

TIME USE AS A DISGUISED EXPLANATION OF POVERTY: A CASE OF TWO ZONES IN TANZANIA

BY

D M B Rugaimukamu
Department of Statistics
University of Dar es Salaam

1 INTRODUCTION

The purpose of this article is to attempt to explain the levels of poverty likely to prevail in the Lake and Southern Highlands zones of Tanzania basing on time use information. For this study, the Lake Zone comprised Kagera, Mara, and Mwanza regions whereas the Southern Highlands Zone comprised Iringa, Mbeya, Rukwa, and Ruvuma regions.

Most of the studies on time use generally adopt some sort of a model in the analysis and discussion of results. See, for example, Becker (1965), Pollack and Wichter (1975), Hawrylshyn (1976), Grounau (1977), Adler and Hawrylshyn (1978), Mueller (1984), Khandker (1988), Juster and Stafford (1991), Buchinsky (1994), Browning and Chiappori (1998), Bonke and McIntosh (2005), Kitterød and Lyngstad (2005). Analysis of time use through either a theoretical or an empirical model will not be attempted here but instead a modest objective of establishing the relationship between time use

and poverty will be undertaken. This is mainly because time use studies basing on Tanzanian data are very few and as such using advanced models in the analysis here might block communication with some of the interested non-experts of time use in Tanzania. Furthermore, it is hoped that the simplified arguments to be used to establish the connection between time use and poverty can later on be presented at different fora in Tanzania in order to try to convince the people, who are the stakeholders, to think of time management in all their daily activities.

2 TIME MANAGEMENT AND BUDGETING

In all societies, individuals are constantly doing one thing or another: they talk, sit, sleep, work, eat, fight, pray, and so on. These may usefully be called activities.

Activities carried out by human beings both occupy their time and have spatial location. Human time is a resource since all activities necessarily require it as an input and since we have limited capacity to act in relation to time.

All processes of social interaction involve time consuming contacts among people. When some individuals participate in one collective activity, they cannot also participate in other group activities elsewhere, and when new groups of activities are introduced, others may have to be reduced in size, frequency, and duration.

The important thing to remember is that a multitude of substantively different activities are cast in a mould of structural interdependence by virtue of

competing for the same ultimate resource, human time.

In the course of carrying out the activities, we need not pretend that all activities are of equal importance and that some are not more critical than others.

Human activities should invariably be geared towards attaining certain stipulated goals. Goals of individuals and groups can be classified in a spectrum ranging from subsistence goals, the making or earning a living, to the life-goals of reproduction and propagation and the goals based on aspiration, virtue, enthusiasm, and pleasure; the kind of goals pursued when most of the tasks of maintenance and subsistence have been completed. In the early stages of development, societal goals need to be dominant over individual goals.

Projects are vehicles of goal attainment, but they are also in themselves constraining. They could channel human action in certain directions rather than others and therefore work as allocative mechanisms. Once the goals are set and decided upon, it inevitably means that some paths of action have been chosen in the set of alternative ones.

Among the activities that should be taken into account when working out the time budget is movement between other activities. In practice, people must move around from one location to another in order to get the necessary inputs and it is only when the necessary inputs are within reach can the activity be started. It has also been found that some activities require special sites and settings and cannot be performed elsewhere and therefore movement to those special sites is imperative. Unfortunately, many studies in developing

countries do not classify movement in space as a specific category of activity but include this in other activities. For example, walking to the farm is in most cases included in cultivation. This tends to distort the actual activity of cultivation and indeed eschews the discussion of other important issues like investment in infrastructure.

Of course, it may often not be necessary to record movements within a station such as the dwelling and its backyard, but all movements between stations are of great importance considering that a lot of time may actually be spent on movement in one form or another in most cases.

Accordingly, if a household or a population has a given size and composition and this factor is multiplied by the observation period, a population time-budget is arrived at which constitutes the aggregate household or population time supply. Only a limited volume of time demanding individual and collective activities can then be packed into this time-budget. The most important thing is then to determine an allocation of time to the various human activities in such a way that the set goals of a household or a population are achieved.

One goal that invariably needs to be set by households and subsequently by nations is a goal of poverty eradication. Indeed, this is a declared goal of all developing countries. Accordingly, household activities must be geared towards attaining this crucial goal by having carefully worked out efficient time budgets.

3 POVERTY

Poverty is generally understood to be a state of not being able to obtain the goods and services necessary to meet some minimum standard of living. Measuring poverty may thus be reduced to two steps: 1) defining a measure of access to goods and services and 2) setting a threshold below which a household is considered poor.

Access to goods and services may be measured by income or by consumption expenditure, although most poverty studies adopt the latter because it is a more direct measure of living standards and it is less subject to measurement error. An alternative way of measuring access to goods and services is to look at non-monetary indicators of the quality of life, such as health, education, access to water, housing characteristics, and ownership of consumer goods. These variables are easier to measure than income or consumption expenditure, but they generally focus on just one dimension of well being. The United Nations Human Development Index (HDI) is an attempt to construct a non-monetary indicator that covers various aspects of well-being. The HDI incorporates information on literacy, life expectancy, and income per capita. Another measure which has been recommended, but is not frequently used, is the Physical Quality of Life Index (PQLI) developed by Morris (1979). The PQLI incorporates information on infant mortality, life expectancy at age one, and literacy.

Setting a threshold below which a household is considered poor (a poverty line) also involves a number of methodological options. The poverty line may be relative, such as the 40th percentile of per capita consumption expenditure,

or absolute, such as US \$1 per person per day, or some mixture, such as a 50 per cent of the average per capita income. Often absolute poverty lines are based on the cost of a “minimal” set of goods and services. Various approaches have been used to define the minimum basket.

Once the poor (and, implicitly, the non-poor) are known then a logical extension of the analysis would be to turn to the question *why are these poor or non-poor?* Having characterized and identified the poor and the reasons for their being poor then the next step should be to strive to ask and carefully consider the options to the question *what are the policies or strategies* that can facilitate sustainable poverty reduction?

It is argued in this article that one of the main reasons why people are poor is that they do not manage their human time well. Indeed, the main objective of the paper is to try to demonstrate that people may be poor mainly because they do not deliberately allocate time in such a way that they can increase the possibility of increasing their access to goods and services.

4 POVERTY PROFILE OF TANZANIA

A number of studies have tried to highlight depth and severity of poverty in Tanzania.

The poverty profile prepared by the World Bank PHRD (1993) used two poverty lines, a lower line based on the cost of a minimum bundle of goods and services (US\$ 152 a year) and an upper one set at 75 per cent of the average per capita expenditure (US\$ 227 per capita). Using these poverty lines, 51 per cent of Tanzanians were defined as poor and 36 per cent as very

poor.

