Chapter XXIV
Survey design and sample design in household budget surveys

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Abstract

The present chapter addresses some issues on survey design and sample design for household budget surveys. The focus is on surveys in developing countries. Problems of measuring consumption and income are discussed in some detail in section B. Section C contains a discussion on some crucial sample design issues, for example, stratification, and sample allocation in space (geographical) and in time (over the full season). Section D provides a description of the Lao Expenditure and Consumption Survey 1997/98 (LECS-2). In section E, some of the experiences from LECS-2 are discussed.

Key terms: household budget survey, expenditure and consumption survey, measurement of expenditures, diary method.

A. Introduction

1.   "Household budget survey" serves as a generic term for a broad category of surveys. The surveys may be called "family expenditure surveys", "expenditure and consumption surveys" or "income and expenditure surveys" but the common element is the attempt to capture important parts of the everyday "budget" for the household. Some surveys originally designed as household budget surveys have taken on the role of multi-purpose surveys. To the core of questions on household consumption, expenditures and income have been added additional modules covering, for example, health, nutrition and education. This way of integrating several subjects in one multipurpose survey is becoming common. In the present chapter, the focus is on surveys in which an important element is the measurement of the household budget, regardless of whether the survey is a multi-purpose survey or a more specialized budget survey.

2.   Data on household consumption, expenditure and income serve a variety of uses. The survey data can be used for various studies of the socio-economic characteristics of the population and their distribution (for instance, the prevalence of poverty). When the surveys are carried out on a regular basis they can be used to monitor the welfare of various population groups. The World Bank Living Standard Measurement Study (LSMS) surveys have been specifically designed to measure poverty and living standard differentials in the population. In recent years, there has been a great deal of interest in the use of surveys to evaluate results of government interventions, especially the effects of poverty reduction projects. These data may also be used for policy decisions within the welfare and fiscal areas.

3.   Data from household budget surveys constitute a very important input to the national economic statistics system and, especially, the national accounts. These surveys measure the consumption in the household sector and can also capture the production in household establishments and agricultural operations (a large part of the national production in poor countries). In the economic statistics system, the emphasis is on national aggregates. A survey mainly catering to the needs of the economic statistics system should be designed to provide estimates of totals at the national level. Such a design may in some cases be less efficient when the survey data are used for policy-oriented analysis and evaluation of interventions, where the interest is on differentials between various population groups or geographical areas.

4.   In this chapter, the emphasis will be on budget surveys in developing countries as providers of data for the economic statistics system. The chapter has four main sections. Section B addresses some important problems relating to survey design, especially the difficult measurement problems and, in particular, the measurement of household consumption. Section C discusses sample design issues for household budget surveys. Section D discusses the Lao Expenditure and Consumption Survey, 1997/98 (LECS-2) as a case study. Experiences and lessons learned from the Lao Expenditure and Consumption Survey are discussed in section E.

B. Survey design

1. Data-collection methods in household budget surveys

5.   The main objective in household budget surveys is to measure total household consumption and its components. The traditional approach to the measurement problem, and the one still used in many surveys, is to collect information at a detailed level. The household is asked to report purchases separately for a large number of items, both in physical quantities and in monetary units. Another approach is to limit the collection of consumption data to a less detailed item list. This is the approach usually taken in the World Bank Living Standard Surveys (Deaton, 1997).

6.   Consumption data can be collected in basically two ways:

- By household interviews consisting of retrospective questions regarding consumption.

- By the use of a household diary where the household records the consumption and expenditure on a daily basis.

7.   The diary method usually requires at least two visits to the household, one at the start and one at the end of the diary period. Often a mid-period visit is scheduled to make sure that the diary reporting is going well. The retrospective interview could be conducted in a single visit to the household but it is common to have two visits.

2. Measurement problems

8.   How should household consumption be measured in an interview with retrospective questions? Should it be measured on a detailed level for a large number of items or on a less detailed level? The first approach produces more accurate detail than the second approach, but at a significantly higher cost. If we can do without the detail and mainly aim at estimating the total consumption, will the second approach with a small number of questions produce estimates as accurate as those produce by the detailed questionnaire? There are no definite conclusions regarding the accuracy. Deaton cites studies in recent years, among them a test survey in Indonesia covering 8,000 households where two questionnaires were tested (Deaton, 1997). The long questionnaire had 218 food items and 102 non-food items, whereas the short questionnaire had 15 food items and 8 non-food items. The estimates of total food expenditures differed little between the questionnaires. The estimates of non-food expenditures were about 15 per cent higher for the long questionnaire (World Bank, 1992, appendix 4.2). However, these results have not been reproduced in other tests. Similar tests in El Salvador (Joliffe and Scott, 1995) and Jamaica (Statistical Institute and Planning Institute of Jamaica 1996, appendix III) show larger differences between the questionnaires. The total expenditures were 40 per cent higher and the food expenditures 27 per cent higher for the long questionnaire in the El Salvador test. The test in Jamaica resulted in 26 per cent higher total expenditures for the long questionnaire. Deaton concludes: "Although the shorter questionnaire can sometimes lead to dramatic

