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HOUSEHOLD MARKET AND NONMARKET ACTIVITIES (HUS) - A PILOT STUDY

by

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HOUSEHOLD MARKET AND NONMARKET ACTIVITIES (HUS)

A PILOT STUDY

N. Anders Klevmarken

Abstract

Economic analysis of household micro behavior, data collection for a longitudinal data base and development of statistical methods for collection and analysis of micro data are the three general purposes of the HUS-project. A pilot study was carried out in 1981/82. It was designed to compare various data collection methods, test questionnaires, give an idea of the likely response rate in a main study, help in developing coding and editing procedures and give the project staff a training in the entire survey operation. The pilot study included a sample survey of 300 households which were interviewed in person and by telephone. This report gives an account of the design and the results of the pilot study.

Contents

1 THE HUS-PROJECT

The research project "Household market and non-market activities" (Swedish title: "Hushållens ekonomiska levnadsvillkor") or shorter "HUS" was started with three main purposes:

a. Research on household behavior,

b. Development of a data base of household micro data,

c. Research on statistical methods for collection and analysis of household micro data.

A basic idea behind the project is that there is an interdependence between the various activities in which a household or its members participate. Consumption activities, maintenance activities, leisure activities, labor market activities, savings- and investment activites are all more or less related. For this reason, in research about household behavior, data about all these activities for each household would be much preferable to single consumer expenditure, savings, income, labor force and time-use surveys.

In our research program Eliasson & Klevmarken (1981) we outline the problems we wish to address. They include studies of labor supply, the influence of market work on leisure activities, family decisions about market work, household maintenance and do-it-yourself activities, demand for consumption goods, demand for housing, demand for public services and usehold savings and investment behavior.

Many of the most interesting issues concern dynamic adjustment processes of the household. To study these one would need longitudinal data. We thus emphasize that the design of our own data collection should make a longitudinal continuation feasible.

No existing data set or combination of data sets can be found which could be used for this project. We have thus proposed a new data collection in combination with utilization of existing data files.

To our knowledge no survey has previously been done which covers all the aspects of household activities mentioned above. If such a study would at all be feasible we would, of course, have to sacrifice much of the details traditionally found in consumer expenditure surveys, saving surveys, labor force surveys, and time-use surveys. We might also have to find new measurement methods which place less of a response burden on the households. Thus, if there are methods developed for more specialized surveys, we would like to test if they would work in a comprehensive survey as ours and, in addition, we would like to test new methods developed for this project. Furthermore, in some areas there is no consensus about a "best practice", which suggests that more methodological work would be useful. Time-use is an area for which this is true.

The Bank of Sweden Tercentenary Foundation and The Swedish Council for Planning and Coordination of Research have financed a pilot study to investigate these methodological issues and to find out if it would be

feasible to make a comprehensive survey of the kind we have suggested. This report explains the design of the pilot study and summarizes the methodological aspects of its findings. Preliminary descriptive and economic analytic studies are reported elsewhere.

The pilot study includes two field tests. The first test was primarily done to test survey questions and it was relatively small. The second was a random sample of 320 households and involved a full scale field operation. The field work was done in February and April-May 1982 respectively. During the the fall of 1981 much work was done on developing good survey questions. To the extent possible we have used already tested questions from previous surveys in Sweden (e.g. Levnadsnivåundersökningen (LNU) och Undersökningen om levnadsförhållanden (ULF)) and in the United States. In particular, we have benefitted much from the experts at the Survey Research Center, ISR, University of Michigan. Two experienced interviewers from the Swedish Central Bureau of Statistics also participated in the questionnaire design. Although many questions have thus been tested and used before, their adaptation to our project as well as new questions developed by us needed repeated field tests. In the following, a relatively brief report is first given on the first test and then a more detailed explanation of the second one.

2 PRETEST 1

The main purpose of the first field test was to test our survey questions. We also wanted to get an idea of how much interviewing time was needed for each segment of questions. Since the sample was to become relatively small and since inference to a population was not important, it was decided to use a non-random sample from the telephone directories for Gothenburg and vicinity. It was easier and less expensive to administer this sample than a random sample, because the travel distance for the interviewers could be minimized. The occupation stated in the directory was used to make sure that certain groups like farmers and college graduates were included in the sample. A few unemployed and retired persons were also added to the list. Quota sampling was used, i.e. the interviewers were asked to contact respondents on the list until a certain number of interviews were made within each occupational category, In all, there were 48 interviews.

Since they were expected to last for about one hour on the average, all interviews were personal. All questions could not be asked to all respondents. For this reason four different questionnaires were developed. Depending on how much testing a question would need some questions were included in more than one questionnaire, while others were only included in one. We thus used a design with respondents cross classified by occupation and type of questionnaire.

Before the fieldwork started, the interviewers received material which explained the general purpose of the study and the particular uses of each segment of the questionnaires. The interviewers were also gathered to a training session during one day. After the fieldwork was completed the project staff met with the interviewers again to inquire about their experiences.

As is usually the case, the experiences from the first pretest called for revisions of several questions. The reader is spared the details but it might be worth-while to mention that the comments from the interviewers both before and after the field work were very useful.

One result might, however, be of more general interest. In the first pretest time-use information was collected by the "yesterday question" technique used in the ISR time-use surveys, but with the difference that these questions were asked for the two previous days. The results from 24 diaries are summarized in Table 1. The first four columns show the average time-use during yesterday and the day before yesterday for a few aggregate activities and the corresponding standard deviations. 1) The averages for the day before yesterday are almost all somewhat smaller than the corresponding averages for yesterday, but the variances are so high that it would be difficult to draw any conclusion. The average number of activities per respondent, as reported in the last two columns,

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1) Since most interviews were made on week-days there are more weekend days among the yesterday observations than among the observations for the day before yesterday. The results given in Table 1 are standardized for this difference between yesterday and the day before yesterday. M=(5/7)*M(wday)+(2/7)*M(wend).

shows that the activity frequencies are smaller for the day before yesterday than for yesterday in five activity groups and higher in one. Since the sample is not a probability sample no stochastic inference is possible, but these results still indicate a systematic difference between the estimates for yesterday and for the day before yesterday.

The number of activities reported by each respondent ranged from 13 to 48 with an average of 26, which rather well corresponds to results from the ISR time-use surveys. The average interviewing time needed for the time-use questionnaire only was 63 minutes. This was much more than expected. Even if there had been no indication of a systematic difference between the two days, more than 60 minutes of interviewing time for the time-use questions would not have been economically feasible in the second pretest. For this reason we only asked about yesterday in the second test.

Table 1. Mean time-use and number of activities reported in pretest 1. (Minutes per day and number of activities per day respectively.)

Activity	M1	SD1	M2	SD2	N1	N2
Work	147	188	144	181	2.3	1.4
Household work	129	114	109	88	4.8	3.5
Personal care	707	109	680	77	9.6	8.2
Shopping	18	30	17	26	0.9	0.9
Education	30	81	27	53	0.3	0.3
Pleasure, recreation	304	113	355	148	4.2	4.4
Travel	82	63	74	57	6.0	5.3
Other communication	23	24	29	37	0.8	0.7
Don't know, gap, etc	0	0	6	14	0.0	0.1

NOTATION:
Mt Mean time-use day t
SDt Time-use standard error day t
Nt Average number of activities per respondent day t

3 PRETEST 2

There were five main purposes of the second pretest, namely, to

a. compare different methods of collecting expenditure and time-use data,

b. get estimates of response rates and an idea of what might be important for the response etc.,

c. test the questionnaires again,

d. develope coding and editing procedures,

e. train the project staff in the entire survey operation.

3.1 The design of pretest 2

It was desirable to design the pretest to equal an anticipated main study as closely as possible. Because of time and budget constraints there were, however, several deviations. At first, the field work of a main study would cover an entire year, while this would obviously not be possible for the pretest. The fieldwork for the pretest lasted from April through May 18. Secondly, a main study would be based on a random sample from the entire Swedish population. For budget reasons the pretest was limited to three counties in Western Sweden (Göteborgs- o. Bohus län, Älvsborgs län och Värmlands län). The cost to gather the interviewers from the entire country for training and follow up sessions was prohibitive. The choice of these particular counties gave us a reasonable mixture of rural and urban areas including one big city, Gothenburg. The limitation to this area had the advantage of easy communication between interviewers, the SCB field office in Örebro and the project staff in Gothenburg. A disadvantage is that the expenditure patterns, the labor market situation and, in particular, the time-use patterns are likely to be different in the northern counties compared to the rest of the country. We have not, however, found any reasons why the differential response to various collection methods would be different in the three chosen counties as compared to the rest of the country.

Our cooperation with the Central Bureau of Statistics opened up a possibility to merge our survey data with the abundant data from a panel study of household incomes, the HINK study. Every year the SCB draws a fresh panel of approximately 5000 individuals. For all members of the households to which these individuals belong, detailed information about incomes, transfer payments, deductions etc. are collected from taxrecords and other files for two consecutive years. Information about labor market status, occupation etc. is obtained directly from the households. For the third year and following, only information which is available through the computer system of various central authorities is added to the panel.

In order to make a merge possible we would have to use one or more of the HINK panels as a sampling frame. For a main study the 1978 panel would probably be preferable, since it is the only panel which, in addition to income data, includes two years of wealth data. However, we did not want to use the same panel for the pretest, since that could increase the non-response in the main study. Instead, it was decided that the 1979 panel would be used in the pretest. This panel also includes wealth data but only for one year.

The 1979 HINK panel was obtained by a stratified random sample of persons, 18 years of age and older, from the entire Swedish population (RTB) not living in institutions as of July 1979. Those who belonged to the 1979 HINK population and lived in any of the three chosen counties at the time of our field work thus belonged to our population. This implies that no selected person in this first sampling stage could be less than 21 years old. We decided not to draw a suplementary sample of young people, immigrants etc. Consequently, our population does not exactly correspond to the population of persons (households) living in the three counties at the time of the pretest. Since inference to this finite population is not our major goal, this was not considered a great disadvantage.

For many types of analysis the preferred unit of analysis is not the individual but rather the household. Since there is no sampling frame of households or dwellings, we had to identify the household through the randomly selected person. This, of course, implies that the household selection probability is proportional to the number of household members included in the frame, i.e. in the sampling frame for the 1979 HINK panel.

The household definition included everyone who lived in the same dwelling and who regularly had meals together. Family members, who temporarily lived somewhere else and were expected to return, were also included. The exact definition is given (in Swedish) in an appendix on page 45.

Questions about personal circumstances should, in principle, be asked to every person, while questions about household matters should be asked to the most knowledgeable household member. A design, which includes all household members, is, however, likely to give difficulties in the field and a high non-response. It is also expensive to interview everyone in the household. In practice, we usually resort to indirect interviews or some scheme with a randomly designated respondent. In our case it is essential to get good data about schooling, labor market history and time-use from both spouses, since the dependence and interaction between the spouses belong to our major interests. In a main study these questions would have to be asked to each spouse. In the pilot study we decided to give time-use questions to both spouses (whether married or not), while we had to save interview time by not giving all remaining individual questions to all spouses. In households with three or more adults we would, in principle, not only like to interview the two spouses but also other adults, since they can be expected to behave differently. Our budget would, however, not permit that much interviewing time spent on each household. It was, therefore, decided that the randomly selected person (our primary selection unit) would always be interviewed, whether or not he or she was household head, married or living together with the head or a third person. In this way we could hope to get some information about "third persons". We would also have a "clean" random sample of designated persons.

It is desirable to administer household questions according to predetermined rules to avoid that response differences depend on differential treatment, i.e. on whom in the household answers the questions. This rule could be random or non-random. One disadvantage is, however, that the response rate might become low. A scheme, where the interviewer and/or the household selects the respondent, would probably give a higher response rate. In the pretest a household head was designated for each household. Since most of our questions concern economic matters and, since it is likely that the husband on the average knows more about expenditures for housing, cars, pleasure boats and other durables, investment activities, etc. than his wife, the husband was the designated head for households with two spouses. 1) For all other households the adult with the highest income during 1981 was selected. The interviewers were instructed not to take the household head interviews with someone else in the household. (In a few single cases exceptions were permitted.)

Although the period for the field work would become relatively short, we decided in favour of a design with repeated contacts. There were two main reasons for this. First, the total amount of interviewing time needed per household to administer all questions would well exceed an hour per respondent. By rule of thumb this was judged as an upper limit for the average time of a personal interview.

