

MQ

2 2 8 1 2

U M I
MICROFILMED 1998

INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

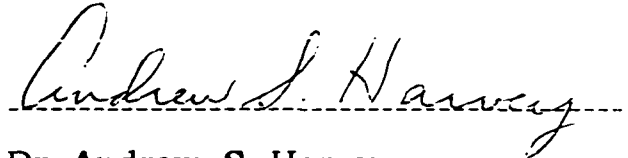
UMI

**A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA
313/761-4700 800/521-0600**

**TIME AN INDICATOR OF DEVELOPMENT: INTRODUCING A TIME-USE
MODULE INTO HOUSEHOLD SURVEYS.**

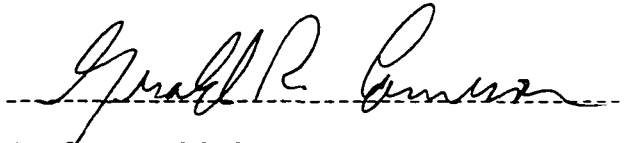
This practicum is presented to the Faculty of Arts at Saint Mary's
University in partial fulfilment of the Master of Arts in International
Development Studies.

c. Maria Elena Taylor, 1997



Dr. Andrew. S. Harvey

Advisor



Prof. Gerald Cameron

Committee Member

Halifax, Nova Scotia

Date 3 Oct / 97



National Library
of Canada

Acquisitions and
Bibliographic Services

395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque nationale
du Canada

Acquisitions et
services bibliographiques

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-22812-6

Canada

TABLE OF CONTENTS

ABSTRACT	iv
ACKNOWLEDGEMENTS	v
I. INTRODUCING A TIME-USE MODULE INTO HOUSEHOLD SURVEYS	1
Time-Use Research Program	5
Working on the Time-Use Modules	7
II. RATIONALE	10
The Project and its Tasks	15
Time Frame	16
III. BRETTON WOODS ECONOMIC POLICIES AND THE LIVING STANDARD MEASUREMENT STUDIES (LSMS)	18
Bretton Woods Organizations Conditionality	18
Structural Adjustment Programs (SAP)	20
What are LSMS	23
Conclusion	30
IV. TIME AS A TOOL OF RESEARCH	32
What do we mean by time-use research?	34
Methods of Data Collection	37
Time-Use Surveys without a Clock	39
Time Indicators	43
Expanding Time-Use Analysis using statistical software	45
Conclusion	48
V. TIME AN INDICATOR OF DEVELOPMENT	50
Paid and Unpaid Work	53
Gender Analysis	55
Extended Poverty Analysis - Household Time Overhead.	60
Nutritional Analysis	62
Evaluating Social Change and Quality of Life	62
Leisure as a Welfare Indicator	64
Changes in the Social Environment	65
Conclusion	66
VI. RECOMMENDATIONS FOR INCORPORATING TIME USE MODULES INTO HOUSEHOLD SURVEYS	67
Proposed Instruments of Data Collection	69
Stylized Activity List	70

Stylized Activity Log	72
Open Interval Time Diary	76
Proposed Coding for Time-Use Surveys	78
Activity Coding	78
For Whom Coding	83
Location Coding	83
 BIBLIOGRAPHY	 84

ABSTRACT

This paper deals with historical, theoretical, and methodological factors considered in the design of time-use modules for the Living Standard Measurement Studies (LSMS) of the World Bank. Project carried out, in the year of 1996 and part of 1997, by the Time-Use Research Program, of Saint Mary's University.

It considers that economic evaluation methods promoted by international organizations, throughout the world, are blind to the living conditions of individuals and to the impact on the structures of society. By using money metric indicators the contribution that nonmonetary activities make to the welfare of individuals, society, and the economy is dismissed. Consequently, if the goal of public policy is to reduce poverty and improve living conditions, this narrow definition of development cannot be used and must be expanded to encompass non economic factors.

Including a time-use module in LSMS surveys can add an extra dimension to the understanding of the conditions faced by households in developing countries. The data collected would provide an accurate picture of the constraints encountered by individuals in their daily lives. This knowledge would facilitate the design and promotion of policies that are supportive of individuals and of a society that is both dynamic and compassionate.

The paper includes information about methods and instruments of time-use data collection and deals with procedures to calculate variables necessary for time-use analysis. It additionally presents three instruments of time-use data collection with the appropriate guidelines for codification of time-use variables.

ACKNOWLEDGEMENTS

This paper written with the people of Honduras in mind is especially dedicate to them, the beacons that lead my search.

I would also like to take the opportunity to thank Dr. Anthony O'Malley who helped and directed the path of my academic search. To Prof. Gerald Cameron who always had a sympathetic ear to my difficulties, opening doors and finding solutions, when I thought the obstacles were too great to overcome. To Dr. Andrew S. Harvey whose trust and confidence in my capacity has always encouraged me to explore new paths. To both Dr. Harvey and Prof. Cameron for their assistance in the successful completion of this paper.

To my beloved daughter Gimena whose courage in the face of insurmountable problems has shown me the strength of the human spirit. To Jim, my husband, and my son's Patrick, Julian, and Michael my love and appreciation for their understanding and reassurance. To my parents' Dr. F. Salomon Jimenez Castro and Prof. Zoila Munguia de Jimenez (QDDG) my gratitude for encouraging my studies and instilling in me the values that lead to this search. To all thank you from the bottom of my heart.

I. INTRODUCING A TIME-USE MODULE INTO HOUSEHOLD SURVEYS

This paper is presented in fulfilment of the practicum requirement of the Master of Arts Degree in International Development Studies (IDS). It explores theoretical and methodological concepts considered in the design of time-use modules for the Living Standard Measurement Studies (LSMS) for the World Bank. Project carried out, in the year of 1996 and part of 1997, by the Time-Use Research Program, of Saint Mary's University; where I have worked since I completed the academic requirements of my degree.

The paper is divided into six chapters:

- Chapter I Details the reasons for and the type of research that I undertook as a graduate student, following a path that led to the project which is the object of this paper.
- Chapter II Comprises the rationale for this paper and describes the tasks and time frame of the project assigned to the Time-Use Research Program by the World Bank.
- Chapter III Briefly presents the Bretton Wood Organizations' (BWO) economic policies, and the Living Standard Measurement Studies (LSMS).
- Chapter IV Contains a preamble of time-use research, which includes information about methods and instruments of time-use data collection. Additionally, it deals with

procedures to calculate variables necessary for time-use analysis.

Chapter V Introduces time as an indicator of the living conditions of the individual and the household, and shows applications of time-use in developing countries.

Chapter VI Presents the proposal to the World Bank which contains suggestions for proper time-use procedures. In addition it presents three instruments of data collection for different types of time-use surveys.

I was introduced to Structural Adjustment Programs (SAPs) in a 1991 visit to Honduras. I emigrated from Honduras in 1981, where I had worked for nine years in various capacities, always related to socioeconomic development. Immediately following my arrival in Canada life circumstances did not allow me to continue working on issues related to development and public policy issues. Consequently, my knowledge of what was happening in developing countries, was limited and restricted to news received through the main stream media, which failed to capture the reality of events taking place in developing countries.

Consequently, when I arrived for a visit to Honduras, after an absence of ten years, the social and economic dislocation of Honduras'

socioeconomic structures became evident. After enquiring from old co-workers, I found how international economic policies had changed during the years I had been disconnected from development issues.

Educated during my undergraduate years in the school of Keynesian economics and influenced during my career by the United Nations Economic Commission for Latin America (ECLA), the policies promoted by the BWO made little sense. My puzzlement and concern were so great that I felt the need to return to university; at an age when my undergraduate friends were preparing to accept early retirement packages.

Once I took the decision to return to university there was no question that I would not further my economic training. During my career in Honduras, I had found that development issues had very little to do with economics, and more with structural bottlenecks. Consequently, there was only one course of study that could answer my questions, the International Development Studies Program.

The flexibility of the IDS program allowed me to direct my studies to my personal line of enquiry, the international economic system and

economic policies carried out by the BWO. I was able to focus on the ideological changes that took place during the international monetary and financial crisis of the seventies and eighties; the response of industrialized countries, international organizations, and commercial banks; and the impact of the BWO policies to the socioeconomic structures of developing countries.

My research showed that small heavily indebted countries are kept captive, unable to reject the push and pull of the international economic system, diverting their goals away from indigenous development (Ghai, 1991). It also became clear to me that the process of thought control inherent in the system (Chomsky, 1987, 1989) ostracized anyone intent in changing present structures.

Consequently, the only means to promote reform is to show through scientific data, the unfairness of these economic policies. These factors influenced me to search for alternate methods of research to measure and validate the impact of economic policies on the lives of individuals.

Time-Use Research Program

The Time-Use Research Program, an initiative of Dr. Andrew S. Harvey of the Economics Department of Saint Mary's University was established to "promote and facilitate, worldwide the understanding, measurement, analysis and policy application of human time allocation data. Its major objectives are:

- To investigate the theory, measurement and analysis of time allocation;
- To promote and work for the development of international standards in the design and implementation of time allocation studies;
- To identify and network individuals interested in the measurement and use of data on human time allocation;
- To maintain worldwide documentary and bibliographical material on time-use studies;
- To provide information, guidance and assistance to individuals and agencies interested in the design, conduct, analysis and reporting of time allocation studies;
- To conduct basic and applied research involving the collection and/or analysis of time-use data."

(<http://www.stmarys.ca/partners/iatur/tur.htm>)

I became involved with this program in 1994, when I participated in time-use research field work project, as part of the academic requirements of my degree. At the conclusion of the internship, I was invited by the Director of the Program to continue working as a full time staff. Since that date, I have collaborated with Dr. Andrew S. Harvey in several projects, supported among others by the United Nations Statistical Office, United Nations Development Program, and the United Nations Institute for the Research and Advancement of Women (INSTRAW).

Through the inventory of time-use studies and the extensive literature database, of nearly forty eight-hundred items of time-use related literature, held at the centre, I have continued my education. Time-use literature abounds with information on survival or remedial strategies used by individuals and households, a method promoted by Cornia, Jolly, and Steward (1987) to understand living conditions in the household. As I became more involved in time-use research it became evident to me how suitable this method was to evaluate the impact of economic policies on individuals.

Dr. Harvey, a prolific writer and researcher, is internationally known for his interest in and promotion of time-use research; presently holding among others the position of president of the International Association of Time-Use Research (IATUR). He participates widely in the international scene, presenting the message of the benefits of time-use research. In view of his interest the World Bank selected him as the main author of the time-use module to be included in a volume to provide direction in conducting LSMS household surveys. Since I was part of the program and had an international development education Dr. Harvey assigned to me a major part of the project.

Working on the Time-Use Modules

I was assigned the following tasks:

- Design an activity coding scheme based on multinational conventions and adapted to incorporate tasks characteristic of developing countries.
- Design a stylized activity log and an open interval diary which could capture the necessary data.
- Justify the incorporation of a time-use module within a LSMS household survey.
- Find applications for time-use data in developing countries.
- Collaborate with Dr. Harvey in summarizing the large amount of information on time-use data collection methods.

The first task that I undertook was the development of the activity coding scheme. For this purpose Dr. Harvey provided me with the Eurostat proposed activity coding scheme; the coding used by Acharya and Bennet (1981) in a Nepal time-use survey; the proposed classification of activities to be incorporated into a satellite account in the United Nations System of National Accounts (SNA), and a list of literature on the subject. Taking into consideration both activity coding schemes, the proposal for the SNA, readings on activity classification for subsistence economies, and my personal knowledge of developing countries, I designed the activity coding scheme that appears in Chapter VI.

To design the stylized activity log and the open interval diary, Dr. Harvey provided me with the tools of research used by different countries. After several discussions, we developed a design that in our estimate captures as much relevant data as it is possible. See Chapter VI.

Justifying the inclusion of a time-use module within an LSMS household survey became my most important contribution to the project. It is in Chapter V where I employed the knowledge I had

acquired during my years of study. In the second stage of the project this chapter was enriched with the incorporation of time-use applications in developing countries.

The technical and methodological section of the project was the responsibility of Dr. Harvey; my intervention was limited to helping him summarize an extensive literature. The experience, however, was unique helping me to expand my knowledge of time-use data collection.

II. RATIONALE

When the Bretton Woods conference was convened, in the summer of 1944, economists and politicians believed they had harnessed all the knowledge required to manage the global economy. Inebriated with this new found proficiency they were eager to make use of it and secure universal prosperity for humankind. For that purpose American and British politicians invited the members of the free world to this conference to discuss questions of how to reorganize the world economy. The certainty of that conviction, however, has caused humanity much suffering. The mistakes incurred are beyond the scope of this paper, however, the impact on the individual and the need to find alternatives to the methods arising from this economic order is at the core of this practicum.

In spite of the rhetoric - to create a better world for humankind - the conference concerned itself only with problems encountered by industrialized countries during the prewar years. Consequently, the impacts of the new system on the environment, individuals, and the fabric of society, and the nature of nonmonetary productive activities were irrelevant to these proceedings. The only concession made to the Latin American countries, participants in this conference, was to

include within the mandate of the World Bank a potential involvement in the development process, but subsequent and subservient to the success of the reconstruction effort.

From this conference the so called Bretton Woods Organizations (BWO) - The International Bank of Reconstruction and Development (World Bank), and the International Monetary Fund (IMF) were born. With the lead of the industrialized countries they developed, in unison with the United Nations, methods, procedures, and regulations to measure and value the economic performance of nations. This process provided economic science a prominent position in public policy design. The emphasis economic science place on money metric indicators validated the view that a country's financial well being has precedence over the welfare of communities and individuals.

Since that time the global economy has changed drastically and the role of the BWO has turned to the restructuring of the developing economies. Aiming to reduce internal and external disequilibrium within these countries, the BWO has forced the application of Stabilization and Structural Adjustment Programs (SAP's).

Before the middle of the nineteen eighties, the performance of these economic policies, were evaluated through the fluctuations experienced by macroeconomic indicators, or by the degree of government compliance to the targets specified in the SAP agreement. These type of evaluations, are blind to the effect of these policies on people and the structures of society, since the aggregation process camouflages and blurs any trace of human suffering. Moreover, economic analysis is not able to infer that households and communities weather economic conditions through a multitude of strategies that have to do with the substitution for rather than the acquisition of money. Ideas too foreign to those bred and trained under the school of classical economics. With the increasing involvement of the BWO in the developing countries, these accounting methods have come under wide criticism not so much for what they measure but for what they fail to capture.