reductions in survey costs and times - in Indonesia from eighty minutes to ten - it seems that such savings come at a cost in terms of accuracy" (Deaton, 1997).

9.   The diary method minimizes the reliance on respondents' memories. However, the method will be difficult to use when a substantial fraction of the population is illiterate. Even with a high literacy rate in the population, we could expect some problems with the diary method; for example, poorer households are less likely to be able to use diaries and many households that are able to use diaries in fact do not use them (Deaton and Grosh, 2000). The General Statistics Office of Viet Nam found that in urban areas many households would not fill out the diaries for the 1995 Viet Nam Multi-purpose Household Survey (Glewwe and Yansaneh, 2001). The length of the period of diary reporting is also an issue for consideration, with many surveys using two-week periods and some covering a whole month. Research indicates lower reporting of expenditures between the first and second week in two-week diaries, likely owing to a fatigue effect.

10.   Many household budget surveys also collect data on household income. The measurement of household income presents even larger challenges than the measurement of consumption. Income is a sensitive topic to many respondents, especially in well-to-do areas. There is sometimes a suspicion among respondents that information on incomes could be used for taxation purposes, especially in the cases where the household operates a family business.

11.   Incomes need to be recorded for all household members and for all kinds of incomes (incomes from household business or agriculture, informal incomes from part-time activities, returns on assets, etc.). Calculations of incomes are further complicated by gifts in cash and in kind, remittances and loans. Incomes from agriculture for smallholder households present special problems, as such households obtain part of their food from subsistence production. Also, some of the cash income may come from sales of agricultural produce that take place intermittently, making it difficult for that income to be captured properly in the interview.

12.   It is probable and, in some cases, proved that these conceptual and practical difficulties in measuring household income lead to underestimation of household incomes. Experiences from income and expenditure surveys support this claim. It is often seen that estimates of income from the surveys are substantially lower than estimates of consumption, so much lower that it is difficult to explain the whole difference by households' using savings for the consumption. The alternative explanation – that the consumption is overestimated - is less probable. Research indicates that consumption is more likely to be underestimated than overestimated. Hence, there are reasons to believe that many survey estimates of income are too low

3. Reference periods

13.   Closely related to the decision on measurement instrument ("long" or "short" questionnaire, diary method for the food consumption or recall questions, etc.) is the decision on reference period. The reference period that the respondent is asked to recall must not be too long, as this would increase the recall errors. The effect of increasing the length of the reference period was studied in an experiment in the Living Standards Survey in Ghana. The study showed that for 13 frequent items, reported expenditures decreased on average 2.9 per cent for

every day added to the recall period (Scott and Amenuvegbe, 1990). There is some controversy among researchers over the effects of varying recall periods. An earlier study on the Indian National Sample Survey seems to indicate that, for certain food items, a one-month reference period produces less bias than a one-week reference period (Mahalanobis and Sen, 1954). Studies on Living Standard Surveys in recent years seem to confirm the results of Scott but it is unclear whether the results are due to recall failure over time in long-period data or boundary effects (telescoping) in short-period data (Deaton, 1997).

14.   High-frequency items such as food usually have rather short reference periods, at most one-month recall. The situation is different for low-frequency items. Recall of expenditures on low-frequency items such as household durables must cover a relatively longer period because a period that is too short would result in large variances in the estimates of totals. The length of a suitable reference period will consequently differ between item groups.

4. Frequency of visits

15.   Most income and expenditure surveys collect data through repeated visits to the sample households. The required frequency of visits to each household depends on the measurement method. The standard procedure for the retrospective method is two visits, roughly two weeks apart. In surveys using the diary method, one or two weeks between the follow-up visits to the households is recommended.

16.   Repeated visits to the same household may cause respondent fatigue, leading to deterioration in the quality of reporting. The advantages of following the household for a longer time and keeping control of the data quality by frequent visits to the same household must be balanced against the fatigue that this may produce.