Second, in a main study repeated contacts would be necessary also for other reasons - to control for seasonality of time-use and expenditures - and we would like the pretest to reflect the main study in this respect as well. Repeated contacts tend to increase non-response cumulatively and we would like to get some idea from the pretest to what extent this is true in our case. Admittedly, the propensity to respond might be different when a household is contacted again after a few weeks as compared to a few months, and it is not obvious which propensity is the highest. If difficulties to trace households which have moved since the last interview can be neglected, it is likely that the household perceives less of a response burden after a few months than after a few weeks. If this is true we would thus, ceteris paribus, tend to overestimate the non-response in the main survey.

In the pretest there was one relatively short contact interview by telephone with the randomly selected person to establish the household composition and to ask a few demographic questions. Then two interviews followed with each respondent in each household. One interview was personal and one was made by telephone. In addition, leave behind expenditure diaries were administered to each respondent and leave behind time-use diaries to a few respondents. This is explained in more detail below.

Time-use data can either be collected by retrospective questions or by a selfadministered leave behind diary. A selfadministered diary have to be relatively simple and those who have been used in previous studies have usually been structured by a list of more or less aggregate activities, cross-classified by a time scale. The units of this scale have sometimes been as coarse as 15 or 30 minutes. Disadvantages with these selfadministered diaries are that the list of activities tend to steer the respondent too much, classification of activities is not in the control of the project staff, small although frequent activities are not reported, secondary activities cannot be reported, and to keep a diary is in itself an

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1) This rule was followed, whether the two spouses were formally married or not.

activity which disturbes other activities. The main disadavantage with retrospective questions about specified activities is that certain activities tend to become underreported while others become overreported.

The method used in the pretest is an adaptation of the yesterday question technique used at the ISR, the University of Michigan. It is perhaps best described as an one day retrospective interviewer administered diary. The basic idea is that the interviewer goes through the past 24 hours with the respondent and asks him or her to recall for each activity, when it started and ended. One advantage with this method is that it forces the respondent to have the time-use of all activities to add up to 24 hours. Furthermore, with one day retrospective questions the data collection does not interfere with the observed activites and the recall error is reduced as much as possible. Contributing to our decision not to try other methods were the results of a few comparisons made in Michigan with the so called beeper technique, i.e. each respondent was equipped with a beeper and, when it gave a signal at random time intervals, the respondent made a note about his (her) present activity. These comparisons showed no systematic difference between the two methods.

The first page of the diary form is reproduced in an appendix on page 46 Each row corresponds to one activity. There are two new features which distinguish this form from the form used by the ISR. Since one of our particular interests is to study to what extent households use public services, each activity is supplemented by a question whether that activity involved use of public services. We are also interested in estimating consumption expenditures. The last two questions ask, if the respondent had any expenditures or paid for anything in doing an activity and, if so, how much.

Questions about time-use during one or a few days will, however, give a very low precision for infrequent activities. The yesterday questions should therefore to be supplemented either with a selfadministered diary for specified infrequent activities or with retrospective questions about these activities. Both these methods were tried in the pretest.

In consumer expenditure surveys data are usually obtained by a combination of selfadministered diaries, which are kept for a period of two to four weeks and recall questions about rare but major purchases of, for instance, consumer durables. There are severe problems with both methods. With diaries certain commodities tend to become underreported, for instance alcoholic beverages, tobacco and various kinds of small purchases without a receipt, see the discussion of this in Klevmarken (1981), chapter 2. Retrospective questions are also burdened by underreporting. The method to ask jointly about expenditures and time-use might be less burdened by underreporting, since the questions link the expenditures to certain activities. This should make it easier for the respondent to remember both expenditures and activities. One problem is, however, that it is not practical to ask, if there was an expenditure for <u>every</u> activity. It is necessary to leave some discretion to the interviewer and this is a possible source of underreporting.

To obtain a standard of comparison for this new method a selfadministered diary was also given to each respondent. It would be kept for one week. A diary for purchases of durables and other rare expenditures for the extended period of two weeks was also administered to some households.

In summary, we would like to make the following comparisons:

a. Expenditure estimates from yesterday questions with estimates from the one week diary,

b. Two week diary for durables etc. with one week general diary,

c. Retrospective questions about time-use in infrequent activities with diary for infrequent activities and both with time-use estimates from yesterday questions.

In addition, we would like to

d. compare estimates, both of time-use and expenditures, obtained in a personal interview with those obtained by a telephone interview. Since telephone interviews are less expensive, it would be an advantage, if telephone could be used in the main study.

e. investigate if the response rate and the estimates depend on how the diaries are sent in, whether the interviewer collects them in person or the respondent is requested to send them by mail.

Our budget did not permit a larger sample than about 300 households. With such a small sample it would be difficult to make all these comparisons. A simple design with subsamples and one treatment for each subsample would give more than ten subsamples, besides no subsample would then be given a treatment similar to the design of a main study. Calculations also showed that the precision of the estimates would be very low even if the sample was only split into two groups and each group given a separate treatment, see Johnsson (1982). This forced us to design the pretest primarily for one of the comparisons, a above, and also to use a "cross-over design".

Suppose there are two treatments we would like to compare. If they would not interfere with each other one would like to give both treatments to each individual in order to eliminate the between individual differences in the comparison. In our case it would not be possible to give both an expenditure diary and a yesterday question for the same week to a respondent since the two methods would influence each other. It would, however, be feasible to administer the diary for one week and ask the yesterday questions for a day in another week. Given that, there is a positive correlation between the two estimates we could still gain in precision. More precisely, suppose we would like to estimate the total of all expenditures for some commodity during a period of two weeks. Let μ be the population mean expenditure per day for this period and μ' and μ'' the means for the first week and the second week respectively. Assume furthermore, that two methods will be compared. The estimates obtained by these are respectively $\hat{\mu}_1$, $\hat{\mu}_2$, $\hat{\mu}_1'$, $\hat{\mu}_2'$, $\hat{\mu}_1'$, and $\hat{\mu}_2'$. We would like to test the hypothesis that

$$E(T\hat{\mu}_1 - T\hat{\mu}_2) = 0;$$

against the alternative

$$E(T\hat{\mu}_1 - T\hat{\mu}_2) = 0;$$

where T is the period length, i.e. T = 14 in our case.

The sample is randomly divided into two groups of equal size. One group, say A, is first treated with method 1 (the one week diary) which gives the estimate $\hat{\mu}_1'$ and then with method 2 (yesterday questions) which gives $\hat{\mu}_2''$. The two methods are administered to the second group, B, in reverse order. For B we thus obtain the estimates $\hat{\mu}_2'$ and $\hat{\mu}_1''$. The expected method difference is estimated by,

$$T\hat{\mu}_1 - T\hat{\mu}_2 = \frac{T}{2}(\hat{\mu}_1' + \hat{\mu}_1'') - \frac{T}{2}(\hat{\mu}_2' + \hat{\mu}_2'') = \underbrace{\frac{T}{2}(\hat{\mu}_1' - \hat{\mu}_2'')}_{\text{from A}} + \underbrace{\frac{T}{2}(\hat{\mu}_1'' - \hat{\mu}_2')}_{\text{from B}}.$$

Since $\hat{\mu}_1'$ and $\hat{\mu}_2''$ both come from group A they are probably correlated. Also $\hat{\mu}_1''$ and $\hat{\mu}_2'$ would be correlated since they both come from B. For broad aggregates of commodities a reasonable guess is that there is a positive correlation. If this is true this design might give a substantial reduction in variance compared to a design with one treatment for each group. (The details are explained in Johnsson (1982)).

To accommodate comparisons also between telephone interviews and personal visits and to test the diaries for the entire two weeks period the sample was randomly divided into six experimental groups. The treatment and time schedule for each group is laid out in Table 2 For instance, group 1 keeps an expenditure diary during the first week. During the second week the yesterday interview is administered for a randomly chosen day. This interview was a personal visit. Finally, a telephone interview was taken sometimes during weeks 3 and 4. Group 4 is given the same treatment as group 1 except for the reversed order between the one week diary and the yesterday interview. Group 3 differs from group 1 by the reversed order of the telephone interview and the personal visit. In 3 the yesterday interview is taken by telephone, while the order between the two methods is the same as in group 4. Those who belong to group 2 are also asked retrospective questions about certain activities in the second interview. To reduce the recall error this interview was taken during a few days immediately following the first two weeks.

Groups 5 and 6 did not get the one week general expenditure diary but were asked to record certain infrequent activities and purchases during weeks 1 and 2. The two groups only differ as to the week for which the yesterday questions were administered and as to the type of interview used.

The questionnaires were put together to meet certain requirements about average interviewing time set by interviewing practice and budget considerations. A telephone interview should not on the average exceed 30 minutes and a personal visit not 60 minutes. Disregarding the contact interview one telephone interview of 30 minutes and one personal interview of 60 minutes were planned for each household head. For the head's spouse and for any designated third adult our design included one telephone interview and one personal interview of 30 minutes each. The total of all interviewing time for each household did not permit us to ask all relevant questions to each respondent. In order to get all questions tested some of them could only be asked to a subsample of respondents. In principle, the questions should be (randomly) allocated on respondents such that there would be no confounding between the expenditure and time-use measurements and all other questions. The questionnaires would then, however, have increased in number so much that it would have become impossible to keep track of them all. We had to compromise. In all there were 6 questionnaires for heads, 3 for the head's spouse and 3 for the

designated third person. The content of each questionnaire is explained in the appendix on page 48 .

The sample was drawn from the HINK sample using the same 15 strata. The allocation of the HINK sample is not optimal for the tests we have in mind. There are relatively few retired and selfemployed persons and low and high income households are oversampled. In pretest 2 we tried to change the sampling fractions towards a Neyman allocation. In a few strata there were too few units in the 1979 HINK-sample to meet the requirement of Neyman allocation. This allocation was done without knowledge of the population variances. Since the sampling frame of the 1979 HINK was not available any longer the strata sizes were unknown as well and had to be estimated. The assumptions used and the details of the calculations can be found in Johnsson (1982).

The sample was then randomly allocated on experimental groups given the sample size of each stratum and under the additional constraint that 70 persons should be allocated to each of the first four experimental groups and 20 persons to each of groups 5 and 6. The efficiency considerations in Johnsson (1982) suggested that most of the sample should be used for those comparisons that had the highest priority. For this reason only a minimum number of sample units was used in groups 5 and 6 to field test the forms for the two weeks' diaries.

The resulting allocation on strata and experimental groups is given in Table 3 The numbers in parenthesis show effective sample size, i.e. after deduction of persons who were included in our frame but were found not to belong to the population. The table also gives the estimated stratum sizes. The calculations behind these are given in the appendix on page 50 . 1) The final step in the design was to draw a random day for each household. This was done for each experimental group and "without replacement" to ensure that each day of the week was included with the same frequency.

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1) Note that these estimates were not used for the allocation of the sample. The estimates used for this purpose are given in Johnsson (1982) Table 4.

Table 2. Experimental design.

