LIVING CONDITIONS IN ESTONIA FIVE YEARS LATER

NORBALT II

EDITED BY DAGMAR KUTSAR

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University of Tartu
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Living Conditions
in Estonia Five Years Later

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PREFACE

The Living Conditions Study concentrates on different aspects of the population's environment including — economic resources, health conditions, employment and working conditions, characteristics of housing, social contacts, political views, the sense of security and plans to change the place of residence. The Living Conditions Study, which has been conducted twice (in 1994 and 1999) by the Applied Social Sciences Institute Fafo (Oslo) within the framework of the NORBALT project, gives important information about the changes in the living conditions of the population during the five years; it also enables a comparison of changing living conditions between the Baltic States and the Scandinavian countries.

The aim of the current book is to reflect selected aspects of the living conditions in Estonia through comparison of data from the 1994 and 1999 surveys. The book begins with the analysis of changes in the structure of households during the different courses of life, reproductive behaviour of the population in reproductive age, focussing on the issue of what are the reasons for the postponement in having children. Further on, an overview is given on the issues of employment, housing and poverty, the sense of security and plans to change the place of residence. This is only a small selection of the rich empirical data and an example of its analytical potential.

As the editor of the book and one of the participators in the NORBALT project I would first and foremost like to thank the researchers of the Fafo Institute for the valuable international scientific cooperation experience. I am most grateful to the general co-ordinator of the project, the science director of Fafo, Aadne Aasland for leading the project so purposefully, Guri Tyldum for methodological advice and help, Arne Grønningsæter for social political discussions and to many other Fafo researchers, who have contributed to the NORBALT project during different times. I am also very grateful to Ülle Marksoo from the Ministry of Social Affairs for the friendly intra-Estonia co-ordination, the workers of the Statistical Office of Estonia for collecting reliable data and last but not least to all the people who participated in the study by responding to the questionnaires. In connection with getting the current book ready, I would like to express my gratitude to professor Ene-Margit Tiit for essential remarks and discussions.

Dagmar Kutsar, editor
In Tartu, March 2002

The Individual Life Course in the context of family development

Dagmar Kutsar, Ene-Margit Tiit

Families and households form the foundations for ordering the life of a society, including its legal and ethical norms, as well as for determining how well a society and its members can manage economically. It is important for legislators, the executive power, economists, demographers, sociologists and statisticians to know the composition and distribution of families and households. Social scientists study the development of the family in order to assess its current situation and to assess its developmental trends, which in turn are reflected in the demographic development of the nation. Knowledge of the structure and distribution of households form the basis for estimating the economic capacity of a nation and for designing the social policy of the country.

The subjects of the current survey are monitored on an individual basis over time, using, on the one hand, life stage definitions determined by the composition of the household; and on the other hand, life course definitions attributed by their status in the family. The calculation of the duration of life stages is based on empirical data, using assumptions about the constancy of household behaviour over the lifetime of one generation. The second goal of the current paper is to estimate the number of families and households in Estonia. The paper uses the empirical material from the Living Conditions Survey (NORBALT II) in autumn 1999. Additionally other survey samplings conducted in Estonia during the past years have been used as comparative material (Household Income and Expenditure Survey HIES 1997–1999, conducted by the Statistical Office of Estonia (SOE); SOE Household Budget Survey HBS, 2000–2001; SOE Labour Force Survey LFS, 1997–1999; Tartu Students' Marriage and Co-habitation Survey, 2001), also the data from censuses conducted in Estonia (1959, 1970, 1979, 1989).

Basic definitions

Before defining the family and household type, definitions have to be given to *family* and *household,* these having been defined slightly differently in different surveys. Similar problems have also been encountered in international research projects. The changes in the frequency distribution of family and household types reflect developments in Europe during the last five decades. On the other

hand, according to several researchers, changes in the role of the family in society have become a risk factor for the society's development.

Family

Family is one of those terms which are easily comprehensible on an everyday level, but which are extremely difficult to define uniformly as an object of scientific treatment. Most often a family is regarded as a group of people who are bound through blood ties, marriage or adoption and who live together in one household (Clulow, 1993; Newman, 1999). Sociologists approach family as a part of the structure of a society, a social institution (a set of social relations and behaviours) and a mediator between an individual and the society, which has to fulfil functions for both the society and the individual. Barbara H. Settles (1987) claims that family is an ideological abstraction, a romantic notion, entity for weak and disabled people; it is a process, but also a social and economic network. In the classic family approach two types of families are referred to most often, from which different modifications are developed.