17.   Another kind of repeated visit survey is one where the household is interviewed for two or more reference periods spread over the year. An example is the Ethiopian Household Income Consumption and Expenditure Survey 1995/96, where the households were visited two times in two different seasons and asked about the last month. This situation is discussed further in the section on sampling below.

5. Non-response

18.   A distinguishing feature of household budget surveys is the heavy response burden put on the sample households. The rate of refusal is generally higher in budget surveys than in other surveys and it may be very high in some parts of the population. To the refusals from the start will be added dropouts during the survey. There is likely to be a higher dropout rate than in other surveys owing to the fatigue (or annoyance) experienced by the household when the interviewer makes repeated visits and undertakes detailed probes into incomes and expenditures.

19.   There are no good comparative studies on the non-response levels in budget surveys in developing countries. The LSMS surveys have non-response rates of less than 20 per cent (Deaton and Grosh, 2000), which are considerably lower than those experienced in household budget surveys in Western Europe, where the levels may reach 40-50 per cent. There is probably a great deal of variation in non-response rates between developing countries. In countries with

strong administrative control at the local community level, the non-response rate will likely be low.

C. Sample design

20.   The demands on the sample design for a budget survey do not differ much from demands in other types of household surveys. Typically, a multistage sample is employed, the primary sampling units (PSUs) being census enumeration areas (EAs) or administrative units such as communes, villages or wards. A few issues specific to sample designs for budget surveys will be addressed in the present section.

1. Stratification, sample allocation to strata

21.   Stratification of PSUs will usually be implemented using administrative regions (provinces, etc.) and, within regions, urban/rural parts. For household budget surveys, further stratification by income level will increase efficiency. In cities and larger towns, it is usually possible to identify two to three income-level strata and to make a crude classification of the PSUs into these strata (for example, high-, middle- and low-income areas).

22.   A household budget survey has many users who place different demands on the results from the survey. This is even truer for a multi-purpose household survey of which the budget survey is a part. The survey planner often has to handle conflicting demands from important users. An important use of household budget data is for national accounts (NA). The NA requires, first and foremost, reliable national estimates of totals for the accounts. This calls for a sample design where the sample is allocated evenly over the population (self-weighting sample) or a design with some oversampling of middle- and high-income households where the economic activity is higher.

23.   Other important users are government planners and policy analysts, who use the data for planning, welfare monitoring, and poverty analysis. For these uses, there is a need for reliable estimates for different parts of the country and for different population groups, rather than for good national estimates. The survey should have a sufficient number of households in all regions and important population groups (for example, households living in remote or poor villages). This calls for a sample design that allocates the sample more or less equally over the regions and, if possible, secures a sufficient sample in important population groups.

24.   The conflicting demands described above must be handled through some sort of compromise. One compromise sometimes used in this situation is the square root allocation where the sample is allocated over the strata (regions) proportionally to the square root of the stratum size (in terms of population or number of households). Square root allocation has been used for the Viet Nam Household Living Standards Survey and the samples for the household surveys in South Africa.

2. Sample size

25.   The total sample sizes for budget surveys vary between countries. Many surveys have sample sizes in the range of 3,000-10,000 households; but in big countries, the sample sizes may be considerably larger. Local authorities may express a strong demand for results at a detailed geographical level, in some cases to the point where the quality of the survey data is put at risk. A large sample may "steal" resources from the equally important work of keeping the non-sampling errors at acceptable levels. The challenge is to find a balance between the demands from the subnational administrative agencies and the budgetary requirements with respect to keeping the sample size and non-sampling errors at manageable levels. Often, the survey designer must face the difficult task of explaining the need to maintain a balance between sampling and non-sampling errors to the users.

3. Sampling over time

26.   The expenditure and income patterns of large population groups may vary considerably over seasons. The survey should preferably cover the various seasons with an adequate sample. Special consideration must be given to large holiday periods when the consumption patterns often deviate considerably from other periods.

27.   One possible way to handle the seasonality problem is to use a one-year reference period. As we have seen, this is not a viable solution for most items and certainly not for food items. Better approaches are:

- Repeated visits (with repeated reference periods) for the same households spread over the year, including all seasons.

- Surveying the household for one period, for example, a month (possibly with several visits during the period). The households are spread over the year according to a sampling plan that secures a sufficient sample in all seasons. The design assumes that by adding together monthly cross-sectional data (multiplied by 12), it is possible to reconstitute the year statistically.