Sarris and Tinios (1994) adopted three poverty lines based on the expenditure levels associated with 1,900, 2,000, and 2,100 calories per person per day. Using the middle poverty line, they estimated that 54 per cent of rural households and 48 per cent of all households are poor. Because of the similarity of these two results, it has become the conventional wisdom that about half of the Tanzanian households are poor.

The World Bank PHRD (1993) identified some of the characteristics of poor households using the 1991 Cornell-ERB survey. One of the main conclusions of the study is that poverty is overwhelmingly a rural phenomenon.

The study also found that poverty is associated with less education, lower rates of literacy, and larger household size and that female-headed households are no poorer than male-headed households.

The results of these studies suggest that poor households are large families in rural areas with an older head of household and that they are likely to be farmers who grow maize but do not earn income from livestock, wages, or self-employment. A particularly interesting result is that households that grow cash crops are less likely to be poor, holding other variables such as education and farm size constant.

The 1996 Tanzanian Demographic and Health Survey (TDHS) results highlight the wide gap between urban and rural living conditions. The results indicate that urban households are better off than rural households in virtually

every category: electrification, source of water, housing construction, and ownership of various consumer goods.

Several national household surveys (1969/70, 1991/92, and 2000/01) have collected income and/or expenditure data in Tanzania and have made conclusions about poverty in Tanzania.

Poverty lines were developed for the analysis of the most recent 2000/01 Household budget Survey data. The price of a minimum food basket necessary to provide 2,200 calories per day was calculated, based on the consumption pattern of the-poorest 50 per cent of the population. A higher, 'basic needs' poverty line was also set to allow for non-food consumption. The main conclusion of the analysis is that poverty remains overwhelmingly rural, with 87 per cent of the poor living in rural areas. Furthermore, the results indicate that households particularly likely to be poor include those with many members, those with a large proportion of dependants, and those headed by someone who is economically inactive.

5 STRATEGIES FOR POVERTY ERADICATION IN TANZANIA

The results of the studies given in section 4 indicate that poverty in Tanzania is mainly a rural phenomenon. Accordingly, strategies for poverty eradication have to start by addressing the rural areas of Tanzania. Since the rural areas depend mostly on agriculture, rural growth will inevitably be determined by the productivity of rural agricultural and non-agricultural activities, which in turn will depend on the quantity and quality of land, labour, capital, and credit and investment in rural infrastructure. Rural infrastructure (see, for example,

Wanmali (1992)) include road, storage, irrigation systems, etc. so called “hard infrastructure” and “soft infrastructure” such as transport (bus, truck), finance, input distribution, marketing, education, information, health, etc which enhance human capital for increased productivity.

The crucial starting step in the strategies for poverty eradication is to address agricultural productivity.

6 PRODUCTIVITY

In the economic literature, there is one generally agreed and widely used definition of productivity, although some minor refinements may sometimes be given. See Kendrick (1961), Kendrick and Sato (1963), Bruton (1967), and Jedruszek (1980), for example.

A simple and more conventional definition of productivity which is widely used in practice, is that productivity is the ratio of the output of a good or service, or collection of goods or services, to the input of one or more of the factors producing it. This forms the core of the definition of productivity. Symbolically, this is represented as:

$$P_i = \frac{O_j}{I_i} \quad (6.1)$$

where: P_i denotes productivity of input i

O_j denotes Output of good or service j

I_i denotes Input i

Other refined definitions of productivity are:

- 1) Productivity is a ratio of valuable output to input.
- 2) Productivity is the function of providing more and more goods and services to more and more people with less and less consumption of real resources.
- 3) Productivity is elimination of waste in all forms. It encompasses the concepts of effectiveness, efficiency, and occupancy.

Refined definition 3) may serve to explain the underlying spirit in production. Firstly, starting with the numerator in the productivity ratio (equation (6.1) above), output may then be regarded as a result of human activity that is geared towards satisfying a genuine individual and social need and it imperatively embraces the concept of quality. That is, the output is effective if it meets the desired quality.

As regards the denominator in the productivity ratio, input factors may be land, labour, or capital, energy or fuel.

These factors are usually scarce resources and thus efficiency exists when organized human activity is performed in such a manner that the amounts of resources expended are no more than what is necessary and sufficient to produce or provide a quality product or service.

Finally, occupancy implies that available time should be devoted to production and that there should not be unnecessary stoppage in production.

Accordingly, the three words of effectiveness, efficiency, and occupancy, should always be kept in mind whenever referring to the conventional definition of productivity.

The focus in this paper will be on labour and labour will be interpreted as the human time expended in agricultural and non-agricultural production.

7 CURRENT TANZANIA COUNTRY-WIDE TIME USE STUDY

7.1 Tanzania

The results of the current Tanzania country-wide time use study indicate that most people devote much of their time to farming. However, other sources indicate that the crops they grow give very little cash income. This does not augur well for Tanzania because poverty eradication mainly means raising agricultural productivity and the returns from the time spent on agricultural activities.

7.2 Zonal assessment of poverty

Instead of looking at poverty in Tanzania as a whole, a zonal comparison is attempted. Zonal distribution of poverty may be of great interest for policy purposes. This is mainly because it is widely agreed and advocated that priority and particular attention needs to be given to disadvantaged groups in the course of poverty eradication.

Indeed, attempts have already been made to assess the regional distribution of

poverty in Tanzania. The regional variation results based on 1993 Human Resource Development Survey (HRDS 1996) and a poverty line equal to the 40th percentile of per capita consumption expenditure suggested that the highest incidence of poverty was found in regions of Rukwa, Kigoma, Dodoma, Mtwara, and Singida and that the areas with the lowest incidence of poverty were Dar es Salaam, Pemba, and Zanzibar.

Results obtained from the 2000 World Bank study by aggregating the regions into six zones suggested that the highest levels of rural poverty were found in the Central Zone (Dodoma and Singida) and the Southern Zone (Mtwara, Lindi, and Ruvuma).

Also, the 2000/01 Household Budget Survey results indicate that, in addition to Dar es Salaam, the regions that are commonly better off in terms of housing conditions and facilities are Kilimajaro and Mbeya, while Shinyanga, Singida, Tabora, Pwani and Lindi tend to be less well off. It is also stated that Lindi, Singida, Shinyanga and Pwani were usually found to be poor on income poverty measures, as is Mara and that Dar es Salaam and Mbeya have lower levels of income poverty.

7.3 Lake and Southern Highlands Zones

For the current Tanzania country-wide time use survey the country was divided into six zones. As already alluded to in the introduction, the main objective of this article is to attempt to explain the levels of poverty likely to prevail in the Lake and Southern Highlands zones basing on time use information. For this study, the Lake Zone comprised Kagera, Mara, and

Mwanza regions whereas the Southern Highlands Zone comprised Iringa, Mbeya, Rukwa, and Ruvuma regions.