After more than a decade of Stabilization and SAP's a series of studies - the best known of which is Cornia, Jolly and Steward's *Adjustment with a Human Face* (1987) sponsored by the United Nation's Children's Fund (UNICEF) - quantified the effect suffered by children and

vulnerable groups because of BWO sponsored economic policies. These criticisms forced the World Bank to:

- search for alternate tools to evaluate such programs - effort that culminated with the creation of the Living Standards Unit (now Poverty and Human Resources Division - PRDPH); and to
- search for band aid policies - or mesopolicies - to relieve the impact of Stabilization and Structural Adjustment Programs on vulnerable groups.

In this environment of partial compromise the new unit received financing from the World Bank's Research Committee to execute the first two LSMS household surveys - Côte d'Ivoire in 1985 and Peru in 1985-86. However, when they were finished, the Research Committee concluded that it could not continue to finance LSMS studies because they could not be considered research. After that date countries interested in carrying out LSMS have been forced to borrow funds, within the World Bank and other international agencies, to carry out such studies.

In spite of the reservation of other units within the Bank, the PRDPH has continued to promote these type of studies. But succeeding LSMS

surveys have been directed to target mesopolicies rather than to understand the impact of economic policies on the household. Consequently, they have not helped, the bank or national governments, to understand why economic policies are not providing the results expected in developing countries.

The PRDPH has been aware of these shortcomings, consequently, it has tried to expand the range of policies issues that may be analyzed with LSMS data. In 1994 the PRDPH initiated the *Increasing the Policy Relevance of LSMS Household Surveys* research project, to produce a guide, for future multi-topic household surveys, to culminate in the publication of a book. Authors in each field were selected by the World Bank and invited to participate. My involvement with the project was fortuitous to the selection of the Saint Mary's University Time-Use Research Program, under the direction of Dr. Andrew S. Harvey, to explore the possibilities of introducing a time-use module within the LSMS household survey.

The outcome of the project is to be a book written especially for the people, who within developing countries, advise, decide, or carry out household statistical surveys. It is not a manual, but rather a glossary

of the latest techniques and the most effective ways of implementing household surveys in developing countries.

The Project and its Tasks

The PRDPH included a time-use module within the proposed multi-topic household survey, because:

- ° this method of social enquiry has been found to be the best way to capture non-market production;
- ° time-use surveys are able to unobtrusively collect personal information about the daily lives of individuals; and
- ° it can be subject to a broad range of scientific analysis and statistical testing.

The responsibility assigned to the Time-Use Research Program was to write the chapter that justifies the inclusion of a time-use module within future LSMS household surveys, discuss traditional collection methods, and propose three alternate modules. The inclusion of a time-use module within this book, however, does not guarantee its automatic incorporation within all LSMS surveys. But it is hoped that the arguments will be sufficient to justify its inclusion and to convince the audience of the importance of its consideration.

The terms of reference defined four specific tasks to be included and addressed in the time-use module chapter:

- Time an indicator of Development. This section was to contain general arguments, examples of how time-use indicators have been utilized in the past, and recommend approaches for collecting time-use data.
- Examine and evaluate LSMS surveys that in the past attempted to collect time-use data.
- Propose three versions for collecting time-use data:
 - A simple version (interview 5-10 minutes) to gather basic information.
 - A medium length version (interview 10-20 minutes) to support in depth research on the issues raised in this chapter.
 - An expanded version, that will incorporate the full range of research commonly undertaken with time-use surveys.
- Discuss specific questions that may arise in implementing time-use surveys in developing countries.

Time Frame

Of necessity the project time frame was designed to be quite flexible, in consideration of the difficulties that could arise in synchronizing a

multi-topic survey; with chapters and modules, written by different authors, that have to fit together into one unit.

The project had two different facets:

- The initial phase, asked for the submission of:
 - an outline of the report - one month after initiating the project;
 - the first draft to be presented six months after initiating the project;

The first draft would be submitted for peer review for comments. The review was expected to generate comments and indicate a series of revisions

The second and final phase required the submission of a second draft six months after; to be followed by

- PRDPH comments on second draft two months after
- Presentation of the final draft the following month.

III. BRETTON WOODS ECONOMIC POLICIES AND THE LIVING STANDARD MEASUREMENT STUDIES (LSMS)

Conditions inherent in the process of restructuring the global economy, in the decades of the seventies and eighties, placed developing countries under the regulation of the BWO. The delinking of the dollar to gold, by the United States in 1971, created an expansionist period of international money supply that took developing countries by surprise. The response of the industrialized countries to protect their own economies increasing interest rates; reducing commercial credit and international aid; and circumscribing international trade to their own regions; contributed to the degradation of prevalent conditions in developing countries. For them deficits of balance of trade became a chronic condition which were financed by the surplus of Eurodollars in the international markets. But what at the time was applauded as the solution to the problem, even by BWO, caught developing countries in a debt trap.

Bretton Woods Organizations Conditionality

The eruption of the debt crisis in 1982, placed the International Monetary Fund (IMF) not only in the position of lender of last resort for

developing countries, but also as the only lender. Dividing the IMF into two groups, one of powerful lending countries (industrialized countries) and a group of unprepared bewildered borrowers (developing countries), each side with an overwhelming desire to increase or reduce accessibility to credit.

In a few years the Fund went from an unsuccessful institution responsible for stabilizing international monetary rates and foreign exchange cooperation among industrialized countries, to that of credit ranking institution, manager of public policies, and financier of developing countries trade flows. Consequently, its power grew by leaps and bounds encouraged by the “cross-conditionality” inherent in the process. Debtor countries in dire stress are not able to obtain funds from any source, or reschedule their debts without a previous approved program of structural reform signed with the IMF. “This agreement - SAPs - specifies the economic policy changes that the debtor country will make to get its financial house in order . . . ” (Bloodgood, 1994.)

Structural Adjustment Programs (SAP).

As the short-term stabilization programs proved ineffectual the IMF realized that the problems faced by developing nations were not of a short term liquidity nature but a structural solvency crisis requiring long-term lending. Consequently, the World Bank with more experience in the developing world and with long term lending, was incorporated into the process. As a result the concepts of Stabilization, SAPs, and the functions of the Institutions have merged in the process. To the point that it is almost impossible to demarcate where the sphere of action of each institution begins and the other ends.

Although, the IMF and World Bank assure the programs imposed are independently designed by individual governments, they all contain the following conditions:

- Reduction of Government expenses in activities such as social programs and economic infrastructure.
- Increase of tax base.
- Restriction of money supply and bank credit.
- Monetary reform such as increase of interest rates and devaluation.
- Liberalization of trade by:
 - Reducing or eliminating export taxes
 - Removing import licences, quotas and quantitative restrictions to trade
 - creating a uniform custom tariff rate.
- Increase in producer prices, through:
 - Reduction of wage bill.

- Wage freezes
- Decline in real wages and salaries
- Reducing or eliminating employee benefits'
- Reduction of States participation in economic activity:
 - Closure or privatization of State enterprises in the productive and financial sectors.
 - Reduction or elimination of State marketing agencies.
- Incentives to foreign investment.

The main objective of these programs is to reduce aggregate demand lowering wages and state transfers to individuals - social programs - strengthen fretted market forces, and widen the scope of action of private enterprise. Because of its bias for liberating market forces and stimulating export production it promotes a process of social internal differentiation that produces extraordinary opportunities for those with access to foreign currency and hardship for those dealing strictly in the domestic scene, whatever class or income level (Ghai and Hewitt de Alcantara, 1991)

The human cost of SAPs has been exposed, since its earliest applications, by non governmental organizations and United Nation's agencies working in developing countries. This has forced the BWO to relieve the strictness of some of its policies. In 1987, the United Nation's Children's Fund (UNICEF) sponsored the publication of Cornia, Jolly and Steward's *Adjustment with a Human Face* which drew on the

Funds experience and studies of the effect suffered by children during periods of stabilization and restructuring. Searching for causality and links to policy, they found that cuts of public sector spending greatly affected children. They incorporated into their analysis performance indicators related to nutrition, health, and educational status, such as: infant and child mortality rates, statistical distribution parameters of anthropometric measurements on children, school enrollment or attendance, and the average results of functional literacy tests or public examinations. A large percent of these indicators showed in some countries a reversal and in others a reduction during the period of stabilization and restructuring.

The performance indicators created a wide controversy, however, the study received wide attention especially because at that time several countries were facing political instability and civil disturbances by the protest of civil servants facing lower real incomes and workers of import-substitution industries in danger of bankruptcy (Cameron, n.d.). A number of case studies carried out by the World Bank and the Organization of Economic Cooperation and Development (OECD) staff,

validated the long standing claim, by non-governmental organizations (NGO's) and the United Nations (UN), of extreme hardship of large portions of the population in African and Latin American countries.

These and similar studies succeeded in reducing the harshness of the programs for vulnerable groups, such as children, mothers, and the new poor. Since 1987, low income countries have been asked to include an assessment of the social impact of the burden of adjustment in all their reports. It is for this purpose that the World Bank created the Living Standard Measurement Studies (LSMS).

What are LSMS

Until 1980, governments and international organizations evaluated public programs by the fluctuations and performance of macro economic indicators, however, these data blurred the impact the programs were having on individuals, especially vulnerable groups such as: women, children, and the elderly. The Living Standard Measurement Studies (LSMS) came to fill this gap. They were designed to collect household data to assess household welfare, understand household behaviour, and evaluate the effect of various government policies on the living

conditions of the population (Grosh and Glewwe, 1995). As structured, however, with a focus on consumption, the LSMS fails to capture appropriately the full reality of production and consumption at the household level.

The LSMS surveys are multi-topic questionnaires that contain:

- a household questionnaire to assemble data regarding household members;
- a community questionnaire, to gather information about community infrastructure from community leaders and groups; and
- a price questionnaire, to collect details about local price levels;
- sometimes a fourth questionnaire regarding school or health facilities is incorporated (Grosh and Glewwe, 1995).

The LSMS measure the welfare of the household by its consumption levels, dismissing other factors that contribute to the standard of living in the household. Data on savings, employment, health, education, fertility, nutrition, housing and migration is also collected to evaluate its impact on consumption.

One of the tasks assigned to the Time-Use Research program by the World Bank (for a description of the project see Chapter II) was to discuss in detail three LSMS surveys for which time use data had been

collected. The World Bank provided information to evaluate the Pakistan 1991, Jamaica 1993, and Tanzania LSMS. However, we only reviewed two, since we found that the Tanzania survey did not incorporate time-use concepts into its questionnaires.

Pakistan Integrated Household Survey

The 1991 Pakistan Integrated Household Survey, contains two separate questionnaires that collect information on the household and the community. The household questionnaire consists of seventeen different sections, each dealing with a particular type of data sought: Household composition, housing, education, health, etc. Included within the different sections that comprise the household questionnaire, we found many questions that gather time-use data, or information that could be easily accessed through time-use methods.

The time-use questions in this survey, however, were not designed to discover how people from Pakistan distribute their twenty four hours of the day, but rather: a) to expand the available information on the subject of enquiry of each section, or b) as an alternative method to obtain information on activities that are not measurable through traditional methods.

Questions regarding time-use in each section seems to have been designed independently. As a consequence, it is difficult to recreate patterns of daily activities.

The following are some time-use questions found in the questionnaire:

- a. How many regular (typical, normal, or traditional) hours a week do you...?
- b. How many hours and minutes did you spend doing... ?
- c. How many hours a week in the last seven days have you...?

Both types a. and b. use formats leaving the time unit of analysis to the interpretation of the respondent. Question a. uses vague words such as regular, normal, typical, or traditional hours a week . Others such as question b. are left completely open, no time frame is incorporated into the question. Consequently, each person select their individual unit of measurement. Some people may talk about what they have done through all their lives, while others only what they have done in the last month. Methods such as this tend to compile unreliable information.

Another failure of this survey, is that the questionnaire contains specific questions for each gender. This is not methodologically correct

because the bias of the designers determining gender specific activities is incorporated into the survey. Due to problems of design this survey does not differentiate between principal, and concurrent activities. Consequently, when one tries to calculate total time spent on productive activities, a selected respondent's total weekly hours added to 137.5 hours or 19.6 hours a day, a highly unreliable result. Considering the nature of the activities included among productive activities, Table III.1, we inferred that the reason for these high results is the fusion of principal and concurrent activities.

Jamaica Survey of Living Conditions

Jamaica with a long history of implementing household surveys departed considerably from the comprehensive and exhaustive nature of most LSMS surveys. Its household questionnaire contains sections dealing with health, education, anthropometric measures, daily expenses, consumption expenditures, food expenses, adequacy of consumption, housing and related expenses, inventory and durable goods, miscellaneous income, employment and time use.

III. 1 Pakistan Household Survey
Hours spent by one respondent in Productive Activities
Household:1101001019 - Person: 51

Hours and minutes in past seven days				
Section 6	Part A	Week		Total
		Days	Hours	Daily Average
	Family Labour Inputs			
	Working in household own farm	7	3	21
Section 6	Part C	Times	Hours	
	Female Time Use			
	Preparing Dung Cakes	14	0.5	7
	Milking	7	0.5	3.5
	Cooking	21	2	42
	Cleaning	4	2	8
Section 6	Part B	Days	Hours	
	Non farm Self Employment			
	How much has each member contributed in past 7 days	7	8	56
	Total			137.5
				19.6

Source: Pakistan Integrated Household Survey

The activities incorporated into the time-use questionnaire are more comprehensive, containing many questions that relate to unpaid work. This survey, additionally, defines the past seven days as the unit of time measurement, but it falls into the same mistake of asking vague questions such as the "usual" hours. In the same line as the Pakistan method it does not differentiate between principal and concurrent activities, which makes it difficult to check the veracity of the data.

The questionnaire has the advantage of not being gender specific, therefore, it is possible to perform a 'partial' gender analysis. Table III.2 shows the result of such an analysis. Males with a work burden of 30.3 hours are suffer less hardship than women who allocate 32.8 hours a week to productive activities. As detected in previous studies males productive activities are centred around the market place; in this case dedicating two thirds, of the time allotted to productive activities, to market production. While females dedicate only one third, of the time allotted to productive activities, to the market. These proportions, however, are not reliable since they may incorporate concurrent activities due to a lack of a 24-hour framework.