1. A nuclear family is formed either by spouses or by spouses and their one or several minor children. A subtype of a nuclear family consists of a single parent with a minor child or children. In family studies a nuclear family is the concept most frequently used as a unit of analysis. However, Erik Arnkil (1994) argues that a nuclear family is merely a political construct, which is needed to define the target group of family policies and it is not an entity that has been consciously formed by people.

2. An extended family consists of a nuclear family and additional family members who all have a blood relationship, are in partnership, or are relatives by marriage[1] (for example the parents of spouses, children's spouses, grandchildren). An extended family can include several nuclear families, either in declining order (grandparents' family, parents' family, child's family), in parallel order (the families of siblings) or in combined order (uncle's family, nephew's family).

In both cases the core of the family is based on a legally recognised marriage relationship, according to which the positions, (*i.e.* status) of family members are determined in relation to each other (*e.g. a child, parent, grandparent* etc). The rights and responsibilities of family members are also regulated through marriage.

In comparison with decades ago, the family is increasingly becoming an object of personal choice rather than a legal commitment, *i.e.* it is based less on

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[1]   Relationship by marriage is a relationship created by marriage (or partnership) with the close relatives of spouses (or partners). Relationships by marriage generally remain after the divorce. Thus, the relatives by marriage are parent-in-law, siblings-in-law etc.

legal status (registered marriage), birth or the fact of adoption and more on mutual feelings — affection, love, trust (Clulow, 1993; Haavio-Mannila & Kontula, 2001; Newman, 1999). Most contemporary family researchers have expanded the definition of family, which has resulted in a contradiction between the definition of a family and the definition of a family based on marriage (compare Burgess, 1945; Burtles, 1999). The registration of a marriage has been removed from the definition of spouses, so that factual co-habitation is suffi-cient. However, there is no universal agreement as to how long the partners should live together in order to be regarded as co-habiting, and the decision is usually left to the individuals concerned (Brown, 2000; Brewster & Padovic, 2000; Barrington, 2001). There are questions as to which form of cohabitations the people concerned regard as free marriage. The children of one spouse who do not have an adoptive status with the other spouse are regarded as equal to the children of the couple. Beside the legal regulation of the rights and respon-sibilities of family members, the non-formal ethical and moral aspects gain in importance (Newman, 1999).

The definition of a child as a family member is also less than uniform. In some family approaches the age of the child is not limited (for example in the censuses conducted in Estonia between 1959–1989, see Eesti rahvastik rahva-loenduste andmetel, 1996). However, in general a child is a minor, but recently the definition of a child in some countries has been expanded to the adult children dependent on their parents (Bengtson, 2001).

The idea of defining a family through relations rather than its structure is relatively old, originating from Ernest Burgess 1945, who referred to a family as a group of people in interaction. Extreme contemporary examples can be presented, where so-called *family-like associations* become accepted by a society. Here, as with the traditional family, the rights and responsibilities of the group members regulated by law and by the non-formal side of the relations — affection, trust, responsibilities — has become greater, as it is for the contem-porary family (Newman, 1999).

According to the UN definition, a family consists of a man and a woman, who live together in a private or government owned (dormitory, institution) household; the term also applies to a parent and his/her single biological or adopted child. In the international surveys a family is treated as a subcategory of a household or, in some cases, as an equivalent to a household (UN Statis-tical Commission, 1987). For example in Italy a household consists without exception of blood relatives and relatives through marriage, so that a family in Italy is the same as a household (Appleton & Hantrais, 2000).

