

**ESTONIAN FAMILY AND FERTILITY SURVEY:
EXPERIENCE FROM THE TRANSFORMING STATISTICAL
ENVIRONMENT**

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Abstract. The article presents the experience from the Estonian Family and Fertility Survey, a national part of the European FFS, coordinated by the United Nations Economic Commission for Europe. Based on the modern event history methodology and collecting harmonised information on major life careers of individuals in more than 20 countries, the European FFS represents one of the most impressive undertakings in international demographic research in the 1990s. In the case of Estonia, the FFS became the first nationally representative social survey after the restoration of statehood. Due to its position, the FFS could not apply the existing procedures, but had to develop them, thus contributing to the establishment of survey statistics in Estonia. The article takes stock of the experience gained in the preparation and implementation of the survey, covering the general context, survey programme, data quality issues, the performance of interviewer network and the linkage to other national surveys.

During its development the population science has acquired a rich tradition of quantitative measurement and analysis of processes occurring in the population. This tradition, according to which demography has excelled among social sciences, builds on careful consideration of data sources, their availability, consistency and quality. Underlining this vital linkage, it would not be an overstatement to say that the development of data sources has formed an important precondition and factor to the progress of population science. Following World War II, the traditional sources of demographic information, vital registration and population census, have been increasingly supplemented by survey statistics. Most importantly, survey statistics allows for the wealth and variety of information on the behaviour of individuals which cannot be derived from other sources, either due to the amount of detail or character of the required information.

Beginning as national undertakings, the demographic surveys developed into comparative international exercises from the 1960s and 1970s, covering a large number of countries with harmonised data collection programme. Major exercises of this type include, among other things, the programmes of the World Fertility Survey and Demographic and Health Surveys. A new round of demographic surveys was initiated in the European region in the late 1980s, under the coordination of the Population Activities Unit at the United Nations Economic Commission for Europe. The survey applied an innovative event history methodology and covered all major life careers of individuals. The launching stage of the European Family and Fertility Survey (FFS) coincided with the fall of the Iron Curtain which opened for several countries, including Estonia, a possibility to join the relevant international cooperation.

The planning of the Estonian FFS was initiated by the Estonian Interuniversity Population Research Centre shortly after the restoration of statehood in 1991. Here, the FFS became the first nationally representative social survey. From the viewpoint of statistical system, such coincidence represented an extreme situation. Also in several other countries of Central and Eastern Europe, FFS became the first internationally comparable and methodologically advanced representative survey. Due to the referred circumstances, the Estonian FFS could not rely on the existing procedures, but had to develop them, going beyond the tasks of a regular data collection exercise. First of all, this concerned the female survey of Estonian FFS (fieldwork 1994); male survey (fieldwork 1997-1998) took advantage of the former. The article summarises the experience gained in the preparation and implementation of the Estonian FFS, in a broader context of the national statistical system.

1. Characteristics of the survey environment

The Soviet totalitarian regime prevailing in Estonia for half a century meant, among other things, a respective organisation of statistical system. Although society has rapidly changed, the statistical system inherited from the past is still in several respects in operation and a principal reform yet needs to be started (Anderson *et al* 1994, Katus *et al* 1998). Therefore, the understanding of the tasks met in the preparation and implementation of the Estonian FFS is not complete without considering the general statistical environment, which was built to serve the Soviet regime. From such wider perspective, four major features of the FFS environment deserve particular attention.

The first feature of the survey environment was the absence of relevant sampling routines which are necessary for any nationally representative survey. Although a series of demographic surveys had been carried out in the Soviet Union, covering Estonia as well, samples were produced outside the country, by the Central Statistical Office in Moscow. These surveys aimed at representative-

ness for the Soviet Union as a whole, not for regions (Darsky 1986, Volkov 1997). The detailed description of the referred sampling procedures was never published, but it is apparent from the sample size that the data cannot be representative of smaller republics. Due to the multistage clustering procedures usually only a few urban/rural communities were included in the sample from Estonia. In such organisation, neither the sample frame on local population nor appropriate skills were developed in Estonia. According to the archive records, the Statistical Office of Estonia never raised the question about the representativeness of survey statistics concerning the country.

Under the conditions of state socialism, the scientific community was granted only a limited access to the aggregated population data, the use of individual-level data by academic institutions was legally forbidden. Thus, the sampling for the female survey of the Estonian FFS became an innovative task (EKDK 1995a, Katus and Puur 1993). This task also included the development of the sample frame and a special address verification procedure. The sample frame and established procedures were later applied in the male survey, saving time and resources. However, the task had still to be accomplished by the Estonian FFS Working Group as statistical institutions continue to rely on frame/procedures, unsuitable for nationwide representative surveys (ESA 1998a, 1998b, 1998c).

The second feature of the survey environment to be noted was the absence of national interviewer network. The fieldwork of the female survey of the Estonian FFS was conducted by a private survey agency, oriented to market surveys and opinion polls. Consequently, the interviewers lacked appropriate experience for collecting event history data, including on sensitive topics, and the elaborating of the network and close supervision of all stages of fieldwork therefore, became one of the central concerns in the Estonian FFS. The Working Group's report on the implementation of female survey gave positive assessment to the performance of the contracted survey agency. The establishment of national interviewer network was nevertheless proposed. The Statistical Office got interested and development of the network was started immediately in autumn 1994.

By the beginning of the male survey of the Estonian FFS, the state interviewer network had been established and shown good results during the Labour Force Survey (Noorkõiv and Puur 1996). Unfortunately, the Statistical Office decided to restructure the network just before the male survey, appointing also a new director. This appointment interrupted the established close cooperation between the FFS Working Group and the interviewer network. Consequently, various difficulties amounted, and as a result the fieldwork period was prolonged about three times.

The third feature of the survey environment concerned funding, more precisely the absence of practices for funding long-term projects from the government budget. Long-term projects need to be approved each year which involves a risk of being stopped or cut. This risk is increased by the very strong competition for budgetary resources, as many important fields in transition countries experience

insufficient funding. The inclusion of the nationwide survey like FFS in the budget was a precedent, thus demanding extensive efforts by the Working Group to justify the project. The Estonian FFS as a separate item was several times discussed in the Budget Commission of Parliament, and was put to the vote in the full assembly. The survey was finally approved, but the actual allocation was cut to one third of the needed resources. This enabled to finish the preparatory stage, which had been started on voluntary basis, and to complete the fieldwork of the female survey.

For the continuity of funding of the Estonian FFS, the support of the Governmental Commission of Population has been essential. Satisfied with annual reports by the Working Group and the intermediate results of the Estonian FFS, the Commission gave its support during the budget formulation, thus reducing the risk of halting the Project. The activity of the Commission, however, subsided in 1997 and securing funds became more complicated. Some tasks, including the completion of the fieldwork of the male survey, have been financed from other sources and/or accomplished on voluntary basis. Also, funds for analytical work have not been allocated. From the year 2000, the government funding of the FFS project was stopped. Fundraising for the preparation of the second stage of the European FFS *Gender and Generations* has to start from scratch.

The fourth feature of the survey environment is related to the efforts to develop an integrated system of survey statistics, as well as to secure the linkage with census and vital statistics in Estonia. Being the first national survey of its kind, it was natural for the FFS to consider these wider tasks. Numerous sociological surveys conducted earlier in Estonia could not set up such an aim as there was no alternative but to draw the samples from enterprise/organisation lists of employees or electors with limited coverage and virtually no personal characteristics. The sampling of the Estonian FFS has been based on census records, thus securing the relevant linkage with total population. From 1992, the linkage with birth and death registers has also been secured. Still, it is more important to stress the comparability of FFS with other national surveys, discussed in the following sections.

The above-mentioned features of survey environment where the Estonian FFS was prepared and implemented, added a whole range of tasks to ensure the data quality and comparability of results with other countries participating in the European FFS. Normally, such tasks are not addressed in the framework of a particular survey, and it is no surprise that their consideration extended the duration of the project. The referred efforts proved unavoidable, particularly from the viewpoint of developing a modern statistical system in the country.