As most LSMS surveys it does not take into consideration, time necessary for physiological needs. This is understandable because even if the survey departed from the traditional LSMS approach, the main measure of welfare continues to be the consumption level of the household.

Conclusion

We concluded that the Pakistan survey could not only be greatly improved, but also its amplitude reduced, without endangering the quality of the data collected. The Jamaican survey was found to be a great improvement over the Pakistan's survey. As structured these two surveys incorporate a wealth of information that complemented with a properly designed time-use module, would provide a very clear picture of the conditions of the household.

It would be necessary to incorporate a 24-hour framework differentiating between principal and concurrent activities to allow quality control of the data. The best method to secure this is the time diary but if properly designed a time log can be suitable. The following chapter presents methodological concepts that will have to be taken into account.

Table III.2
Partial Gender Analysis
1993 Jamaica LSMS

ACTIVITIES	Males			Females		
	Hours	Minutes	Total Hours	Hours	Minutes	Total Hours
Main job	19.1	31.8	19.7	11.2	29.9	11.7
Secondary job	0.4	0.0	0.4	0.2	0.0	0.2
Looking for job	0.1	0.1	0.1	0.1	0.0	0.1
Other activities that contribute to income	0.1	0.0	0.1	0.1	0.0	0.1
Other act to increase consumption	0.2	0.0	0.2	0.1	0.0	0.1
Preparation food	1.4	1.3	1.4	5.4	2.9	5.4
Cleaning house	0.7	2.8	0.7	2.5	5.3	2.6
Other household chores	0.1	0.1	0.1	0.0	0.0	0.0
Care of clothes	0.4	0.8	0.5	2.5	2.1	2.5
Fetching water	0.5	1.4	0.5	0.4	1.2	0.4
Collecting wood	0.2	0.6	0.2	0.1	0.3	0.1
Shopping and doing errands	2.5	8.7	2.6	3.2	5.7	3.3
Commuting-work	1.7	2.4	1.7	1.1	1.8	1.2
Education	1.7	0.2	1.7	2.0	0.3	2.0
Caring	0.3	0.1	0.3	3.1	0.4	3.1
Leisure activities	2.0	0.9	2.0	1.7	1.1	1.7
Total weekly hours			32.3			34.5

Source of Data: Jamaica Survey of Living Conditions, The Statistical Institute of Jamaica. 1993

TIME AN INDICATOR OF DEVELOPMENT: INTRODUCING A TIME-USE MODULE INTO HOUSEHOLD SURVEYS.

IV. TIME AS A TOOL OF RESEARCH

Time-use research goes farther than other methods of social analysis to consider that the quality of life of individuals is not restricted to the provision of material needs. Time-use studies try to fathom the total breadth of human activity and discern how individuals and households adapt to new socioeconomic conditions, taking into account the restrictions presented by the 24-hour framework.

Time-Use is not a new method of research, industrialized countries have a long tradition of carrying out this type of surveys. The first sophisticated study was performed, for socioeconomic planning purposes in the Soviet Union by Strumlin (1924). The thirties saw several studies, Lundberg starting a trend of leisure studies, and Sorokin and Berger on human behaviour (Harvey, n.d.). A landmark in time-use diary research was the Multinational Time-Use Study directed by Alexander Szalai in the mid 1960s; an ambitious project that covered 12 countries and 15 surveys (Harvey, n.d.).

Canada is one of the countries with the longest experience in the subject. Statistics Canada has carried out two national surveys, as part of the General Social Survey - in: 1986, and 1992- and it is in the preparatory stage for a survey in 1998. In addition, several regional surveys have been carried out:

- Vancouver 1965
- Toronto 1969
- Vancouver 1971
- Halifax/Dartmouth 1971-72
- Toronto 1980
- 11 Urban and 3 rural areas 1981

(Statistics Canada, 1986).

National time-use surveys in industrialized countries are carried out by statistical offices. These surveys with a bias for household activity and unpaid work are purposefully designed to be as broad as possible, with the intention of accommodating different types of enquiry and expand their use. In developing countries, however, most time-use research has been the subject of individual projects addressing specific topics.

What do we mean by time-use research?

Time-Use is the method of social research that analyses individual behaviour through the allocation of time to daily activities. The information gathered can be enriched with the addition of objective and subjective variables. When a time-use survey is carried out by itself, and not as a part of a larger survey, it contains two sections. The first collects general data about the individual, the household, and the community and the second contains the time instrument, which can be a diary or a log, where the episodal data about the daily activity is recorded.

Time-use data may be collected through a wide range of instruments: such as direct questions, simple activity lists, logs, or time diaries. However, the time diary is the preferred tool, because it collects the data in sequence and allows for the collection of an extensive range of objective and subjective dimensions of each activity episode as it is entered in the diary.

Time diaries follow the individual through a 24 or 48 hour period, forcing full accounting of daily activities. Diaries can collect time through an

open time interval or restricted interval. Most restricted time diaries collect data in ten or fifteen minute intervals, but this has been found to be problematic, because activities of less than fifteen minutes are sometime missed. In the case of travel studies, it has been found that trips, sometimes short in nature, are missed in restricted time interval diaries. Consequently, the open time interval has become the method of choice.

Depending on their design, diaries can collect a broad range of details about the daily activity of individuals. Most diaries include information about location of the activity, mode of travel, and social contact. Other data that is usually incorporated are concurrent activities, 'for whom' the activity is being performed, 'type of payment' received, quantitative measures such as 'how many', 'how far', aids of the activity, comments, etc.

A cross section of a fictitious filled time diary appears in Table IV.1, to show its clarity, make up, and ease of use. This diary was designed to collect information about two levels of activities, primary and secondary (concurrent), beginning and end time of the activity, primary, secondary (some diaries collect more than two levels), for whom, with whom, and

where the activity takes place, units produced by the activity, and aids of the activity.

Table IV.1 Sample Time diary

Primary activity What were you doing?	S t a r t	E n d	For Whom	Where	With Whom	How many	Payment Type			Secondary Activity What else were you doing?	Technical or animal aids
							cash	in kind	Un paid		
Sleep	4:00	4:45	self	home	personal				x		
Wash	4:46	5:00	self	home	personal				x		
get dressed	5:01	5:10	self	home	personal				x		
Breast feed	5:11	5:15	baby	home	child	1 child			x		
change baby	5:56	6:00	child	home	child				x	hurry children in other room	
Preparation of meal	6:01	6:35	family	home	children	5 meals 3 children			x	talking to husband	adobe fire-wood
Serve meal	6:36	6:50	family	home	husband children	5 meals			x	rock baby	radio-solar power
Eat meal	6:51	7:30	self	home	husband children				x		radio-solar power
Wash dishes clean kitchen	7:31	8:00	family	home	daughter	5 sets of plates, cups			x	listen to radio	radio-solar power
Collect water	8:01	8:50	family	river	3 neighbours-friends 2 children	1 gallon, 2 kms				talk	mule

Time diaries have become popular in social research because they are an unobtrusive method of social research. Respondents concentrate on listing activities, which reduces the feeling of invasiveness into their privacy (Harvey and Macdonald, 1976).

Methods of Data Collection

Traditionally, the chosen method of data collection in developing countries has been **direct observation**, especially in areas with low levels of literacy, where people's activities are not guided by the clock, or where simultaneous activities are predominant. Some researchers believe, that with other methods, people would have difficulty recalling simultaneous activities (Khan et.al., 1992). However, despite its popularity this method has many drawbacks:

- people tend to modify their behaviour in the presence of others;
- it is difficult for observers to determine the difference between pay and unpaid activities;
- recording may be influenced by the bias of the observer;
- samples tend to be small because only one member of the household can be observed at the time;
- its cost.

To avoid or reduce some disadvantages of direct observation, some researchers prefer to use the ***random spot-check observation*** method. But designing the sample for this technique demands extreme care, it needs a high knowledge of demographic characteristics and of daily and seasonal patterns of the population to secure representativeness of the sample.

Both observation methods encounter a problem with privacy, which disallows witnessing activities that take place inside quarters and/or during night hours. This is prejudicial to non monetary activities that contrary to market endeavours, do not take place exclusively during day light hours or in public areas.

In industrialized countries, the methods of choice, have been a) the ***tomorrow or left behind diary*** and b) the ***yesterday or recall diary***. The first, are diaries which are sent or left in the house, for respondents to fill the following day as activities take place. The second method, requires the recall of past activities that took place during preceding days, with or without the assistance and probing of trained enumerators or interviewers.

Tomorrow or left behind diary would be unsuitable for areas with low levels of literacy. The yesterday or recall diary, would be more appropriate. The recall period, however, should not be higher than two days since this has been accepted as the length of time people can recall with accuracy. More important, however, would be the careful design of the diary and use of appropriate terms to measure time in areas where the clock is not widely used. If the design of the diary is clear, direct, and simple, as the one proposed in Chapter VI, it is feasible to collect a wide range of reliable information.

Time-Use Surveys without a Clock

A deterrent to time-use studies in developing countries, has been the erroneous perception that people that do not use clocks cannot report the structure of their days. This problem is caused mainly by the lack of knowledge of the reasons that promote the wide use of clocks in modern societies. The clock is an important technology, for the healthy running of an urban setting. The synchronization of transportation and market activities is absolutely necessary in modern society to avoid chaos. This, however, is not required in subsistence economies, where

timing of activities is aligned to nature and its cycles: such as the daylight and seasons, rather than the clock.

When designing time-use surveys for use in a developing country, or in areas where the clock is not widely used, there will be an additional task for individuals responsible of designing the surveys. They must meet with people knowledgeable of traditions of the area (elders, teachers, social scientists) to translate standard time to terms used in the communities being surveyed. The translation should detect how people identify the hour of the day and how they measure the time that it takes to carry out an activity.

Time-Use Measurements

Activities

Activities are the main focus of research in time-use research. By placing all activities in a time framework, time-use methods equalize and level all human activity. When hours and minutes become the yardstick, all human activity can be measured and compared.

Researchers prefer not to pre-code activities and allow individuals to freely describe them in their own words. This creates more work for

statistical officers, however, it reduces the bias of precoded forms, and turns the survey into a tool of discovery.

Once all the surveys are collected, the data is coded. The most difficult part of this task is the coding of activities. Coders may be guided by detailed activity lists such as the one found in Chapter VI. This activity list has been coded following multinational conventions - in particular Eurostat's coding procedures and has been expanded to incorporate activities typical of developing countries. The activities have also been coded at different levels of aggregation, to show how they can be grouped for analytical purposes. These schemes of activity aggregation comply with theoretical or heuristic (Harvey, n.d.) bases, that are the result of long discussions among time-use researchers.

At a minimum time-use data is aggregated to show the involvement of household members in:

1. market oriented economic activities;
2. non market productive activities;
3. personal;
4. free/discretionary time.

Activities are the main unit of analysis in time-use studies. Common research questions involve different features of specific activities, such as:

- existence or absence of the activity
- allocation of time
- frequency of occurrence
- types of individuals or groups involved on it (participation rates).

Activity episodes

Each time slot or entry, in a time diary, is called an activity episode. This indicator allows us to measure frequency, number, and timing of activities (duration, sequence, and time of the day). Episodes can also be the unit of analysis and have been used to investigate:

- sequence of episodes to determine how people organize their day, and
- how many people execute an activity at a given point in time.

Caution is needed in the analysis of episodal data. In modern societies, time is seen as a circular phenomenon with a daily beginning and end. However, time is linear and continuous, the beginning of the day being a fictitious landmark created by the physiological restriction of human nature. As a consequence, the first hours of the day are not the beginning of all activities, some episodes spill over from the preceding

day. If care is not taken, double recording of one single activity episodes such as sleeping is common. A 24-hour diary will show two sleeping episodes - one at the beginning and the other at the end of the day - when actually they are sections of one individual episode.

Time Indicators

From the original data collected in the activity episodes, additional variables may be computed. This multiplies the analysis options with time-use survey data:

Duration is the time allocated to each episode. It can be calculated by measuring the length of time between the two variables start and end - see Table IV.1. Time allocation can be aggregated in different ways and for different purposes. Duration is used in combination with individual or aggregated activities to find the time allocated to them. This is the variable used to determine how the 24 hours of the day are distributed among activities. It also serves as a check for accuracy, to insure the diary contains data on 1440 minutes of the day.

Other **temporal location** variables situate the activity in particular periods of time. The primary temporal location is the hour. Activities can be further situated in the temporal space by using other details collected in the first section of the survey: such as day of the week, month, and year. Further temporal location, such as seasons, can be calculated with diary data .

Participation can be calculated at different levels, to increase the cognizance of people's daily behaviour. Harvey (Instraw, 1995) has used four primary measures, to develop a number of variables:

- P - population, the completed sample population
- D - doers, participants who did a given activity
- O - occurrences, events - a line on a diary
- T - time (duration).

Table IV. 2 presents time-use indicators developed with data collected by a pilot survey in the Dominican Republic.

Sequence allows the construction of patterns of daily behaviour, relating the occurrence of a given activity to those which precede and follow it. This measurement helps to show how individuals organize their days and increases our understanding of activity participation.

Expanding Time-Use Analysis using statistical software

Use of statistical software packages has increased the type of analysis that can be performed with time-use survey data. The use of hypercodes and procedures such as leading and lagging variables multiplies the number and complexity of indicators that can be generated with time-use survey data.

**Table IV. 2 Measures of Time-Use
Dominican Republic - 1994**

Activ- ities	Popu- lation	Doer s	Par- ticipati on Rate	Epi- sodes	Time	Time per Person	Time per Doers	Time per Episode	Epi- sodes per Per- son	Epi- sodes per Doer
	P	D	D/P	E	T minutes	T/P minutes	T/D minutes	T/E minutes	E/P	E/D
Paid Work	280	115	41.1	312	38055	135.9	330.9	122.0	1.1	2.7
Non- market produc- tion	280	98	35.0	269	8835	31.6	90.2	32.8	1.0	2.7
House- hold mainten- ance	280	249	38.2	2000	60555	216.3	243.2	30.3	7.1	8.0
Personal Devlpmnt	280	107	88.9	524	25425	90.8	237.6	48.5	1.9	4.9
Volunteer	280	30	10.7	55	1695	6.1	56.5	30.8	0.2	1.8
Personal Mainten- ance	280	280	100.0	1683	52185	186.4	186.4	31.0	6.0	6.0
Personal	280	266	95.0	1349	64785	231.4	243.6	48.0	4.8	5.1

Source of data: Dominican Republic Time-use Study, 1994.