7.3.1 Activity that takes most of the time of the respondent

The starting point is to look at how respondents spend most of their time. As articulated in section 1 on time budgeting, there are a considerable number of activities that can be done by a person in the course of the day. During this study, respondents were asked to state the particular activity that took most of their time. The findings on the activities that take most of the time of the head of the household and the spouse of the head of the household in the Lake and Southern Highlands zones are presented in Tables 7.1a, 7.1b, 7.2a, and 7.2b.

Table 7.1a: Activities that take most of the time of the head of the household in Lake Zone

Activity	Number		Per cent	
	Rural	Urban	Rural	Urban
Rest	0	11	0	4.74
Study/Read	0	1	0	0.43
Knit handkerchiefs	0	1	0	0.43
Teaching and school work	2	8	1.27	3.45
Cleaning the house	0	1	0	0.43
Agricultural activities	144	20	91.14	8.62
Domestic work	0	4	0	1.72
Taking care of the children	0	1	0	0.43
Selling in the shop	0	1	0	0.43
Construction/Building activities	1	1	0.63	0.43
Business	2	55	1.27	23.71
Medical services	1	2	0.63	0.86
Watching television	0	1	0	0.43
Nursing the sick	0	1	0	0.43

Activity	Number		Per cent	
	Rural	Urban	Rural	Urban
Soldering work	0	1	0	0.43
Hair plaiting	0	2	0	0.86
Small business	0	9	0	3.88
Cleaning work	0	1	0	0.43
Security guard duties	0	3	0	1.29
Driving	0	7	0	3.02
Carpentry	1	0	0.63	0
Selling fish at the market	0	1	0	0.43
Weaving a carpet	0	2	0	0.86
Paid employment	0	53	0	22.84
Cooking	0	8	0	3.45
Fishing	1	7	0.63	3.02
Traveling around	0	1	0	0.43
Repairing bicycles	1	0	0.63	0
Washing utensils	0	1	0	0.43
Selling fish	0	1	0	0.43
Crushing stones	1	2	0.63	0.86
Sitting	1	3	0.63	1.29
Technical work	1	12	0.63	5.17
Music activities	0	1	0	0.43
Studying	0	2	0	0.86
Washing clothes	0	1	0	0.43
Knitting/Weaving	0	1	0	0.43
Sewing	0	2	0	0.86
Teaching religion	0	1	0	0.43
Repairing watches	0	1	0	0.43
Lumbering	1	0	0.63	0
Barber	1	0	0.63	0
Bus conductor	0	1	0	0.43
Livestock keeping	0	0	0	0
Collecting water	0	0	0	0
Taking care of the family	0	0	0	0
Computer studies	0	0	0	0
Labourer/doing odd jobs	0	0	0	0
TOTAL	158	232	100	100

Source: Department of Statistics (2005): Tanzania Country-wide time use survey data file

Table 7.1b: Activities that take most of the time of the spouse of the head of the household in Lake Zone

Activity	Number		Per cent	
	Rural	Urban	Rural	Urban
Rest	0	3	0	1.71
Study/Read	0	0	0	0
Knit handkerchiefs	0	0	0	0
Teaching and school work	0	2	0	1.14
Cleaning the house	0	8	0	4.57
Agricultural activities	131	110	96.32	6.29
Domestic work	1	30	0.74	17.14
Taking care of the children	0	4	0	2.29
Selling in the shop	0	0	0	0
Construction/Building activities	0	2	0	1.14
Business	0	38	0	21.71
Medical services	0	0	0	0
Watching television	0	1	0	0.57
Nursing the sick	0	2	0	1.14
Soldering work	0	0	0	0
Hair plaiting	0	2	0	1.14
Small business	0	7	0	4.00
Cleaning work	0	2	0	1.14
Security guard duties	0	2	0	1.14
Driving	0	2	0	1.14
Carpentry	0	0	0	0.00
Selling fish at the market	0	0	0	0.00
Weaving a carpet	0	0	0	0.00
Paid employment	1	11	0.74	6.29
Cooking	0	22	0	12.57
Fishing	0	1	0	0.57
Traveling around	0	0	0	0.00
Repairing bicycles	0	0	0	0.00
Washing utensils	0	1	0	0.57
Selling fish	0	0	0	0.00

Activity	Number		Per cent	
	Rural	Urban	Rural	Urban
Crushing stones	0	1	0	0.57
Sitting	1	4	0.74	2.29
Technical work	0	4	0	2.29
Music activities	0	0	0	0.00
Studying	0	2	0	1.14
Washing clothes	0	6	0	3.43
Knitting/Weaving	0	0	0	0.00
Sewing	0	0	0	0.00
Teaching religion	0	0	0	0.00
Repairing watches	0	0	0	0.00
Lumbering	0	0	0	0.00
Barber	0	0	0	0.00
Bus conductor	0	1	0	0.57
Livestock keeping	1	2	0.74	1.14
Collecting water	1	1	0.74	0.57
Taking care of the family	0	1	0	0.57
Computer studies	0	1	0	0.57
Labourer/doing odd jobs	0	1	0	0.57
TOTAL	136	175	100	100

Source: Department of Statistics (2005): Tanzania Country-wide time use survey data file

Table 7.2a: Activities that take most of the time of the head of the household in Southern Highlands Zone

Activity	Number		Per cent	
	Rural	Urban	Rural	Urban
Rest	2	1	0.89	0.38
Agricultural activities	102	47	45.54	17.94
Domestic work	0	12	0.00	4.58
Construction/Building activities	18	16	8.04	6.11
Business	46	77	20.54	29.39
Security guard duties	5	7	2.23	2.67
Driving	2	8	0.89	3.05
Paid employment	43	78	19.20	29.77

Activity	Number		Per cent	
	Rural	Urban	Rural	Urban
Cooking	0	3	0.00	1.15
Traveling around	0	1	0.00	0.38
Sitting	0	1	0.00	0.38
Studying	0	1	0.00	0.38
Washing clothes	0	1	0.00	0.38
Livestock keeping	0	3	0.00	1.15
Collecting water	0	1	0.00	0.38
Labourer/doing odd jobs	1	1	0.45	0.38
Weave a basket	1	1	0.45	0.38
Preach in a church	2	0	0.89	0.00
Collecting firewood	2	2	0.89	0.76
Praying	0	1	0.00	0.38
TOTAL	224	262	100	100

Source: Department of Statistics (2005): Tanzania Country-wide time use survey data file

Table 7.2b: Activities that take most of the time of the spouse of the head of the household in Southern Highlands Zone