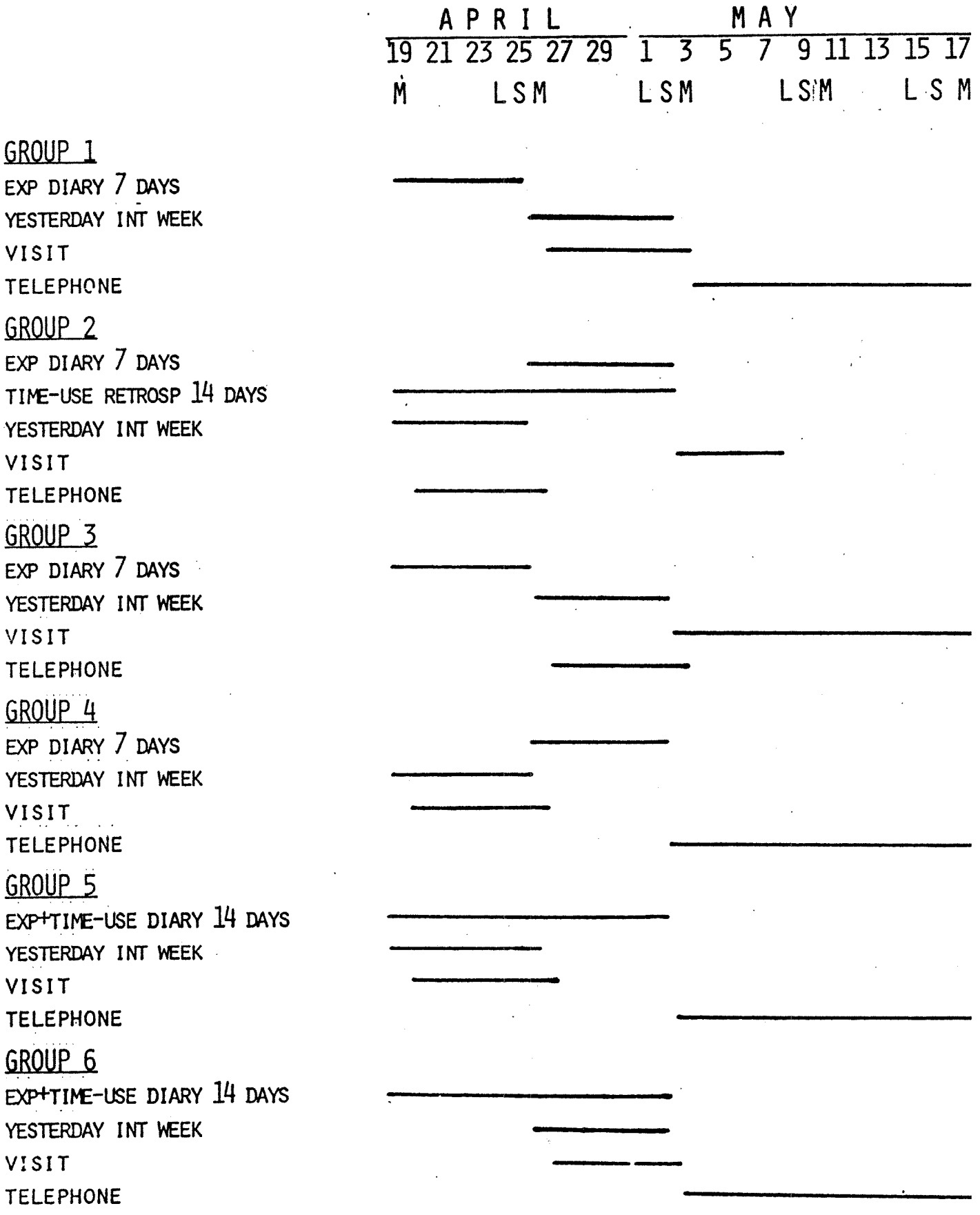

Table 3. Sample allocation on strata and experimental groups.

Stratum	Experimental groups 1	2	3	4	5	6	Sample size	Stratum size
1	5	5	5	5	1	1	22 (19)	122488
2	5	5	5	5	2	2	24 (24)	78774
3	1	1	2	2	1	1	8 (8)	16686
4	2	2	1	1	0	0	6 (6)	9798
5	1	1	2	2	0	0	6 (6)	9934
6	15	15	15	15	4	4	68 (66)	217189
7	6	6	6	6	2	2	28 (28)	32853
8	1	1	1	1	0	0	4 (4)	12604
9	10	10	9	9	3	3	44 (42)	159413
10	3	4	3	3	1	1	15 (15)	25400
11	5	5	6	6	2	2	26 (26)	39744
12	13	13	12	12	4	4	58 (55)	275115
13	1	1	1	2	0	0	5 (5)	10644
14	1	1	2	1	0	0	5 (5)	11666
15	1	0	0	0	0	0	1 (1)	2588
All	70	70	70	70	20	20	320 (310)	1024896

NOTE: For a key to the strata numbers see the appendix on page 44 .

3.2 Practical aspects on fieldwork, coding and editing

The fieldwork was preceded by two training sessions, each with about 10 of the 20 interviewers. The whole project staff participated to explain the purpose and meaning of each part of the questionnaires. A few hours were used to practice the yesterday questionnaire.

The fieldwork started with an introductory letter to the selected persons and their households (see appendix on page 52). Then followed the contact interview after which diary forms and accompanied instructions were sent out to the respondents. The fieldwork then proceeded according to the schedule given above in Table 2. With very few exceptions no replacements or indirect interviews were allowed when a non-response occurred. The instructions for the interview with yesterday questions were to contact the respondent for this interview the day after the designated day. If an interview could not take place on this day the interviewer should try the following day or the next day again, but still ask about the designated day. If there was no interview during the first three days after the designated day we accepted a non-response. The recall errors would otherwise probably have made the response useless anyway.

The fieldwork was administered from the field office of the SCB in Örebro. They also received all questionnaires from the interviewers.

Schooling, occupation and industry were coded manually by the SCB following their normal routines. Time-use and expenditure diaries from yesterday questions were sent to Gothenburg for checking and coding, while all other questionnaires were keypunched (with some consistency checks) without any preceding control. Keypunched data were sent on tape to Gothenburg for computer checks and editing. Parallel to consistency checking by computer the questionnaires were checked manually. It is essential in a pilot study to get a good view of the respondents reaction to the questions and of all possible error sources. We also wanted to know how well computer checks would work. For this reason both approaches were used.

After the fieldwork was completed the SCB provided us with HINK-data for the designated respondents. At the same time all files containing identification numbers, social security numbers, names and addresses were destroyed. There is thus no register of persons in the meaning of the Data Act and it is no longer feasible to return to the respondents. The HINK-data we have obtained cover the years 1979 and 1980. There are no HINK-data for other household members than the designated respondent in the pilot study, and those members which also belonged to the HINK household in 1979. 1)

3.3 Nonresponse

Whether a nonresponse rate is high or not depends on what analysis the data are used for. In principle, a nonresponse of 10 % may be very high in one survey, while 40 % or 50 % may not be very harmful in another survey. The problem is that it is very difficult to show that a particular nonresponse does not contribute to a bias. What can be done after the fieldwork is completed is to attempt an analysis of the characteristics of the nonresponse compared to those of the response and, if called for, try by various means to correct for selectivity bias. This is, however, only possible if there is at least some information about nonrespondents.

Another approach to evaluate the nonresponse of a survey would be to compare with other surveys for which the response rate and the effects of the nonresponse are known. A higher than "normal" nonresponse rate might indicate that the design could be improved. It might be difficult to assess what is a normal rate and also a normal rate might give a substantial bias. This approach might, however, lead to a useful discussion of what caused the nonresponse.

In the following we will first analyse the nonresponse. Information about nonrespondents is available through the strata definitions, i.e. the nonresponse rates can be analysed by household type and income as of 1979. We also know the age of each sample member and in what county the household lives. We can, in addition, use HINK-data for the entire sample of designated persons for a nonresponse analysis.

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1) For the main study it would be technically feasible to get HINK-data or other register data for all respondents.

Second, various reasons for nonresponse in the pretest will be discussed as well as measures which could improve the response rate in a main study.

Finally, there will be a brief discussion about the use of supplementary information for bias corrections. The likelihood to do this successfully is rather high in this project, because we would have access to rich supplementary information from HINK. For this reason a lower response rate is acceptable than would otherwise be the case.

3.3.1 An evaluation of the response rates.

In Table 4 we find response rates by type of contact and nonresponse by reason. Of the 320 designated persons sampled from HINK 10 had died, moved outside the three counties or moved into an institution. They thus did not belong to the population. Of the remaining 310, 224 agreed to give a contact interview, i.e. 72.3 per cent. 88 per cent of the nonresponse was classified by the inverviewers as refusal. A respondent, who refused to participate, was not approached again.

Since we do not know the household composition for those households to which nonresponding designated persons belonged, it is not possible to compute individual response rates. In Table 4 response rates for contacts after the first contact interview are given for the 403 persons, who belonged to a household which agreed to give a contact interview. In other tables response rates are exhibited for designated persons only.

Of the 403 household members in households with a contact interview, 75.7 per cent completed a leave behind diary, either the one week expenditure diary or the expenditure and time-use diaries for two weeks , 78.7 per cent responded to the first interview after the contact, 77.0 per cent answered the time-use questions and 78.4 per cent responded to the last interview.

The cumulative response rate is 66.5, i.e. 268 persons of the 403 participated in all contacts.

Table 5 exhibits the nonresponse rates by county. There is a much smaller nonresponse in Värmlands län than in the other two counties. Rural areas usually give a higher response. The interview with yesterday time-use questions is, however, an exception. In Värmlands län the not found rate is unusually high. There is no obvious reason for this. One possibility would be that the interviewers in Värmlands län classified a person, who could not find the time to give an interview within the three designated days as "not found", while interviewers in the other two counties classified that person as a "refusal". But why would interviewers differ in this way?

Table 6 is similar to 7 but gives nonresponse rates by experimental groups. There is no significant difference between the groups in the contact interview (Chisq = 1.24). The nonresponse for the diaries does not differ much between the first four groups but the nonresponse rate is rather low for group 5 and very high for group 6. One possible explanation is that the two weeks' diaries, in particular the time-use diary, needed personal explanation which the interviewer was able to give to group 5 in the personel visit during the first week but not to group 6 until the second week. Another explanation is that there are relatively many respondents from the county of Värmland in group 5. The high rate

for "not found" for this group in interview 1 indicates that this is the case.

Tables 7, 8 and 9 compare the nonresponse in the contact interview, the time-use segment and the savings segment. The relatively low response rates in the latter two segments should, however, not be interpreted as a low partial response to these particular segments. The response was equally low for other segments of interviews 1 and 2. These two segments did not necessarily cause the low response rates.

In Table 7 we find no significant difference in response between age groups for designated persons in the contact interview. There is, however, a difference in the time-use segment. For the oldest cohorts the nonresponse rate is much higher than for younger people. The same pattern is found in Table 8, where the nonresponse rates are shown by household type. Retired persons have an average nonresponse rate in the contact interview but higher than average both in the time-use segment and in the savings segment. Farmers and other selfemployed persons have a low nonresponse rate, which pershaps is contrary to what one would expect. This table also shows how the over all nonresponse increases from 27.8 per cent in the contact interview to 44.3 per cent in the time-use segment, which was part of the first interview and to 43.4 per cent in the savings segment, which was part of the second interview. 1)

Tables 8 and 9 were all calculated from the nonresponse rate in each stratum. Household type and household income are thus the concepts which were used to form strata for the 1979 HINK survey. Since 1979 the respondents might both have changed income class and moved to a different type of household. In the appendix on page 44 the nonresponse rates are given by stratum.

In Table 9 we find a high nonresponse rate for people with low incomes. The sample size is, however, so small that conclusions become very uncertain. For high income earners the nonresponse rate is only marginally higher than average.

Nonresponse rates have also been computed by matching our survey data with HINK-data. These results are based on 307 designated respondents. HINK-data for 3 respondents are missing. Nonresponse rates were calculated for six classes of disposable income and 10 socioeconomic groups. See tables 10 and 11 respectively. In none of the six cases exhibited in these tables a chisquare test of homogeneity was significant at a 5 per cent level. The response rate was low in the income groups between 20,000 and 60,000 crowns and relatively high for those who had less than 20,000 and for those who had between 60,000 and 100,000. There was thus no clear trend in response rate with income.

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1) Note that the savings questions were only given to household heads. The last part of Table 8 is thus only based on the response of heads.

Table 4. Response by type of contact

	TYPE OF CONTACT			
	Contact interview	Leave behind diaries	Interview 1 inc yester-day quest.	Interview 2
Sample size,households	310			
Household members in households with contact interview	403	403	403	403
Respondents,households	224			
Respondents,individuals		305	317 *	316
Response rate (%)	72.3	75.7	78.7 *	78.4
Nonresponse by reason (%):				
not found	2.4	0.5	4.0	2.0
refusal	24.4	21.3	17.1	18.6
other	0.9	2.5	0.2	1.0
total nonresponse	27.7	24.3	21.3	21.6
Cumulative response	403	305	280	268
Cumulative response rate (%)	100.0	75.7	69.5	66.5

*: 7 individuals (1.7 %) did not respond to the yesterday questions.

Table 5. Nonresponse rates by type of interview and county (%).