A particular useful approach to analyze the information collected in a time diary is the hypercode. A time diary collects in sequence a broad range of information - see Table V.3- that may be combined to create more time-use measurements. For example, we may want to find out the time parents spend with their children in a given day. By looking at Table V.3, we can see that the time parent's spend with their child is not all equal. Interaction may be alone with the child, in the company with others - children, another parent, friends, etc - or a combination of all these. The quality of contact at each level of interaction is different. Consequently, it is important to know whether the interaction is single or multiple. Hypercodes facilitates this type of analysis.

The first step is to create a variable for each value of the original 'with whom' variable, using a binary code: 1 = yes and 0 = no. Next a new hypercode variable is calculated by a) adding the codes in each of the new 'with whom' binary variables and b) multiplying from the second 'with whom' binary variable on, with a decimal value that increases with each succeeding variable. Table IV.3 illustrates this procedure.

Table IV. 3 Using Hypercodes

Calculated Variables				
With child 1 (var001)	With child _n (var002)	With spouse (var003)	With others (var004)	Interaction of parent and child Hypercode variable (var005)
1 = yes 0 = no	1 = yes 0 = no	1 = yes 0 = no	1 = yes 0 = no	$= (\text{var001} + (\text{var002} * 10) + (\text{var003} * 100) + (\text{var004} * 1000))$

The hypercode formula calculates the values of the hypercode variable according to all conceivable combinations of interaction for respondent parents; as follows:

- 0 = alone
- 1 = with child
- 10 = with other children
- 11 = with child & other children
- 100 = with spouse
- 101 = with child & spouse
- 110 = with other children & spouse
- 111 = with child, other children, & spouse
- 1000 = with others
- 1001 = with child & others
- 1010 = with other children & others
- 1011 = with child, other children, & others
- 1111 = with child, other children, spouse, & others

The lag and lead procedure, on the other hand, is the method used to calculate sequencing of activities. The lead places the value of the subsequent episode, of the base variable, into a calculated variable.

Lag is similar to the lead procedure, the only difference is that replaces the value of the base variable with a preceding, rather than a subsequent episode.

Conclusion

This chapter has tried to present to the reader a succinct view of the nature of time-use data collection and analysis. Particular attention was paid to elements of specific interests in developing countries.

Table IV. 4 Base, Lead, and Lag Activity Code Variables

Lag	Primary activity What are you doing?	Lead
	Sleep	Wash
Sleep	Wash	Get dressed
Wash	Get dressed	Feed baby
Get dressed	Feed baby	Change baby
Feed baby	Change baby	Preparation of meal
Change baby	Preparation of meal	Serve meal
Preparation of meal	Serve meal	Eat meal
Serve meal	Eat meal	Wash dishes clean kitchen
Eat meal	Wash dishes clean kitchen	Collect water
Wash dishes clean kitchen	Collect water	
Collect water		

Time-use surveys provide the researcher with the basic information with which to explore hypothesis, however, this data can be expanded by the use of statistical procedures; some of which were presented and explained in this chapter. The type of variables created with available data depends on the research question, subject of the next chapter .

V. TIME AN INDICATOR OF DEVELOPMENT

The mercantilistic roots of Western civilization have contributed to the economic point of view that the volume of market production and transaction determines the level of development of a nation. Experience of the past five centuries, however, has shown that economic growth of a country does not necessarily guarantee a higher standard of living for individuals. Consequently, if the goal of public policy is to reduce poverty and improve conditions, this narrow definition of development, must be expanded to encompass non economic factors.

Public policy carried out in developing countries, has treated the economy as a separate entity from the household and therefore society; which disregards the fact that the household is a basic unit of production in the economy. Moreover, it has eluded the point, that the household does not depend exclusively on money metric activities, but instead uses many non economic schemes that cannot be overlooked.

Despite of the linearity of time, human activity is periodic in nature and has to be repeated continuously every day; individuals have to sleep, and eat daily. This has given time the circular appearance, that even if

imaginary, creates a framework which is reinforced by urban and/or natural settings. Consequently, the inflexible restriction of the 24 hours a day combined with the available stock of money, forces people to make life choices to optimize the living standard of the household.

When encountering new living conditions, members of the household, make use of survival or remedial strategies to protect, increase, or improve their circumstances. They undertake activities that combine the available factors of production of the household: time (of all its members) and its stock of money. To perform the household activities required for their survival, individuals can do two things:

- use the time of the members of the household, and/or
- complement the time dedicated to the household with the purchase of labour saving alternatives such as: devices, processed goods, and/or services.

Lacking other factors of production - capital and technology - poor families find time is the only factor of production they can manipulate to generate their needs. Without money, they only have two alternatives to maintain or improve conditions in their household:

- increase the number of household members contributing to sustain the household, and/or

- increase the total number of hours household members dedicate to household tasks.

The non poor, on the other hand, perceives time as a very valuable factor and uses money to purchase: labour saving devices, processed goods, and/or services.

Failure to understand the restrictions presented by time can lead to harmful results. When households are forced to increase time for productive activities other activities, crucial to the health and welfare of individuals and households, may be affected. If the reduction affects the education of the youth, the countries human capital could be placed in peril. Reducing physiological and/or social needs, of any individual, could compromise the health, standard of living, and future of the individual, the household, and society.

The need to prioritize the allocation of time, can also affect the outcome of public policy. No matter what the incentives, people's first concern is the provision of the needs of the household. Consequently, anything that may jeopardize this provision will be evaded. If the time available to the household is already scarce, introduction of public policies that may take time from basic needs provision, are bound to

fail. Thus if the goal of public policy is social development time-use research is an absolute necessity.

Incorporating a time-use module into the LSMS studies would allow the collection of data required to produce indicators covering diverse life domains, such as:

- The contribution of paid and unpaid work to the survival of the household - an improved labour force analysis,
- dynamics of differentiation in the household,
- extended poverty analysis - household time overhead,
- improved labour force analysis
- nutritional analysis
- evaluation of social change and quality of life
- leisure as a welfare indicator
- changes in the social environment.

Paid and Unpaid Work

Time-Use equalizes and levels paid and unpaid work, women's and men's work, and the work of the poor and the rich. Using time as the yardstick the illusion created by money metrics - the prominence of paid work - is eliminated and we can compare and evaluate the contribution of the diverse categories of work.

Traditional estimates of labour productivity have been skewed by the lack of inclusion of subsistence and domestic activities. Taking other types of work into account is extremely important for developing economies where most productive activity takes place outside the money economy. An International Labour Organization (ILO) study of eight Latin American countries, established that more work is undertaken inside than outside the household (Tokman et al). While others found that domestic work provides between one third and one half of the family income, greater in poorer families (Urdaneta-Ferran, 1990).

Additionally, the nature of employment, a contract by which a person places at the disposal of the employer a given number of hours a day, has reinforced the tendency to over estimate time dedicated to paid work. Time allotted to a job is not equal to productive activities, since it includes time waiting for work, socializing, rest periods, etc. However, when estimating hours spent on a job most people will say they work eight hours a day, which denies a diversity of activities that take place at the workplace.

Because of the emphasis on paid work, the level of unemployment, has also been overestimated, considering all adults not employed as

surplus labour. This presents a false figure, especially in developing countries, where people dedicate a large percent of their time to subsistence activities.

Consequently, to obtain reliable indicators of labour availability and productivity, the definition of work must be extended to reflect time spent in productive activities rather than just time spent at a job. This means considering, the time individuals dedicate to productive activities both in:

- market employment (including overtime and time worked in supplementary jobs and in self employed productive activities; and deducting time spent socializing, resting, eating meals, etc), and
- subsistence activities (including time spent producing both goods that can be sold or traded in the marketplace and goods and services for the household's own use).

Gender Analysis

The ability of time-use research to equalize market and non-market activity, has made it the method of choice to compare the structure of

women's and men's lives. Time-use indicators examine the structure of people's lives elucidating the contribution that each group of individuals make to the welfare of the household, society, and the economy.

Analysis of time-use is extremely important in the design of public policy. It is important to know and understand the structure of women's lives and whether it is possible to reallocate time. Present public policies seem to have the perception that women are a labour reserve, ready to take over with their unpaid work, the community support that the state abandons. Time-use studies demonstrate that this not the case, women tend to have less disposable time than men.

Table V.1 shows how Canadians distribute the 24 hours of the day among different activities of daily life. It shows that males of all ages dedicate higher percentage of time to paid work than females. However, when we calculate total work (pay and unpaid work) in the majority of cases, female's contribution to the household outweighs that of male's. Additionally, it discloses that age as gender, is a determinant factor of the work burden (Figure V.1). Both genders increase the time dedicated to productive activities between the ages of 25 and 64 years of age. The outlying age groups - the 15 to 24 and the 65+ - experience lower work

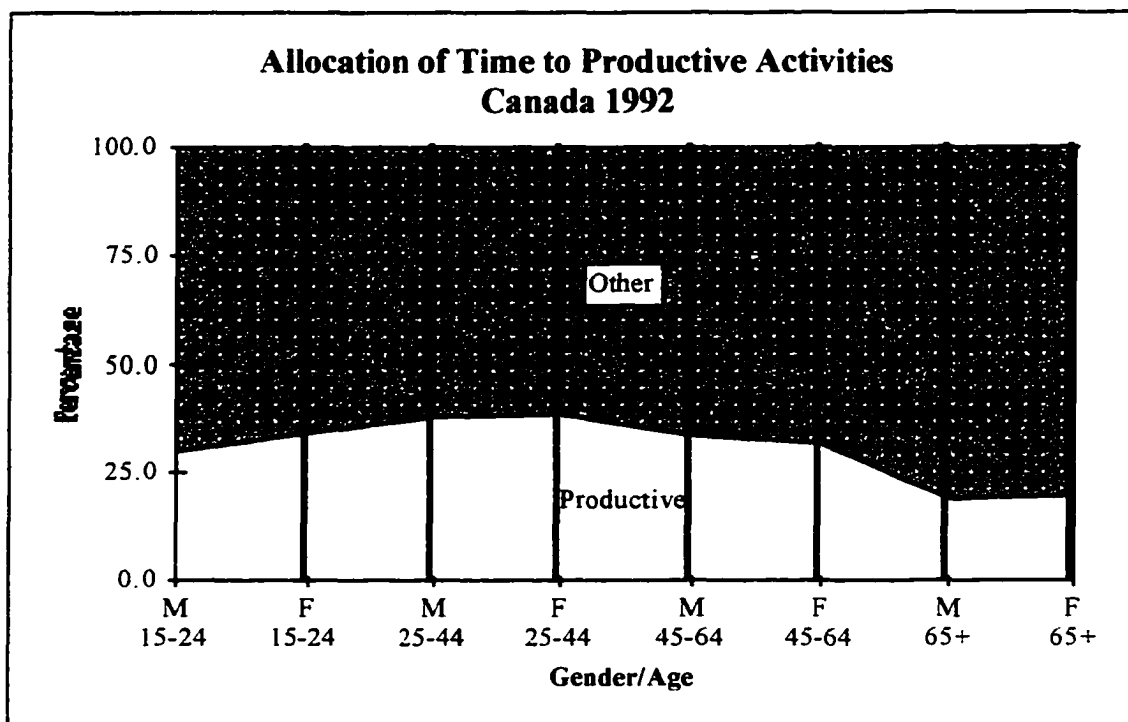
burdens, however, those in the 65+ age group allocate less time to productive activities. Time dedicated to housework by females remains constant through their lives at around 12%; women's work is only reduced by a lower allocations of time to pay work and child care.

Table V. 1
Percentage Allocation of Time
Canada 1992

Age Group	15 to 24		25 to 44		45 to 64		65+	
Gender/Activities	Male	Females	Male	Females	Male	Females	Male	Females
1. Paid Work	13.3	12.5	25.9	15.3	20.4	11.4	3.0	0.6
2. Housework	2.8	4.9	5.4	12.1	7.2	12.7	8.2	12.6
3. Child care	0.3	1.6	2.3	5.2	0.5	0.8	0.4	0.2
4. Shopping	1.5	2.5	2.4	3.6	3.0	4.2	4.0	4.0
5. Volunteer	1.2	1.6	1.2	1.5	2.2	2.6	3.5	2.4
6. Education	11.0	11.0	1.0	1.2	0.2	0.5	0.0	0.1
1: 6. Total Work	30.1	34.1	38.2	38.9	33.5	32.2	19.1	19.9
7. Entertainment	6.4	3.0	3.6	2.7	4.2	4.8	4.9	6.0
8. Attendance	8.1	7.9	5.3	5.4	5.0	6.0	5.6	5.5
9. Media	12.2	10.9	11.3	9.1	14.4	12.6	21.7	18.6
7:9. Leisure	26.7	21.8	20.2	17.2	23.6	23.4	32.2	30.1
10. Personal	43.3	44.0	41.4	43.9	43.0	44.5	48.6	50.0
1:10. Total time	100.0	100.0	100. 0	100.0	100. 0	100.0	100. 0	100.0

Source of data: Canada 1992 Time-use Survey

Figure V. 1



Source of data: Canada 1992 Time-use Survey

To understand the dynamics of differentiation and equity in the household, it is recommended, that gender analysis be conducted considering groups residing in the household (Kennedy, Rubin, and Alwnwick , n.d.). Table V.2 subdivides women according to kinship status and shows how this factor determines, in Kenya, the work burden assigned to each female household member. Daughters-in-law's, and wives's of head of household carrying the highest work burden, while females head of households and other females carry the lowest work burden.

Table V. 2
Percentage of Time Allocation
Women 15 to 50 years old
Relationship to Head of Household
Nyanza, Kenya

Activity	Female head of household	Wife	Daughter in law	Other Females
Domestic	26.8	33.2	34.6	26.1
Child care	2.5	2.5	2.9	0.4
Community	3.8	5.8	5.0	18.4
Subsistence	6.3	8.3	11.7	1.7
Sugar	0.0	0.4	0.0	0.0
Animal	0.0	0.4	0.4	0.0
Employment	11.3	1.7	0.4	0.0
Manufacturing	0.0	1.7	0.0	1.3
Total Work	50.6	54.0	55.0	47.9
Relaxing	8.8	8.7	5.8	9.0
Sleep	40.6	37.3	39.2	43.2
Total	100.0	100.0	100.0	100.0

Source of Data: Kennedy, Rubin, and Alwnwick (n.d.)