Activity	Number		Per cent	
	Rural	Urban	Rural	Urban
Rest	1	4	0.45	1.53
Agricultural activities	119	43	53.13	16.41
Domestic work	18	24	8.04	9.16
Construction/Building activities	4	5	1.79	1.91
Business	32	72	14.29	27.48
Security guard duties	0	0	0.00	0.00
Driving	0	0	0.00	0.00
Paid employment	15	37	6.70	14.12
Cooking	12	40	5.36	15.27
Traveling around	0	2	0.00	0.76
Sitting	1	4	0.45	1.53
Studying	3	6	1.34	2.29
Washing clothes	9	13	4.02	4.96
Livestock keeping	2	1	0.89	0.38

Activity	Number		Per cent	
	Rural	Urban	Rural	Urban
Collecting water	4	4	1.79	1.53
Labourer/doing odd jobs	0	0	0.00	0.00
Weave a basket	2	2	0.89	0.76
Preach in a church	0	0	0.00	0.00
Collecting firewood	0	0	0.00	0.00
Praying	0	0	0.00	0.00
Prepare gravy	2	0	0.89	0.00
Release chicken	0	1	0.00	0.38
Filter brew	0	3	0.00	1.15
Visit a beer club	0	1	0.00	0.38
TOTAL	224	262	100	100

Source: Department of Statistics (2005): Tanzania Country-wide time use survey data file

The results in Tables 7.1a, 7.1b, 7.2a, and 7.2b seem to suggest that most of the people in rural areas spend most of their time on agricultural activities. However, there seems to be a remarkable difference between the rural people in the Lake zone and those in the Southern Highlands zone. Whereas over 90 per cent of the rural people in the Lake zone spend most of their time on agricultural activities only about 50 per cent of the rural people in the Southern Highlands zone spend most of their time on agricultural activities. This essentially means that any policy aimed at influencing the agricultural sector will have a greater impact on the rural people in the Lake zone than on rural people in the Southern Highlands zone.

Another interesting feature of the results is that it seems a considerable number of people in the urban areas of both the Lake zone and the Southern Highlands zone spend most of their time on business and paid employment. However, it seems that a slightly higher percentage of people in the urban

areas of the Southern Highlands zone spend most of their time in business and paid employment.

This becomes more clearer if we look at the graphical presentation of, for example, three main activities of agriculture, business, and paid employment. Charts 7.1 to 7.4 illustrate the point.

Chart 7.1: Three activities that take most of the time of the head of the household in Rural locations of Lake and Southern Highlands zones

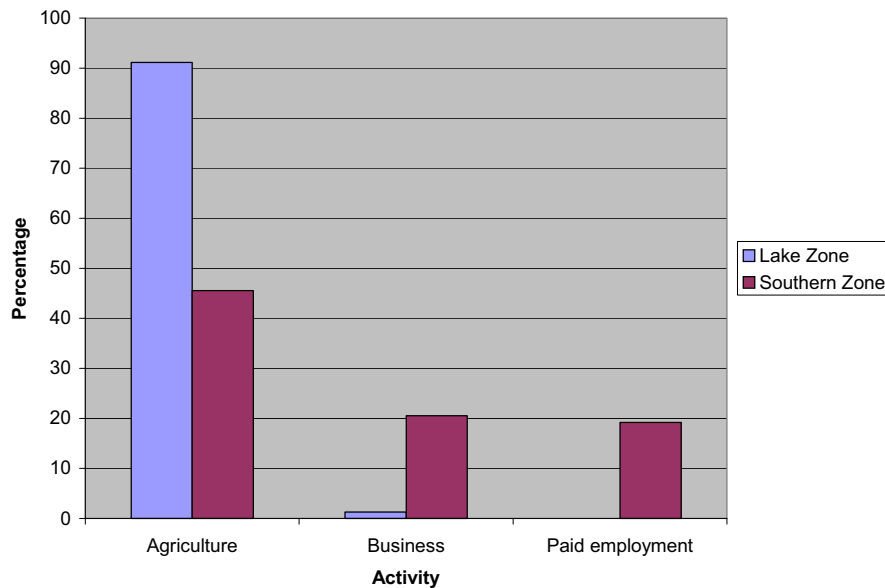


Chart 7.2: Three activities that take most of the time of the head of the household in Urban locations of Lake and Southern Highlands zones

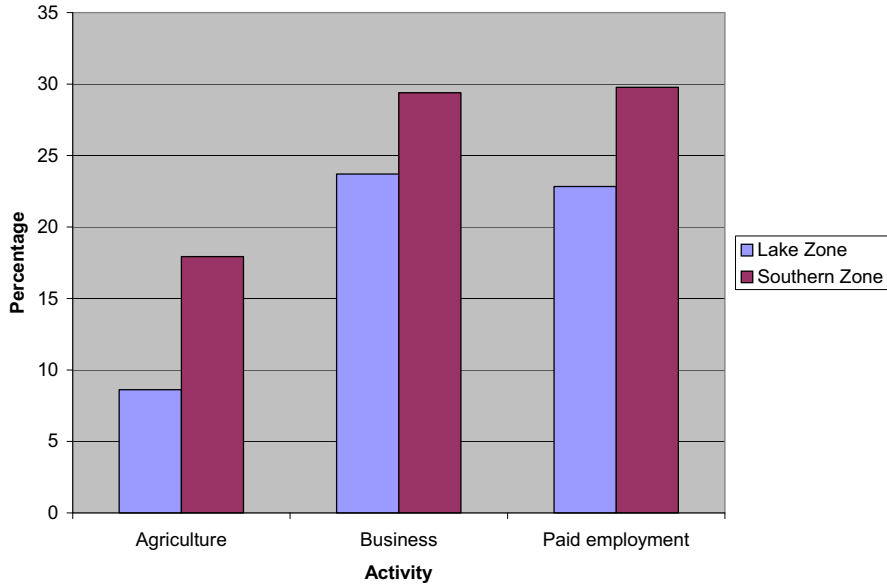


Chart 7.3: Three activities that take most of the time of the spouse of the head of the household in rural locations of Lake and Southern Highland zones