28.   The second approach probably offers the most common solution to the problem of seasonality. It is used in the expenditure surveys in, for example, the Lao People's Democratic Republic, Namibia and Lesotho.

29.   The first approach has been used in, for example, the Ethiopian Household Income, Consumption and Expenditure Survey 1995/96, where the households were visited two times in two different seasons and asked about the last month.

30.   With the second approach, we take care of the seasonal variation but only at the aggregate level. Aggregates such as means and totals of annual household income or expenditure will be correctly estimated. Ordinary measures of dispersion, however, will be biased. Individual household monthly totals that are annualized by multiplication by 12 will contain seasonal variation (owing to the fact that only one month is surveyed) and random non-seasonal

variation (owing to the fact that the household has different incomes and expenditures over the months that are not attributable to seasonal effects). This seasonal and non-seasonal variation in the annualized monthly totals increases the variation above what would have been obtained if yearly totals had been observed. Estimates of dispersion in yearly totals will consequently be biased if we use measures of dispersion in monthly totals as estimates. The seasonal variation can be estimated from the data and used to reduce the bias. It is not possible, however, to reduce the bias due to variation within household between months because we have data for only one month for each household.

31. For the analyst interested in the annual expenditure distribution across households, the one-month survey design presents problems because of the bias in the ordinary measures of dispersion (for example, the standard deviation). These problems affect, for example, poverty analysis, where individual households are identified as being below or above a poverty line and characteristics of these groups are analysed. If corrections are not made, the extent of poverty will be overstated if less than half of the population is poor, and understated if more than half of the population is poor. Scott shows through a model calculation that the standard deviation of annual expenditures is overestimated by 36 per cent in a survey that collects data for a single month from the households (Scott, 1992).

D. A case study: the Lao Expenditure and Consumption Survey 1997/98

32. The Lao People's Democratic Republic has conducted two expenditure and consumption surveys in the last decade. The first Lao Expenditure and Consumption Survey (LECS-1) was conducted 1992/93. The second, LECS-2 was conducted 1997/98 (State Planning Committee, National Statistical Centre of Lao People's Democratic Republic, 1999). A third survey, LECS-3, is under way.

1. General conditions for survey work

33. The Lao People's Democratic Republic had a population of 4.5 million in the latest census (1995). Area-wise, it is a bit larger than Great Britain. The northern and eastern parts are mountainous. Transportation is difficult in many parts of the country: 57 per cent of the rural household lived in villages that had no access to roads, according to the 1995 census. The Lao People's Democratic Republic is still a predominantly rural and agricultural society. The overwhelming majority of the population is self-employed in agriculture. The adult literacy rate is about 60 per cent. Although there are many languages in the Lao People's Democratic Republic, the official language, Lao, is understood by most of the population. The villages are well-defined administrative units and there is even a formal subdivision within villages into "household groups" of 10-15 households. A somewhat crude (and subjective) assessment of the fieldwork conditions would consider that in the Lao People's Democratic Republic, compared with the average developing country, it is more difficult to reach the households in the rural areas but that, once reached, households are more likely to cooperate.

2. Topics covered in the survey, questionnaires

34.   Large parts of the two macroeconomic measures "value added" and "labour input in production" concern household production in agriculture or informal household activities. In order to capture household production data, three new modules were introduced in the second LECS: (a) a "light" time diary, which was used to capture time use for one member of the household, enabling measurement of labour input in hours in the Lao economy; and (b) two modules on agricultural and household business operations. This makes it possible to calculate value added in household production in agriculture and informal business activities.

35.   A general module on household composition, education, employment, fertility and child nutrition was administered in the first interview. A diary module was used to cover all household transactions during a month. Housing, access to durables, land and cattle were covered in the second interview. The questions on housing were used as a basis for imputing values on rent. At the end of the month, the household was asked about purchases of durable goods during the preceding 12 months. A village questionnaire was administered to the head of the village. The questionnaire covered roads and transport, water, electricity, health facilities, local markets, schools, etc.

3. Measurement methods

36.   The fact that the diary method had been used in the first LECS for measuring household transactions argued for using this method in the new LECS, provided it had worked well. Changing the measurement method would compromise the comparability between the surveys. The diary method had worked well in the LECS-1 but only with substantial support to the households from the interviewers. Many households could not (or would not) fill in the diary properly without rather close and frequent support from the interviewer. Under these circumstances, the diary method seems to be a less favourable alternative. However, we must also consider the fact that many villages in the Lao People's Democratic Republic are difficult to reach. Once the interviewer is in the village, it often pays to keep him/her there for the three interviews that are needed for each household, rather than have him/her travel several times between the village and home base. Furthermore, the interviewers would be available for frequent contacts with the households during their stay in the village. The National Statistical Centre finally opted for the "interviewer-supported diary method" for LECS-2. The interviewers would stay in the village for a whole month and give the households all the assistance needed for the diary keeping.