2. Integrated survey programme

An essential feature of the FFS, which needs to be underlined in the context of social surveys, is the comprehensive scope of its data collection programme.

Although the focus of the survey lies with fertility and family dynamics, these processes are not considered *per se*, but regarded in multitudinous interactions with other life domains. Besides childbirth and partnerships, the FFS programme accordingly covers socialisation environment and departure from parental home, fertility regulation, education and work, residential mobility and housing conditions, etc (UNECE 1992). The inclusion of all major individual careers is understandably not accidental, but represents a growing recognition of interdependencies between social processes. In the FFS, information on major individual life careers is integrated in a modern event history framework which has become regarded as universal and the most appropriate reflection of reality, implying a principal extension of analytical capacity (Blossfeld *et al* 1989, Courgeau and Lelièvre 1992 and several others).

In the case of Estonia, additional reasons strengthened the broad scope of the FFS programme. Most importantly, these reasons relate to the scarcity of resources available for survey statistics. A small country undergoing an economic transition can afford only a limited number of nationally representative surveys. To supply essential information for decision-making and research under these circumstances, individual surveys must consider a wider range of tasks than characteristic of bigger countries with extensive programmes of national surveys. Regarding the Estonian FFS, the need for greater integration has been visible in both major dimensions of the survey – the programme and target population. In order to provide a more complete insight into the post-war population development and establish an appropriate information basis for population-related policies, the programme of the Estonian FFS was expanded in several directions, compared to the core questionnaire.

The first module with an extended programme concerned pregnancy/abortion history. The need for corresponding information was underlined by a remarkably high level of induced abortions and poor knowledge of behavioural patterns supporting it (Anderson *et al* 1993, EMSB 1996). Also, the patterns of family formation were considered in this context. In Estonia, like in other countries with an established post-transitional pattern of population reproduction, generational replacement is to a large extent determined by the prevalence of third births. They have been rather frequent among native-born population in 1968–1990, but decreased substantially during the recent decade (Katus 1997). The parity-specific approach to partnership, pregnancy and fertility histories was expected, among other things, to outline the pathways which have led to the three-child family.

Regarding partnerships, the extension of survey programme concerned the definition of events. In particular, both in the case of the formation and dissolution of partnerships, additional to the usual *de jure/de facto* dimension (registered marriage/consensual union), two complementary aspects were distinguished. One referred to sexuality which defined regular and/or long-term dyadic relations, considered neither marriage nor consensual union by partners involved. The second referred to the residential dimension which allows to capture marriages

and consensual unions with partners living apart for extended periods. A separate specification of residential dimension was considered particularly important in view of administrative allocation of housing under centrally planned economy and following a principal transformation in the 1990s. The range of partner characteristics was expanded as well.

The second optional module included in the programme concerned migration and residential mobility which have strongly influenced the post-war population development in Estonia, but are rather inadequately covered by vital and/or census statistics (Katus, Puur and Sakkeus 1998, Katus *et al* 1998). As a part of the former Soviet Union, Estonia had been exposed to very high in- and out-migration volumes of international migration. Also, Estonia has been characterised by the administratively directed internal migration, which has resulted in noticeable regionalisation of population development. The FFS programme also considered the need to apply internationally comparable definitions of long- and short-term as well as long- and short-distance migration which has not been possible based on other data sources. The programme of the Estonian FFS was somewhat extended also with respect to parental home and socialisation environment.

On the other hand, some attitudinal questions included in the core questionnaire appeared poorly applicable, mostly due to the rapid transformation of society. For example, even questions on childbearing plans, rather common in demographic surveys, yielded a clearly misleading picture of the expected fertility trend. Applying even the most conservative definition of expected births, childbearing plans predicted the increase of Estonian fertility. In reality, however, the strongly opposite trend has been prevailing, and in the 1990s, the period fertility has undergone the steepest decline observed in the course of the 20th century. In other words, the female cohorts in fertile ages have behaved rather differently compared to their intentions stated in the survey.

Beside the survey programme, an integrated approach was applied also to the definition of target population. First, differently from the standard recommendation, the Estonian FFS extended the cohort range of the target population beyond the fertile age. The upper age limit of the target population was increased by twenty years, up to the birth cohort 1924–1928. The extension of the cohort range was motivated, among others, by substantial gaps in population data for the early post-war decades. This period of 15–20 years has been poorly covered by vital statistics, neither have there been a census or representative surveys which could supply the data on that period. At the same time, these decades were marked by an extensive discontinuity in demographic and social development of Estonia, including sovietisation, absence of post-war baby boom, etc. And last but not least, postponing the data collection on older cohorts, who by the time of the survey had already reached age 70, would have likely led to the eventual loss of information.

The second extension of target population concerned the inclusion of the population of foreign origin, i.e. immigrants and their second generation. The need for such an extension stems from post-war immigration. According to the

last census, the proportion of foreign-borns in total population has exceeded one quarter, together with the second generation, the share of population of foreign origin comes close to two fifths of the total population (Sakkeus 1991, 1996). In the formation of foreign-born population, two immigration waves can be distinguished, reflecting the major expansion of Estonia's migration hinterland, and implying the growth in the heterogeneity of foreign-origin population. In the case of Estonia, the omission of the immigrants and their second generation would have clearly prevented the FFS being representative whole of the country.

Apart from size, the population of foreign origin has systematically been distinguished from the native-borns in terms of demographic and social behaviour, the difference dating back to the timing of demographic transition (Katus and Sakkeus 1993, Puur 1998, Viikberg 1999). This fact appears particularly important for analytical stages of the survey and the presentation of results: because of the diverse, sometimes even opposing trends between the populations of native and foreign origin, consideration of total population without disaggregation would have yielded a rather misleading picture of population development (UNECE 2000).

3. Potential risks and quality-supportive procedures

The extension of the survey programme and target population in the mentioned directions implied several risks to the data quality. The inclusion of optional modules and additional questions implied the extension in the length of interview. In the stage of questionnaire development and pretests, the average length of interview was expected to be around an hour and a half, in reality it took 87.5 minutes in female survey and 107 minutes on average in male survey. The proportion of interviews longer than 2.5 hours accounted for 13.7 per cent and 32.6 per cent respectively. Particular concern in this respect was expressed by one distinguished foreign expert of the Estonian FFS Working Group, pointing to potential overburdening of respondents, decline in the accuracy of responses, and a threat that a substantial proportion of respondents might refuse to answer or quit interviews. Specific concerns were also expressed about the inclusion of modules related to fertility regulation and abortion. Related questions were considered too sensitive for respondents, provoking part of them to interrupt the interviews and refuse to continue, or to yield unreliable answers.

Regarding the extension of the target population, different concerns were expressed. In the case of older cohorts, the recall problems were expected because of weakened memory and long periods between the events and the interview. Considering the event history methodology, a critical question was whether the older respondents could provide consistent answers on exact dates of events, particularly those which concerned not the respondents themselves, but related persons. Regarding the population of foreign origin, concerns were related

primarily to the problem of non-response. Dissolution of the Soviet Union had triggered return migration which has been covered poorly by official statistics (ESA 1998d). This hampered the advance estimation of non-response, confounded by the political tension ensuing from the restoration of Estonian independence.

The risks related to the extension of the survey programme and target population were addressed by the FFS Working Group. To safeguard the data quality of the survey, special attention was paid to the elaboration of survey procedures, starting from the design of data collection instruments. The position of the FFS as the first nationally representative survey meant that there was no earlier experience to draw on which necessitated a series of three pretests before the actual survey. The inclusion of the population of foreign origin required the questionnaire and other survey instruments to be developed in two languages, splitting the interviewer training as well as field procedures according to the interview language. In order to inform the public, including the respondents about the survey, the Working Group launched a media campaign, holding press conferences, preparing newspaper articles and TV/radio broadcasts.