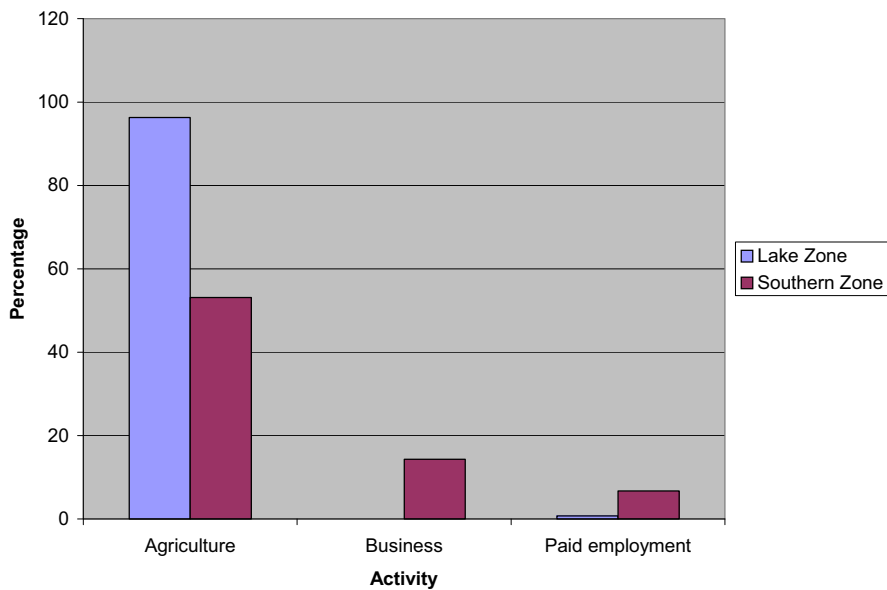
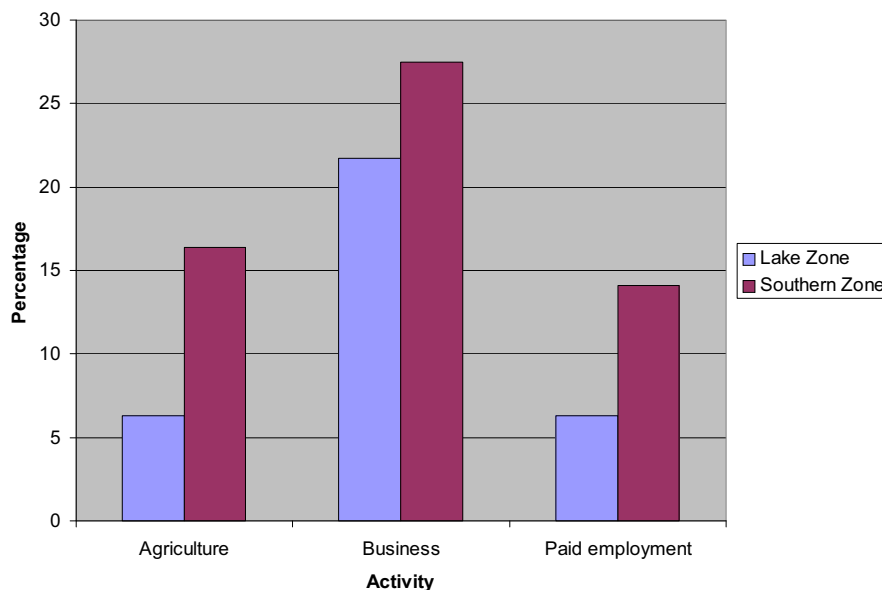


Chart 7.4: Three activities that take most of the time of the spouse of the head of the household in Urban locations of Lake and Southern Highland zones



The main conclusion from Charts 7.1 to 7.4 is that, overall, the households in the Lake zone spend relatively more time on agricultural activities in the rural areas only than households in the Southern Highlands zone. The Lake Zone households spend less time than the Southern Highlands zone households on the other two main activities, whether in rural or urban locations.

Since we have found that a large number of people in the rural areas of both zones spend most of their time in agricultural activities it might also be interesting to consider the issues of land ownership and the types of crops grown.

The results indicate that the percentage of people without land on which to grow crops is higher in the Lake zone (41.4 per cent) than in the Southern

Highlands zone (30.0 per cent). This suggests a higher degree of flexibility for the people in the Southern Highlands zone than for the people in the Lake zone as regards the use of land for agricultural and non-agricultural activities.

As regards the kind of crops grown on the owned land the findings are as presented in Table 7.3 below.

Table 7.3: Crops grown in the Lake and Southern Highlands Zones

Type of crop	Frequency		Per cent	
	Lake Zone	Southern Highlands Zone	Lake zone	Southern Highlands Zone
Cassava	89	21	39.91	6.18
Maize	58	266	26.01	78.24
Bananas	22	2	9.86	0.59
Coffee	11	5	4.93	1.47
Cotton	9	0	4.04	0.00
Rice	8	5	3.59	1.47
Potatoes	7	3	3.14	0.88
Vegetables	7	1	3.14	0.29
Beans	5	24	2.24	7.06
Vanilla	2	0	0.90	0.00
Sorghum	1	0	0.45	0.00
Spinach	1	0	0.45	0.00
Special Yams	1	0	0.45	0.00
Sweet Potatoes	1	0	0.45	0.00
Tomatoes	1	0	0.45	0.00
Cashewnuts	0	3	0.00	0.88
Coconuts	0	2	0.00	0.59
Groundnuts	0	2	0.00	0.59
Simsim/Sesame seed	0	4	0.00	1.18
Tobacco	0	1	0.00	0.29
Trees for wood/planks	0	1	0.00	0.29
Total	223	340	100.01	100.0

The results seem to suggest that the dominating crop for the Southern Highlands zone is maize. In contrast, the Lake zone does not seem to have a dominating crop but cassava and maize seem to be grown by a considerable number of people in the zone. Cash crops grown in the Lake zone are coffee and cotton and those grown in the Southern Highlands zone are coffee, cashewnuts, and tobacco.

The impact of the agricultural activities on the levels of poverty in the two zones will very much depend on the production and tradability of the different food and cash crops. Apart from land ownership, production is very much influenced by prices of inputs, especially fertilizer. Input subsidy removal, for example, tends to reduce the gain of fertilizer use for food crops such as maize and is likely to affect the Southern Highlands more severely than the Lake zone. Pricing mechanisms are bound to influence the tradability of the various food and cash crops. Tables 7.4 and 7.5 below give a picture of cash and food crop production in Tanzania, respectively, for the period of 2000 to 2003. The production figures seem to fluctuate a lot probably because of the weather and availability of agricultural inputs.

Table 7.4: Cash crop production in tons for the period 2000 to 2003

Period	Cashewnuts	Coffee	Cotton (bales)	Tobacco
2000	112,000	37,000	163,000	55,000
2001	122,283	58,134	125,000	28,000
2002	78,000	67,000	149,000	59,000
2003	92,000	53,000	188,000	20,000

Source: Economic survey various issues

Table 7.5: Food crop production in tons for the period 2000 to 2003

Period	Beans	Paddy	Maize
2000	510,000	934,000	2,739,000
2001	527,000	1,010,000	3,348,000
2002	574,000	1,069,000	3,480,000
2003	517,000	921,000	3,129,000

Source: Economic survey various issues

In Tables 7.6 and 7.7 cash and food crop prices in Tanzania are presented for the crop periods 2000/2001 to 2003/2004.

