005	.440	-.028	-.060	-1.644	-.002	-.005	-.244
Women 21-62	-.198	-.160	-7.926	.003	.008	.752	.020	.040	1.383	-.001	-.003	-.153
Men 65+	.011	.056	1.615	-.027	-.051	-1.517	-.051	-.120	-2.189	-.055	-.131	-1.654
Women 65+	.007	.027	.553	-.010	-.019	-.537	-.020	-.046	-.893	-.058	-.090	-1.108
sex of household	-.113	-.098	-9.742	-.042	-.042	-6.916	.074	.081	6.462	-.034	-.091	-1.122
Hh income	.140	.096	6.424	.108	.070	6.721	.076	.041	1.564	-.069	-.023	-.193
R-Square	0.28			0.250			0.39					0.26
Mean time	1.640			1.600			1.721					1.790
Standard deviation	.481			.491			.449					.407
N	3514			5675			551					1496

Table2: Determinants of Individual Time Use, Female Aged 21-64

	Wage work			Non-wage work			Housework			Leisure		
	B	Beta	t	B	Beta	t	B	Beta	t	B	Beta	t
Constant	6.201		3.211	6.251		3.23	1.618		0.11	1.54		11.33
Land Cultivation	0.080	0.054	1.819	0.078	0.053	2.167	.045	.027	.432	.144	.097	2.188
Own education	0.039	0.076	3.341	0.013	0.025	2.405	0.084	0.165	5.737	-.004	-.007	-.409
Higher education	0.028	0.115	3.771	0.005	0.017	1.297	.011	.049	1.264	-.017	-.058	-2.573
Age	-0.003	-0.062	-2.755	-0.001	-0.012	-1.131	-.009	-.249	-8.794	-.001	-.021	-1.153
Age squared	0.000	-0.065	-2.864	0.000	-0.020	-1.877	.000	-.258	-9.140	.000	-.023	-1.297
Baby present	-0.016	-0.028	-1.245	-0.010	-0.018	-0.763	.077	.139	2.407	-.007	-.015	-.352
Hh members	0.000	-0.002	-0.074	0.003	0.010	0.442	0.010	0.038	0.894	-.006	-.026	-.448
BOYS 7-20	.125	0.137	0.691	0.134	0.150	0.730	0.333	0.333	0.500	-.010	-.009	-.051
GIRLS 7-20	-0.248	-0.308	-1.621	-.209	-.263	.204	.000	.000	0.00	-.099	-.132	-.777
Men 21-64	-0.007	-0.032	-2.587	-.008	-.036	-2.760	-.007	-.048	-2.186	-.004	-.020	-.773
Women 21-62	0.000	-0.002	-0.074	.003	.010	.442	-.012	-0.089	-3.443	.010	.038	.894
Men 65+	0.011	0.056	1.615	.012	.060	1.718	-.051	-.120	-2.189	-.002	-.013	-.156
Women 65+	0.007	0.027	0.553	.007	.026	.532	-.020	-.046	-.893	.066	.246	2.149
Head ofHh sex				-.112	-.116	-4.748	-.082	-.094	-2.498	-.123	-.127	-2.238
Hh income	0.150	0.055	1.142	.152	.056	1.163	.169	.060	.878	-.069	-.023	-.193
R-Square	0.52			0.43			0.57					0.51
Mean time	1.33			1.32			1.323					1.64
Std Deviation	0.406			0.468			0.475					0.4806
N	406			405			131					215

Table3: Determinants of Individual Time Use, Boys Aged 7-20

	Wage work			In school			Housework			Leisure		
	B	Beta	t	B	Beta	t	B	Beta	t	B	Beta	t
Constant	47.97		0.564	8.74		5.06	0.831		31.647	0.072		0.02
Land Cultivation	-.589	-.589	-1.177	2.458	.635	2.464				.082	.088	4.16
Own education	.085	.159	1.272	.677	.353	5.022	.032	.053	2.44	.066	.131	11.29
Higher education	-.058	-.270	-1.726	.263	.425	4.353	.014	.106	4.80	.016	.065	4.49
Age	-.034	-.047	-.371	.185	.526	8.232	.021	.224	10.50	.058	.494	16.04
Age squared	-.001	-.049	-.384	.007	.514	7.972	.001	.242	11.42	.002	.490	15.88
Baby present	.008	.012	.095	-.030	-.020	-.319	.091	.174	.25	.150	.238	1.15
Hh members	.058	.151	1.199	-.093	-.120	-1.948	-.259	-.778	-1.75	.206	.302	1.48
BOYS 7-20	.143	.157	1.502	.001	.001	.009	.333	.333	.50	-.010	-.009	-0.05
GIRLS 7-20	-.224	-.255	-2.483	-.069	-.030	-.488	.000	.000	.00	-.060	-.072	-0.73
Men 21-64	.058	.151	1.199	-.131	-.166	-2.309	-.001	-.004	-.09	-.002	-.005	-0.24
Women 21-62	-.022	-.047	-.233	.046	.054	.351	-.006	-.026	-.45	-.001	-.003	-0.15
Men 65+	.011	.056	1.615	.029	.045	.192	.008	.040	.69	-.055	-.131	-1.65
Women 65+	.007	.027	.553	-0.5625	-.563	-1.178	0.0083	0.0329	.48	-.058	-.090	-1.11
Head of Hh sex	-.165	-.152	-1.449	-.258	-.076	-2.174	.039	.060	3.60	.021	.021	0.87
Hh income	.471	.235	2.284	.383	.092	1.477	.058	.108	.53	.238	.194	0.93
R-Square	0.164					0.262			0.15			0.78
Mean time	1.58					5.867			1.099			1.909
Std Deviation	0.498					1.43			0.2989			0.305
N	98					150			2098			121