In both female and male survey, the training of interviewers was considered of key importance. The FFS Working Group conducted a series of training seminars, focusing primarily on specific requirements of event-history survey (supporting the recall of events, checking the consistency between parallel careers, etc). At the end of the seminar each interviewer had to pass an individual test, after which (s)he was approved for the task. The test foresaw an interview with one of the Working Group members taking the role of respondent. Such a "respondent" had a complex life history, and the task of the interviewer was to detect deliberately inserted inconsistencies. Similar quality-supportive procedures were devised also for subsequent stages of the survey. To ensure control over the progress of fieldwork, the Working Group employed its own coordinator for field operations, parallel to supervisors of contracted network.

Coding and data entry, which were combined with primary consistency control, were detached from survey organisation and operated by a separate unit under close supervision of the Working Group. Each time an inconsistency was encountered, the life history of the respondent was analysed. Also, the Working Group summarised typical recording errors and provided interviewers with relevant feedback. This measure evidently had its effect, as in the course of the survey, the need for clarification decreased by nearly one third. After the completion of data collection, the evaluation of data quality proceeded across two major directions: (1) representativeness of the sample and (2) completeness and consistency of responses. Followingly, both directions are examined.

3.1. Representativeness of the FFS data

A fundamental requirement in survey statistics implies that survey sample must be representative to target population, regarding its demographic, social and regional composition. Although the complete identity of the two can never be reached, the

lack of systematic biases, exceeding random variation, must be secured. In the following, the assessment of representativeness of the Estonian FFS is based on the comparison of the composition of target, respondent and non-respondent population. The comparison builds on a set of personal characteristics available from the sampling frame (population census) for both respondents and non-respondents.

Considering the extension of target population, neither older female nor male cohorts introduced an increase in non-response. The reality was the opposite, and combining different reasons of non-response, older cohorts displayed lower non-response rates, accounting for one third of the fertile age cohorts among males (Table 1). The decomposition of non-response revealed two major causes, rather equally important, refusals and non-locations. Due to poor accuracy of residence registration, the latter reason appears particularly high in Estonia. Non-response due to ill health had been expectedly higher in older cohorts but it did not determine the general pattern.

Table 1

Representativeness of Estonian FFS

	Female survey				Male survey			
	Target population	Respondents	Non-respondents	Non-response rate	Target population ¹	Respondents	Non-respondents	Non-response rate
1969-73	9.8	9.2	10.2	13.8	11.8	11.5	15.2	27.1
1964-68	9.4	9.9	10.5	13.5	10.7	10.7	11.9	23.7
1959-63	11.0	10.1	9.3	13.6	12.1	11.5	13.8	25.0
1954-58	11.4	9.9	10.4	14.6	12.0	11.5	13.1	22.9
1949-53	10.9	9.6	7.4	10.4	11.2	11.1	13.1	22.1
1944-48	9.1	9.6	11.6	15.3	9.0	9.3	9.3	20.6
1939-43	9.4	10.9	9.1	12.4	9.2	9.3	9.5	20.9
1934-38	9.8	10.6	10.5	13.5	9.1	10.0	6.4	13.1
1929-33	9.7	10.0	10.2	10.6	8.3	8.8	4.3	8.7
1924-28	9.6	10.1	10.7	10.2	6.6	6.3	3.3	9.9
Native	59.8	62.7	52.9	12.5	58.8	63.9	51.7	17.1
Foreign	40.2	37.3	47.1	13.2	41.2	36.1	48.3	25.9
Married	62.2	63.1	59.1	12.2	64.7	68.6	55.5	17.4
N-married	19.9	18.9	22.9	14.3	26.7	24.9	32.8	25.7
Widowed	7.0	7.1	6.8	11.2	1.3	1.0	1.7	27.0
Divorced	10.8	10.8	11.1	14.1	7.0	5.4	10.0	30.0
Childless	24.2	22.6	30.8	16.3	—	—	—	—
1 child	27.1	26.6	30.0	14.2	—	—	—	—
2 children	34.9	35.0	29.3	11.3	—	—	—	—
3+children	13.8	15.8	9.9	15.6	—	—	—	—

¹ In the sample frame (the latest census) the information on the number of children was collected only on females and the comparison between the target and survey population is not possible across this characteristic.

The actual problem of non-response related to older cohorts stems from the selectivity. The birth cohorts defining the target population are represented by survivors, those who have died, have necessarily been omitted. While in younger cohorts the potential selectivity is relatively weak, it keeps strengthening towards older cohorts, reflecting the age-pattern of mortality. It is evident that survivors and non-survivors of each cohort are selective with respect to life histories, introducing the bias in data. Due to prolonged mortality stagnation, extensive gender gap in life expectancy, the impact of the referred selectivity is likely stronger in the Estonian FFS than on average among the European participant countries. The importance of the referred problem should not be ignored; alternative designs (prospective studies), however, will hardly present a viable option for FFS.

Regarding the distinction between native- and foreign-origin population, the non-response appeared higher among the latter, in line with the experience of other countries (Groves and Couper 1998). Similarly to cohort dimension, heterogeneity in non-response turned to be significantly higher among males. In addition to the more frequent temporary absence of foreign-origin population, higher non-response rate of foreign-origin population was attributable to less accurate address information. Due to the heavy concentration of foreign-origin population in urban areas, the differential pattern of non-response has probably influenced also the urban-rural differentiation. At the same time it is interesting to note that the refusal rate has been fairly equal between native- and foreign-origin population, suggesting no major discrepancy in the attitude towards the survey.

Across marital status, the highest level of non-response has been observed among the never-married. Closely correlated with their younger age distribution, the never-married individuals appeared more mobile and therefore their non-response was primarily related to frequent temporary absence from the place of residence. Regarding other groups, the pattern appeared somewhat different among males and females. Among females, the observed differences between married, divorced and widowed were very small. Among males, those married had a significantly higher probability of being interviewed than widowers and divorcees. Due to the availability of information from the sampling frame, for females it was possible to assess the differentiation of response also by parity. The data reveal a slight positive association between the participation in the survey and the number of children ever-born. The information on the reasons of non-response suggests that the pattern may have partly resulted from lesser mobility of higher-parity women, and partly from their increased interest in participating in the survey. The parity-specific analysis revealed acceptable consistency of the Estonian FFS with vital registration which was not the case with all FFS countries (Barkalov and Dörbritz 1998).

The structure of target population, respondents and non-respondents is compared in Table 1. Across cohorts, the data reveal quite a close similarity between the target population and respondents, although slight underrepresenta-

tion of the younger and overrepresentation of the older cohorts can be observed. Regarding the distinction between native- and foreign-origin population, the FFS respondents are characterised by a somewhat lower proportion of immigrants and their descendants compared to the sampling frame. This discrepancy could, to a considerable extent, reflect the impact of migration flows that have occurred since the 1989 census to which the structure of target population refers. Whatever the reason, potential underrepresentation of foreign-origin population should not be exaggerated as the development and behavioural patterns of two subpopulations necessitate a separate analysis. Returning to other principal characteristics, the data of the Estonian FFS can be considered also representative and require no weighting. The Estonian FFS census-based sample frame supports the evaluation of representatives against more than 50 characteristics.

3.2. Completeness and consistency of the FFS data

The second major dimension of the survey data quality refers to the completeness of responses collected from sampled individuals who were eventually interviewed. This kind of non-response should not be underestimated as even a low frequency of omissions at individual items tends to cumulate and sharply limit the amount of information which can be effectively used in the analyses. Such omissions may occur for different reasons. However, for the purposes of classification two broad categories should be distinguished. The first category of the item-specific non-response stems from the unwillingness of respondents to provide answers for specific questions. Given the intimacy of the spheres addressed by the survey, particularly the extended modules on fertility regulation, pregnancy/abortion and sexuality, these concerns required careful attention.

Analysis of the responses by individual questions and modules revealed that item-specific refusals were encountered only in exceptional cases. Regarding even the most delicate issues, there were only three respondents in female survey who refused to provide information on the number of sexual intercourse during the last four weeks preceding the interview. As for induced abortions, only one person explicitly refused to answer. In male survey, altogether eight respondents were not willing to provide information about the number of sexual intercourse during the last four weeks and three respondents refused to talk about their experience with commercial sex or male partner. Understandably, the referred numbers are too small for any generalisation across respondent characteristics.