Table 7.6: Cash crop prices in Tanzania shillings per kilogram

Period	Cashewnuts	Coffee		Seed cotton	Tobacco	
		Arabica	Robusta			
2000/2001	320	470	200	180	590	
2001/2002	300	400	106	165	542	
2002/2003	377	430	95	180	560	
2003/2004	462	400	110	280	750	

Source: Economic survey various issues

Table 7.7: Food crop prices in Tanzania shillings per kilogram

Period	Beans	Rice	Maize
2000/2001	347	296	81
2001/2002	315	274	96
2002/2003	349	334	139
2003/2004	391	503	185

Source: Economic survey various issues

Since a lot of the coffee grown in Tanzania is not grown in the Lake zone and since most of the coffee grown in the Lake zone is the Robusta type and given that almost all the maize grown in Tanzania is in Southern Highlands zone the figures in Tables 6.4, 6.5, 6.6, and 6.7 suggest a potentially lower level of

poverty for rural people in the Southern Highlands zone than that of the rural people in the Lake zone.

Of course, it is noted that the various studies on poverty cited in section 7.2 indicate that Rukwa and Ruvuma that are in the Southern Highlands zone have higher incidencies of poverty whereas the argument in this paper suggests potentially the opposite. The usual explanation given in the relevant studies is that those areas are either remote from the trading centres, especially Dar es Salaam, or have poor road connection to trading centres. The point being made in this paper is that with improved infrastructure, the potential for the areas in the Southern Highlands zone is likely to be realized.

It might, also, be interesting and informative to look at activities of people who do not own land. The results presented in Tables 7.8a, 7.8b, and 7.9a, and 7.9b for heads of household and spouses of heads of household who do not own land, seem to indicate as expected, that they spend much of their time on non-agricultural activities.

Table 7.8a: Activities that take most of the time of the head of the household with respect to land ownership in Lake Zone

Activity	Does this household own a plot of land?		Does this household own a plot of land?	
	Number		Per cent	
	Yes	No	Yes	No
Rest	3	8	1.34	4.82
Study/Read	0	1	0	0.60
Knit handkerchiefs	0	1	0	0.60

Activity	Does this household own a plot of land?		Does this household own a plot of land?	
	Number		Per cent	
	Yes	No	Yes	No
Teaching and school work	6	4	2.69	2.41
Cleaning the house	0	1	0	0.60
Agricultural activities	153	11	68.61	6.63
Domestic work	0	4	0	2.41
Taking care of the children	0	1	0	0.60
Selling in the shop	0	1	0	0.60
Construction/Building activities	1	1	0.45	0.60
Business	18	39	8.07	23.49
Medical services	1	2	0.45	1.20
Watching television	0	1	0	0.60
Nursing the sick	0	1	0	0.60
Soldering work	0	1	0	0.60
Hair plaiting	0	2	0	1.20
Small business	3	6	1.34	3.61
Cleaning work	0	1	0	0.60
Security guard duties	0	3	0	1.81
Driving	2	5	0.90	3.01
Carpentry	1	0	0.45	0
Selling fish at the market	0	1	0	0.60
Weaving a carpet	1	1	0.45	0.60
Paid employment	18	35	8.07	21.08
Cooking	2	6	0.90	3.61
Fishing	3	5	1.34	3.01
Traveling around	0	1	0	0.60
Repairing bicycles	1	0	0.45	0
Washing utensils	0	1	0	0.60
Selling fish	1	0	0.45	0
Crushing stones	2	1	0.90	0.60
Sitting	1	3	0.45	1.81
Technical work	4	9	1.79	5.42
Music activities	0	1	0	0.60
Studying	0	2	0	1.20

Activity	Does this household own a plot of land?		Does this household own a plot of land?	
	Number		Per cent	
	Yes	No	Yes	No
Washing clothes	0	1	0	0.60
Knitting/Weaving	0	1	0	0.60
Sewing	0	1	0	0.60
Teaching religion	0	1	0	0.60
Repairing watches	0	1	0	0.60
Lumbering	1	0	0.45	0
Barber	1	0	0.45	0
Bus conductor	0	1	0	0.60
Livestock keeping	0	0	0	0
Collecting water	0	0	0	0
Taking care of the family	0	0	0	0
Computer studies	0	0	0	0
Labourer/doing odd jobs	0	0	0	0
TOTAL	223	166	100	100

Source: Department of Statistics (2005): Tanzania Country-wide time use survey data file

Table 7.8b: Activities that take most of the time of the spouse of the head of the household with respect to land ownership in Lake Zone

Activity	Does this household own a plot of land?		Does this household own a plot of land?	
	Number		Per cent	
	Yes	No	Yes	No
Rest	0	3	0	2.42
Study/Read	0	0	0	0
Knit handkerchiefs	0	0	0	0
Teaching and school work	1	1	0.53	0.81
Cleaning the house	3	5	1.60	4.03
Livestock keeping	3	0	1.60	0

Activity	Does this household own a plot of land?		Does this household own a plot of land?	
	Number		Per cent	
	Yes	No	Yes	No
Agricultural activities	137	5	73.26	4.03
Domestic work	7	24	3.74	19.35
Taking care of the children	1	3	0.53	2.42
Selling in the shop	0	0	0	0
Construction/Building activities	0	2	0	1.61
Business	11	27	5.88	21.77
Medical services	0	0	0	0
Watching television	0	1	0	0.81
Nursing the sick	1	0	0.53	0
Soldering work	0	0	0	0
Hair plaiting	0	2	0	1.61
Small business	3	4	1.60	3.22
Cleaning work	0	2	0	1.61
Security guard duties	0	2	0	1.61
Driving	1	1	0.53	0.81
Collecting water	0	2	0	1.61
Carpentry	0	0	0	0.00
Selling fish at the market	0	0	0	0.00
Weaving a carpet	0	0	0	0.00
Paid employment	1	11	0.53	8.87
Cooking	11	11	5.88	8.87
Fishing	0	1	0	0.81
Serving patients	0	1	0	0.81
Traveling around	0	0	0	0.00
Repairing bicycles	0	0	0	0.00
Washing utensils	0	1	0	0.81
Taking care of the family	1	0	0.53	0
Selling fish	0	0	0	0.00
Crushing stones	0	1	0	0.81
Sitting	2	3	1.07	2.42
Technical work	2	2	1.07	1.61
Music activities	0	0	0	0.00

Activity	Does this household own a plot of land?		Does this household own a plot of land?	
	Number		Per cent	
	Yes	No	Yes	No
Studying	1	1	0.53	0.81
Washing clothes	1	5	0.53	4.03
Knitting/Weaving	0	0	0	0.00
Sewing	0	0	0	0.00
Teaching religion	0	0	0	0.00
Repairing watches	0	0	0	0.00
Lumbering	0	0	0	0.00
Barber	0	0	0	0.00
Bus conductor	0	1	0	0.81
Computer studies	0	1	0	0.81
Labourer/doing odd jobs	0	1	0	0.81
TOTAL	187	124	100	100