Household

Definitions of a household and family have reached the scientific literature via different routes. According to one of the founders of family science, Ernest Burgess, a family is the union of interacting individuals, a process; whereas a household is rather a structure (Bengtson, 2001). Three definitions have been traditionally used in Estonia — *perekond, leibkond, pere* (*perekond* meaning family, *leibkond* and *pere* both stand for household), whilst their content has shifted slightly during over time. An Estonian Encyclopaedia published in the 1930s (Eesti Entsüklopeedia, 1932) defines family and household in rather modern terms; *pere* is regarded as the synonym of *leibkond*. However, the headword *leibkond* is absent from the Estonian Soviet Encyclopaedia published in the 60's and 70's, the headword *pere* is defined as a pre-capitalist farm household (Eesti Nõukogude Entsüklopeedia, 1968). All three headwords are included in the next edition of the Estonian Soviet Encyclopaedia (Eesti Nõukogude Entsüklopeedia, 1985). *Leibkond* is defined in modern terms as a household, but *pere* also includes sets of other persons in addition to household members. The definition of a family has generally been unchanged.

The definition of a household was used quite early in scientific research and literature in Estonia, but in the household budget surveys it just denoted farm households (Eesti töölise büdžett, 1925). The definition of family (rather than household) was used in the censuses conducted in Estonia (Eesti rahvastik rahvaloenduste andmetel, 1996), although the associations of people covered were, by their nature, more similar to households, as no family bonds were assumed between the members. The marital relationship was determined by the people's own definition, which included unregistered cohabitation. This was probably the case of following the Soviet tradition in the last four censuses that a household, being mainly an economic entity, was not seen as different from of a family.

In the current paper the definition of household which is used is the same as the definition used in most other statistical studies in Estonia today (Leibkonna elujärg, 2001). In principle, the definition of household was the same in the census conducted in Estonia in 2000. Unlike a family, a household can consist of a single person. In this case it would be called a one-person household. Also, no blood ties need exist between household members. The definition of a family, in turn, does not contain any specific requirements concerning economic ties between its members, although they usually do exist because of the economic function of a family.

The definition of a household in the majority of the European Union countries assumes economic ties and not blood or marital relations or adoption. In France and Sweden the term *household's dwelling* is used, which is based on the main accommodation of the household, but people are not differentiated on the basis of their economic ties. Having common meals is a condition included

in the definition of household in several European countries (at least one common meal per day) (Appleton & Hantrais, 2000). This condition is not implemented in Estonia, since it is possible in principle to arrange the affairs of a functioning household so that common food resources are consumed ("fridge" — see Clulow, 1993) without its members sharing meals on regular basis. According to the official definition of the Statistical Office of Estonia, *a household is a group of people living at the same address and sharing joint monetary resources and whose members consider themselves to be members of one household* (Statistical Yearbook of Estonia, 2000: 182). Objective and subjective criteria of the definition of household have been combined within this term.

Nor has the definition of household been treated uniformly by different researchers, although EUROSTAT has made recommendations to harmonise the definitions to the maximum extent, particularly in the household budget surveys (Household..., 1994). Nor has household been defined uniformly in different surveys conducted in Estonia. The main difference is whether a member living away is or is not included as a member of the household. In the Household Budget Surveys conducted by the SOE, a member who stays away for less than a year is regarded as a member of the household if they continue to have economic ties with the household and have not found a new household or main accommodation (Leibkonna eelarve uuringu metoodiline juhend, 2000). In the 2000 census an adult student living away from the household was viewed as a separate household (Rahvaloenduse metoodiline juhend, 2000). In the case of some surveys no separate criteria has been established for the members living away (SOE Labour Force Survey, 2000, SOE Living Conditions Survey — NORBALT II, 2000). In this case, the subjective opinion of the household members is taken into account, but it is impossible to determine whether it tallies with the opinion of the absent member.

To conclude, family is an entity determined through relations, rights and responsibilities, whilst household is a structural, economic category. To some extent, a family and household are synonyms and thus both terms will be referred to as households in the current paper.

A family's "career" and the individual's life course

According to the developmental approach (Duvall, 1967; Christensen, 1964 *et al*) familiar to family sociologists, a family goes through a series of structural changes, *i.e.* development phases over time, which form the family's "career" (Aldous, 1978). Every family member has a position in the family structure (spouse, father, child etc), which modifies as the family structure changes.