Comparison of Tables V.1 and V.2 demonstrates how disparate is the of allocation of time to productive activities between Canadians and Kenyans. The highest allocation of time to productive activities among Canadians being 39.2% while the lowest among Kenyans is 47.9% of

their day. This comparison demonstrates the need to collect time information in developing countries.

Extended Poverty Analysis - Household Time Overhead.

Poverty has traditionally been defined according to income and consumption levels. Poverty is a more complex concept that cannot be understood only by money metric considerations. As already mentioned, poor families sustain the household through a combination of labour inputs schemes of its members. Therefore, it is important that poverty analysis be expanded to consider the use of time as a factor.

Every household requires a given income to purchase the basic needs and a minimum number of hours to perform the basic domestic chores vital to the survival of the family. This minimum number of hours can be called the household time overhead, a concept first defined by Vickery (1977) who posited that poverty is a function of time and money. The household time overhead includes the number of hours spent washing clothes, preparing meals, and cleaning the house. In rural areas, where even basic infrastructure is seldom available, it also includes time spent gathering firewood for cooking and fetching water

for domestic purposes.

This time overhead can be performed by any member of the household. Consequently, the number of household members who contribute to domestic chores determines the living standard of the household. In other words, a household that has two adults, extended family, and/or friends to help, are better off, time wise than a household where only one adult performs all the chores.

Vickery (1977) considered that a more realistic indicator of the standard of living of households may be calculated by combining disposable income and time overhead data. To live above the poverty line households require sufficient time to meet basic needs, and money to allocate to consumption. The lack of either variable in a household lowers the household's standard of living. Individual shortfalls in time, however, may be compensated by the purchase of equivalent market services. This strategy, however, is only available to those with disposable income and not to those below the income poverty line.

Nutritional Analysis

Time diaries are an ideal method to collect data for nutritional analysis. This research tool locates the respondents' daily activity within a time frame and enriches our knowledge of activities with the collection of additional dimensions, such as with whom, where, for whom, etc. If in addition, time diaries are designed to collect data on

- a. the quantity and type of inputs used to prepare meals, and
- b. quantity eaten, they become ideal collection method for nutritional analysis. With these data researchers can estimate caloric intake and energy expenditures, which further allows them to compute nutritional levels of the population (Berio, 1984; Schoffield, 1990).

Other methods have explored the correlation between type of productive activity, time spent by mothers at/or away from home, and caloric and nutritional value of meals (Rubin, 1990).

Evaluating Social Change and Quality of Life

Social change has been studied in developing countries, by comparing conditions of different geographical areas, or socioeconomic groups. In industrialized countries it has been more popular to use time-use panel data of national surveys and/or multinational surveys.

One example of the first type of study is Kumar and Hotchkiss (1995), who examined the effect of deforestation on women's time allocation, dedicated or not to agricultural production, and the further impact on the nutrition of children.

The second method, has recently been used by Harvey, Taylor, Aas, and Ellis (1997). They examined the emergence of the 24-Hour society, using ten databases, including different time-use surveys, four from Canada, two from Norway, and one each for The Netherlands, Italy, Sweden, and Austria. They examined the changes in patterns and characteristics of work, shopping, travel, and social contact, for all the datasets.

Other important method is to group individuals according to level of participation in a given activity and correlate the results to other indicators. For example we could divide mothers according to levels of time allocation to productive activities and correlate the results to the anthropometric measurements of their children.

Leisure as a Welfare Indicator

Economic science perceives time not dedicated to productive activities as idle, unnecessary, and unproductive. However, free time is a physiological need. Leisure a basic need for humans should never be equated with idle time or considered a luxury.

Researchers dealing with households surviving at the subsistence level, have disregarded the value of leisure considering it irrelevant in view of so many pressing needs. However, this could present an enlightening venue of research, leading to higher levels of understanding of different cultures and economic systems.

To measure leisure in developing countries it would be necessary to expand its definition, to incorporate cultural specific definitions of what is considered leisure in each society. For some groups, leisure may be considered physical or passive participation in sports or public activities, others may consider it to be social interaction, rest, contemplation, or discretionary time, etc. It must be understood, that leisure it is not necessarily a primary activity, if enjoyment is the determining fact to classify an activity as leisure, then any activity

including work could be considered leisure. Leisure, consequently, seen this way can be an important measure of well being and a welfare indicator of the standard of living.

Changes in the Social Environment

As the economy and society changes, due to the impact of economic policies or natural trends, the social environment - the people and site of social interaction - is modified. In industrialized countries, the colonization of time has escalated the complexity of synchronizing individuals' time budgets, to the point that the family has been reduced from extended to nuclear and the community spirit in urban areas practically eliminated.

For the poor in developing countries, social interaction and collective action, are the means to overcome hardship. They are the strategies of survival of unempowered individuals, the means by which they safeguard their rights through collective action. Consequently, similar trends as those experienced in industrialized countries, could have disastrous impact on the quality of life of individuals and the health of society. Conditions and changes of the social environment can be

analyzed through time diaries designed to collect objective dimensions of the activity, such as the 'with whom' and the 'where.'

Conclusion

Including a time-use module in an LSMS survey can add an extra dimension to our understanding of the conditions faced by households, especially poor households, in developing countries. These data would allow the replication of peoples' lives and show the full range of constraints they encounter in their daily lives. With this knowledge it would be easier to design policies that are conducive to support poor people trying to overcome poverty and to promote a society that is both dynamic and compassionate.

VI. RECOMMENDATIONS FOR INCORPORATING TIME USE MODULES INTO HOUSEHOLD SURVEYS

The present chapter presents a series of recommendations and three instruments for data collection. National time-use data are drawn from a random sample size of about 3500 and 5000 households. All persons contributing to the household overhead, whether they live or not in the household, must be interviewed- including relatives non- household members, friends, or hired hands.

The sample should be representative of all economic or geographical areas of the country, which at a minimum must be labelled as urban or rural. Some surveys go as far as incorporating geographical coordinates. Data collection of the sample should be extended through a full year by a representative selection of respondents and diary days. If this is not possible the survey should at least contain representative data of the country's most important seasons and/or crops. Data must be collected by a properly trained enumerator or interviewer.

The day of data collection should be a randomly chosen by the designated day method. Most surveys do not allow the substitution of the designated day, but others have allowed interviewers to postpone the interview, to the same day in a later week, without affecting the quality of the data.

The general section of the survey must collect at a minimum the following information:

- Day, month, and year of interview
- Community ID
- Geographical location ID
- Household ID
- Respondent ID
- Age
- Gender
- Marital Status
- Relationship to head of household
- Employment Status
- Occupation
- Estimated annual monetary income
- Distance from home to work/school
- Distance from home to place of day care
- Distance from day care to work
- Distance from home to place of water collection
- Distance from home to place of fuel collection
- Distance from home to shopping areas
- Distance from home to place of medical attention

Proposed Instruments of Data Collection

Three instruments are presented in this section. The first allows the capture of data about infrequent activities. The second facilitates data collection through precoded activities and set time intervals of fifteen minutes. The third instrument is the preferred form of time-use data collection, and it is highly recommended in order to capture a full disclosure of the structure of the lives of individuals.

The use of one instrument in a survey does not exclude the use of the others. On the contrary, the first instrument could ideally be used in conjunction with any of the other two. The mix of the first and the third instrument would be the most suitable method of data collection. The first capturing infrequent activities and the second the daily activities with all its dimensions as recalled by the respondent.

Time-Use data must be gathered by trained interviewers who ask the questions about what happened during the preceding period. In logs and diaries the period to be recalled should not be longer than 48 hours. The 24 hour framework should start and end at 4 a.m. and should ideally collect information for a two day period.

Stylized Activity List

The stylized activity list collects information about a condensed list of activities. From an instrument of data collection such as this we can draw information about the duration and participation in particular activities. It is the preferred instrument when data regarding infrequent activities is sought or when economic considerations limits the time that can be dedicated to the time-use module. It is important, however, that total activities add to the 24 hours of the day.

Stylized Activity List

ID _____
Date _____

Were you involved in..	Last 6 months		→	Last Week		→	Yesterday		→	Day Before Yesterday	
	No	Yes →		No	Yes →		Yes →	How many Hours?		Yes →	How many Hours?
Sleep rest			→			→			→		
Bathing, dressing			→			→			→		
Eating			→			→			→		
Cooking, washing dishes pans			→			→			→		
House cleaning (in and out)			→			→			→		
Shopping			→			→			→		
Other household			→			→			→		
Travel (all)			→			→			→		
Paid Work											
Waged Employment			→			→			→		
Commission Work			→			→			→		
Self Employment			→			→			→		
Looking for work			→			→			→		
Work for own use											
Animal husbandry			→			→			→		
Agriculture			→			→			→		
Hunting/Gathering			→			→			→		
Fetch/Prepare Fuel			→			→			→		
Fetching water			→			→			→		
Home manufacturing			→			→			→		
Food processing			→			→			→		
Other production own use			→			→			→		
Child bearing/care											
Education			→			→			→		
Community work			→			→			→		
Visiting, movie, games, sports			→			→			→		
Reading, TV, radio			→			→			→		
Others			→			→			→		
Total daily hours										24 hours	24 hours

TIME AN INDICATOR OF DEVELOPMENT: INTRODUCING A TIME-USE MODULE INTO HOUSEHOLD SURVEYS.

Stylized Activity Log

The stylized activity log is a great improvement on the stylized activity list, because it incorporates episodes, and other dimensions of the primary activity.

This activity log has been especially designed to incorporate more information than is customary in this type of instrument. If we use codes, objective information about the primary activity such as where, for whom, and with whom may be collected; and by using different colour pencils it is possible to capture primary, and concurrent activities.

Stylized Activity Log

		NIGHT		MORNING			
ACTIVITIES	A	4:00 am	5:00 am	6:00 am	7:00 am	8:00 am	9:00 am
Sleep rest	1						
Bathing, dressing	2						
Eating	3						
Cooking, washing dishes pans	4						
House cleaning (inside and out)	5						
Shopping	6						
Other household	7						
Travel (all)	8						
Paid Work							
Waged Employment	9						
Commission Work	10						
Self Employment	11						
Looking for work	12						
Work for own use							
Animal husbandry	13						
Agriculture	14						
Hunting/Gathering	15						
Fetch/Prepare Fuel	16						
Fetching water	17						
Home manufacturing	18						
Food processing	19						
Other production own use	20						
Child bearing/care	21						
Education	22						
Community work	23						
Visiting, movie, games, sports	24						
Reading, TV, radio	25						
Others	26						
Remuneration type							
Cash	27						
In kind	28						
Unpaid	29						
Location of activity							
Home	30						
Place of work	31						
Other	32						
Social Dimension							
For whom	31						
With whom 1	32						
With whom 2	33						
With whom 3	34						
With whom 4	35						
Hour of the day		4:00 am	5:00 am	6:00 am	7:00 am	8:00 am	9:00 am

Page 1

TIME AN INDICATOR OF DEVELOPMENT: INTRODUCING A TIME-USE MODULE INTO HOUSEHOLD SURVEYS.

NIGHT							
12:00 pm	11:00 pm	0:00 am	1:00 am	2:00 am	3:00 am	A	ACTIVITIES
						1	Sleep rest
						2	Bathing, dressing
						3	Eating
						4	Cooking, washing dishes pans
						5	House cleaning (inside and out)
						6	Shopping
						7	Other household
						8	Travel (all)
							Paid Work
						9	Waged Employment
						10	Commission Work
						11	Self Employment
						12	Looking for work
							Work for own use
						13	Animal husbandry
						14	Agriculture
						15	Hunting/Gathering
						16	Fetch/Prepare Fuel
						17	Fetching water
						18	Home manufacturing
						19	Food processing
						20	Other production own use
							Remuneration type
						21	Child bearing/care
						22	Education
						23	Community work
						24	Visiting, movie, games, sports
						25	Reading, TV, radio
						26	Others
							Location of activity
						27	Cash
						28	In kind
						29	Unpaid
							Social Dimension
						30	Home
						31	Place of work
						32	Other
							Social Dimension
						31	For whom
						32	With whom 1
						33	With whom 2
						34	With whom 3
						35	With whom 4

12:00 pm	11:00 pm	0:00 am	1:00 am	2:00 am	3:00 am		Hour of Day
----------	----------	---------	---------	---------	---------	--	-------------

TIME AN INDICATOR OF DEVELOPMENT: INTRODUCING A TIME-USE MODULE INTO HOUSEHOLD SURVEYS.

Open Interval Time Diary

The open interval time diary is the preferred instrument of data collection. By gathering a range of information about the activity episodes, it aids in the recall of daily activity sequence. Asking where and with whom the person is, helps to remember the activities of preceding days.

The most important addition to this module, however, is the freedom provided by allowing the respondent to freely state activities performed and the timing when these episodes were performed. Because of this characteristic, this instrument is a tool of discovery that reduces the bias promoted by coded instruments of data collection.