	Göteborgs- o.Bohus län	Älvsborgs län	Värmlands län	All counties
Contact interview				
Not found	3.8	2.1	0.0	2.4
Refusal	26.4	29.0	11.9	24.4
Other	1.2	0.1	1.7	0.9
Total nonresponse	31.4	31.2	13.6	27.7
Sample size	159	93	59	310
Leave behind diaries				
Not found	0.0	0.9	1.1	0.5
Refusal	22.4	28.0	10.7	21.3
Other	2.1	2.5	3.2	2.5
Total nonresponse	24.5	31.4	15.0	24.3
Sample size (after the contact interview)	192	118	93	403
Interview 1 (incl. yesterday questions)				
Not found	2.1	1.7	10.8	4.0
Refusal	18.2	20.3	10.8	17.1
Other	0.5	0.0	0.0	0.2
Total nonresponse	10.8	22.0	21.6	21.3
Sample size (after the contact interview)	192	118	93	403
Interview 2				
Not found	1.0	4.3	1.1	2.0
Refusal	19.3	23.9	10.7	18.7
Other	1.6	0.0	0.0	0.9
Total nonresponse	21.9	28.2	11.8	21.6
Sample size (after the contact interview)	192	118	93	403

Table 6. Nonresponse rates by type of interview and experimental group (%)

Experimental group	1	2	3	4	5	6	All
Contact interview							
Not found	1.5	2.9	2.9	2.9	5.0	0.0	2.4
Refusal	26.9	22.1	28.6	21.7	20.0	23.5	24.4
Other	1.5	1.5	1.4	0.0	0.0	0.0	0.9
Total nonresponse	29.9	26.5	32.9	24.6	25.0	23.5	27.7
Sample size	67	68	70	69	20	17	310
Leave behind diaries							
Not found	0.0	1.1	0.0	0.0	3.6	0.0	0.5
Refusal	17.9	25.0	17.1	20.6	7.1	54.2	21.3
Other	0.0	4.6	4.9	1.0	3.6	0.0	2.5
Total nonresponse	17.9	30.7	22.0	21.6	14.3	54.2	24.3
Sample size (after the contact interview)	84	88	82	97	28	24	403
Interview 1 (incl. yesterday questions)							
Not found	2.4	5.7	3.7	3.1	10.7	0.0	4.0
Refusal	20.2	20.4	12.2	17.5	7.1	20.8	17.1
Other	0.0	0.0	1.2	0.0	0.0	0.0	0.2
Total nonresponse	22.6	26.1	17.1	20.6	17.8	20.8	21.3
Sample size (after the contact interview)	84	88	82	97	28	24	403
Interview 2							
Not found	0.0	3.4	3.7	0.0	0.0	8.7	2.0
Refusal	20.2	21.6	15.8	19.6	7.1	21.7	18.7
Other	0.0	0.0	2.7	0.0	0.0	0.7	0.9
Total nonresponse	20.2	25.0	22.2	19.6	7.1	30.4	21.6
Sample size (after the contact interview)	84	88	82	97	28	23	403

Table 7. Nonresponse rates among designated persons by age and type of contact.

Birth cohort	Contact interview	Time-use segment	Sample size
1959-1961	19.0	36.2	58
1940-1949	26.6	38.0	79
1930-1939	32.8	50.0	58
1920-1929	32.7	44.2	52
1910-1919	24.4	39.0	41
-1909	36.4	72.7	22
All	27.7	43.5	310
Chisq	4.69	11.22	
P-value	0.45	0.05	

NOTE: The Chisq statistic was computed without paying attention to the sampling design.

Table 8. Nonresponse rate among designated persons or household heads by household type and type of contact.

Household type	Nonresponse rate	Sample size
Contact interview (designated persons)		
Retired	27.4	43
Selfemployed	21.9	14
Other married with children	25.8	100
Other married, no children	30.2	61
Single with children	23.1	26
Single without children	31.0	60
Farmers	0.0	6
All household types	27.8	310
Time-use segment (designated persons)		
Retired	53.2	43
Selfemployed	36.0	14
Other married with children	38.8	100
Other married, no children	42.6	61
Single with children	42.3	26
Single without children	46.7	60
Farmers	16.4	6
All household types	44.3	310
Savings segment (household heads)		
Retired	50.0	43
Selfemployed	34.2	14
Other married with children	40.2	100
Other married, no children	45.4	61
Single with children	50.0	26
Single without children	41.5	60
Farmers	16.4	6
All household types	43.4	310

Table 9. Nonresponse rate among married designated persons or household heads by income and type of contact.

Income class	Nonresponse rate	Sample size
Contact interview (designated persons)		
<38000	64.0	10
38000-125000	25.1	108
125000-	31.2	43
Time-use segment (designated persons)		
<38000	71.3	10
38000-125000	38.1	108
125000-	43.6	43
Savings segment (household heads)		
< 38000	64.0	10
38000-125000	40.9	108
125000-	44.5	43

NOTE: The nonresponse rates were weighted by relative stratum size.

Table 10. Response rates by disposable income and type of contact.

Income class	Type of contact					
	FS		DKO		TA	
	Response rate	Sample size	Response rate	Sample size	Response rate	Sample size
0- 20000	82,4	34	61,3	31	64,7	34
20000- 40000	73,8	42	44,5	36	52,4	42
40000- 60000	64,2	53	40,0	45	41,5	53
60000- 80000	72,7	55	62,0	50	60,0	55
80000-100000	77,5	40	65,7	35	65,0	40
100000-	69,9	83	50,7	73	57,8	83
ALL	72,3	307	53,3	270	56,4	307
Chisq	4,31	-	9,02	-	7,57	-
P-value	0,51	-	0,11	-	0,18	-

NOTE:

FS = Contact interview
DKO = 7 days' expenditure diary
TA = Time-use interview

Table 11. Response rates by socioeconomic groups.

Socioeconomic group	Type of contact					
	FS		DKO		TA	
	Response rate	Sample size	Response rate	Sample size	Response rate	Sample size
1	69,8	63	51,8	56	57,1	63
2	70,6	34	38,7	31	50,0	34
3	61,9	21	44,4	18	42,9	21
4	76,5	51	58,2	44	68,6	51
5	68,2	22	55,0	20	54,6	22
6	100,0	4	100,0	4	100,0	4
7	75,0	16	46,2	13	62,5	16
8	74,4	43	47,4	38	48,8	43
9	77,3	44	57,5	40	59,1	44
99	55,6	9	50,0	6	33,3	9
ALL	72,3	307	53,3	270	56,4	307
Chisq	5,50	-	11,83	-	11,7	-
P-value	0,79	-	0,22	-	0,23	-

NOTE:

FS = Contact interview
DKO = 7 days' expenditure diary
TA = Time-use interview

Classification of socioeconomic group

1. Belongs normally to LO; less than one year of schooling
2. " ; at least 2 years of schooling above compulsory schooling.
3. Belongs normally to TCO or SACO/SR; less than one year of schooling above compulsory schooling.
4. " ; 2-4 years of schooling above compulsory schooling.
5. " ; at least 5 years of schooling above compulsory schooling.
6. Farmers
7. Other selfemployed
8. Retired
99. Employed, not otherwise classified.
9. Other (incl. students)

In evaluating the response rates given above one has to take into account that the design of the pretest was very complex and demanding, both for the respondents and the interviewers. The following features should be kept in mind:

a. Under such a short period as five weeks the household was contacted for three interviews and, in addition, asked to keep a diary for one or two weeks.

b. Up to three household members were asked to participate in the survey.

c. The time schedule left very little freedom for the respondents and the interviewers to choose date and time for an interview at their convenience. The yesterday questions about time-use and expenditures should apply to a particular designated day and the interview had to take place within three days after that day. No replacement days were used. For households with more than one participating adult, all interviews would have to be made within the same three days. The time span was rather short also for the contact interview and the last interview. The interviewers were instructed to make repeated attempts to contact the respondents only within the period for each interview.

d. The time of the year was not ideal for a high response. During April and May people tend to go out to their vacation houses, work on their pleasure boats etc. One long weekend was also part of the sample period.

e. Replacement interviews and indirect interviews were normally not permitted. For instance, the fixed rules which determined who would be head in combination with no replacements or indirect interviews made us lose much information about the household, which we could have got from the spouse.

f. Households very reluctantly volunteer to keep a diary. In this case the diary was introduced and explained to the respondents in the contact interview by telephone and then mailed to the household with instructions. Although the diaries were not complicated any diary and written instructions are likely to be deterrent. If the diary had been explained at a personal visit by the interviewer it might have been easier to convince respondents to participate.

g. The respondents were not paid.

h. There were twelve different questionnaires and three diaries with instructions as well as additional material. Many interviewers found it difficult to keep track of all this material and also administer the right questionnaire to the right person in the right moment. Almost all interviewers had respondents from all or almost all experimental groups.

i. The technique to ask yesterday questions about time-use and expenditures were new to all interviewers. Although some advance training was provided many interviewers found it difficult to go through 24 hours activity by activity with the required detail. Respondents (and interviewers) found it difficult to understand why we needed such details. Some respondents felt their privacy invaded.

j. Our questions were mostly on economic facts about the household, questions which the respondents at best found boring or sometimes invasive. Some of our questions were rather sensitive and all questions taken toghether might in the respondents opinion have revealed too much.

k. Respondents often find it difficult to understand what use a research project has and it might be difficult to explain it in simple words. No respondent had any personal benefit from our pretest.

l. No nonresponse follow up was done in the pretest. There were mainly two reasons for this. First, the very tight time schedule did not permit a follow up and the design with designated weeks and days made it difficult. Second, our budget constraints did not permit a rather expensive follow up.

Since the pilot study was very demanding on the respondents and no special attempts were made to reduce the nonresponse, the response rate is lower than we would find acceptable in a main study. There are a few characteristics of the nonresponse pattern which are noteworthy.

- The initial nonresponse is rather high. This is probably the combined effect of the following features. The survey was introduced by telephone rather than in a personal visit, in this telephone interview we asked for family composition, previous marriages and living arrangements and when the interviewer explained the design of the study many respondents found the work load too high. This shows that the first interview should be in person and the telephone contact preceeding it should not be used to ask questions, only to make arrangements for the first interview.

- A major drop in the response rate also occured immediately after the contact interview, i.e. many respondents refused to keep an expenditure diary. Leave behind diaries tend to increase the nonresponse. In this case a better result might have been obtained if the relative simplicity of the diary had been demonstrated by the interviewer in a personal visit. In the pilot study the diary was explained in the initial telephone contact and then mailed to the respondent.

- Old respondents show a relatively high nonresponse in those parts of the survey which involve relatively more work, i.e. diaries and long interviews about time-use. For this reason we should probably not include very old persons in the main survey. An upper age limit somewhere between 70 and 75 might be helpful. Another reason for this is that interviews with old people are relatively expensiv.

- Since nonresponse is relatively high in urban areas special efforts to obtain cooperation in the big cities might be useful. One possibility is to form interviewer groups (see below).

- There is no indication of a strong relationship between nonresponse and income.

- Refusals make up a very large share of the nonresponse. This indicates that we have to do a much better job in explaining the importance of the survey and also provide some personal stimulus to obtain a better cooperation.

3.3.2 What can be done to increase the response rate?

Measures to reduce the nonresponse rate can be grouped into three main categories.

A. Design measures to decrease the nonresponse.

1. The number of contacts with each household should be reduced to a minimum.

2. Since leave behind diaries tend to increase the nonresponse they should be avoided if possible. For expenditures there is however, no equivalent method. One possibility might be to ask the resondent to keep a diary and if he(she) refuses resort to a yesterday interview. Another possibility is to try a shorter diary than for one week.

3. If a method with a designated day is used, it would be desirable to have a design with alternative days to be used if the resondent cannot give a response for the first day. A problem is, however, that the selection probabilities for days will no longer be known. It might be possible to get around this problem by estimating this probability, but to know if there is a feasible solution one would have to do some analytic work and some calculations.

4. If a diary is to be used it should be introduced to the respondents by a personal visit, not sent to them by mail.

B. Special activities to stimulate response.

1. It is extremly important to explain the purpose and uses of the survey to the respondents and make them understand that their cooperation is very important. One way to do this is to give them a comprehensive but short printed explanation which appeal to their imagination. Another way is to train the interviewers carefully, not only before the fieldwork starts but also during the fieldwork. It is important that the project staff stay in contact with the interviewers during the course of the fieldwork and give them feedback.

2. Newspaper and journal articles about the project should be copied and made available to the interviewers so they can show it to the respondents. Press coverage in the papers, also the local papers, is important.

3. One experience from the pretests is that interviewers and respondents find it difficult to understand why we need time-use in such detail. We have to do a much better job to explain this in the main survey.

4. The resondents should get some kind of feedback after the first interview. One possibility would be to give them an average expenditure and time budget calculated from the pilot study. It might also be possible to do it by household type and income group. We could also make comparisons with, for instance, Norway and the United States. When the field work is completed and data ready for analysis the respondents could get similar tables but based on the main survey

and with their own figures added as a comparison. This assumes that we will have access to names and addresses.