Source: Department of Statistics (2005): Tanzania Country-wide time use survey data file

Table 7.9a: Activities that take most of the time of the head of the household with respect to land ownership in Southern Highlands Zone

Activity	Does this household own a plot of land?		Does this household own a plot of land?	
	Number		Per cent	
	Yes	No	Yes	No
Rest	1	2	0.29	1.37
Agricultural activities	142	7	41.76	4.79
Domestic work	8	4	2.35	2.74
Construction/Building activities	21	13	6.18	8.90
Business	64	59	18.82	40.41
Security guard duties	9	3	2.65	2.05
Driving	7	3	2.06	2.05

Activity	Does this household own a plot of land?		Does this household own a plot of land?	
	Number		Per cent	
	Yes	No	Yes	No
Paid employment	73	48	21.47	32.88
Cooking	2	1	0.59	0.68
Traveling around	0	1	0.00	0.68
Sitting	1	0	0.29	0.00
Studying	0	1	0.00	0.68
Washing clothes	1	0	0.29	0.00
Livestock keeping	2	1	0.59	0.68
Collecting water	1	0	0.29	0.00
Labourer/doing odd jobs	1	1	0.29	0.68
Weave a basket	1	1	0.29	0.68
Preach in a church	1	1	0.29	0.68
Collecting firewood	4	0	1.18	0.00
Praying	1	0	0.29	0.00
TOTAL	340	146	100	100

Source: Department of Statistics (2005): Tanzania Country-wide time use survey data file

Table 7.9b: Activities that take most of the time of the spouse of the head of the household with respect to land ownership in Southern Highlands Zone

Activity	Does this household own a plot of land?		Does this household own a plot of land?	
	Number		Per cent	
	Yes	No	Yes	No
Rest	3	2	0.88	1.37
Prepare gravy	0	2	0.00	1.37
Release chicken	1	0	0.29	0.00
Weave a basket	2	2	0.59	1.37
Filter brew	3	0	0.88	0.00

Activity	Does this household own a plot of land?		Does this household own a plot of land?	
	Number		Per cent	
	Yes	No	Yes	No
Visit a beer club	0	1	0.00	0.68
Livestock keeping	3	0	0.88	0.00
Agricultural activities	146	16	42.94	10.96
Domestic work	33	9	9.70	6.16
Construction/Building activities	5	4	1.47	2.74
Business	60	44	17.65	30.14
Collecting water	4	4	1.18	2.74
Paid employment	32	20	9.41	13.70
Cooking	25	27	7.35	18.49
Traveling around	1	1	0.29	0.68
Sitting	3	2	0.88	1.37
Studying	6	3	1.76	2.05
Washing clothes	13	9	3.82	6.16
TOTAL	340	146	100	100

Source: Department of Statistics (2005): Tanzania Country-wide time use survey data file

The results suggest that the activities that the households that do not own land engage in are business, paid employment, technical work, construction/building activities, domestic work, and cooking. It is noted that some of these people also engage in agricultural activities either possibly on hired land or, may be, as agricultural workers for a wage but they do not consider this as paid employment.

Charts 5 and 6 below present the findings on households that do not own land on just three main activities of the Lake and Southern Highlands zones.

Chart 7.5: Three activities that take most of the time of the head of the household for household that do not own land of Lake and Southern Highlands zones

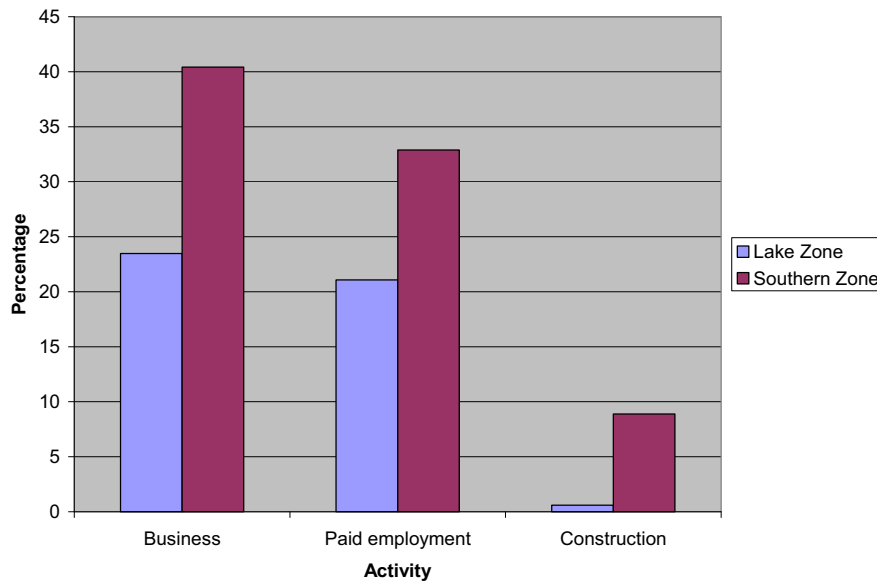
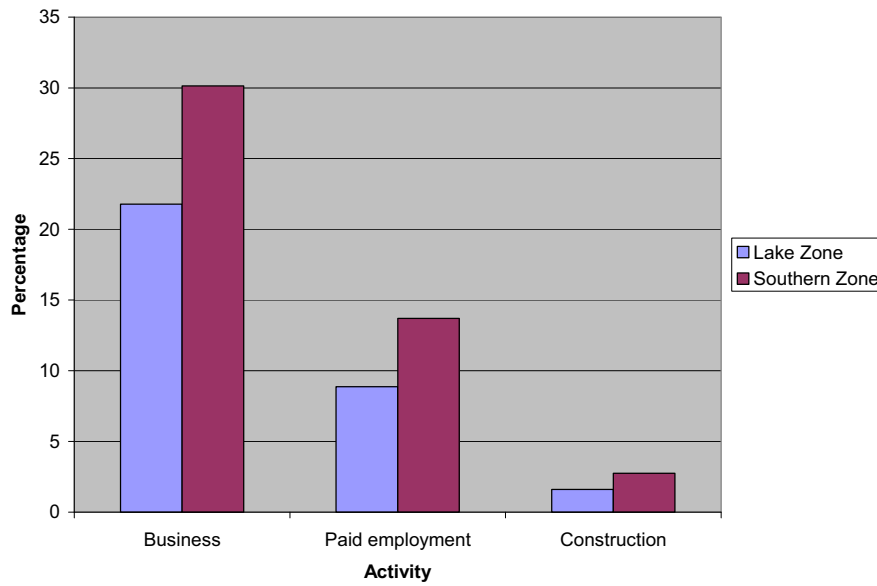


Chart 7.6: Three activities that take most of the time of the spouse of the head of the household for household that do not own land of Lake and Southern Highlands zones



In Tanzania, the non-agricultural activities are currently generating higher income than agricultural activities and this is likely to remain the case for the near future. Accordingly, the potential for the households of the Southern Highlands zones to have a lower level of poverty than the households of the Lake zone is vividly demonstrated in the above two charts.