Proposed Coding for Time-Use Surveys

Activity Coding

0 Personal Activities

- 01 Sleeping
- 02 Grooming and personal hygiene
- 03 Sickness/treatment
- 04 Eating

1 Work

11 Pay Work

- 111 Principal job/occupation (include both wage and self-employment)
- 112 Secondary job/occupation
- 113 Looking for Work
 - 1131 Visiting prospective employers, networking, etc.
 - 1132 Trying to negotiate: financing, purchase of land, equipment, hiring workers, etc.
 - 1133 Preparing and sending resumes, proposals, licitations, etc
- 114 Other activities Related to Pay Work
 - 1141 Travel, waiting for work (part of paid work)
 - 1142 Coffee Breaks (included as part of pay work)
 - 1143 Other work activities

12 Unpaid Work

121 Self-Subsistence Activities

- 1211 Animal Husbandry (Only working animals - do not include care of pets in this section.)
 - 12111 Herding
 - 12112 Care and feeding of animals within compound (medical treatment, shoeing,grooming)
 - 12113 Fodder collection
 - 12114 Castration/breeding
 - 12115 Shearing
 - 12116 Milking
 - 12117 Butchering
 - 12118 Other
- 1212 Agriculture
 - 12121 Land preparation
 - 12122 Terrace keep-up and routine repair of

- irrigation channels
- 12123 Collecting and preparing organic fertilizer
- 12124 Carrying and spreading organic-chemical fertilizer
- 12125 Weeding planting operations
- 12126 Irrigation
- 12128 Harvesting
- 12129 Threshing and cleaning grain
- 12122 Horticulture
- 121223 Kitchen gardening
- 121224 Seed selection and storage
- 121225 Guarding/protection of crops
- 121226 Other Agricultural activities
- 1213 Hunting and Gathering
 - 12131 Hunting wild animals, birds, etc.
 - 12132 Fishing
 - 12133 Gathering of materials for craft production
 - 12134 Gathering of edible food
 - 12135 Collection of medical plants
 - 12136 Other Hunting and Gathering activities
- 1214 Fetching or preparing fuel (firewood, sawdust, charcoal, dung cakes, etc)
- 1215 Fetching water
- 1216 Home Manufacturing
 - 12161 Textile (entire process)
 - 12162 Basketry/ Rope (hammocks, fish nets, etc)
 - 12163 Making and repair of tools and utensils (plough, spades, pots, etc.)
 - 12164 Leather work
 - 12165 Pottery
 - 12166 Sewing (in own home)
 - 12167 Other Home Manufacturing
- 1217 Food Processing
 - 12171 Husking, drying grains
 - 12172 Roasting, grinding, milling
 - 12173 Liquor making
 - 12174 Food preservation (drying of meat and vegetables, pickle making)
 - 12175 Preparation of dairy products (ghee, butter, curds, cheese, etc.)

- 122 Construction and Repairs
 - 1221 Barns, farm buildings.
 - 1222 Equipment, tools, or machinery
 - 1223 Field fences, animal sheds and shelters in the field or in the yard
 - 1224 Well-digging
 - 1225 Other

2 Education

- 21 Organized Academic or Vocational (school, radio school program, etc)
- 22 Non-organized
 - 221 Being taught by others reading, writing, and arithmetic.
 - 222 Being taught a trade

3 Household and Family Care

- 31 Meal Preparation
 - 311 Cooking/serving meals
 - 312 Cleaning dishes and pots
- 32 House Cleaning Maintenance
 - 321 Cleaning house - indoors
 - 322 Washing clothes and bedding
 - 323 Outdoor maintenance/yard work
- 33 Washing clothes and bedding
- 34 Gardening (flowers for household decoration) and pet care
- 35 Construction and Repairs- own-house (living quarters)
- 36 Shopping
- 37 Adult care
- 38 Child bearing and child care
 - 381 Child birth/recovery period
 - 382 Tending
 - 383 Feeding
 - 384 Bathing/cleaning
 - 385 Teaching/helping/reprimanding
 - 386 Reading/playing
 - 387 Taking children places (school, playground, walk, etc)
 - 388 Other Child bearing and child care

4 Community Work

- 41 Work for organizations
 - 411 Voluntary community service (school, committee, youth organization, women's organization etc.)

- 412 Political service
- 42 Teaching others (voluntary work)
- 43 Voluntary labour (helping build roads, houses, planting fields for no pay)
- 44 Helping others - (looking after someone else's children, helping the sick and elderly, without pay.)

5 Social Life and Entertaining

51 Socializing

- 511 Sitting together/talking/story telling.
- 512 Dancing
- 513 Visiting with friends or family in same community
- 514 Religious activities. Rituals, processions, fairs, pilgrimage, etc.

52 Passive Leisure

- 521 Watching spectator sports.
- 522 Watching television
- 523 Going to the movies, theatre, church meetings, etc.
- 599 Other Passive Leisure

6 Sport participation

- 61 Playing games (soccer, marbles, cards, etc)
- 62 Nature related recreation
 - 621 Going to the park
 - 622 Swimming
 - 623 Fishing or hunting for pleasure

7 Arts, hobbies, or games

- 71 Arts & Crafts (done mainly for pleasure)
- 72 Technical Hobbies
- 73 Games

8 Mass Media

- 81 Reading for pleasure
- 82 TV
- 83 Radio/Music

9 Travels and Unspecified time-use

With Whom Coding

It is extremely important that the interviewers be trained to capture the person or persons with whom the activity was 'performed with' and not in the 'presence of whom'. For example, one could be 'alone' in a room full of people; cooking with a daughter in the presence of the rest of the family. In these cases, the first should be coded as alone and the second with a daughter.

Ideally, data should be collected reflecting social contact with at least the following persons , spouse, children, other household members, coworkers/ schoolmates, friends/relatives outside household, and others outside household. For household members the persons id number maybe be used. For non-household members the following coding is recommended:

1. relatives
2. neighbour-friend
3. neighbour-other
4. co-worker friend
5. co-worker other
6. association member - friend
7. association member - other
8. other - friend
9. other - other

For Whom Coding

The following coding is recommended:

1. For a child or children of the household
2. For non-household child or children
3. For spouse
4. For household members
5. For relatives
6. For neighbours
7. For co-worker
8. For other members of the community
9. For others

Location Coding

Location activity episode should incorporate the following coding:

1. Home (including yard)
2. Workplace (away from home)
3. Relative's home
4. Other Persons Home
5. Other place
6. Travelling - on foot
7. Travelling - on mule, other animal, cart pulled by animal
8. Travelling - by bicycle,
9. Travelling - by car
10. Travelling - by public transit,
11. Travelling - other/unknown,
12. Other/Unknown Location.

BIBLIOGRAPHY

- Abdel-Ghany, M. & Nickols, S. (1983). *Home Economics Research Journal*, 12, (2), pp.159-167.
- Acharya, M. & Bennett, L. (1981). The rural women of Nepal: An aggregate analysis and summary of eight village studies. *The Status of Women in Nepal, Vol. II*, Part 9. Katmandu: Tribhuban University, Center for Economic Development and Administration.
- Acharya, M. (1982). Time-use data and the living standards measurement study. Working Paper No. 18, *Living Standards Measurement Study*. Washington: The World Bank.
- Adamczuk, L. & Zagorski K. (n.d.) *The time budget in socio-demographic statistics*. Warsaw: Central Statistical Office of Poland.
- Aldershoff, D.E., Zuidberg, A.C.L. & Baak, W. (1983). *Household production in the Netherlands*. SWOKA Interim Report No. 14. S-Gravenhage, Netherlands: Institute for Scientific Research on Consumer Affairs..
- Altergott, K. (1982). Role relationships across the life span: A secondary analysis of a National study. In Z. Staikov (Ed.), *It's about time*, 123-136. Sophia: Bulgarian Sociological Association and Institute of Sociology.
- Altergott, K. (1988). *Daily life in later life: Comparative perspectives*. London: Sage.
- Altman, J. (1974). Observational study of behaviour: Sampling methods. *Behaviour*, 48, pp. 227-267.
- Anderson, J. (1971). Space-time budgets and activity studies in urban geography and planning. *Environment and Planning*, 3, 1971.
- Andorka, R., Harsca, I. & Neimi, I. (1983). *Use of time in Hungary and Finland*. Helsinki: Central Statistical Office of Finland.
- Andorka, R. & Harcsa, I. (1986). Economic development and the use of time in Hungary, Poland and Finland. in D. Aas et.al *Time-use studies: Dimensions and applications*. Helsinki: Central Statistical Office of Finland.

- Andorka, R. (1987). Time budgets and their uses. *Annual Review of Sociology*, 13, 149-164.
- Andrews, H. F. & Breslauer, Helen J. (1976). *Cooperative housing study: A preliminary analysis of activity diary data*. Toronto: Centre for Urban and Community Studies, University of Toronto.
- Anker, R. (1983). Female labour force participation in developing countries: A critique of current definitions and data collection methods. *International Labour Review*, 122 (6), 709-723.
- Arangio-Ruiz, G. G. (1984). *Surveys on time-use in Italy*. A paper prepared for Meetings of the International Research Group on Time Budgets and Social Activities. Helsinki, Finland.
- Australian Bureau of Statistics (1988). *Information paper time-use pilot survey*. Catalogue No. 4111.1.
- Aas, D. (1982). Designs for large scale, time-use studies of the 24-hour day. In Z. Staikov, (Ed), *It's about time*, (pp. 17-53). Sophia: Bulgarian Sociological Association and Institute of Sociology.
- Aas, D. (1978). Studies of time-use: problems and prospects. *Acta Sociologica*, 2, pp. 125-141.
- Berio, A. (1986). The use of time allocation data in developing countries: From influencing development policies to estimating energy requirements. In Aas D. et al. *Time-use studies: Dimensions and applications*. Helsinki: Central Statistical Office of Finland.
- Berio, A. (1984). Time allocation surveys: A common tool to anthropologists economists and nutritionists. Mimeograph.
- Bishop, D., Jenrenaud, C. & Lawson, K. (1975). Comparison of a time diary and recall questionnaire for surveying leisure activities. *Journal of Leisure Research*, 7, pp. 73-80.
- Bloodgood, L. (1994) *Managing the debt rescheduling process: 1982-1993* in <http://alexandra.bmgt.umd.edu/cyber/wp39.html>
- Bojikov, P. (1989, September). *Planning of the sample for representative survey: The time budget of the population of the PR of Bulgaria in 1988 and the stochastic accuracy of the received results*. A paper prepared for

- meetings of the International Association of Time-use Research, Varna, Bulgaria.
- Bolwes, S., Gintis, H. *Democracy and Capitalism: Property, Community, and the contradictions of modern social thought* Basic Books. Harper Collins Publishers.
- Brail, R. K. (1969). *Activity system investigations: Strategy for model design*. Ph.D.Thesis, University of North Carolina, Chapel Hill, N.C.
- Bullock, N., Dickens, P., Shapcott, M. & Steadman, P. (1974). Time budgets and models of urban activity patterns. *Social Trends* No. 5. London: HMSO.
- Brown, L. R. & Haddad, L. (1995) *Time allocation patterns and time burden: a gendered analysis of seven countries*. Washington: International Food Policy Research Institute.
- Cain, M.T., Khanam, S.R. & Nahar, S. (1979). Class, patriarchy, and women's work in Bangladesh. *Center for Policy Studies Working Papers*, 43. New York: Population Council.
- Cain, M.T. (1980). The economic activities of children in a village in Bangladesh. In Hans. P. Binswanger et al. (Eds.), *Rural household studies in Asia*. Singapore: Singapore University Press.
- Cairncross, S. & Cliff, J.L. (1987). Water use and health in Mueda, Mozambique. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 81, pp. 51-54.
- Cameron, J. (n.d.) *Adjusting Structural Adjustment: Getting beyond the UNICEF compromise*. School of Development Studies, Norwich: University of East Anglia. United Kingdom.
- Caldwell, J.C. et al. (1980). The control of activity in Bangladesh. *Working Papers in Demography*. Canberra: Department of Demography, Research School of the Social Sciences, Australian National University.
- Carlstein, T. (1978) A time-geographic approach to time allocation and socio-ecological systems. In William Michelson, (Ed.), *Public policy in temporal perspective: Report on the workshop on the application of time-budget research to policy questions in urban and regional settings* (pp. 69-82). (1975: Laxenburg, Austria). The Hague: Mouton.

- Carr, M. & Sandhu, R. (1987). *Women, technology and rural productivity*. UNIFEM Occasional Paper No. 6. New York: United Nations Development Fund for Women.
- Central Bureau of Statistics of Norway. (1983). *The time budget survey, 1980-81*. Oslo: Central Bureau of Statistics of Norway.
- Chadeau, A. & Roy, C. (1985, August). *Relating households' final consumption of household activities: Substitutability or complementarity between market and non-market production*. Paper presented at Nineteenth General Conference of the International Association for Research in Income and Wealth, Noordwijkerhout, Netherlands.
- Chapin, Jr., F.S. (1974). *Human activity patterns in the city*. New York: John Wiley & Sons
- Chavez Borjas, M.(1992) *Como subsisten los campesinos Tegucigalpa*: Editorial Guaymuras.
- Chernichovsky, D., Lucas, R.E.B. & Mueller, E. (n.d.) *The household economy of rural Botswana: An African case*. Washington: The World Bank.
- Chomsky, N. (1987) *On Power and Ideology: The Managua Lectures*, Boston: South End Press.
- Chomsky, N. (1989) *Necessary Illusions: Thought Control in Democratic Societies*, London: Pluto.
- Clark, S. & Harvey, A. S. (1977). *An evaluation of the multinational activity classification system*. Halifax: Institute of Public Affairs, Dalhousie University.
- Conference of European Statistics. (1987). *Measuring and valuing women's participation in the informal sector of the economy*. Prepared for an informal meeting on Statistics and Indicators on Women, May, Geneva.
- Cornia, G.A., Jolly, R. & Steward, F. (1988). *Adjustment with a human face*. Oxford: Oxford University Press.
- Cosper, R. L. & Shaw, S. M. (1981, August). *How good is our measurement? A comparison of estimates of occurrences of selected leisure activities derived from frequency questionnaires and time budget diaries*. Paper presented at Third Canadian Congress of Leisure Research, Edmonton, Alberta,

- Cosper, R. L. & Elliott, D. H. (1982). Public drinking in a metropolitan Canadian region: A comparison of survey and time budget data. In Z. Staikov (Ed.) *It's about time* (pp. 146-165). Sophia: Institute of Sociology at the Bulgarian Academy of Sciences and Bulgarian Sociological Association.
- Cullen, I. G. & Phelps, E. (1978). Patterns of behaviour and responses to the urban environment. In: W. Michelson (Ed.), *Public policy in temporal perspective: report on the workshop on the application of time-budget research to policy questions in urban and regional settings* (pp. 165-181). (1975: Laxenburg, Austria). The Hague: Mouton,
- Dixon-Mueller, R. (1985). *Women's work in third world agriculture*. Geneva: International Labour Office.
- Dixon-Mueller, R. & Anker, R. (1988). *Assessing women's economic contributions to development*. Paper 6. Background papers for training in population, human resources and development planning. Geneva: ILO
- Douthitt, R. (1993). *The inclusion of time availability in Canadian poverty measures*. Paper presented at the International Association for Time-Use Research, June 15-18, 1992. *Time-use Methodology: Toward Consensus*. Rome: National Statistical Institute of Italy, Rome.
- Eglite, P. & Zarina, I. (1988, May). *Changes of time-use of the town population in the Latvian SSR*. Report for a joint meeting of Soviet-Finnish working group for cooperation in the field of sociological research. Sochi: Riga. The Institute of Economy of the Academy of Sciences of the Latvian SSR.
- Eichler, M. (1983). Changing patterns in household management. Chapter 5 of *Families in Canada Today*. Toronto: Gage.
- Elliott, D.H., Harvey, A.S. & Procos, D. (1976). An overview of the Halifax time-budget study. *Society and Leisure*, 3.
- Elliott, D. H. & Clark, S. (1978). The spatial context of urban activities: some theoretical, methodological and policy considerations. In W. Michelson (Ed.), *Public policy in temporal perspective*. Report on the workshop on the application of time-budget research to policy questions in urban and regional settings (pp. 41-68). (1975: Laxenburg, Austria). The Hague: Mouton,