5. Renumeration is likely to increase the response somewhat, in particular if the resondents are asked to keep a diary. The effects observed in other studies are small, however. In order to get an effect of paying the respondents of any magnitude one would probably have to give them an amount equivalent to pay for work. That would ,however, quickly exhaust any research budget. One alternative which have been tried successfully by some survey institutes is to send the respondents a gift before the first interview. Still another alternative is to arrange a lottery for those who have responded. These methods could be combined.

C. Plan for a crisis.

1. Analysis of the nonresponse in the first interview in order to find target groups for nonresponse measures.

2. Reminder letters specially designed for each target group.

3. Form groups of interviewers, in particular in big cities, which can cooperate in recalls and exchange respondents within the group.

3.3.3 Corrections for nonresponse bias.

Even with a good design and major efforts to get the cooperation of respondents there will still be a nonresponse when the field work is completed. If the nonresponse is likely to be selective there are a number of methods which can be used to correct for nonresponse bias provided there is information about characteristics of the nonresponding persons. In our case we will have access to HINK data for both respondents and nonrespondents. The prospects for a successful bias correction are thus unusually good.

If the probability for nonresponse is a function of one or more HINK-variables this function can be estimated and used for bias correction. A general theory for model based nonresponse treatment is given in Little (1982). He also compares these methods with more traditional weighting and imputation methods. Other references to similar methods can be found in the volume edited by Manski and McFadden (1981).

In this methodology correction for nonresponse bias becomes part of the modelbuilding and estimation process. Suppose we would like to estimate the parameters of an ordinary regression model. If the probability for response is a function of a number of variables of which at least one stochasticly depends on the dependent variable in the regression model, then the regression model and the function for the response probability would have to be estimated simultaneously. An example is given in Greenlees et.al. (1982). They estimated an earnings function. Log of earnings was a function of schooling, experience, a few other variables and a stochastic disturbance term. If one does not take into account that people with high earnings are less likely to respond, the estimates will become biased and the same will also be true for predictions generated by the earnings function. In their case the probability of response followed a

logistic distribution. It was made dependent on income, education, age and a few geographical dummies.

If, however, the response probability does not depend on the endogenous variables of the economic model, then no correction is needed at all. If, for instance, the response probability would only be a function of schooling and experience, then it is possible to estimate the earnings function from the responding part of the sample without any nonresponse bias.

4 COMPARISONS OF MEASUREMENT METHODS.

4.1 Expenditure estimates from one week diaries as compared to estimates from yesterday questions.

Table 12 shows the difference between estimates from the one week diary and the yesterday questions of average expenditures per head by commodity. These results are based on those 147 households which provided data by both methods. The estimates were obtained as descibed above and in Johnsson (1982). They are unbiased estimates of population averages, if the nonresponse does not cause a bias.

With exception of the last three groups the difference is positive and also larger than twice its standard error for groups 1,2,5,7 and 9. Since there is no reason to believe that neither method would systematicly overestimate the average expenditure for any commodity, these results indicate that the estimates from the yesterday questions have a (larger) negative bias (than the one week diary).

Table 12. Comparison between the 7 days expenditure diary and yesterday questions.

Commodity	Average expenditure difference per head	Standard error
1. Meals outside home	27.73	8.92
2. Every day commodities	161.34	68.06
3. Clothing, shoes, etc	16.23	65.34
4. Personal care services	12.33	14.53
5. Medicin, etc	24.35	7.08
6. Medical services	6.15	7.35
7. Child care	24.58	7.96
8. Housing	212.40	288.65
9. Durables	147.05	48.78
10. Transport and communication	171.44	121.40
11. Pleasure, hobby and recreation	3.86	46.01
12. Use and maintenance of vacation house and boat	-3.07	13.95
14. Mortgage payments etc	-9.12	30.25
15. Other commodities	-0.23	0.23

Note: Sample size is 147 households. No expenditures were recorded for commodity 13, Courses and education, or for 16, Other services.

4.2 Comparisons between personal visits and telephone interviews.

In week 16 or in week 17 the yesterday questions were administered to experimental groups in personal visits and telephone interviews according to the following scheme:

	Week 16	Week 17
Visit	4, 5	1, 6
Telephone	2	3

Any difference between interviewing method can thus be estimated by,

$$X(1,6)-X(3)+X(4,5)-X(2);$$

where, for instance, X(1,6) is the estimated average time-use obtained from experimental groups 1 and 6. (Time-use adds up to 24 hours for each individual. This constraint on variability was, however, not used in estimating the standard errors).

The results for expenditures in a few major commodities and the time-use in all aggregate activities are exhibited in Table 13 . The only significant difference is for the activity "Travel". The difference for "Maintenance and Repaires" is also close to twice its standard error. It is difficult to find any good explanation. Additional data analysis might give a clue. A tentative conlusion is that there is no serious systematic difference between results from the two types of interviews.

Table 13. Comparison of estimates from personal visits and telephone interviews.
(Expenditures per head are given in Swedish kronor and time-use per head in minutes.)

Commodity or activity	Average difference	Standard deviation
Meals during work outside home	1.70	1.25
Every day commodities	-18.71	14.74
Clothing, shoes, etc.	1.32	18.87
Durables	9.77	5.70
Transport and communication	11.71	20.86
Pleasure, hobbies and recreation	-1.31	11.31
Work for pay, etc.	-4.63	63.73
Household work	-4.69	32.99
Care activities excl. sleep and rest	-28.21	29.92
Sleep and rest	-17.19	44.74
Shopping	-2.13	18.44
Maintenance and repairs	33.74	17.37
Education and courses	-6.29	26.38
Pleasure and recreation	-28.91	68.17
Travel	57.36	23.00
Other communication	-7.83	9.22
Don't remember, refusal, gap	8.78	8.13

4.3 Time-use estimates from yesterday questions compared to estimates from retrospective questions for 14 days

Time-use estimates of less frequent activities from yesterday questions will have a relatively low precision. To supplement them with more reliable estimates these activities have to be observed for a longer time period. The pilot study design included two alternative approaches. One was a leave behind diary for rare activities which the respondents were asked to keep for 14 days. The other approach was to ask retrospectively for the past 14 days about time-use in these infrequent activities. The diary form and the retrospective questions are reproduced in Appendix G. and Appendix H. respectively.

The leave behind diary was only given to respondents in the experimental groups 5 and 6. The small sample size accentuated by a relatively high nonresponse makes comparisons with this method impossible. It is, however, feasible to compare the results from the retrospective questions with the results from the yesterday questions.

Retrospective questions for 14 days were only given to respondents in experimental group 2. To simplify the calculations the response from this group to the yesterday questions were not used. For this reason the estimates from the two methods are independent. Also, only the response

from designated persons were used to calculate the estimates given in Table 14 . It covers five activities which were reported so frequently that a comparison is feasible.

The first nine columns give results from the yesterday questions and the last three from the retrospective questions. f is an estimate of the relative frequency of people, who have done the activity at least once during the period and Y is the corresponding estimate of the average amount of time per day used by those who have done the activity. n is the number of respondents in the sample who have reported the activity. The estimates in column 7 are simply the sum of those in columns 1 and 4, and the estimates in column 8 are the unweighted averages of the estimates in columns 2 and 5. Since there most certainly were people who did an activity both in week 16 and in week 17 the estimates in column 7 are likely to be overestimates. For the same reason the estimates in column 8 are likely to be underestimates. This calls for onesided tests in the comparisons with the retrospective questions. Both the point estimates and the variances were computed according to the formulas given in Durbin (1958).

The differences between the estimates from the two methods are exhibited in Table 15 . With retrospective questions for 14 days time-use is badly underreported for all activites. The relative frequencies of active people agree somewhat better. There is only one significant difference. The share of people who have entertained guests at home was reported much higher retrospectively for 14 days than in the yesterday interviews.

Since underreporting is likely to be a more serious problem the longer period covered, these comparisons show that retrospective questions for 14 days or longer cannot be recommended.

Table 14. Time-use estimates from yesterday questions and retrospective questions for 14 days

Activity	Yesterday questions					
	Week 16			Week 17		
	f	Y	n	f	Y	n
Maintenance and repaires	0.113	133	23	0.346	140	25
	(0.033)	(29)		(0.089)	(35)	
Sport activities, walks etc.	0.191	83	27	0.228	94	16
	(0.061)	(16)		(0.084)	(19)	
Spectator activites	0.093	127	13	0.092	147	7
	(0.047)	(20)		(0.066)	(20)	
Guests at home	0.105	69	16	0.087	86	4
	(0.052)	(17)		(0.060)	(16)	
Guests with someone else	0.248	218	36	0.243	142	20
	(0.063)	(31)		(0.082)	(26)	
Sample size (after nonresponse)			131			75

Activity	Yesterday questions			Questions for 14 days		
	Weeks 16-17			Weeks 16-17		
	f	Y	n	f	Y	n
Maintenance and reapires	0.459 (0.095)	136 (23)	48	0.425 (0.102)	51 (11)	29
Sport activities, walks etc.	0.419 (0.104)	88 (13)	43	0.148 (0.087)	23 (6)	12
Spectator activities	0.186 (0.081)	137 (14)	20	0.213 (0.093)	15 (5)	13
Guests at home	0.192 (0.079)	77 (12)	20	0.489 (0.103)	34 (7)	26
Guest with someone else	0.491 (0.103)	180 (20)	56	0.470 (0.099)	74 (20)	26
Sample size (after nonresponse)			206			57

Table 15. Time-use estimates from yesterday questions compared to retrospective questions for 14 days.

Activity	f	Y
Maintenance and repairs	0.034	85*
	(0.140)	(25)
Sport activities, walks etc.	0.271	65*
	(0.136)	(14)
Spectator activities	-0.027	122*
	(0.123)	(15)
Guests at home	-0.297*	43*
	(0.130)	(14)
Guest with someone else	0.021	106*
	(0.143)	(29)

* significant at the 5% level with a one-sided t-test

4.4 Estimates of time off work at work

In the labor market segment of the questionnaire questions were asked about how much time the respondent usually spent on breaks while at work. There were three questions:

SY34 During a normal workday, how much time do you use for meal breaks which are not included in your work-time?

SY35 (In addition), how much time do you use for ordinary coffee breaks or equivalent during your work-time?

SY36 How much time in addition to the breaks do you use for personal matters unrelated to your work, for instance, speak to friends, personal errands or just relaxing?

The answers to these questions can be compared to the corresponding estimates from the time-use diary. Activity code 120 included lunch, coffee breaks, other breaks and private errands and telephone calls in the main job and code 150 the corresponding activities in a secondary job.
1)

In all there were 78 respondents, who had answered at least one of the questions SY34-SY36 and also given a time diary. In Table 16 the number of respondents are cross-classified by their time-use according to each method. The first row of the first panel shows that 15 respondents did not report any time off work at all in their time-diary. Possible explanations are that they did not work or only worked part time on the designated day or that they did not have any time off during that particular day. Even if we disregard these 15 respondents, the first panel shows that there are more observations above the main diagonal than below, i.e. the retrospective questions give on the average higher estimates than the time-use diaries.

In the second panel of Table 16 there is the corresponding cross-classification based on the answers to question SY34 only. There were now only 77 respondents, because one did not answer SY34. Now we find relatively more observations below the main diagonal.

These comparisons indicate that there are systematic differences between the two methods. It is difficult to say anything about what causes these differences. What is normal or what the respondents perceive as normal could well differ from the average time off during the two observed weeks, i.e. there is a true difference, because two different parameters are measured. It could also be that people tend to overreport retrospectively or they could tend to underreport in the time diary, in particular ,short breaks of say less than 5 to 10 minutes. Since the sample size is also relatively small and there might be selectivity effects, the relative merits of these two methods need further analysis with new data.

---

1) No activities were reported which could be coded 150.