Being an indication of fairly low schism, a negligible level of item-specific refusals, however, does not necessarily imply the completeness of reporting. Sensitive and/or uncomfortable issues can be easily evaded less explicitly, for example, merely leaving certain events or circumstances unrecorded. From the viewpoint of data quality, the extent of a hidden evasion is much more difficult to assess. To assess the extent of such concern, a special validation study was conducted in connection with the Estonian FFS (Anderson *et al* 1994). In that framework, the truthfulness of survey responses on abortion was checked against

objective information from external sources. Differently from the prevailing practice in such studies, the verification of responses was accomplished on individual level. The sample for the study was drawn from patient records of women who had an abortion which served as an external standard for assessing the completeness and accuracy of responses.

The second type of item-specific non-response stems from the inability of respondents to provide answers for specific questions. From the viewpoint of event history analysis, the most critical was the issue of the completeness of event dates (exact month and year). As noted above, in the case of Estonian FFS the task was complicated by the extension of the survey programme and the inclusion of older cohorts. Nevertheless, the analysis performed after data collection reveals a generally high quality of date information. To measure the accuracy of responses, the number of incomplete dates was related to the total number of questions on event-dates (altogether close to 250 thousand). In female survey, the respondents could not provide complete information to slightly less than 0.4 per cent of questions addressing the year of event. Regarding the month of event, the proportion of incomplete answers was understandably higher, accounting to 1.6 per cent. In male survey, the year of the event was missing in 0.9 per cent of the relevant questions, and month in 2.3 per cent. The difference between male and female survey should at least partly be ascribed to varying performance of contracted survey organisations (Pungas 1999).

To assess the impact of date omissions on the FFS analyses, a date-specific non-response has been decomposed according to modules of the questionnaire on the one hand, and the characteristics of the respondent on the other. To better demonstrate the variation, an alternative measure of data completeness has been introduced: the proportion of questionnaires with at least one year/month missing. It should be noted that the referred measure appears quite conservative and tends to amplify the limitations of the data: even one missing piece of information from the average of 30–40 event-dates provided by the respondent is enough to omit the case from the count. Table 2 presents the variation of date-specific non-response by modules of the questionnaire in female survey, applying both measures in parallel.

The data reveal that the lowest level of non-response has been characteristic of partnership and birth history. Similarly low levels, particularly considering the year of event, appeared in migration and residence history, education and work, and household history. In all these main careers, the proportion of answers with a missing year was lower than 0.1 per cent. Regarding the month of event, the proportion of missing information varied between 0.1 and 0.6 per cent in these modules. At the other extreme, the highest level of date-specific non-response concentrated in parental home module. Typically, the respondents failed to recall the exact birth and death dates of their siblings which had occurred in infancy or childhood. In male survey, the concentration of omissions in parental home module appeared even more expressed (EKDK 1999).

Table 2

Date-specific non-response rate by questionnaire modules,
Estonian FFS, female survey

	Proportion of date-questions with missing		Proportion of respondents with at least one missing	
	Year	Month	Year	Month
Partnership history	0.0	0.2	0.2	0.8
Birth history	0.0	0.2	0.1	0.5
Pregnancy history	0.9	4.1	0.4	2.1
Household history	0.0	0.6	0.1	0.8
Migration history	0.0	0.4	0.0	0.9
Education/work history	0.0	0.1	0.1	0.6
Parental home	1.2	4.9	4.3	17.1

The module of pregnancy/abortion history positions between parental home and other modules. Considering the proportion of events with missing information, data quality of the pregnancy/abortion module stands closer to parental home module with 0.9 per cent of all recorded years and 4.1 per cent of months not specified. Applying a more conservative measure, the proportion of respondents with at least one missing response in the respective module, the prevalence of date-specific non-response drops to 0.4 per cent (year of event) and 2.1 per cent (month of event). According to these figures, particularly regarding the year of event, data quality of the pregnancy/abortion module appears closer to other major life career modules.

This exceptional and at first glance rather paradoxical result – more conservative measure yielding a better estimate of data quality – can be explained by a specific parity distribution of abortions, together with other pregnancies not resulting in live birth, compared to other life careers. The proportion of women with no abortions tends to be particularly higher compared to those having no event in partnership, birth, household, migration, education and work history. The inclusion/ exclusion of zero parity group from the denominator of alternative item-specific response rates explains much of the mentioned anomaly.

To assess the impact of the extension of target population and present the inter-group variation of date-specific non-response, a more sensitive measure was applied. Judging upon the proportion of respondents with at least one missing event-date, date-specific non-response expectedly increased towards older cohorts. The omission of event-dates reached maximum in the 1924–1928 birth cohort, exceeding the average level in currently fertile age-span more than twice (Table 3).

The observed cohort pattern date-specific non-response should be explained by two different factors. Firstly, the increase in the proportion of respondents with at least one event-date missing stems from the accumulation in the number of life

Table 3

**Date-specific non-response
Estonian FFS, female survey**

	Proportion of respondents with at least one missing	
	Year	Month
1969-73	0.1	6.0
1964-68	0.9	6.3
1959-63	3.4	10.3
1954-58	3.5	14.7
1949-53	4.5	18.1
1944-48	4.8	19.9
1939-43	6.2	26.0
1934-38	7.4	30.8
1929-33	7.9	31.3
1924-28	11.8	33.9
Native	3.9	16.4
Foreign	7.6	26.1

events experienced by the respondent. The referred impact concentrates clearly on fertile age, for example between cohorts 1969-1973 and 1949-1953 the proportion of respondents with date-specific non-response increases 3-4 times. Women in the 1949-1953 birth cohort were only 40-44 years old during the interview, and it would therefore be inappropriate to relate the pattern to the difficulties of recall. Beyond age 50 the number of life events stabilises, and in these age groups, recall difficulties emerge. Although the levels presented in Table 3 look rather high, the extent of the problem should not be exaggerated.

Secondly, and more importantly, the examination of the pattern by modules reveals that across cohorts, the overwhelming majority of date omissions is limited to parental home (EKDK 1995b). The frequency of omissions in major life careers of the respondents themselves remains moderate also in older cohorts. For example, in the 1924-1928 female birth cohort, in modules other than parental home, the proportion of respondents with at least one event-year missing ranged between 0.2-1.2 per cent. Regarding the month of event, the corresponding percentage ranged between 1.0-2.7.

The good quality of information provided by older respondents is revealed also by other characteristics. Regarding the consistency of life histories, there were only slightly more interviews which required clarification in older cohorts. Similar conclusion can be reached relying on the number of edits introduced during the data cleaning and verification of survey responses against individual-level census records of the respondents. It is interesting to note that differently from some expectations, the same analysis revealed no significant deterioration of data accuracy parallel to the increase in interview duration (EKDK 1995a). In other words, lengthy interviews do not necessarily cause interviewing difficulties, but could, on the contrary, indicate particularly good cooperation by the respondents and a willingness to provide the interviewer with various details. Notably, none of the lengthy interviews was abandoned in the middle, although two per cent were interrupted and completed at a later date.

Regarding the population of foreign origin, some deterioration in the completeness of information can be observed. In view of the previous discussion and the younger age structure of immigrants, this outcome may look somewhat

surprising. It could evidently be explained by the diverse historical experience of the two populations, dating back to the 19th century. Already during that period, the native population had virtually complete literacy which facilitated the transfer of information from parents to children. Among immigrant population, the heterogeneity of educational attainment has been much greater and illiteracy has not been exceptional in the cohorts born in the early 20th century. Additionally, a considerably later demographic transition in the home regions of immigrants has meant larger families as well as a lower survival of siblings and parents which has a direct impact on the completeness of data.

To sum up, the extension of the survey programme and target population did not imply any major compromise in data quality of the Estonian FFS. It can be assumed that the extension of survey programme has, on the contrary, contributed to the increase in consistency of life histories and data quality in general. From analytical viewpoint, the discussed omissions impose no major restrictions on event history analysis.