- Elliott, D. H., Harvey, A. S. & Macdonald, W. S. (1986). Time-use long term stability and change. In D. Aas et.al *Time-use studies: Dimensions and applications*, (pp.59-88). Helsinki: Central Statistical Office of Finland.
- Ettema, D. et. al (1996). *Effects of data collection methods in travel and activity research*. Eindhoven: European Institute of Retailing and Services Studies.
- Evenson, R.E. (1982). The allocation of women's time: an international comparison. *Behaviour Science Research*, 17(3-4), 196-215.
- Falussy, B., & Boda, G. (1988, June) *Change of socially obligatory time to unit of freely used time: Time use indicator in time, space and in correlation with economic development*. Presented at the International Research Group on Time Budgets and Social Activities. Budapest.
- FAO (1987) *Agricultural Issues in Structural Adjustment Programs* Economic and Social Development Paper. No 66..
- FAO (1991) *Agricultural Labour Markets and Structural Adjustment in Sub-Saharan Africa* Economic and Social Development Paper No. 99.
- FAO (1987) *Agricultural Stabilization and Structural Adjustment Policies in Developing Countries* Economic and Social Development Paper. No. 65..
- FAO (1989) *Effects of Stabilization and Structural Adjustment Programmes on Food Security* Economic and Social Development Paper.No. 89..
- FAO (1990) *Guidelines for Monitoring the Impact of Structural Adjustment Programmes on the Agricultural Sector* Economic and Social Development Paper. No. 95..
- FAO (1991) *The Impact of Stabilization and Structural Adjustment Policies on the Rural Sector* Economic and Social Development Paper. No. 90..
- FAO (1992) *The Impact of Structural Adjustment on Smallholders* Economic and Social Development Paper. No. 103,.
- Farouk, A. (1975). Use of time by individuals: A survey in Bangladesh. In H. Binswanger et al. (Eds.) *Rural household studies in Asia*. Singapore: Singapore University Press.

- Federal Statistical Office of Czechoslovakia. (1984). *Basic results of the survey on use of time budget of the Czechoslovak population 1979-80*. Paper presented to meetings of the International Research Group on Time Budgets and Social Activities, Helsinki, Finland.
- Ferge, S.C. (1972). Social differentiation in leisure activity choices: An unfinished experiment. In A. Szalai (Ed.), *The use of time: Daily activities of urban and suburban populations in twelve countries*, (pp. 213-227). The Hague: Mouton.
- Fiebiger, H. (1989). On the methodology of time budget surveys in the GDR. *Statistical Journal of the United Nations*, 6, pp. 207-212.
- Foot, N. (1961). Methods for study of meaning in use of time. In R. W. Kleemeier (Ed.), *Aging and leisure: A research perspective into the meaningful use of time*, (pp.155-176). New York: Oxford University Press.
- Gerner, J. L. & Zick, C.D. (1983). Time allocation decisions in two-parent families. *Home Economics Research Journal*, 12 (2), pp. 145-158.
- Gershuny, J. (n.d.). Personal correspondence with Dr Andrew S. Harvey.
- Gershuny, J. (1989). *International comparisons of time budget surveys*. Paper prepared for the International Workshop the Changing Use of Time, April, Brussels.
- Gershuny, J. (1995). Time budget research in Europe. *Statistics in Transition*, 2, (4), pp. 529-551.
- Gershuny, J. & Jones, S. (1986). Time-use in seven countries. *School of Humanities and Social Sciences*, University of Bath.
- Gershuny, J. & Jones, S. (1987). The multinational longitudinal time budget archive. *School of Humanities and Social Sciences*, University of Bath.
- Ghai, Dharam and Cynthia Hewitt de Alcantara (1991) "The Crisis of the 1980's in Africa, Latin America and the Caribbean: An Overview" in Dharam Ghai *The IMF and the South: The Social Impact of Crisis and Adjustment* UN Research Institute for Social Development..
- Gill, S. and Law D. (1988) *The global political economy: perspectives, problems and policies* Baltimore: The John Hopkins University Press.

- Goldschmidt-Clermont, L. (1982). Unpaid work in the household: A review of economic evaluation methods. *Women, Work and Development* 1. Geneva: ILO.
- Goldschmidt-Clermont, L. (1987). Economic evaluations of unpaid household work: Africa, Asia, Latin America and Oceania. *Women, Work and Development*, 14. Geneva: ILO.
- Gomez, J. C. R. (1984). *Use of time and attitudes toward time from the people of Bogota, Colombia*. A paper presented to meetings of the International Research Group on Time Budgets and Social Activities, August, Helsinki, Finland, .
- Goodchild, M. F. & Janelle, D.G. (1984). The city around the clock: space-time patterns of urban ecological structure. *Environment and Planning A*, (16), pp. 807-820.
- Grönmo, S., Haraldsen, G. & Lingsom, S. (1988). *Age differences in time-use: Stability and change in Norway in the 1970s*. Paper prepared for the meeting of the International Research Group on Time Budgets and Social Activities, June, Budapest.
- Grosh, M. and Glewwe, P. (1995) *An Introduction to the World Bank's Living Standards Study: Household Surveys*. PRDPH mimeo.
- Gross, D. R. (1984). Time allocation: a tool for the study of cultural behavior. *Annual Review of Anthropology*, 13, pp. 519-58.
- Hanson S. (1982). The determinants of daily travel - activity patterns: relative location and socio-demographic factors. *Urban Geography*, 3, (3), pp. 179-202.
- Harvey, A.S. & Elliott, D.H. (1983). *Time and time again*. Explorations in Time-use Series, Vol. 4, 63 pp. Ottawa: Department of Communications; Employment and Immigration.
- Harvey, A.S. & Macdonald, W.S. (1976). Time diaries and time data for extension of economic accounts. *Social Indicators Research*, 3, pp. 21-35.
- Harvey, A.S. (1978). *Discretionary time activities in context*. Occasional Paper No. 3. Halifax: Institute of Public Affairs, Dalhousie University.

- Harvey, A.S. & Grönmo, S. (1986). Social contact in Canada and Norway. In D. Aas et.al *Time-use studies: Dimensions and applications*. Helsinki: Central Statistical Office of Finland.
- Harvey, A. S., Elliott, D.H. & Procos, D. (1976). An overview of the Halifax time-budget study, *Society and Leisure*.
- Harvey, A.S. & Singleton, J.F. (1989). Canadian activity patterns across the life-span: A time budget perspective. *Canadian Journal of Aging*, pp.268-285.
- Harvey, A.S. (1984). The context of discretionary activities In M.D Lee and R. N. Kanungo (Eds.), *Management of work and personal life*. New York: Praeger.
- Harvey, A.S. et. al (1980). *A blueprint for core social indicators: Meeting social data needs of the 1980s*. Halifax: Institute of Public Affairs, Dalhousie University.
- Harvey, A. S. (1978). The role of time-budgets in national and regional economic accounting. In W. Michelson (Ed), *Public policy in temporal perspective: report on the workshop on the application of time-budget research to policy questions in urban and regional settings* (pp.11-12). (1975): Laxenburg, Austria). The Hague: Mouton.
- Harvey, A. S., Elliott, D. H. & Stone. P. J. (1977). *Review of analytic and descriptive methods of time- use data: A working paper*. Halifax: Institute of Public Affairs, Dalhousie University.
- Harvey, A. S., Clark, S. M. (1976). The sexual division of labour: The use of time. *Atlantis*, 2 (1).
- Harvey, A. S. (n.d.) *Time use module of the general social survey* Statistic Canada. General Social Survey Working Paper # 8
- Harvey, A.S. & Singleton, J. F. (1989). Canadian activity patterns across the life span: A time budget perspective. *Canadian Journal of Aging*, 8 (3), pp. 268-285.
- Harvey, A. S. (1987). Time-use studies entering the 1990's. Editorial, *It's abouttime!*, November.
- Harvey, A. S. (1983). *Time-use studies for national and transnational leisure analysis*, a paper prepared for the Calgary Sociology colloquium, The

Challenge of Leisure and its Diversity in a Pluralistic Society.

- Harvey, A. S. et.al. (1984). *Time budget research*. Frankfurt: Campus.
- Harvey, A. S. & Macdonald, W. S. (1986). Time diaries and time data for extension of economic accounts, *Social Indicators Research*, 3, (1), 21-35.
- Harvey, A.S., Taylor, M.E., Aas, D., Ellis, S. (1997) *The 24-Hour Society: Implications for Travel*. Unpublished report.
- Hawes, D. K. Grönmo, S., Arndt, J. (1978). Shopping time and leisure time: Some preliminary cross-cultural comparisons of time-budget expenditures. In J. K. Hunt (Ed.), *Advances in consumer research*, Vol. V, pp. 151-159. Ann Arbor: Association for Consumer Research.
- Hedges, B. M. (1974). Time budgets. *Social Trends*, 5, pp. 35-44.
- Hendrix, P. E. & Qualls, W. J. (n.d.) *Assessing the validity of subjective measures of household tasks responsibility with time budget data*. Unpublished Paper. Ann Arbor: Institute of Social research, University of Michigan.
- Hernandez, A. (1987) *El Neoliberalismo en Honduras Tegucigalpa*: Editorial Guaymuras.
- Hernandez, A. (1992) *Del reformismo al ajuste estructural Tegucigalpa*: Editorial Guaymuras.
- Hill, M. (1984). Investments of time in houses and durables. In F. T. Juster and F.P. Stafford (Eds.). *Time, goods, and well-being*. Ann Arbor: Institute for Social Research, University of Michigan.
- Hill, C. R. & Stafford, F.P. (1985). Parental care of children: Time diary estimates of quantity dictability and variety. In F. T. Juster and F. P. Stafford (Eds.). *Time, goods, and well-being*. Ann Arbor: Institute for Social Research, University of Michigan.
- Hornik, J. & Schlinger, M. J. (1981). Allocation of time to the mass media. *Journal of Consumer Research*, 7, (4), pp.343-355.
- ILO. (1982). Thirteenth International Conference of Labour Statisticians, Resolution, ICLS/13/D.8.
- Immink, M. D. C., Sibrian, R., & Hahn, H. (1994). *Food availability, water*

and sanitation, and women's time constraints as risk factors of poor health and growth failure of children in the central highlands of Guatemala.
Washington: International Food Policy Research Institute

INSTRAW. (1995). *Measurement and valuation of unpaid contribution: accounting through time and output.* Santo Domingo, Dominican Republic: Institute for Research and Training for the Advancement of Women.

Isaula, R. (1996) *Honduras: El ajuste en el sector agrícola y la seguridad alimentaria.* Tegucigalpa: Centro de Documentación de Honduras.

James, W. P. T. & Schofield, E. C. (1990). *Human energy requirements: A manual for planners and nutritionists.* Oxford: Oxford University Press.

Janelle, D. G., Goodchild, M.F., Klinkenberg, B. (1988). Space-time diaries and travel characteristics for different levels of respondent aggregation.. *Environment and Planning Annual*, 20.

Janelle, D. G., M. F. Goodchild (1983). Transportation indicators of space-time autonomy. *Urban Geography*, 4, (4), pp. 317-337.

Juster, F. T. (1985). The validity and quality of time-use estimates obtained from recall diaries. In F. T. Juster & F. P. Stafford (Eds.), *Time, goods, and well-being.* Ann Arbor: Institute for Social Research, University of Michigan.

Juster, F. T. (1986). The effect of recall period on the quality of time diary data. In D. Aas, A. S. Harvey, E. Wnuk-Lipinski & I. Niemi, (Eds.) *Time-use studies: Dimensions and applications*, pp. 149-175. Helsinki: Central Statistical Office of Finland.

Juster, F. T. & Stafford, F. P. (Eds.) (1985). *Time, goods, and well-being.* Ann Arbor: Institute of Social Research, The University of Michigan.

Juster, F. T. (1973). A framework for the measurement of economic and social performance. In M. Moss (Ed.), *The measurement of economic and social performance*, pp. 26-109. New York: National Bureau of Economic Research

Juster, F. T. & Stafford, F. P. (Eds.) (1990). *The allocation of time: Empirical findings, behavioral models, and problems of measurement.* Ann Arbor: Institute of Social Research, The University of Michigan.

Juster, F. T. (1985). Preferences for work and leisure. In F. T. Juster & F.

- P. Stafford (Eds.) *Time, goods, and well-being*. Ann Arbor: Institute of Social Research, The University of Michigan.
- Kalfs, N. (1993). *Hour by hour: Effects of modes of data collection in time-use research*. Amsterdam: University of Amsterdam.
- Kalton, G. (1985). Sample design issues in time diary studies. In: F.T. Juster, & F. P. Stafford (Eds.) *Time, goods and well-being* (pp. 93-112). Ann Arbor: University of Michigan, Survey Research Center, Institute for Social Research,
- Kardos, J. (1984, August). *The 1984 time budget survey in Poland*. A paper presented at meetings of the International Research Group on Time Budgets and Social Activities. Helsinki.
- Keller, J., Kempter, D., Timmer, S.G. & Young-Demarco, L. (1982). *Proceedings of the International Time-use workshop*. Ann Arbor: Institute for Social Research, University of Michigan.
- Kennedy, E. T., Rubin, D. & Alnwick, D. (n.d.). *A comparison of time allocation methods and implication for child nutrition*. Washington: International Food Policy Research Institute.
- Kennedy, E., et. al. (1994). *Impacts of credit programs on food security and nutrition in Ghana*. Washington: AID
- Khan, M. E., et al. (1992). Methodological issues in collecting time-use data from female labour force. *Indian Journal of Labour Economics*. 35, (1), pp.55-72.
- Khandker, S. R. (1987). Women's time allocation and household non-market production in rural Bangladesh. *The Journal of Developing Areas*, 22, pp. 85-102.
- Killick, Tony "The Impact of Fund Stabilisation Programmes" in *The Quest for Economic Stabilization: The IMF and the Third World* Heinemann Educational Books and Overseas Development Institute.
- Kim, K.W., et al. (1982). *A survey of time budgeting by Korean people*. A paper prepared for the meetings of the International Research Group on Time Budgets and Social Activities. Mexico City.
- Kinsley, B. L. & O'Donnell, T. (1983). Marking time. *Explorations in time-use, Volume 1*. Ottawa: Employment and Immigration Canada.