Table 16. Time off work at work estimated from yesterday time-use diaries and retrospective questions
(Number of respondents by time-use in minutes)

Time-use diaries	Retrospective questions SY34-SY36						
	0	1-15	16-30	31-45	46-60	61-	Total
0		3	3	2	1	6	15
1-15		0	0	0	1	0	1
16-30		0	0	3	2	7	12
31-45		1	1	2	2	9	15
46-60		0	1	0	5	8	14
61-		2	0	2	3	14	21
Total		6	5	9	14	44	78
	Retrospective question SY32						
0	5	0	2	0	5	2	14
1-15	0	0	1	0	0	0	1
16-30	0	0	6	0	5	1	12
31-45	1	0	5	7	2	0	15
46-60	1	1	3	2	6	1	14
61-	0	2	7	4	4	4	21
Total	7	3	24	13	22	8	77

5 CONCLUSIONS

To a large extent the design of the second pretest was determined by the comparison between leave behind diaries and yesterday questions as methods of collecting expenditure data. For almost all commodities the yesterday question technique gave smaller estimates of the average expenditures. Since we have no reason to expect that leave behind diaries would give overestimates this result shows that yesterday questions in their present form tend to underestimate household expenditures. However, it might be possible to improve the methodology. Adding one or two follow up questions about expenditures previously not mentioned by the respondent would be one improvement. Another one would be to give stricter rules about when to ask for expenditures. For instance, if the respondent mentions a few small activities it might not be necessary to ask about expenditures for every activity but it might be sufficient to ask if the respondent had any expenditures when doing any of these activities. In this way there would be less repetition of the same question and the interviewer would be less inclined to drop that question. In the present design the interviewer was allowed to decide that an activity was very unlikely to involve an expenditure and choose not to ask the expenditure questions. Another experience from the pretest is that the yesterday question technique requires a very thorough training of the interviewers.

Even if it will be possible to modify the yesterday questions not to give any systematic error, expenditures recorded only for a few days for each respondent will give unreliable estimates. It might be possible to increase the efficiency , if the shopping pattern during the week could taken into account. It is a difficulty, however, that this pattern will probably not be the same for all commodities. One should perhaps look upon the yesterday questions as a second best method which could be used when the respondent refuses to keep a diary.

The pilot study did not include any comparison between a time-use leave behind diary and the yesterday questions, but only comparisons between retrospective questions for one day (yesterday) and for a longer period. Similar to results from other studies we found that retrospective questions for a longer period tend to give systematic errors. Time-use was clearly underreported.

Another issue was to investigate if telephone interviews could be used instead of personal interviews. Our experiences show that a difficult and demanding study like ours should be introduced to the respondents in person. Otherwise the nonresponse rate is likely to increase. For respondents we could, however, find no difference in time-use or expenditures between interviews made in person and those made by telephone.

All these results were obtained under the assumption that the nonresponse was random. In the second pretest the response rate in the major contacts was 50-55 per cent which is lower than we would find acceptable in a main study. The reasons for this have been discussed extensively above. In short, we ascribe this result at least partly to the ambitious design, the short time-span during which the field work had to be done and the budget constraints, which did not permit paying the respondents nor permitted expensive nonresponse follow ups. The conclusion is, with

improvements in the design and response stimulating measures it should be possible to increase the response rate in a main study. It is difficult to say by how much since the pilot study was not explicitly designed to elucidate the effect on the response rate of various methods. In a survey of time-use and expenditures with leave behind diaries we will always get a relatively low response rate unless the respondents are paid a very high gratification. A guess would be that one in Sweden could achieve a response rate of 70 to 75 per cent with "realistic" gratifications. This might seem on the low side but it is not deterrent. To the extent that we have been able to analyze the characteristics of the nonresponse there are no strong indications of a systematic nonresponse. One exception is that old respondents respond less frequently than average when the workload is heavy on the respondent.

In surveys of this kind it is most desirable to supplement survey data with register data in order to reduce the workload of the respondents and to make feasible corrections for a systematic nonresponse. In particular, when the survey is to be used for an (economic) analysis of household behavior it is natural to model response behavior as part of other aspects of behavior. In doing so, it will become possible to correct for nonrandom nonresponse. This is a reason for accepting a somewhat lower response rate than "normal". The approach, however, requires register data also for nonrespondents. In our case we would get very good data from the HINK files, tax assessment forms and other government registers.

Finally a few comments on questionnaires and data from the pilot study. Much effort has gone into the design of good questions based on preparatory analyses of subject matter problems and experiences from other surveys. After the pilot study we now have sequences of questions which we expect will work well.

Data from the pilot study have been checked and edited both manually and by the computer. By this process we have gained useful experiences for a main study. There are most certainly remaining errors in the datafiles but we do not find it justified to put more resources into additional cleaning. Data are now available in deidentified form on tape subject to the discretion of the HUS-project and the National Central Bureau of Statistics. The data files also include HINK data from 1979 and 1980.

6 POST SCRIPTUM

After two years of preparation and planning including the pilot study described in this report and approximately 2 milj. SEK invested during the same period, the board of The Bank of Sweden Tercentenary Foundation in their October meeting 1982 decided not to fund a main study. For this reason the project cannot continue as planned. Funding through other sources is now sought.

7 REFERENCES

1. Durbin, J., 1958, Sampling Theory for estimates based on fewer individuals than the number selected. Bull. Int. Stat. Inst., 36, 3, 113-119.

2. Eliasson, G. and Klevmarken, N.A., 1981, Household Market and Nonmarket Activities. Research Program and Proposal, IUI Research Report No 12, 1981.

3. Greenlees, J.S., Reece, W.S., and Zieschang, K.D., 1982, Imputation of Missing Values when the Probability of Response Depands on the Variable Being Imputed, J of the American Statistical Association Vol 77 No 378 pp. 251-260

4. Johnsson, T., 1982, Household Market and Nonmarket Activities - Design issues for a Pilot Study, Research Report 1982:2, Department of Statistics, University of Göteborg.

5. Klevmarken, N.A., 1981, On the complete systems approach to demand analysis, IUI/Almqvist & Wiksell International, Uppsala.

6. Little, R.J.A., 1982, Models for Nonresponse in Sample Surveys, J of the American Statistical Association Vol 77 No 378 pp. 237-250

7. Manski, C.F., and McFadden, D. (ed.), 1981, Structural Analysis of Descrete Data with Econometric Applications, MIT Press.

APPENDIX A. NONRESPONSE RATES FOR DESIGNATED PERSONS OR HOUSEHOLD HEADS BY STRATUM AND TYPE OF CONTACT.

Stratum	Contact interview (1)	Employment section (SY)* (2)	Savings section (SP)** (3)	Time-use section (TA) (4)	Sample size (1,3,4)	Sample size (2)
1. Retired, income<38000	31.6	36.4	52.6	57.9	19	11
2. " " 38000-	20.8	35.7	45.8	45.8	24	14
3. Selfemployed,income<45000	25.0	50.0	25.0	37.5	8	6
4. " " 45000-	16.7	0.0	50.0	33.3	6	2
Other married with children:						
5. income<38000	50.0	75.0	50.0	66.7	6	4
6. 38000-125000	24.2	35.1	39.4	36.4	66	37
7. 125000-	28.6	50.0	42.9	46.4	28	16
Other married without children:						
8. income<38000	75.0	100.0	75.0	75.0	4	2
9. 38000-125000	26.2	43.5	42.9	40.5	42	23
10. 125000-	33.3	37.5	46.7	40.0	15	8
11. Single with children	23.1	18.7	50.0	42.3	26	16
Single without children:						
12. income<75000	29.1	48.4	40.0	45.4	55	31
13. 75000-	80.0	66.7	80.0	80.0	5	3
Farmers:						
14. income<40000	0.0	0.0	20.0	20.0	5	3
15. 40000-	0.0	0.0	0.0	0.0	1	0
All strata	27.7	40.3	43.5	44.3	310	176

* Only calculated for experimental groups 3-6

** Savings questions were only asked to household heads and these nonresponse rates are based on heads. The rates for all other contacts are based on designated persons, who could either be the head or the head's spouse.

APPENDIX B. HOUSEHOLD DEFINITION.

Den övergripande principen för hushållsdefinitionen är, att hushållet skall utgöra en ekonomisk enhet. Detta innebär bl a att hushållsmedlemmarna vanligen har samma bostad, att de har någon form av gemensamt kosthåll (minst ett huvudmål per vecka) och tillbringar tid tillsammans. Undantag från denna huvudregel finns. Personer, som är tillfälligt frånvarande från hushållet - t ex på grund av sjukdom, tjänsteresa eller militärtjänst, skall räknas till hushållet även om de inte uppfyller villkoren. Med tillfälligt avses här en period, som inte överstiger 1 månad. Personer som är frånvarande under längre tid - t ex sjömän och utlandsanställda och som kommer att återvända, skall ändå räknas till hushållet om de uppfyller åtminstone ett av följande villkor:

a. förväntas bo i hushållsbostaden minst 6 månader under 1982,

b. på ett väsentligt sätt bidrar till hushållets ekonomi

Det är svårt att precisera vad som här ska menas med "väsentlig". Om en person t ex bidrar med minst 20% av hushållets inkomster, skall detta anses som ett väsentligt bidrag. Observera dock, att frånskilda, personer i hemskillnad och andra som lämnar underhållsbidrag eller motsvarande inte skall räknas till hushållet, då de ej med stor säkerhet kan förväntas återvända till hushållet.

Denna hushållsdefinition medför t ex att studenter och personer i militärtjänst, som veckopendlar, skall räknas till hushållet. Om besöken i hushållet är mindre frekventa skall de ändå räknas till hushållet, om de uppfyller något av villkoren a och b ovan. Studenter som enbart är hemma under 3 månaders sommarferier utan att bidraga till hushållets ekonomi, skall således inte räknas med.

APPENDIX C. QUESTIONNAIRE FOR YESTERDAY QUESTIONS ABOUT TIME-USE AND EXPENDITURES.

TA TIDSANVÄNDNING OCH KONSUMTIONSUTGIFTER

UB |_|_|_|_|_|_| POSTTYP 043
1-6 7-9

TA 1 Nu skulle jag vilja be Dig berätta i kronologisk ordning vad Du gjorde under gårdagsdygnet och vilka konsumtionsutgifter Du eventuellt hade då.

Låt oss börja vid midnatt natten mellan _____ -dagen och _____ -dagen. Vad gjorde Du då?

SKRIV SVARET I TABLÅN KOL. 1. GÅ DÄREFTER TILL TA 4.

MÅN DAG
DATUM FÖR DET DYGN DAGBOKEN GÄLLER |_|_|_|_|
12-15

KLOCKAN ÄR |_|_|_|_|
16-19

TA 5 läses endast om oklart. Gäller ej aktiviteter i hemmet eller på arbetsplatsen

TA 6 och TA 7 läses ej för aktiviteterna sömn, sex och personlig hygien

Läs endast de kursiverade aktiviteterna vid första tillämpliga primäraktivitet

Om tillämplig

TA 2 Vad gjorde Du sedan?	**TA 3** När började Du med det?	**TA 4** När slutade Du med det?	**TA 5** Var detta offentlig vård/ service?	**TA 6** Var någon tillsammans med Dig? Vem?	**TA 7** Gjorde Du något annat samtidigt (som t.ex. ***pratade, läste, tittade på TV, lyssnade på radio, åt, passade barn)***	**TA 8** Köpte Du något eller betalade Du för något samtidigt?	**TA 9** Vad var det och hur mycket kostade det?	VARUKOD
20-22	23-26	27-30	31	32-33	34-36	37		
01	MIDNATT		1. EJ TILLÄMPL 2. JA 3. NEJ	ENSAM	NEJ	1. EJ TILLÄMPL TA 2 2. JA TA 9 3. NEJ TA 2		
02			1. EJ TILLÄMPL 2. JA 3. NEJ	ENSAM	NEJ	1. EJ TILLÄMPL TA 2 2. JA TA 9 3. NEJ TA 2		
03			1. EJ TILLÄMPL 2. JA 3. NEJ	ENSAM	NEJ	1. EJ TILLÄMPL TA 2 2. JA TA 9 3. NEJ TA 2		
04			1. EJ TILLÄMPL 2. JA 3. NEJ	ENSAM	NEJ	1. EJ TILLÄMPL TA 2 2. JA TA 9 3. NEJ TA 2		
05			1. EJ TILLÄMPL 2. JA 3. NEJ	ENSAM	NEJ	1. EJ TILLÄMPL TA 2 2. JA TA 9 3. NEJ TA 2		
06			1. EJ TILLÄMPL 2. JA 3. NEJ	ENSAM	NEJ	1. EJ TILLÄMPL TA 2 2. JA TA 9 3. NEJ TA 2		

APPENDIX D. CONTENTS OF EACH QUESTIONNAIRE.

Questionnairs for household heads.

INTERVIEW 1

HF-F1-(1)	AM, UT, SY, AÖ, AR, EA.
HF-F4-6-(1)	AM, UT, SY, AR, EA, BI, BÅ.