4. Interviewer network and data quality

The Estonian FFS Working Group considered the survey as a vehicle for developing a national statistical system in Estonia. This broader perspective implied, among other things, setting the focus on the performance of interviewer network. The professional capacity of the network is directly determined by the skills of each interviewer who carries the primary responsibility for contacting the respondents and recording the answers. Accordingly, the quality of survey statistics in both its major aspects, the non-response and consistency of collected information depends on the interviewers, and moreover, various deficiencies occurring during fieldwork are usually difficult, if not impossible, to rectify in later stages. In the case of Estonia, the need to concentrate on the performance of interviewer network stems from the stage of formation of national survey statistics, outlined in the previous sections. Consequently, there have been no investigations focusing on the impact of the interviewer qualification on survey results (Tasuja 1998). The direct impulse for the inclusion of such analysis in the national FFS activities stems from the particularly extensive regional variation in network performance during the male survey, which could not be explained by the heterogeneity of the target population. On the other hand, the referred type of analysis deserves attention also in the comparative perspective of the European FFS (Festy and Prioux 2000, Kveder 2000).

The analysis focused on the variation in data quality in the male survey of Estonian FFS across four interviewer characteristics: (1) gender, (2) general interviewer experience, (3) survey-specific interviewer experience and (4) language compatibility. Information on these characteristics was related to a set of data quality measures, including the non-response rate, refusal rate, average

number of corrections per questionnaire, smoothness of the interview and percentage of questionnaires with date-specific non-response. These measures, representing the data quality from various perspectives, have been additionally combined into a summary index, calculated as the simple geometric average of the ratios of group-specific to the average value of each component index¹. Indeed, the analysis would have benefited from a more extensive and detailed information on interviewers. The administration of the network, however, sadly lacked cooperation to provide such data (EKDK 1999). Nevertheless, the results presented in the following sections are useful for identifying some key factors shaping the data quality in survey statistics in Estonia, and supporting the development of interviewer network.

4.1. General interviewer experience

Experience plays an important part in any occupation and there is no reason to consider interviewing as an exception. In the following, general interviewer experience has been expressed by two complementary indicators: the interviewer cohort, determined by the year when the person started the job of an interviewer, and participation in complex event history surveys. It should be noted that the first measure builds on the assumption of continuous commitment since entering the network. According to the present organisation, in fact, participation in each major survey tends to be agreed separately and the work might have been intermittent. The second indicator is introduced particularly to overcome this shortcoming, and additionally makes it possible to identify the specific contribution of each individual survey to the formation of interviewer experience.

Before turning to the results, the composition of interviewer network is worth attention. Of all the interviewers having participated in the male survey of the Estonian FFS, 38.2 per cent had been recruited in 1994, 24.3 per cent in 1995, 20.8 per cent in 1996 and 13.9 per cent in January–February 1997. Considering that the network was established and the recruitment of interviewers was started in autumn 1994, and the data reflect the network in March 1997, there was a very high personnel turnover. Regarding the 1994 cohort, for example, in less than three years more than 60 per cent of the initially recruited interviewers have left, according to the life table method this translates into just about two years of

¹ Summary index = $4\sqrt{((a_i/a) * (b_i/b) * (c_i/c) * (d_i/d))}$, where a_i – non-response rate in group i ; a – average non-response rate; b_i – number of corrections in group i ; b – average number of corrections; c_i – smoothness of the interview in group i ; c – average smoothness of the interview; d_i – percentage of questionnaires with date-specific non-response in group i ; d – average percentage of questionnaires with date-specific non-response. The value of summary index greater than one refers to better data quality compared to the average, and the value less than one to inferior quality. The summary index is included in all tables of the chapter whereas the presentation of component indices varies between sections. The difference of summary index from sample average is comparable across sections, thus giving an idea of relative importance of each interviewer characteristic of data quality.

tenure for an average interviewer. Regarding later cohorts, the situation seems to have even deteriorated over time.

The decomposition of non-response and data accuracy by the interviewer cohort shows that better results have been achieved by those having the longest work experience (Table 4). The difference is especially pronounced in the non-response rate stressing the role of experience in locating the respondents and securing their agreement for an interview. The interviewers with longer work experience are also inclined to be more careful as shown by a higher number of recorded life events and a better consistency between the survey and census records. The observed relationship has at least two alternative explanations. First, the increase in work experience may facilitate the improvement of interviewer performance. Another explanation is selectivity: better qualified interviewers are more likely to continue working while the less able quit and leave the network. The importance of the latter hypothesis is stressed by the very high turnover of interviewers. Its testing, however, requires additional information.

Table 4

**Data quality impact of general interviewer experience
Estonian FFS, male survey**

	Interviewer cohort			Participation in event-history surveys				Total
	1994–1995	1996	1997	LFS+HS	LFS	HS	None	
Non-response rate	15.9	26.6	21.6	17.8	18.2	22.4	17.5	18.8
No of corrections	2.2	2.7	2.3	2.1	2.1	2.5	2.2	2.3
Date-specific non-response rate	17.1	21.6	20.0	15.0	10.0	22.5	20.1	18.5
Summary index	1.08	0.85	0.93	1.10	1.19	0.89	1.02	1.00

The improvement of performance according to the accumulation of general interviewer experience was expected and confirmed in the analysis. The relationship between experience and data quality, however, did not appear linear. Contrary to expectations, the poorest performance was demonstrated systematically by the 1996 cohort rather than by the newly-recruited interviewers. This fact cannot be explained within the framework of either hypotheses supplied above, and requires the introduction of an additional factor – the negative work experience. The nature of such an experience is revealed by the right-hand panel of Table 4: the interviewers who had participated exceptionally in the Health Survey stand out for the poorest performance. These interviewers were characterised by the highest non-response rate, and despite having shorter than average interviews, had also the highest incidence of recording errors and date-specific non-response.

At first glance, the referred negative work experience seems difficult to explain. All the considered national surveys applied similar event history

methodology, training, sampling and field procedures. There is also no ground to assume major differences in the aptitude between interviewers recruited in different years. Similarly, the explanation cannot be found at the level of county coordinators as in the period under consideration – unlike the interviewers, the coordinator staff has been rather stable. Nevertheless, a closer examination of circumstances provides a clue to a negative experience to managerial level. In particular, the fieldwork of the Health Survey coincided with the decision to replace the director of the network, causing confusion and uncertainty which undermined the basic quality requirements (Leinsalu *et al* 1998). More importantly, the deterioration of management was not compensated by the Working Group of the Health Survey. In the male survey of the FFS, immediately following the Health Survey, the interviewers of the 1996 cohort proceeded according to their experience.

4.2. Survey-specific interviewer experience

Good performance of interviewers requires a thorough knowledge of the questionnaire, definitions, procedures, etc. applied in a particular survey. To support such a qualification, the Estonian FFS Working Group held a series of training seminars for the interviewers. Based on the training, however, the survey-specific skills increase in the process of fieldwork. Therefore, the more interviews performed, the better are the results. Such acquiring of specific experience is particularly important in the case of complex event history surveys. For that, the Working Group attempted to limit the number of interviewers. In reality, however, the number of interviewers employed in the male survey of the FFS far exceeded the optimum. The present section analyses the data quality impact of excess number of interviewers by comparing the performance of three groups. The first group includes interviewers who had completed less than 10 questionnaires, representing the survey-specific experience which was clearly unacceptable in the framework of the agreed procedures. The interviewers with more than 20 interviews seemed quite experienced under given circumstances, although the relatively low limit does not allow such a generalisation for the entire group. The third group, consisting of interviewers with 10–19 interviews, represents the intermediate experience (Table 5).

Consistent with what was expected, the increase in the number of completed interviews appeared positively associated with interviewer performance, although the pattern is not identical across different indicators. For example, there is virtually no variation between the non-response rate of the two groups having completed less than 10 and 10–19 interviews respectively, but those having carried out more than 20 interviews demonstrated an almost twice lower non-response. On the other hand, the data accuracy improves almost linearly: each ten additionally completed questionnaires brought the number of required corrections down by ca 20 per cent. Data quality improvement measured by the frequency of re-contact and date-specific non-response are somewhat less strongly expressed,

but demonstrate similar pattern. The contribution of survey-specific interviewer experience to data quality could be demonstrated by other indicators on a more detailed level.