Table4: Determinants of Individual Time Use, Girls Aged 7-20

	Wage work			In school			Housework			Leisure		
	B	Beta	t	B	Beta	t	B	Beta	t	B	Beta	t
Constant	12.78		1.203	-14		-1.52	2.28		16.218	1.659		5.51
Land Cultivation	-.088	-.513	-1.581	2.500	.408	1.339	.078	.081	.545	.005	.004	.024
Own education	-.010	-.018	-.092	.582	.327	3.794	.044	.069	2.682	.094	.173	5.346
Higher education	.026	.084	.339	.069	.123	.866	.023	.152	5.741	.047	.188	4.558
Age	.160	.253	1.307	.181	.524	6.739	.037	.356	14.694	.054	.457	15.623
Age squared	.004	.258	1.333	.007	.512	6.532	.001	.384	16.071	.002	.451	15.373
Baby present	-.104	-.156	-.788	-.030	-.020	-.319	.091	.174	.250	-.500	-.586	-2.284
Hh members	-.022	-.047	-.233	-.093	-.120	-1.948	-.259	-.778	-1.750	.053	.099	.581
BOYS 7-20	.125	.137	.691	.001	.001	.009	.333	.333	.500	-.010	-.009	-.051
GIRLS 7-20	-.248	-.308	-1.621	-.069	-.030	-.488	.000	.000	.000	-.099	-.132	-.777
Men 21-64	-.007	-.032	-2.587	-.131	-.166	-2.309	-.001	-.004	-.092	-.004	-.020	-.773
Women 21-62	.000	-.002	-.074	.046	.054	.351	-.006	-.026	-.448	.010	.038	.894
Men 65+	.011	.056	1.615	.029	.045	.192	.008	.040	.694	-.002	-.013	-.156
Women 65+	.007	.027	.553	-.563	-.563	-1.178	.008	.033	.483	.066	.246	2.149
Sex of household	-.113	-.098	-9.742	-.258	-.076	-2.174	.039	.060	3.597	.021	.021	.873
Hh income	-.065	-.047	-.233	.383	.092	1.477	-.155	-.080	-3.009	.100	.076	.240
R-Square	0.766					0.728			0.201			0.251
Mean time	1.38					6.6			1.530			1.902
Std Deviation	0.518					1.516			0.499			0.298
N	150					120			1420			143

5. Discussion and Conclusion

The analysis of the time allocations clearly shows that the time devoted to economic work when compared to non –wage employment (self-employment) and wage work are positives to the human and non-human capital. The more productive capital the household has, the more time is spent by members of the family, particularly male children in economic work. This trend is similar to family with poor assets since are forced by low income to engage in work of low productivity.

In Tanzania labor under-utilization is very high. It is not easy to determine the concept of labor surplus especially for women and children. This study used purely operational concepts to identify the surplus of any task which does not make a statistically significant margin contribution to household income. The leisure time has been compared with various economic and demographic conditions and the results are consistent with the widely held view except during the busy season, there is a substantial labor in the rural area of Tanzania. The incidence of under-employment however, varies with age, sex and assets position.

Leisure time is higher among the males compared to females. During the busy season women are having extra duties to work in economic activities and to work for housework and child care. If both housework and child care and market activities are taken into account, women influence about 25 percent higher than men in rural Tanzania. About 70 percent of the increase in economic household work time is associated with the presence of a baby and is balanced by a reduction in leisure time of the women. Within the male headed households the productivity of women's work is not important at the margin in the most rural of Tanzania. This interference is consistent with state desires for a large number of youngsters. The only qualification is that the kids need to be cared even in the busy season in the same manner as in the season when it is not in use. It is important for government and males in the household to plan for a number of children in the family which may allow women to participate in economic activities rather than engaging more in housework and child care in rural areas of Tanzania.

In rural of Tanzania one may wonder why children are engaged in economic activities rather than attend school. The main reason is that the data collected by the National Bureau of Statistics was not designed to capture the

magnitude the intensity of work and the customs regarding the work sharing is very high in rural of Tanzania. Parents are very proud to train and an associate child in the adult's responsibilities which normally depends upon the gender of the child and therefore, the leisure time is controlled by the activities available in the household.
Finally, the variations among household in the economic activities work time of children is related to assets holds. Households which are well endowed with the productive assets benefit from the toil of their children while is not significant for poor households. This finding has important implications for stakeholders, families and government plan in the process of income determination and fertility decisions.

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