Every individual passes through several *stages of life* which constitute a person's *life course*. The beginning and end of a life stage can be determined by

a significant *life event* (see articles that have been referenced in the source LIFE CYCLES). In the context of a family, the individual's life stages form part of the family's "career". The number and the duration of stages varies from individual to individual. Also, one person can go through some life stages several times and not go through others at all. Since the definition of family assumes at least two people, but a household can consist of a single individual, it would be more practical to base the analysis on the definition of household in order to describe the entire life course. In the following, we will analyse a person's life course through the household structure, reviewing the positions of family members in relation to each other wherever possible. It should be noted that the concepts of individual life stages and life courses have already been used in various analytical contexts by Estonian researchers (see Titma, 1999; Katus, 1995).

Changes in family institution

The family in Western culture

Recent changes in the structure of traditional families and households are currently being noted on a worldwide basis (Bianchi & Casper, 2000; Clulow, 1993; Fontaine, 2000 Gottlieb, 1993; Hantrais, 2000). The western family as an institution has gone through the following major changes in the 20th century (Burgess, Bengtson & Barrington, 2001; Bengtson, 2001; Haavio-Mannila & Kontula, 2001; Hantrais, 1999; 1999a; 2000; Raley, 2001; Thomson, 2001):

- one generational families began to predominate over several generation families;
- the patriarchal model — working husband (head of the household) and a housewife — was replaced by an egalitarian family with both partners in employment;
- remaining single and living in a one person household became an acceptable alternative to founding a family; a new trend that Elina Haavio-Mannila and Osmo Kontula (2001) as well as Jan Trost (2001) refer to is the sustainable partnership of people living alone;
- one parent families became more widespread alongside two parent families;
- the family was no longer viewed as a life-long commitment, which only could only be terminated by the death of one partner. Establishing a new family following divorce became socially accepted ;
- the use of family planning measures to regulate the number of children gained approval within society. Sexual relationships were no longer seen as merely a means of pro-creation, but rather as a form of communication that creating mutual satisfaction;

- families based on cohabitation became a considerable alternative to registered married families;
- homosexual family-like associations won the right to exist alongside heterosexual families;
- reconstituted families became more frequent, whereby children are blood related to only one parent and at least one of the spouses/partners has previously been married or has cohabited.

The most important change observed in the development of Western families during the past decade (and one also regarded earlier as a significant trend), is its plurality, the multitude of different forms (Coontz, 2000). This is confirmed by the fact that the trends of changes in the family and social institutions during the past decade have not all been in one direction (Bengtson, 2001). In the same way that the age for getting married has increased, fallen and increased again, and that reproductive figures have oscillated (Demographic Yearbook, 2001; Raley, 2001), the intensity of the influence of different generations on each other is not one-way. A few decades ago, researchers were of the opinion that the number of extended, several generation families would decrease and that nuclear families would then dominate. Now it is believed that there is a significant trend in the opposite direction — the bond between generations is becoming stronger and increasingly important (Bengtson, 2001). One possible reason for this is an increase in the number of one parent-households, where the grandparents have an important role in raising and looking after the children. Contributory factors are the increase in average life expectancy, improved health amongst the elderly and an improvement in their living standards. All these factors increase the opportunities for generations to spend their lives together.

In some areas, the age of leaving home has gone up, so that the trend prevalent a couple of decades ago for young people to leave home upon becoming adult and to establish an independent household is no longer dominant. The new trend is associated with prolonged education, the increased availability of education as well as unemployment among young people. A significant additional factor in the Central and Eastern European transition countries is the issue of adaptation and the stress rooted in that change (Hraba, *et al*, 2000).

Behind all the polemics, family researchers have always been excited by the question — is the family based on marriage in retreat? Is the importance of the family decreasing for people in general? It is apparent that the lifelong family based on one registered marriage has not been dominant for some time. Almost half of all marriages result in divorce in many countries (Wang & Amato, 2000). The new form of family alongside the registered marriage — unregistered cohabitation, which, a few decades ago, only covered a relatively short period of time prior to marriage — has become a significant alternative to registered marriage in several countries today (Berrington, 2000; Brown, 2000,

Ermisch, 2000; Eriksen, 2001; Raley, 2001; Haavio-Mannila & Kontula, 2001). Deciding to cohabit or to marry is not in the least socially determined, and the decision may therefore depend on somewhat incidental circumstances, for example people wanting or not wanting to organise a wedding or to avoid bureaucracy (Trost, 2001).