37.   A special procedure was used for measuring the daily consumption of rice. The rice consumption of each member of the household was measured for one day to obtain a precise measure of intake at each meal for each person. The person was shown a leaflet with pictures of six plates with various amounts of rice (one "ball", two "balls", etc.) and was asked to indicate which picture was accurate.

38.   During the month, a 24-hour period was selected for recording household time use. The time-use diary used in LECS-2 had been developed jointly by Statistics Sweden and the Economic and Social Research Council (ESRC) Research Centre on Microsocial Change at the University of Essex. A major objective was to make it "light" -- to have a diary format that

could be used together with other survey instruments without overburdening the respondents. Only one (randomly selected) household member, 10 years of age or over, was asked to fill in the time-use diary for one designated day. The interviewer selected respondents randomly so that the number selected each day of the week was constant.

39.   The time-use diary contained 22 predefined activities with an emphasis on economic activities. For some of these activities, the interviewer probed for additional information at the time when the diaries were collected. Those who answered "worked as employee" were asked whether they had worked as a farm worker, in the governmental sector, in the private sector, or somewhere else. Those who answered "for own business work" were asked what role they performed in their business. The answers were classified according to a list with about 50 categories based on the International Standard Industrial Classification of all Economic Activities (ISIC), and the System of National Accounts, 1993 [Commission of the European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations and World Bank (1993)].

4. Sample design, fieldwork

40.   Census enumeration areas serve as primary sampling units (PSUs). The PSUs were stratified by 18 provinces and within provinces by urban/rural. The rural EAs were further stratified into EAs with "access to road" and "no access to road". A sample of 25 PSUs was allocated to each province. A further allocation by urban/rural was implemented, the urban part being assigned a sampling fraction 50 per cent larger than that of the rural part. The PSUs were selected with a systematic probability proportional to size (PPS) procedure in each province, giving a sample of 450 PSUs.

41.   The households in the selected PSUs were listed prior to the survey and 20 households were selected with systematic sampling in each PSU, resulting in a total sample of 9,000 households. Sampling over time was achieved by a random assignment of the provincial sample over the 12-month period, giving two (and, in one case, three) villages per month.

42.   A team of two interviewers was required for the work in the village. Interviewers were selected among the permanent staff in the provincial statistics offices. Many had participated in the first LECS. Training was conducted over a two-week period.

E. Experiences, lessons learned

1. Measurement methods, non-response

43.   The interviewers spent much time in the households assisting the respondents in their task of recording all transactions relating to the household as well as household businesses and agricultural operations. There are reasons to believe that this tedious and time-consuming work improved the quality of the responses. There is anecdotal evidence that the frequent visits to the household by the interviewer in many cases established a relaxed and trustful relation between the parties. They also gave the interviewers ample time to sort out the often complicated

relations between household consumption and household production in agriculture or household businesses.

44.   A few checks of quality were made. The estimates of rice consumption derived from the survey were checked against external agricultural production data and found to agree reasonably well. A check on consumption levels between the first and the second two-week diary period was also made. There was no indication of lower reporting during the second period, and there were small differences in the number of diary entries between the two periods. Also, the estimates of total consumption were comparable over the two periods.

45.   The fact that there were very small differences in consumption on aggregate level between the first and the second two-week diary period raises the question whether a shorter diary period might have been sufficient to capture the consumption.

46.   The reported non-response was low, only 3.1 per cent. The non-response was very low in urban areas, only 0.6 per cent, and higher, but still low, in the rural areas (3.9 per cent). The non-response was underestimated to some extent. Substitution for non-response was used but the routines for reporting outcomes of the interview were poor, so that it is difficult to assess the correct non-response level and also to differentiate between non-contacts and refusals. The number of refusals was very low. All experiences from Lao household surveys indicate that households feel obliged to participate in government surveys. In addition, they are told to participate by the village chairman.

2. Sample design, sampling errors

47.   The analysis of variance and cost structures indicates that an optimal sample size within PSUs (enumeration areas) is in the range of 8-12 households. Thus, the sample size used in the survey, 20 households, was larger than the optimal level (Pettersson, 2001).