INTERVIEW 2

HF-F1-(2)	UV, AH, BO*, ÄG*, HY*, FÄ, FH, SP, SO.
HF-F2-(2)	AM, UT, SY, AR, EA, BO*, ÄG*, HY*, FÄ*, VV, TA:R, SP, SO.
HF-F3-(2)	AM, UT, SY, AR, EA, BO*, ÄG*, HY*, FÄ*, BT, HS, KS, AH, SP, SO.
HF-F4-6-(2)	BO, ÄG, HY, FÄ*, BT, SP, SO.

Questionnairs for head's spouse.

INTERVIEW 2.

M-F1-(2)	BT, HS.
M-F2-(2)	BT, HS, TA:R.
M-f3-6-(2)	AM< SY, AR, EA.

Questionnaires for 3rd person.

INTERVIEW 2.

IP-F1,3-6-(2)	UT, SY, AR, EA.
IP-F2-(2)	UT, SY, AR, EA, TA:R.

Explanation of notation used.

F1, F2 etc means experimental group 1 and 2 respectively. Questionnaire HF-F2-(2), for instance, was administered to heads in experimental group 2 during interview no 2.

AM	Labor market experience
UT	Schooling
SY	Present labor market status
AÖ	Work environment
AR	Unemployed
EA	Not economicly active
UV	Social background
AH	Other household members' incomes and expenditures
BO	Housing (general)
BO*	ditto, short form
ÄG	Owners
ÄG*	ditto, short form
HY	Renters
HY*	ditto, short form
FÄ	Owner of vacation house

FÄ*	ditto, short form
FH	Renter of vacation house
SP	Savings (general)
SO	Sophisticated savers
VV	Consumer durables
TA:R	Retrospective time-use questions
BT	Child care
HS	Health
BI	Automobiles
BÅ	Pleasure boates

APPENDIX E. ASSUMPTIONS BEHIND THE ESTIMATED STRATA SIZES.

Since the sampling frame for the 1979 HINK survey has not been preserved, we had to estimate the stratum sizes. This was done in the following way,

$$\hat{N}_h = N_h^{79}(1-d_h)^2\left(1-\frac{d_h}{2}\right)(1+m_1)(1+m_2)(1+m_3)(1-u_1)(1-u_2)(1-u_3);$$

where N_h^{79} = estimated strata sizes 1979 based on the 1979 sample. This sample was drawn systematicly by fiscal classification.

d_h = average death rate for stratum h;

m_1 = domestic net migration per 1000 1980;

m_2 = - " - 1981;

m_3 = guess of - " - for part of 1982;

u_1 = emigration per 1000 1980;

u_2 = - " - 1981;

u_3 = guess of - " - for part of 1982;

Calculations were made for each county. One exception is d_h which was only computed for retired and nonretired. The estimates are weighted means of death rates by age classes of five years for Sweden as a whole (Source: Statistical Abstract of Sweden). The population of each county in the beginning of 1981 was used as weight (Source: SOS, Folkmängden). Differences in specific death rates between counties are thus not taken into account, while differences in the age distributions are considered.

The following data have been used:

	Göteborgs o Bohus län	Älvsborgs län	Värmlands län
Average death rate (0/00)			
20 - 64 years	3,67	3,71	3,96
65 - "	53,97	54,49	54,26
Domestic net migration (0/00)			
1980	-4,18	2,06	0,70
1981	-1,82	1,42	-0,07
1982	-1,00	1,00	0,00
Emigration (0/00)			
1980	5,22	3,32	1,87
1981	4,85	3,26	1,71
1982	2,50	1,60	0,90

APPENDIX F. INTRODUCTORY LETTER.

Statistiska Institutionen
Göteborgs Universitet
Viktoriagatan 13
411 25 Göteborg

Industriens Utredningsinstitut
Grevgatan 34
114 53 Stockholm

Statistiska centralbyrån
115 81 Stockholm

Till hushållet

I samhället fattas det många beslut, som påverkar vår ekonomi och våra levnadsvillkor. Politiker och andra beslutsfattare vet förhållandevis litet om hur hushållen handlar och tänker. För att förbättra bl a det ekonomiska beslutsunderlaget har vi nu startat ett forskningsprojekt kallat **Hushållens ekonomiska levnadsvillkor.**

Inom kort kommer en av statistiska centralbyråns intervjuare att kontakta Er per telefon för att ytterligare förklara undersökningens syfte och utförande. Mer information kan Ni också få genom att läsa bifogade folder.

Den betydelse vårt forskningsprojekt kommer att få för förståelsen av hur svenska hushåll anpassar sig till nya ekonomiska förhållanden är helt beroende av, att vi får goda svar. Vi hoppas därför, att Ni vill hjälpa oss genom att svara på våra frågor.

Med vänlig hälsning

Anders Klevmarken
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Elisabeth Landgren-Möller
t f chef för Statistiska centralbyråns Utredningsinstitut

UNDERSÖKNINGEN

HUSHÅLLENS EKONOMISKA LEVNADSVILLKOR

Sekretess

De uppgifter vi får kommer endast att användas för statistiska beräkningar och sammanställningar utan att individuella uppgifter avslöjas. Uppgifter om namn, adress och personnummer finns endast på SCB och inte ens de forskare som deltar i projektet kommer att veta vad just Ni svarat. De svar som lämnas är inte offentliga och de kommer inte att utlämnas till någon utomstående person eller myndighet. De skyddas av datalagen och sekretesslagen.

Sekretesslagen lyder:

> *Sekretess gäller i sådan särskild verksamhet hos myndighet som avser framställning av statistik samt, i den utsträckning regeringen föreskriver det, i annan därmed jämförvar undersökning, som utförs av myndighet, för uppgift som avser enskilds personliga eller ekonomiska förhållanden och som kan hänföras till den enskilde. Uppgift i företagsregister, uppgift som avser avliden, uppgift som behövs för forskningsändamål och uppgift, som inte genom namn, annan identitetsbeteckning eller därmed jämförbart förhållande är direkt hänförlig till den enskilde, får dock lämnas ut, om det står klart att uppgiften kan röjas utan att den som uppgiften rör eller någon honom närstående lider skada eller men.*
>
> *Ifråga om uppgift i allmän handling gäller sekretessen i högst sjuttio år, såvitt angår uppgift om enskilds personliga förhållanden, och annars i högst tjugo år.*

Automatisk databehandling

Automatisk databehandling kommer att användas i undersökningen. Datainspektionen har lämnat tillstånd för det register som uppkommer i samband med undersökningen.

Medverkan

Det är givetvis Ni själv, som avgör, om Ni vill medverka eller ej. Ni har även möjlighet att under intervjuns gång avstå från att svara på vissa frågor eller att ändra redan givna. Den betydelse vårt forskningsprojekt kommer att få för förståelsen av hur svenska hushåll anpassar sig till nya ekonomiska förhållanden är helt beroende av, att vi får goda svar. Vi hoppas därför, att Ni vill hjälpa oss genom att svara på våra frågor.

Några frågor?

Om Ni undrar över någonting, ring oss eller skriv en rad. Vid rikssamtal, be att få bli uppringd av oss. Projektansvariga är: Professor Anders Klevmarken, Statistiska institutionen, Göteborgs Universitet, telefon 031–17 53 00 och Docent Gunnar Eliasson, Industriens Utredningsinstitut, Grevgatan 34, 114 53 Stockholm, telefon 08–63 50 20. Undersökningsledare vid SCB är Peder Kjellegård, telefon 08–14 05 60.

Varför undersökning?

I samhället fattas det många beslut, som påverkar vår ekonomi och våra levnadsvillkor. Politiker och andra beslutsfattare vet emellertid förhållandevis litet om hur hushållen handlar och tänker. Vilken ekonomisk framtid planerar vi för? Upplever vi våra jobb som otrygga? Hur mycket offentlig service som barnavård, utbildning och sjukvård kommer vi att efterfråga? Sparar vi av våra inkomster för en tryggare framtid eller köper vi upp dem? Om inkomsten minskar, vad drar vi då in på? Hur delar vi vår tid mellan förvärvsarbetet, hushållsarbete och rekreation?

Av vem?

Detta är några av de frågor vi vill försöka besvara i ett forskningsobjekt kallat **Hushållens ekonomiska levnadsvillkor.** I det samarbetar forskare från Göteborgs Universitet, Industriens Utredningsinstitut, Stockholms Universitet, Handelshögskolan och Konjunkturinstitutet. Riksbankens Jubileumsfond har givit anslag till projektet.

Hur?

Innan vi genomför en undersökning för hela Sverige, kommer vi först att göra en mindre undersökning i västra Sverige. Statistiska Centralbyrån (SCB) har fått i uppdrag att utföra den. SCB har slumpmässigt valt ut drygt 300 hushåll bland dem som 1979 deltog i SCB-undersökningen "Hushållens inkomster". För framtagning av urvalet till den nu aktuella undersökningen har ur dataregistret för "Hushållens inkomster" hämtats uppgifter om namn, adress, personnummer samt grupptillhörighet, indelat efter inkomstslag och inkomststorlek. Ert hushåll är ett av dessa utvalda hushåll, som vi nu ber medverka i tre intervjuer under mitten av april till början av juni.

Inom kort kommer en av SCBs intervjuare att kontakta Er per telefon för att ytterligare förklara undersökningens syfte och uppläggning, samt för att ställa några frågor om vilka som tillhör hushållet, deras civilstånd m m. I de två följande intervjuerna, en per telefon och en genom ett besök, kommer vi bl a att fråga om Ni förvärvsarbetar och i så fall med vad, vad Ni anser om Er arbetsmiljö, hur Ni använde Er tid under de två senaste dygnen och vilka utgifter Ni då hade. Vi har också frågor om bostaden och kostnaderna för den, om varaktiga konsumtionsvaror och om Era sparvanor. Alla intervjuare har legitimationskort från SCB som uppvisas vid besöket.

För att få en korrekt bild som möjligt av de ekonomiska villkoren för flerpersonshushåll är det av stor vikt, att vi får uppgifter för hela hushållet. I några fall behöver vi intervjua flera hushållsmedlemmar och i andra fall är det tillräckligt, om vi får fråga en av dem om de övriga. Vi ber Er därför visa detta introduktionsbrev för alla vuxna hushållsmedlemmar som en förberedelse till vår intervjuares första kontakt.

APPENDIX G. TIME-USE DIARY FOR INFREQUENT ACTIVITIES

UB-nr (1) |_|_|_|_|_|_|-|_| (7)

Posttyp |_|_|_| (8)

Rad 00 (11)

HUS-projektet

SCB produktnr 838704-7

Intervjuarnr |_|_|_|_| (13) (

STATISTISKA CENTRALBYRÅN

019/140320

DAGBOK ÖVER TIDSANVÄNDNINGEN I VISSA AKTIVITETER

Anvisningar: Läs igenom den bifogade listan på aktiviteter. Gå varje kväl igenom den gångna dagen för att konstatera, om Du utfört någo (några) av de nämnda aktiviteterna. Anteckna i så fall motsvarande nummer på aktiviteten (aktiviteterna) nedan och hur lång tid det tog. Eventuell restid noteras särskilt.

(13-14)	Datum (15-18)	Aktivitet nr (19-22)	Tid Tim Min (23-26)	Restid Tim Min (27-30)	Aktivitet nr (31-34)	Tid Tim Min (35-38)	Restid Tim Min (39-42)	Aktivitet nr (43-46)	Tid Tim Min (47-50)	Restid Tim Min (51-54)
01	[illegible] 19/4									
02	Ti 20/4									
03	On 21/4									
04	To 22/4									
05	Fr 23/4									
06	Lö 24/4									
07	Sö 25/4									
08	Må 26/4									
09	Ti 27/4									
10	On 28/4									
11	To 29/4									
12	Fr 30/4									
13	Lö 1/5									
14	Sö 2/5									

(Om utrymmet inte räcker till, anteckna datum etc. på baksidan eller på löst blad.)