Table 5

**Data quality impact of survey-specific interviewer experience
Estonian FFS, male survey**

	Number of interviews			Total
	0-9	10-19	20-29	
Non-response rate	15.0	15.1	8.2	18.8
Number of corrections	2.4	1.9	1.5	2.3
Date-specific non-response	21.5	16.6	18.2	18.5
Summary index	1.01	1.12	1.35	1.00

4.3. Language compatibility

A positive interaction between the respondent and the interviewer, which is a prerequisite for obtaining accurate and reliable data, naturally implies a common language of communication. In the context of survey statistics, the requirement of language compatibility must be extended beyond the basic understanding and daily communication, especially in case sensitive topics are addressed. Countries with ethnically and linguistically homogeneous population usually do not need to consider the issue, but in Estonia, language requirements deserve special attention. Because of the inclusion of foreign-origin population, implementation of national surveys cannot be limited to the Estonian language. The legacy of Soviet ethnic and language policies makes it necessary to carry out the surveys in two languages, Estonian, and Russian, which is the usual language of the majority of immigrants (Katus and Sakkeus 1993, Viikberg 1999).

The procedure of the Estonian FFS required the interviewer to have the same usual language with the respondent. Since advanced Estonian-Russian bilingualism is quite rare, this implied that interviews in Estonian had to be carried out by the native Estonian-speaking interviewers, and interviews in Russian by native Russian-speakers. Exceptions to this rule were allowed only in the counties with ethnically homogeneous population. Unfortunately, concerning both attitude and skill, the interviewer network was not prepared to meet the language requirement in full scale. Both the majority of county coordinators and central administration of the network considered the requirement as unnecessarily strict, and regarded the skills of daily communication entirely sufficient for an interviewer. As a result, in the male survey of the Estonian FFS, 85 interviewers or 59 per cent worked exclusively in one language (66 in Estonian and 19 in Russian) while two languages were employed by 59 interviewers or 41 per cent.

Table 6

Data quality impact of language compatibility
Estonian FFS, male survey

	Number of interviewing languages		Total
	One	Two	
Non-response rate	14.7	29.9	18.8
Date-specific non-response	17.0	23.1	18.5
Interview smoothness	26.6	371	29.0
Summary index	1.11	0.79	1.00

Since the usual language of the interviewers was not documented and the administration of the network refused to record such information upon request, the following analysis builds on the comparison of two groups of interviewers: those carrying out interviews only in one language and those carrying out interviews in two

languages. In order to follow the impact of language compatibility, the interviewers having worked overwhelmingly in one language, but completing just a few interviews in another language have been excluded. Table 6 presents the non-response rate, the date-specific non-response rate and interview smoothness across the two referred groups. The number of corrections, presented in all other tables, has been left out because of no systematic variation.

The data reveal a considerable discrepancy in the performance of the interviewers working only in one or in both languages. In the case of the former, the non-response rate is 78 per cent of the average, while among the latter, non-response is 158 per cent of the average, i.e. the difference between the groups is about twofold. It should be noted that this difference reflects not only the interviewer impact, but also the characteristics of the respondents. In particular, the affiliation to the population of foreign origin increases the level of non-response, inflating the non-response of the interviewers working in two languages. In order to get an additional insight, the performance of the interviewers having worked either in Estonian or in Russian was compared. In the case of the interviewers working only in Estonian, the impact of language requirement and respondent characteristics cumulated, resulting in the non-response rate of 43.6 per cent of the average. In the case of the interviewers working only in Russian, the non-response rate appeared 110.6 per cent of the average. The latter figure shows that interviewing the population of foreign origin indeed increases the non-response two and a half times. More importantly, however, the poorest result was demonstrated not by the interviewers working solely in Russian, but among those combining Estonian and Russian: their corresponding non-response rate was 3.6 times of those interviewing only in Estonian, and notably, 42.9 per cent higher compared to those interviewing only in Russian.

The decomposition of the non-response rate also revealed the mechanism behind the discussed impact. The higher non-response among the interviewers working in two languages stems primarily from more frequent refusals. Thus, among the interviewers working either only in Estonian or only in Russian, the refusal rate was quite low (5.7 and 6.7 per cent respectively), whereas among the

interviewers combining Estonian and Russian the refusal rate was more than twice higher (14.4 per cent). In other words, the respondents are much more inclined to refuse when meeting an interviewer having a different usual language. The importance of language compatibility was also underlined by the differentiation of smoothness of interviews and date-specific non-response. Bilingual interviewers had about one third more cases where the respondent was unable to recall the date of some event. Additionally, the importance of language compatibility was reflected in the number of life events recorded.

4.4. Gender of interviewer

Women form the majority of interviewers in most countries today, and Estonia is no exception in this respect. Of the total number of interviewers participating in the male survey of the Estonian FFS, women made up 88.2 per cent and men 11.8 per cent. Regarding gender, the purpose of the analysis was to compare the performance of male and female interviewers in a survey focusing on male population and containing sensitive personal issues. In the broader perspective, this comparison could establish whether male respondents provide answers more easily to interviewers of the same or opposite sex, or whether the sex of the interviewer does not play a significant role.

The gender of the interviewer made no significant difference in the level of non-response, but there were some differences in its components. Although it could have been presumed that the respondents feel more convenient answering to interviewers of the same sex, the results do not support the positive impact of such a combination. The refusal rate was limited to nine per cent among female interviewers whereas in the case of their male colleagues, the indicator accounted for 11 per cent. A certain communicative advantage of female interviewers was also reflected in interviewer assessments: both the respondent interest and the smoothness of interview were higher with female interviewers. On the other hand, male interviewers demonstrated somewhat better results in locating the respondents, thus balancing the difference in non-response.

A better communication with respondents of the female interviewers was observed also in other data quality indicators. Female interviewers demonstrated a higher accuracy of date-specific information, presumably due to more skilful support to the respondents' recall

Table 7

Data quality impact of interviewer gender
Estonian FFS, male survey

	Gender of interviewer		Total
	Male	Female	
Refusal rate	11.2	8.2	8.8
Number of corrections	2.6	2.3	2.3
Date-specific non-response	31.5	16.4	18.5
Summary index	0.80	1.07	1.00

efforts. A lower number of corrections refers either to greater attentiveness or more careful checking. Also, the average number of life events recorded by female interviewers was somewhat higher compared to males. In general, the results seem to confirm that women are somewhat better fitted to the job of interviewer for individual-based surveys. Because of the single-sex survey population, however, one should be careful in generalising that conclusion.

5. Estonian FFS in the system of national surveys

The Estonian FFS Working Group considered the survey as a constituent of the national statistical system. The scientific community therefore proposed the FFS to be prepared and implemented with a wider aim of building up the survey statistics in Estonia. The proposal was acknowledged by the Governmental Commission of Population and the FFS Working Group followed this task throughout all the stages. Due to the scarcity of funding, the excellent cooperation among scientific community was mostly accomplished on voluntary basis. Among other things, the contribution of FFS to the elaboration of national definitions and concepts for various societal fields, compatible with international standards, should be underlined. Those concepts considered the applications in vital and census statistics, as well as the requirements of policy-oriented research.

In 1993 the Governmental Commission of Population adopted the programme for an integrated system of national surveys, which foresaw in the first round the completion of eight national surveys in the 1990s. The system of national surveys had to secure, together with census and vital statistics, the basic information on the most essential population and social processes (Katus *et al* 1993). The female survey of the Estonian FFS was followed by the Labour Force Survey 1995 (Noorkõiv and Puur 1996), Health Survey (Leinsalu *et al* 1998), National Minority Survey (EKDK 2000) and the male survey of the Estonian FFS.