- Kinsley, B. L. & Graves, F. (1983). The time of our lives. *Explorations in Time-use, Volume 2*. Ottawa: Employment and Immigration Canada.
- Klevmarken, N. A. (1982). *Household market and non-market activities (Hus): A pilot study*. Goteborg: Sweden. University of Goteborg. Department of Statistics.
- Kulcsar, R. (1987). *The way of life and the time budget of Hungarian women*. Paper submitted by the Hungarian Central Statistical Office to an Informal Meeting on Statistics and Indicators on Women, May, Geneva.
- Kumar, S. K. & Hotchkiss, D. (1988) *Consequences of deforestation for women's time allocation, agricultural production, and nutrition in hill areas of Nepal*. Washington: International Food Policy Research Institute.
- Kutter, E. (1973). A model of individual travel behavior. *Urban Studies*, 10 (2), pp. 235-258.
- Liegler, S. & Michelson, W. (1981). Complementary methods of data gathering in literate urban population. *Human Organization*, 40, (4), pp. 323-329.
- Lingsom, S. (1979). *Advantages and disadvantages of alternative time diary: A working paper*. Oslo: Central Bureau of Statistics.
- Lingsom, S. (1980). *Open and fixed International time diaries: A pilot study on time-use 1979*. Oslo: Statistisk Sentralbyrå.
- Lippold, G. (1989). *The development of the use of time, mode of living and living conditions in Hoyerswerda from 1966 till into the eighties years*. Paper presented at meetings of the International Association for Time-use Research, September, Varna, Bulgaria.
- Lucas, R. "On the Mechanics of Economic Development" *Journal of Monetary Economics*, n. 22, 1988.
- Luttikuizen, R. & Oudhof, J. (1987). *Informal economy: A time-use approach*. A paper prepared for the 20th general conference of the International Association for Research in Income and Wealth, August, Rocca di Papa, Italy.
- Lyberg, I. (1989). *Sampling, nonresponse and measurement issues in the 1984/85 Swedish time budget survey*. Paper prepared for US Bureau of the Census Fifth Annual Research Conference (ARC V), March,

Washington, D.C.

- Marchak, M.(1991) *The integrated circus: the new right and the restructuring of global markets* Montreal: McGill-Queen's University Press
- Martin, P. & Bateson, P. (1986). *Measuring behaviour: An introductory guide*. Cambridge: Cambridge University Press.
- Mata-Greenwood, A. (1992). *An integrated framework for the measurement of working time*. STAT working papers (95 pp.). Geneva: ILO
- McQuaig, L. (1993) *The assault of equality in Canada: the wealthy banker's wife*. Toronto: Penguin Group.
- McQuaig, L. (1995) *Shooting the hippo: death by deficit and other Canadian myths* Toronto: Penguin Group.
- McSweeney, B. (1979). Collection and analysis of data on rural women's time-use. In S. Zeidenoteir (Ed.) *Learning about Rural Women, Studies of Family Planning*, Special Issue, 10, (11/12).
- Medrich, E. A., Roizen, J.A., Rubin, V. & Buckley, S. (1982). *The serious business of growing up*. Berkley: University of California Press.
- Meissner, M., Humphreys, E.W., Meis, S.M. & Scheu, W. J. (1975). No exit for wives: Sexual division of labour and the cumulation of household demands. *Canadian Review of Sociology and Anthropology*, 12, (4,pt.1), pp. 424-439.
- Melbin, M. (1979). Settling the frontier of night. *Psychology Today*, June: pp. 40-52, 94-97.
- Meza, V., Shepherd, P., Benjamin, M. (1988) *Honduras- Estados Unidos: subordinacion y crisis* Tegucigalpa: Centro de Documentacion de Honduras.
- Michelson, W. (1980). Spatial and temporal dimensions of child care. *Journal of Women, Culture and Society*, 5, (35), pp. 242-247.
- Michelson, W. & Ziegler, S. (1982). Child care under constraint (Research Project). In Z. Staikov (Ed.), *It's about time*. Sofia, Bulgaria: Institute of Sociology at the Bulgarian Academy of Sciences and the Bulgarian Sociological Association.

- Minge-Kalman, W. (1977). On the theory and measurement of domestic labour intensity. *American Ethnologist*, 4, (2), pp. 273-284.
- Miralao, V. A. (1981). *Methodological issues in the collection and analysis of women's time-use data*. Occasional paper No.3. Kuala Lumpur, Malaysia: Integration of Women in Development Asian and Pacific Development Centre.
- Moss, S. M. & Lawton, P. (1982). Time budgets of older people: A window on four lifestyles. *Journal of Gerontology*, 37, (1), pp. 115-123.
- Munroe, R. H., Munroe, R. L. & Shimmin, H. S. (1984). Children's work in four cultures: Determinants and consequences. *American Anthropologist*, 86, (2), pp. 369-379.
- Nag, M., B., White, B. N. F. & Peet, R.C. (1977). *An anthropological approach to the study of economic value of children in Java and Nepal*. Working Paper. New York: Center for Policy Studies, The Population Council.
- Navarro, J. (1993) *Poverty and adjustment: the case of Honduras* Cepal Review No 49.
- Niemi, I. (1982). *Time budget compared with other methods used in measuring working time*. Prepared for workshop on Time Budgets, May. Ann Arbor: Survey Research Centre, Institute for Social Research, University of Michigan
- Niemi, I. (1988). *Main trends in time-use from the 1920s to the 1980s*. Paper prepared for the International Meeting on Studies on Time-use, June, Budapest.
- Niemi, I. (1983). *The 1979 time-use study method*. Helsinki: Central Statistical Office of Finland.
- OECD (1989) *Macro-Economic Adjustment and Income Distribution: A Macro-Micro Simulation Model*, Technical Paper n.1, Paris, Development Centre, March
- Pas, E. I. (1984). *Sample design, parameter estimation efficiency and data collection costs for least squares regression trip generation models*. A paper prepared for the 1985 Annual Transportation Research Board Meeting, U.S.A.
- Patrushev, V. D. (1986). Past and future changes in Soviet workers' time-budget, *Time and Society: Sociological and Historical Perspectives*.

- Petkov, K. (1982). The five day working week and the time budget. In Zahari Staikov, (Ed.), *It's about time* (pp. 118-122). Sophia: Institute of Sociology at the Bulgarian Academy of Sciences and Bulgarian Sociological Association.
- Pio, A. (1992) "The Social Dimension of Economic Adjustment Programmes: Economic Feedbacks and Implications for Medium and Long-Term Growth" in Paul Mosley *Development Finance and Policy Reform: Essays in the Theory and Practice of Conditionality in Less Developed Countries*. London: MacMillan Press,
- Proulx, M. (1978). *Five million women*. Ottawa: Advisory Council on the Status of Women.
- Quizon, E. K. (1978). Time allocation and home production in rural Philippine households. *The Philippine Economic Journal*, 17, (1,2), pp. 185-203.
- Ray, M. (1996) *Chomsky's Politics* London: Verso.
- Robinson, J. P. (1969). Television and leisure time: Yesterday, today and (maybe) tomorrow. *Public Opinion Quarterly*, 33, pp.210-222.
- Robinson, J., Andreyenkov, V.G. & Patrushev, V. D. (1988). *The rhythm of everyday life: How Soviet and American citizens use time*. London: Westview Press.
- Robinson, J.P. (1978). Time-use as a social indicator. In W.Michelson (Ed.), *Public policy in temporal perspective: Report on the workshop on the application of time-budget research to policy questions in urban and regional settings* (pp. 103-111) (1975: Laxenburg, Austria). The Hague: Mouton,
- Robinson, J. P. (n.d.) *Methodological studies*.
- Robinson, J. P. (1977). *How Americans use time: A social-psychological analysis of everyday behaviour*. New York: Praeger Publications.
- Robinson, J. P. (1984). *Free time in western countries*. College Park, Maryland: University of Maryland Survey Research Center.
- Romer, P. "Increasing Returns and Long Run Growth" *Journal of Political Economy*, Vol. 94, n. 5, 1986.

- Ross, M. M. (1990). Time-use in later life. *Journal of Advanced Nursing*, 15, pp. 394-399.
- Rubin, D. S. (1990). Women's work and children's nutrition in south-western Kenya. *Food and Nutrition Bulletin*. 12, (4).
- Scheuch, E. K. (1971). The time budget interview. In A Szalai (Ed) *The use of time: Daily activities of urban and suburban population in twelve countries*, (pp. 69-87). The Hague: Mouton.
- Shaw, S. M. (1981). *The sexual division of leisure: The development of a model*. Paper presented at the Canadian Sociology and Anthropology Association Meetings, Edmonton, Alberta, Canada.
- Shaw, S. M. (1986). Leisure, recreation or free time?: Measuring time usage. *Journal of Leisure Research*, 18, (3), 177-189.
- Shaw, S. (1982). *The sexual division of leisure: Meanings, perceptions, and the distribution of time*. Ottawa: Ottawa University.
- Shaw, S. M. (1985). The meaning of leisure in everyday life. *Leisure Sciences*, 7, (1).
- Skorzynski, Z. (1972). The use of free time in Torun, Maribor and Jackson. In A. Szalai (Ed.), *The use of time: Daily activities of urban and suburban populations in twelve countries* (pp. 265-289). The Hague: Mouton.
- Skoufias, E. (1994). Market wages, family composition and the time allocation of children in agricultural households. *The Journal of Development Studies*, 30, (2) January 1994, (pp. 335-360)
- Stafford F. P. & Duncan, G.J. (1980). The use of time and technology by households in the United States. *Time, goods and well-being* (pp. 245-288). Ann Arbor: Institute for Social Research, University of Michigan.
- Staikov, Z. (1986). *Change in the time budget of the Kasanluk population over the last 20 years*. Paper prepared for meetings of the International Research Group on Time Budgets and Social Activities, XI ISA World Congress. New Delhi: India.
- Staikov, Z. (1982). Problems of the comparison of time-budgets. In Z. Staikov (Ed.), *It's about time* (pp. 54-65). Sophia: Institute of Sociology at

the Bulgarian Academy of Sciences and Bulgarian Sociological Association.

Staikov, Z. (1985). *Ten suggestions concerning the international comparative research on time budgets - 1965 -1985- 1995*. Paper prepared for a workshop on Time Budget Research sponsored by the Central Bureau of Statistics of the Netherlands.

Statistics Canada. (n.d) *General social survey, Appendix F*. Canada: Ottawa.

Steward, F. (1992) "The Many Faces of Adjustment" in Paul Mosley *Development Finance and Policy Reform: Essays in the Theory and Practice of Conditionality in Less Developed Countries*. London: MacMillan Press.

Stone, P.J. (1972). Childcare in twelve countries. In A. Szalai (Ed.) *The use of time: Daily activities of urban and suburban population in twelve countries* (pp. 249-264). The Hague: Mouton.

Survey Research Center, Institute for Social Research. (1984b). Addendum to a proposal to the National Science Foundation for support of A *1985-86 study of time allocation among American households*. Michigan: University of Michigan.

Szalai, A., et al. (Eds.) (1972) *The use of time: Daily activities of urban and suburban population in twelve countries*. The Hague: Mouton.

Szalai, A. (1975). *The situation of women in the light of contemporary time-budget research*. (June 19 - July 2, 1975). Conference Background Paper, E/Conf.66/BP/6, World Conference of the International Women's Year, Mexico City. New York: United Nations.

Timmer, S. G., Eccles, J. & O'Brien, K. (1985). How children use time. In F. T. Juster & F. P. Stafford, *Time, goods and well-being*, (pp.253-382). Ann Arbor: Institute for Social Research, University of Michigan.

Tokman, V., N. Garcia and R. Infante. *Adjustment and Social Debt: A Structural Approach* International Labour Organization (ILO). 1987.

Tripp, R. (1982). Time allocation in Northern Ghana: An example of the random visit method. *The Journal of Developing Areas*, 16, pp. 391-400.

Urdaneta-Ferran, L. (1986). *Measuring and valuing women's participation in the informal sector of the economy*, October. Prepared for the Expert

Group on Measurement of Women's Income and their Participation and Production in the Informal Sector, Santo Domingo.

Vickery, C. (1977). The time poor: A new look at poverty. *The Journal of Human Resources*. V.XII, (1), pp. 27-48.

Viteckova, J. (1980). *Research survey on the time budgets of Prague inhabitants*. A paper prepared for the meetings of the International Research Group on Time Budgets and Social Activities, October, (pp. 33). Sofia, Prague: Institute for Philosophy and Sociology Czechoslovak Academy of Sciences,

Viteckova, J. (n.d.) *Basic trends in the structure of time fund in Czechoslovakia: Primary information* Mimeograph..

Walker, K. E. & Woods, M. E. (1976). Time-use: A measure of household production of family goods and services. *American Home Economics Association Washington*. Washington: D.C.

Wagenbuur, H.T.M. (1972). *Labour and development: An analysis of the time-budget and of the production and productivity of lime farmers in southern Ghana*. Institute of Social Studies. The Hague: Netherlands.

Wilson, R.D. & Holman, R.. H. (1984). Time allocation dimensions of shopping behavior. *Advances in Consumer Research*, 11, pp. 29-34.

Wnuk-Lipinski, E. (1984). *Report on the problems encountered while doing nation-wide time budgets survey*. A paper presented to the International Research Group on Time Budgets and Social Activities. Toronto.

Ziegler, S., & Michelson, W. (1981). Complementary methods of data gathering in literate urban population. *Human Organization*, 40, (4), pp. 323-329.

Zuzanek, J. (1979). *Evaluation of the instruments used in leisure studies - Canada 1972, 1975, 1976, and 1978*. Suggestions for Further Research. Waterloo: University of Waterloo.