LISTA ÖVER VISSA AKTIVITETER FÖR 14 DAGARS BOKFÖRING

Aktivitet	Aktivitetsnummer
Förvärvsarbete	
Tjänsteresa (endast tiden på förrättningsorten (orterna) ej själva restiden. Den redovisas separat.)	0130
Sökaktiviteter för att erhålla (nytt) arbete, aktiviteter för att få arbetslöshetsersättning.	0170
Inköp m.m.	
Inköp av varaktiga konsumtionsvaror och fastigheter (även förberedelse till inköp)	0420
Sjuk- och hälsovård	
Erhållit privat sjuk- och hälsovård	0431
Erhållit offentlig sjuk- och hälsovård, t.ex. på distriktsmottagning, allmän poliklinik, allmänt sjukhus.	0441
Erhållit privat tandvård.	0432
Erhållit offentlig tandvård (folktandvården m.m.)	0442
Annan offentlig service	
Besökt eller ringt annan kommunal eller statlig myndighet eller inrättning som t.ex. bibliotek, daghem, kurator, socialnämnd, byggnadsnämnd, försäkringskassan, länsstyrelsen, polisen.	0443
Underhållsarbete (EJ YRKESMÄSSIGT)	
Underhåll, reparationer, förbättringar av den egna bostaden, inkl. inventarier (EJ STÄDNING)	0510
Trädgårdsarbete	0520
Underhåll, reparationer, förbättringar av bil, MC, och moped	0530

Aktivitet	Aktivitetsnummer
Underhåll, reparationer, förbättringar av båt	0540
Underhåll, reparationer, förbättringar av fritidshus och tomt (annat än trädgårdsarbete)	0550
Utbildning och studier	
Kurser och studier av hobby- och fritidskaraktär	
tid utanför hemmet	0630
tid i hemmet (förberedelser etc.)	0660
Nöjen och rekreation	
Gudstjänster och andra religiösa sammankomster och aktiviteter	0710
Föreningsliv	0720
Själv sportat eller idrottat, promenader	0730
Varit åskådare på sport- eller idrottsevenemang	0741
Gått på bio	0742
Gått på privat teater, privat konsert	0743
Gått på kommunal eller statlig teater, konsert	0744
Gått på museum	0745
Varit åskådare på annan aktivitet	0749
Varit ute och dansat	0788
Ätit ute (på restaurang, gatukök el.dyl., dock ej i samband med förvärvsarbete)	0789
Haft gäster hemma	0774
Varit gäst hos någon annan	0781

APPENDIX H. RETROSPECTIVE TIME-USE QUESTIONS.

(13-16) |_|_|_|_| KLOCKAN ÄR NU

TA:R TIDSANVÄNDNING I VISSA AKTIVITETER

INSTRUKTION: LÄS FÖRST FÖLJANDE INTRODUKTION

För att få en säkrare skattning av tidsanvändningen i några ej så vanligt förekommande aktiviteter skulle jag nu vilja komplettera den förra intervjun med några frågor som gäller perioden måndagen den 19/4 - söndagen den 2/5. Några av dessa frågor passar kanske inte in på Din situation. Då behöver Du bara säga det.

TA 1 T.O.M. TA 18
I DETTA AVSNITT UTGÅR

TA 19 Har Ni någon gång under perioden 19/4-2/5		TA 20 Ungefär hur många timmar eller minuter använde Ni för detta under dessa 14 dagar? TIM	 MIN	TA 21 Ingår då resor till och från?	TA 22 Hur mycket tid använde Ni för resor till och från? (TIMMAR/MINUTER) TIM	 MIN
01) varit på tjänsteresa	1. JA 2. NEJ (17)	(18-19)	(20-21)			
02) sökt (nytt) arbete	1. JA 2. NEJ (22)	(23-24)	(25-26)	1. JA 2. NEJ (27)	(28-29)	(30-31)
03) köpt varaktiga konsumtionsvaror eller samlat information för att köpa	1. JA 2. NEJ (32)	(33-34)	(35-36)	1. JA 2. NEJ (37)	(38-39)	(40-41)
04) konsulterat privatläkare	1. JA 2. NEJ (42)	(43-44)	(45-46)	1. JA 2. NEJ (47)	(48-49)	(50-51)

TA 19 Har Ni någon gång under perioden 19/4-2/5		TA 20 Ungefär hur många timmar eller minuter använde Ni för detta under dessa 14 dagar?		TA 21 Ingår då resor till och från?	TA 22 Hur mycket tid använde Ni för resor till och från? (TIMMAR/MINUTER)	
		TIM	MIN		TIM	MIN
05) konsulterat offentligt anställd läkare, t ex distriktsläkare, akutmottagning, allmän poliklinik	1. JA 2. NEJ (52)	(53-54)	(55-56)	1. JA 2. NEJ 57	(58-59)	(60-61)
06) behandlats av privat tandläkare	1. JA 2. NEJ (62)	(63-64)	(65-66)	1. JA 2. NEJ 67	(68-69)	(70-71)
07) behandlats av folktandvården eller annan offentlig tandklinik	1. JA 2. NEJ (72)	(73-74)	(75-76)	1. JA 2. NEJ (77)	(78-79)	(80-81)
08) erhållit annan privat sjuk- eller hälsovård	1. JA 2. NEJ (82)	(83-84)	(85-86)	1. JA 2. NEJ (87)	(88-89)	(90-91)
09) erhållit annan offentlig sjuk- eller hälsovård (även intagen på sjukhus)	1. JA 2. NEJ (92)	(93-94)	(95-96)	1. JA 2. NEJ (97)	(98-99)	(100-101)
10) besökt eller ringt annan kommunal eller statlig myndighet eller inrättning som t ex bibliotek, daghem, kurator, socialnämnd, byggnadsnämnd, försäkringskassa, länsstyrelse eller polisen	1. JA 2. NEJ (102)	(103-104)	(105-106)	1. JA 2. NEJ (107)	(108-109)	(110-111)

TA 19		TA 20		TA 21	TA 22	
Har Ni någon gång under perioden 19/4-2/5		Ungefär hur många timmar eller minuter använde Ni för detta under dessa 14 dagar?		Ingår då resor till och från?	Hur mycket tid använde Ni för resor till och från? (TIMMAR/MINUTER)	
		TIM	MIN		TIM	MIN
11) arbetat med underhåll, reparation eller förbättring av Din egen bostad eller dess inventarier (EJ STÄDNING)	1. JA 2. NEJ (112)	(113-114)	(115-116)			
12) Utfört trädgårdsarbete	1. JA 2. NEJ (117)	(118-119)	(120-121)			
13) arbetat med underhåll eller reparation av Din eller någon annans bil	1. JA 2. NEJ (122)	(123-124)	(125-126)			
14) arbetat med underhåll eller reparation på Din eller någon annans båt	1. JA 2. NEJ (127)	(128-129)	(130-131)	1. JA 2. NEJ (132)	(133-134)	(135-136)
15) arbetat med underhåll, reparation eller förbättring av Ditt eller någon annans fritidshus eller fritidstomt (ANNAT ÄN TRÄDGÅRDSARBETE)	1. JA 2. NEJ (137)	(138-139)	(140-141)	1. JA 2. NEJ (142)	(143-144)	(145-146)

TA 19 Har Ni någon gång under perioden 19/4-2/5		TA 20 Ungefär hur många timmar eller minuter använde Ni för detta under dessa 14 dagar? TIM	MIN	TA 21 Ingår då resor till och från?	TA 22 Hur mycket tid använde Ni för resor till och från? (TIMMAR/MINUTER) TIM	MIN
11) arbetat med underhåll, reparation eller förbättring av Din egen bostad eller dess inventarier (EJ STÄDNING)	1. JA 2. NEJ (112)	(113-114)	(115-116)			
12) Utfört trädgårdsarbete	1. JA 2. NEJ (117)	(118-119)	(120-121)			
13) arbetat med underhåll eller reparation av Din eller någon annans bil	1. JA 2. NEJ (122)	(123-124)	(125-126)			
14) arbetat med underhåll eller reparation på Din eller någon annans båt	1. JA 2. NEJ (127)	(128-129)	(130-131)	1. JA 2. NEJ (132)	(133-134)	(135-136)
15) arbetat med underhåll, reparation eller förbättring av Ditt eller någon annans fritidshus eller fritidstomt (ANNAT ÄN TRÄDGÅRDSARBETE)	1. JA 2. NEJ (137)	(138-139)	(140-141)	1. JA 2. NEJ (142)	(143-144)	(145-146)

TA 19		TA 20		TA 21	TA 22	
Har Ni någon gång under perioden 19/4-2/5		Ungefär hur många timmar eller minuter använde Ni för detta under dessa 14 dagar?		Ingår då resor till och från?	Hur mycket tid använde Ni för resor till och från? (TIMMAR/MINUTER	
		TIM	MIN		TIM	MIN
11) arbetat med underhåll, reparation eller förbättring av Din egen bostad eller dess inventarier (EJ STÄDNING)	1. JA 2. NEJ (112)	(113-114)	(115-116)			
12) Utfört trädgårdsarbete	1. JA 2. NEJ (117)	(118-119)	(120-121)			
13) arbetat med underhåll eller reparation av Din eller någon annans bil	1. JA 2. NEJ (122)	(123-124)	(125-126)			
14) arbetat med underhåll eller reparation på Din eller någon annans båt	1. JA 2. NEJ (127)	(128-129)	(130-131)	1. JA 2. NEJ (132)	(133-134)	(135-136)
15) arbetat med underhåll, reparation eller förbättring av Ditt eller någon annans fritidshus eller fritidstomt (ANNAT ÄN TRÄDGÅRDSARBETE)	1. JA 2. NEJ (137)	(138-139)	(140-141)	1. JA 2. NEJ (142)	(143-144)	(145-146)

TA 19 Har Ni någon gång under perioden 19/4-2/5		TA 20 Ungefär hur många timmar eller minuter använde Ni för detta under dessa 14 dagar? TIM	MIN	TA 21 Ingår då resor till och från?		TA 22 Hur mycket tid använde Ni för resor till och från? (TIMMAR/MINUTER) TIM	MIN
16) deltagit i kurser av fritids- o hobbykaraktär (Räkna endast tid utanför hemmet)	1. JA 2. NEJ (147)	(148-149)	(150-151)	1. JA 2. NEJ (152)		(153-154)	(155-156)

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17) deltagit i en gudstjänst eller annan religiös sammankomst eller aktivitet	1. JA 2. NEJ (13)	(14-15)	(16-17)	1. JA 2. NEJ (18)		(19-20)	(21-22)
18) deltagit i föreningsliv	1. JA 2. NEJ (23)	(24-25)	(26-27)	1. JA 2. NEJ (28)		(29-30)	(31-32)
19) själv sportat eller idrottat	1. JA 2. NEJ (33)	(34-35)	(36-37)	1. JA 2. NEJ (38)		(39-40)	(41-42)
20) varit åskådare vid sport eller idrottsevenemang	1. JA 2. NEJ (43)	(44-45)	(46-47)	1. JA 2. NEJ (48)		(49-50)	(51-52)
21) gått på bio	1. JA 2. NEJ (53)	(54-55)	(56-57)	1. JA 2. NEJ (58)		(59-60)	(61-62)

TA 19 Har Ni någon gång under perioden 19/4-2/5		TA 20 Ungefär hur många timmar eller minuter använde Ni för detta under dessa 14 dagar?		TA 21 Ingår då resor till och från?	TA 22 Hur mycket tid använde Ni för resor till och från? (TIMMAR/MINUTER)	
		TIM	MIN		TIM	MIN
22) gått på privat teater eller privat konsert	1. JA 2. NEJ (63)	(64-65)	(66-67)	1. JA 2. NEJ (68)	(69-70)	(71-72)
23) gått på kommunal eller statlig teater eller konsert	1. JA 2. NEJ (73)	(74-75)	(76-77)	1. JA 2. NEJ (78)	(79-80)	(81-82)
24) gått på museum	1. JA 2. NEJ (83)	(84-85)	(86-87)	1. JA 2. NEJ (88)	(89-90)	(91-92)
25) varit åskådare på annan aktivitet	1. JA 2. NEJ (93)	(94-95)	(96-97)	1. JA 2. NEJ (98)	(99-100)	(101-102)
26) varit ute och dansat eller på disko	1. JA 2. NEJ (103)	(104-105)	(106-107)	1. JA 2. NEJ (108)	(109-110)	(111-112)
27) haft gäster hemma	1. JA 2. NEJ (113)	(114-115)	(116-117)	1. JA 2. NEJ (118)	(119-120)	(121-122)
28) varit gäst hos någon annan	1. JA 2. NEJ (123)	(124-125)	(126-127)	1. JA 2. NEJ (128)	(129-130)	(131-132)
29) ätit ute med undantag för arbetsmåltider	1. JA 2. NEJ (133)	(134-135)	(136-137)	1. JA 2. NEJ (138)	(139-140)	(141-142)
30) gjort semesterresor eller resor för nöje och rekreation utanför bostadsorten (HELA BORTOVAROTIDEN)	1. JA 2. NEJ (143)	(144-145)	(146-147)	1. JA 2. NEJ (148)	(149-150)	(151-152)

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