Changes in the family in Estonia

Several characteristic traits can be identified in the changes of Estonian family and household structures. Large families consisting of several generations have been relatively unpopular in Estonia. This trend has lasted for almost a century and it escalated as the population was urbanised. Although there is no statistical data about the earlier history, literary sources confirm the unpopularity of this type of living arrangement. During the Soviet times generations were obliged to live together because living space was scarce, but as soon as the opportunities opened up, people preferred to move out of their parents' home (Haavio-Mannila & Tiit, 1981).

Before the Second World War the divorce rate in Estonia was already quite high (up to 10% of all marriages ending in divorce) (Eesti arvudes ..., 1937). The divorce ratio during the second half of the 20th century increased unevenly, but still rapidly enough to estimate that approximately half of all marriages would end in divorce or separation (Tiit, 1980). Presumably this trend is significantly associated with the high level of education among Estonian women and their independence due to their high employment rate. Since the 1960's the level of education of Estonian women has exceeded that of men; moreover, by the beginning of the 1980's the difference between their educational careers exceeded one year. Furthermore, despite the lower retirement age for women, their share of the labour market in the 1980's was over 50%. The figure for remarriages has also been quite high. The proportion of people marrying who had been married before accounted for almost 30% of all people getting married in the last decades of the 20th century (Eesti rahvastik 2000; Narusk & Hansson, 1999).

Beside registered marriages, cohabitation spread in the 1960's and 1970's and was somewhat reluctantly accepted by society. There is no specific statistical data about the spread of cohabitation. However, in the light of the number of children born outside marriage and the number of children born shortly after marriage, it can be argued that cohabitation was already wide-spread as a preparatory phase for marriage during that period, and as in the Scandinavian countries it became a common alternative to registered marriage in the 1990's (Haavio-Mannila & Kontula, 2001). Since 1998 almost half of children have been born outside a registered marriage in Estonia (Eesti rahvastik 2000).

During the past century Estonian society has been quite tolerant of all the changes in traditional beliefs about marriage. It is plausible that this is partly due to the relatively modest influence of religious beliefs, a situation which on the one hand is rooted in remote history (it is in the consciousness of many people that Christianity was brought to Estonia with fire and sword), and on the other hand in recent history (official propaganda, including schools, disparaged religion during the soviet times and it was also difficult to maintain religious traditions). It is also possible that the fact that the majority of young people have no inheritance or ownership related problems which would stimulate registered marriages also has an impact on the relatively low level of registered marriages.

A survey carried out in 2001 among the students in Tartu showed that only approximately half of the students regard marriage as the preferred form of partnership (wedded — 20%, officially registered — 30%). More than one sixth were in favour of cohabitation and the formal arrangements were of no importance for almost one third of the respondents (Juurmann & Kasearu, 2002). Although the survey was not representative of the whole of Estonia (the sample size was 336), it could be assumed that the survey reflected the attitudes of students, the opinion leaders, and thus a deepening trend in society. However, it did transpire from a survey conducted among women who terminated a pregnancy that, all other things being equal, single women were the most likely to terminate a pregnancy and married women to give birth, the attitude of women in cohabitation falling between the two groups (Tiit & Käärik, 2001).

The average age for giving birth in Estonia has increased during the past decade (during 1995–2000 it rose on average by three months per year). Both the birth of the first child and of subsequent children are more frequently postponed. The number of births, and thus also the number of children in a family, has decreased (Eesti sünni- ja abordiregister, 2001). Postponing children and having fewer children are trends presumably rooted in changes in society, including problems of adaptation to change, but also in longer educational careers, which in turn arise from education being valued more highly. Expanding career and migration opportunities may also play a role.