8 SUMMARY AND CONCLUSION

Although it still remains to estimate the average time spent on agricultural activities in the two zones, the available information seem to suggest that a larger number of rural people in the Lake zone spend most of their time on agricultural activities than that of the rural people in the Southern Highlands Zone. Furthermore, from the information on food and cash crop production and producer prices it would seem that rural people in the Southern Highlands zone would have a lower level of poverty than that of the rural people in the Lake zone.

Again, although the types of business the people are engaged in have not been determined, it would seem that the urban people of the Southern Highlands zone would also have a lower level of poverty than that of the urban people in the Lake zone. This is because a higher percentage of urban people in the Southern Highlands zone spend most of their time in business and paid employment than the percentage of the urban people that spend most of their time in business and paid employment in the Lake zone.

Accordingly, it can be concluded that the people in the Southern zone are potentially likely to have a lower level of poverty than a level of poverty of the people in the Lake zone because their time seems to be allocated to gainful activities.

In order to eradicate poverty in the rural areas of Tanzania it is crucial that people are made aware of the need to budget their time profitably. People in the rural areas should be encouraged to allocate time to both tradable food and cash crop production if weather conditions allow. Investment in infrastructure should also be made in order to make non-tradable food crops tradable in some areas where communication is generally very difficult.

As alluded to earlier, the most important thing is to determine an allocation of time to the various human activities in such a way that the set goal of household eradication of poverty is achieved.

REFERENCES

1. Adler Hans J. and Hawrylshyn O (1978), “Estimates of the Value of Household Work, Canada, 1961 and 1971”, *Review of Income and Wealth*, December 1978, 24 (4), pp. 333 – 355.
2. Agriculture in Tanzania since 1986: Follower or Leader of growth? A world Bank Country study, 2000.
3. Becker Gary S. (1965), “A Theory of the Allocation of Time”, *Economic Journal* 75 (September 1965), pp. 493 – 517.
4. Bonke, J. and McIntosh, J. (2005). “Household time allocation – Theoretical and empirical results from Denmark.” *electronic International Journal of Time Use Research*, Vol. 2 no. 1, October 2005, ISSN 1860 – 9937, pp. 1 – 12.
5. Browning M. and Chiappori P.A. (1998). “Efficient Intra-Household Allocations: A General Characterization and empirical Tests.” *Econometrica* 66 (6), pp. 1241 – 1278.
6. Bruton, Henry J. (1967), “Productivity Growth in Latin America”, *American Economic Review* Vol. 57, 1967, pp. 1099 – 1116.
7. Buchinsky M. (1994) “Changes in the US Wage Structure 1963 – 1987: Application of Quantile Regression.” *Econometrica* 62 (2): pp. 405 – 458.
8. Department of Statistics (2005): “Tanzania Country-wide time use survey data file”.
9. Gronau R. (1977). “Leisure, Home Production, and Work – the Theory of the Allocation of Time Revisited,” *Journal of Political Economy* 85 (December 1977), pp. 1099 – 1123.
10. Hawrylshyn O. (1976). “The Value of Household Services: A Survey of Empirical Estimates,” *Review of Income and Wealth*, (June 1976), pp.

- 101 – 131.
11. Household Budget Survey 2000/01. National Bureau of Statistics Tanzania, Dar es Salaam, July 2002.
 12. HRDS (Human Resource Development Survey by The Population and Human Resources Division of the East Africa Department of the World Bank in collaboration with the University of Dar es Salaam and the Government of Tanzania's Planning Commission). 1996. www.worldbank.org/lsm/country/tza/tanzhome.html. Washington, D. C.: World Bank.
 13. Juster, T. F. and Stafford, F. P. (1991). "The Allocation of Time: Empirical Findings, Behavioural Models, and Problems of Measurement." *Journal of Economic Literature* 29 (2), pp. 471 – 522.
 14. Jedruszek, J. (1980). Economic efficiency and the process of development: a study of developments in employment and productivity in Tanzania, 1967 – 1977. University of Dar es Salaam Inaugural Lecture series no. 17. Dar es Salaam University Press, 1980.
 15. Kendrick, J.W. (1961). *Productivity Trends in the United States*. National Bureau of Economic Research, 1961.
 16. Kendrick, J.W. and Sato, R. (1963), "Factor Prices, Productivity, and Economic Growth", *American Economic Review* Vol. 53, 1963, pp. 974 – 1003.
 17. Khandker, S. R. (1988). "Determinants of Women's Time Allocation in Rural Bangladesh." *Economic Development and Cultural Change* 37 (1), pp. 111 – 126.
 18. Kitterød, R. H. and Lyngstad, T. H. (2005). "Diary versus questionnaire information on time spent on housework – The case of Norway." *electronic International Journal of Time Use Research*, Vol. 2 no. 1,

October 2005, ISSN 1860 – 9937, pp.

19. Morris, D.M. (1979), *Measuring the Condition of the World's Poor: The physical Quality of life index*. Pergamon Polisy Studies.
20. Mueller, E. (1984). *The Value and Allocation of Time in Rural Botswana* ,” *Journal of Development Economics*, (May 1984, 15 (1, 2, 3), pp. 329 – 360.
21. Pollack, R. A. and Wichter, M. L. (1975). “The Relevance of the Household Production Function and Its Implications for the Allocation of Time,” *Journal of Political Economy*, April 1975, 83 (2), pp. 255 – 277.
22. Sarris, a. and Tinios (1994), “Consumption and poverty in Tanzania in 1976 and 1991: A comparison using survey data. *World Development* 23, 1994, pp. 1401 – 1419.
23. Tanzania Demographic and Health Survey (1996), Bureau of Statistics, Planning commission, Tanzania. *Demographic and health Surveys*, Macro International Inc.
24. *The Economic Surveys, various issues*. The United Republic of Tanzania, The president's office – planning and privatization, Dar es Salaam – Tanzania.
25. Wanmali, S. (1992) “Rural Infrastructure, the Settlement System, and Development of the Regional Economy in Southern India”, *International Food Policy Research Institute Research Report 91*.
26. World Bank PHRD (1993). (Population and Human Resources Division, East Africa Department, Africa Region). *Tanzania: A poverty profile*. Washington, D.C.
27. World Bank country study (2000). *Agriculture in Tanzania Since 1986: Follower or Leader of Growth?* The World Bank, Washington, D.C.