The surveys included in the programme were chosen to cover the major societal fields. Each survey was given a dual task: on the one hand, the development of definitions, concepts and appropriate measurement tools in its field, and on the other, systematic application of definitions, already elaborated by other national surveys. In the case of Estonian FFS, the contribution of the first comprises the definitions related to family, household and fertility, including reproductive health. Regarding the other task, FFS had to consider in advance the basic requirements of the following surveys, in order to secure the comparability within the system. In view of that, the FFS Working Group had invited the key researchers, responsible for the following surveys to participate in its activities.

For the needs of national survey statistics, the FFS Working Group developed a sample frame and sampling procedures, principles of interviewer training, organisation of fieldwork, coding, data entry and editing routines. The following national surveys draw on the experience of FFS and extended it in their specific

directions, contributing to the formation of integrated survey statistics. In that process, the essential role of working groups for planning and implementation in each national survey should be underlined. The working groups brought together the efforts of all interested institutions and individual researchers. The membership of such working groups changed from one survey to another with some core members participating in all groups and securing the comparability across individual surveys. Generalising the experience of the 1990s, only those surveys which had applied the institution of the working group, have been integrated, leaving others that were carried out as separate undertakings, including those by the Statistical Office, outside the system.

As a contribution to the general statistical system, the linkage with vital and census statistics has been equally important. The individual-level linkage of survey responses to census records, safeguarded by the sampling frame, has allowed to analyse the content of definitions. Starting from 1992, the organisation of vital statistics records allows the linkage with survey data on the individual level, supporting the follow-up. The possibilities of individual level linkage, in addition to the comparability on aggregate level, have been particularly welcome in the case of Estonia, experiencing the transition from Soviet-type statistical system to the international one, without losing the consistency of time-series on major population and social processes.

6. Comparability of major definitions

In the following, the definitions and concepts, first elaborated within the framework of the Estonian FFS and continued in other national surveys, are compared. The comparison addresses the consistency of major definitions and provides a basis for an integrated use of national surveys. Considering the gender composition of target population in different national surveys, the male survey of the Estonian FFS was compared to male data from Labour Force Survey and Health Survey. The female survey of the Estonian FFS was compared to female data from Labour Force Survey and Health Survey, and National Minority Survey, which covered the Russian and Ingerian national minority populations in Estonia. Here, only the comparisons of females are presented (Figure 1).

The analysis of comparability covered the definitions of various events and statuses, giving preference to standard characteristics applied also in census and vital statistics. Besides the latter, some comparisons involved innovative characteristics which in the case of high consistency across surveys, could lead to the extension of a set of standard characteristics. Understandably, reflecting the underlying regularities of demographic and social processes, all comparisons apply disaggregation by cohort/age. In the context of the present paper, the definitions of partnership and fertility-related characteristics are paid particular attention.

Figure 1

Comparability of major definitions in national surveys
Estonia, females 1990s

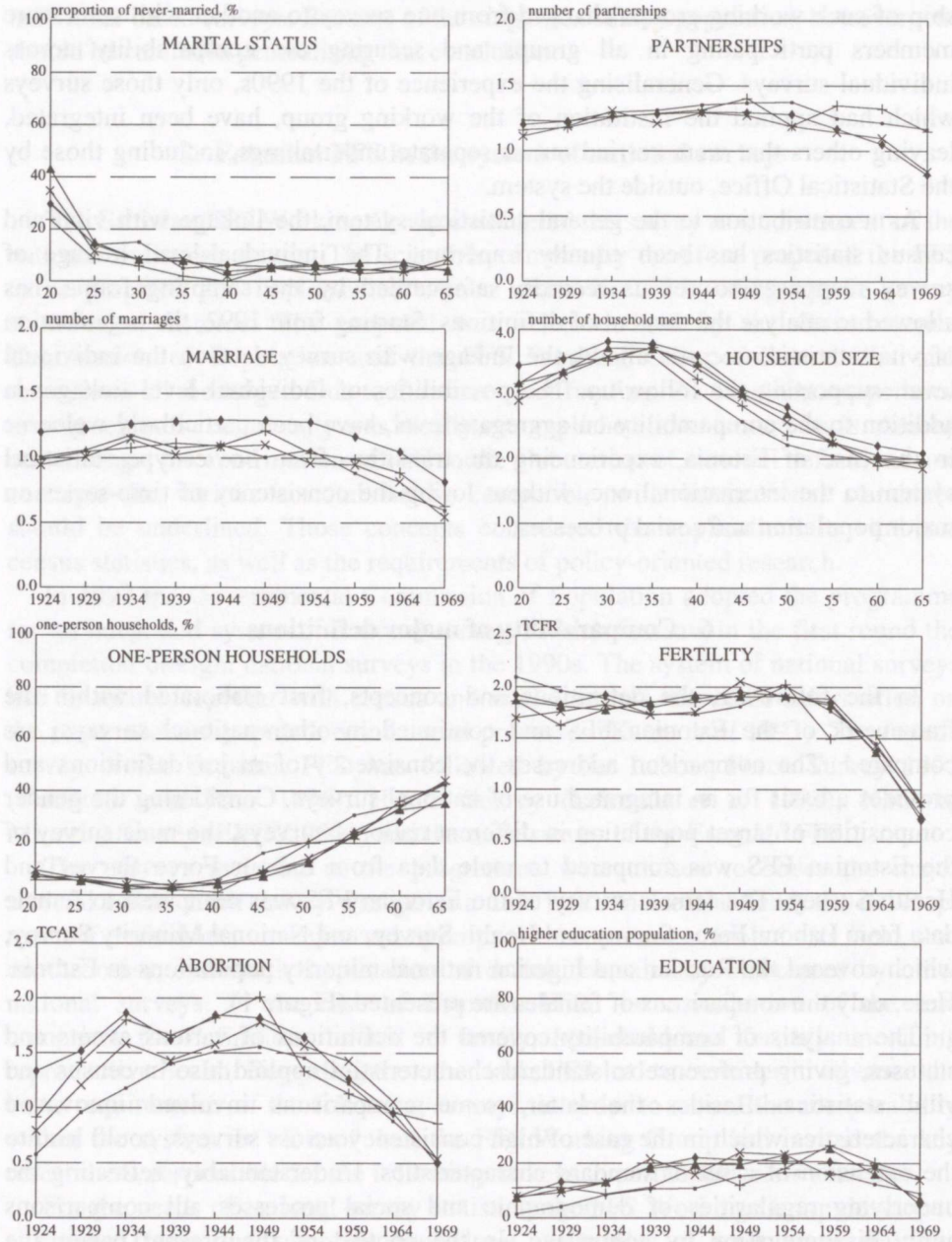
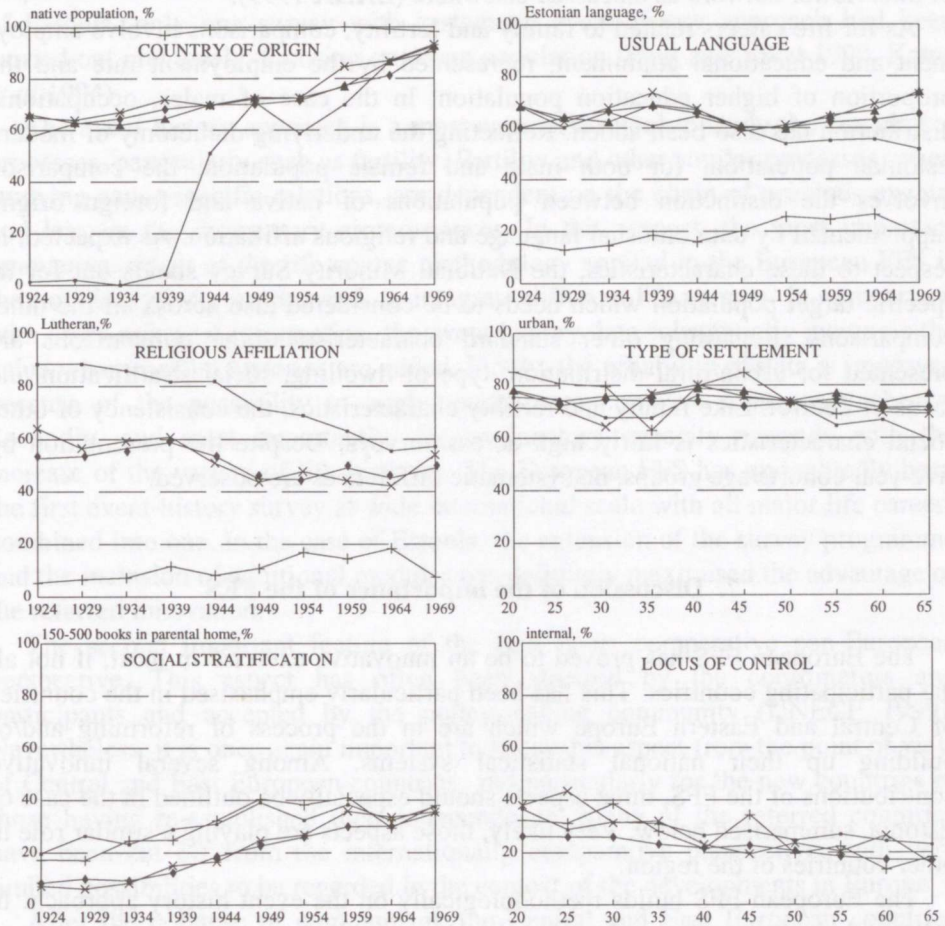