48.   Calculations also show that the equal allocation of the sample over provinces resulted in sampling errors in national estimates that were approximately 20 per cent higher than what would have been achieved with proportional allocation. The coefficients of variation (CV) were generally below 5 per cent for national-level estimates. The sample in urban areas was smaller than the sample in rural areas (2,008 versus 6,874 households) but the CVs for urban estimates were comparable with the rural estimates, partly an effect of the lower design effects in urban areas.

49.   The design effects were relatively high in rural areas, considerably higher than in the urban areas (see table XXIV.1). This was a reflection of the fact that the rural villages are socio-economically homogeneous. As most of the rural PSUs consist of one village, the PSUs would also be homogeneous. In the cities and towns, there is relatively little income-level segregation into rich and poor areas: rich households are living next to poor households in all parts of the city. Many urban PSUs therefore contain both rather rich households and rather poor households, making the urban PSUs relatively heterogeneous.

Table XXIV.1. Design effects on household consumption and possession of durables

	National	Urban	Rural
Total monthly consumption per household in Lao kip	5.4	3.8	7.7
Monthly food consumption per household in Lao kip	5.8	4.4	6.8
Proportion of households in possession of motor vehicle	2.1	1.3	3.3
Proportion of households in possession of TV	5.4	3.1	6.8
Proportion of households in possession of radio	4.5	2.7	4.8
Proportion of households in possession of video	5.5	3.9	6.1

50.   Each sample household was surveyed for one month, the sample spread evenly over a twelve-month period. This caused problems when poverty rates were estimated from the survey (see sect. C.3). The seasonal variation was estimated from the data and used to remove the seasonal variation in the estimates. The random non-seasonal variation within household between months, however, could not be estimated. The result was that the dispersion of household consumption was overstated somewhat and the poverty rates were overestimated.

3. Experiences from the use of the time-use diary

51.   The number of self- and interviewer-completed diaries are not known. There are, however, indications that the interviewers generally gave significant support to most respondents, though there might have been regional differences.

52.   The random sampling of one person in the household did not work well. Calculation of age/sex distribution among the persons who filled in the time-use form indicate that interviewers and supervisors were not very successful in implementing the rules for random selection. It seems that in many cases the interviewer did not insist on using the randomly selected person but allowed substitutions, probably for practical reasons. Calculations indicate that men of active age (aged 15-64) were over-represented and the young (aged 10-14) of both sexes and the old (65 years or over), particularly women, were underrepresented in the selection (Johansson, 2000) (see table XXIV.2). Modification of the procedure is needed to secure better representativity of the time-use data. If the time-use survey module is designed to capture mainly economic activities, the youngest and the oldest may not need to be included. However, including these categories is relevant to a social programme with particular interest in child labour and the situation of the elderly.

Table XXIV.2.   Ratio between actual and expected number of persons in the time-use diary sample

	Ratio actual/expected		
Age	Men	Women	All
10-14	0.41	0.49	0.45
15-64	1.33	1.04	1.18
65+	0.59	0.29	0.43
All	1.11	0.90	1.00

4. The use of LECS-2 for estimates of GDP

53. The experiences from including modules that measures value data on household production and input costs, as well as time use, have been encouraging. It has considerably strengthened the statistical base for the estimates of gross domestic product (GDP). The survey now provides important data for the national accounts regarding: (a) value added in household production; (b) labour input in the total economy; and (c) level and structure of private consumption.

54. In the new base estimate of GDP for 1997, household production in agriculture and in informal economic activities accounted for 64 per cent of GDP and an even larger per cent of GDP from the use side. About 80 per cent of labour input in the total economy came from household production in agriculture and informal sector economic activities (Johansson, 2000).

F. Concluding remarks

55. This chapter has addressed issues concerning the design of surveys where the aim is to measure the "household budget". The focus has been on surveys where the total household consumption as well as production is estimated and where these estimates in turn serve as input to the national accounts and the national economic statistics in general. For a more thorough treatment of the design issues, the interested reader is referred to other publications [see, for example, Deaton and Grosh (2000) and United Nations (1989)].

56. The case study used in this chapter is somewhat unusual in terms of the amount of interviewer time spent per household. Considerations of measurement accuracy and fieldwork conditions argued for this resource-demanding design for the Lao survey. The use of the diary method in a population with a low literacy rate meant that support on a more or less daily basis would be required for many households. The interviewer-supported diary method was deemed necessary to accurately capture the consumption in the Lao households. Other, less costly, methods may result in estimates of acceptable quality in other countries.

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