Figure 1 (continued)



The family/household status is represented by the proportion of the never-married; cumulative number of partnerships (including consensual unions) over lifetime, average household size, proportion of one-person households and average number of registered marriages has been additionally presented. The comparison of fertility data builds on the cumulative number of ever-born children, representing a completed total fertility rate for cohorts born before 1950. Being one of the core subjects of the FFS, the consistency of fertility data should be evaluated in a broader context of pregnancy outcome. The set of figures thus includes also the cumulative number of abortions. All the referred comparisons reveal a consistency of main patterns across the surveys. At the same time it should be noted that compared to FFS, the Health Survey has indicated, for

instance, a lower prevalence of induced abortions, due to the inferior performance of interviewer network as discussed elsewhere (EKDK 1999).

As for life careers related to family and fertility, comparisons involve employment and educational attainment, represented by the employment rate and the proportion of higher education population. In the case of males, occupational distribution has also been added. Reflecting the underlying dichotomy of modern Estonian population, for both male and female population, the comparison involves the distinction between populations of native and foreign origin, supplemented by data on usual language and religious affiliation. As expected, in respect to these characteristics, the National Minority Survey stands out for its specific target population which needs to be considered also across all the other comparisons. Regarding other standard characteristics, the comparisons are presented for urban/rural distribution, type of dwelling, social stratification and locus of control. Like family and fertility characteristics, the consistency of other social characteristics is fairly high across surveys. Despite the presentation by five-year cohorts/age groups, no systematic differences are observed.

7. Discussion of the importance of the FFS

The European FFS has proved to be an innovative exercise in most, if not all the participating countries. This has been particularly emphasised in the countries of Central and Eastern Europe which are in the process of reforming and/or building up their national statistical systems. Among several innovative contributions of the FFS, three aspects should especially be outlined in the case of Estonia, summarised below. Very likely, those aspects are playing a similar role in other countries of the region.

The European FFS builds methodologically on the event history approach. In spite of being recently developed, it has been applied to a variety of processes ranging from family planning to deviant behaviour and development of business entities. The European FFS was the first attempt to apply that methodology on a broad cross-national scale. The undertaking has been quantitatively impressive with a quarter of hundred countries in the European region covered. Much more important, however, was the methodological challenge to compare the dynamic development of European populations. The event history approach, following the life events starting from parental home, inevitably requires the consideration of diverse historical experience of nations and countries for at least half a century. Even collecting internationally comparable cross-sectional data proves to be a complex task, in the case of event history approach, the difficulties are manifold.

The European FFS was initiated and developed with active participation of major population institutes in the region. This, among other things, has secured the dissemination of the best practices for the success of the survey, and the comparability of collected event-history data. The countries of Central and

Eastern Europe with less experience with such surveys have undoubtedly been the major beneficiaries from the pan-European cooperation. For example, in the case of Estonia, only one survey with systematic event-history approach had been carried out previously, focusing on urban population (Puur and Vikat 1990, Katus *et al* 1994).

The event history approach is a most appropriate tool to study the cumulative processes, particularly such as fertility. Fertility and other similar processes, when studying cause-specific relations, are dependent on the chain of previous events, and less on the momentary circumstances. In this respect, the most important innovative aspect of the life course methodology applied in the European FFS is the possibility, or even demand, to integrate different life careers. In comparison with cross-sectional information, the event history data substantially increases the value when parallel histories are added. Firstly, the reliability of data is improved because of the possibility to apply much more complex consistency checks. Secondly, and most importantly, the explanatory capacity expands with the increase of the variety of life histories. The European FFS has undoubtedly been the first event-history survey at wide international scale with all major life careers combined into one. In the case of Estonia, the extension of the survey programme and the inclusion of additional modules has definitely maximised the advantage of the referred innovation.

The second important feature of the FFS is its comparative pan-European perspective. This aspect has often been stressed by the coordinators and participants and accepted by the policy-making community (UNECE 1999). Nevertheless, it is once again important to stress this aspect from the point of view of Central and East European countries, and particularly for the new countries or those having re-established their independence. Many of the referred countries have been cut off from the internationally comparative perspective, with very limited possibilities to be regarded in the context of the developments in Europe.

After the collapse of communism, the Central and East European countries have found their economies and social organisation seriously lagging behind, depreciating the value of comparisons with the rest of Europe. The population trends and various life careers, however, have been much more in correspondence with long-term development, making the comparative perspective appropriate. Moreover, this perspective enables generalisations about the impact of diverse social and political environments. In that sense, the role of FFS for Central and East European countries goes far beyond the family and fertility development. In Estonian case, the extension of target population to older cohorts, accumulating the long-term impact of social discontinuity following WW II, has been motivated by this perspective.

The third feature of the FFS, in the context of Estonia and other countries with social discontinuity, is its contribution to the development of national statistical system. Due to the specific societal and statistical environment, the preparation and implementation of the FFS had to go beyond an individual data collection

exercise and aim at a much wider range of activities than considered under normal circumstances. In the case of Estonia, the FFS became the first nationwide undertaking of its kind, aimed at building up survey statistics and statistical organisation in general. From the organisational point of view, the integration between researchers and governmental officials was established. Independent from medium-level administrative bureaucracy, the FFS Working Group had full responsibility for all stages of the survey planning and implementation. In the conditions of underdeveloped official structures of the transitional society, such an organisation proved to be the most efficient.

Being a successful exercise, the FFS in several ways contributed to the emergence of survey statistics in Estonia. However, from several years' distance it is also necessary to acknowledge major shortcomings and even failures. The principal difference of the FFS from previous practices proved to be the methodological work. It has been fully accomplished by the scientific community who joined the Working Group, i.e. outside regular structure of statistical institution. By today, several surveys carried out by the Statistical Office have shown reluctance to use the gained methodological experience and preference to much simpler, less time- and work-consuming procedures. In other words, the real cooperation between the scientific community and statistical administrators has not been established and each new national survey needs to start from the very beginning.

Secondly, the data quality issues are still widely and wildly underestimated. In that context, it has been common to refer to the experience of the Estonian FFS as something irregular which does not deserve to be followed. Such practices as forming a working group uniting all the available intellectual capacity, providing it with the responsibility for all stages of the survey, decision-making authority, including the allocation of relevant funds, etc which were essential in securing the data quality, are regarded as useless, or even harmful parallelisms to the official structure of a statistical institution

To sum up, the experience of the Estonian FFS as a system-creative and innovative exercise has been opposed by old working habits, and has lost. As a result, the survey statistics, although newly established, requires to be principally reformed and the broader aim of the Estonian FFS to build up national survey statistics, still remains to be achieved.

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