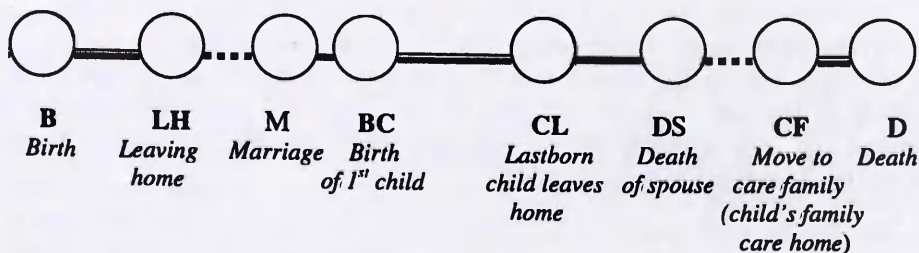Because of the difference in men and women's life expectancy, there are relatively many single elderly women in Estonia who try to cope as one-person households. Unlike the situation in Scandinavian countries, taking care of the elderly in Estonia is mostly the duty of relatives. The public care system is limited and only less than half a per cent of the elderly live in care homes (Estonian Statistical Yearbook, 2001).

Definition of life cycles in the context of household and family

The traditional approach to life stages

A developmental approach to the family observes the internal development of a nuclear family from its formation to the death of the first and then the second spouse. Different authors have specified a varied number of phases of family development. Figure 1 gives a schematic overview of a person's life course, adapting the most frequent key life events in the developmental framework for a family; in addition there are events which happen prior to forming an individual family. The key life events connected with traditional family life are marked with circles and the different lines mark the life stages during an individual's life course as follows:

1. B→LH — life with parent(s), individual's position: *a child*;
2. LH→M — life in self-contained household, new family has not (yet) been formed, individual's position: *single adolescent* (student or worker);
3. M→BC — young married couple with no children; a new household and family has been formed; individual's position: *spouse;*
4. BC→CL — married couple with children; the household and family has grown by one child or children, individual's position: *spouse and parent*;
5. CL→DS — senior married couple with no children; the children have left the parents' home and formed their own household (and family); the household has lost some of its members, the nuclear family has remained; individual's position: *spouse;*
6. DS→CF — the spouse has died; the marriage has ceased to exist, thus the family has ceased its existence, a one person household remains, individual's position: *single (elderly);*
7. (CF→D)$_1$ — member of child's (grandchild's) household, individual's position: *grandparent or relative* or:
7a. (CF→D)$_2$ — member of an institutional household without own (nuclear) family, position: *in care*.

B	**LH**	**M**	**BC**	**CL**	**DS**	**CF**	**D**
Birth	*Leaving home*	*Marriage*	*Birth of 1ˢᵗ child*	*Lastborn child leaves home*	*Death of spouse*	*Move to care family (child's family care home)*	*Death*

Figure 1. Key events on the life course in the traditional approach.

Reality often deviates from the scheme as presented. A person's life may end before passing through all the stages, this probability being higher the later the stage. For example half of all spouses do not reach the sixth stage (widowhood). Often people skip some stages (*e.g.* people leave their parents to get married without living alone; a child is born before the marriage; people do not get married at all; do not have children; not all children leave home, etc.).

It is also possible that some stages are passed through more than once. Most common is the case when people re-marry after a divorce or the death of a spouse; thus they repeat stages 3–4–5. In principle it is possible to repeat these stages a number of times. The term reconstituted family has received increasing attention in family research. According to the UN definition, a reconstituted family is a group of people where at least one of the members of the nuclear family has previously been married or has cohabited. The term reconstituted family gains special significance from the perspective of children raised in the family. For example in Sweden just 65% of children and young adolescents (less than 18 years of age) live with their two biological parents (Appleton & Hantrais, 2000). According to the Estonian data, people getting married for the first time made up only two thirds of all the marriages registered in 1999 (Eesti statistika aastaraamat, 2000).

With the development of society and the rise in the average life expectancy, the number of stages passed through generally increases. In addition, the probability of repeating and skipping some stages also increases. As a result, the number of possible life courses and their individual differences also grows (Abi-Hashem, 2000). According to Christopher Clulow (1993), the most important changes in life cycles have been the following:

- leaving the parental household to form one's own household is now significantly less often connected with the event of marriage;
- the trend by which partner relations and parent relations are separate has increased, so that the biological (blood tie) basis of the family group is decreasing;
- the breaking up of a family is increasingly related to forming a new, reconstituted family.

Determining the life stage: the most frequent issues

In reality, the end of one stage of life and the beginning of the next do not necessarily coincide, but may take place during a transition period. One of the most difficult life events to pin down is the child leaving the parental home, *i.e.* forming a new household, since this often happens step-by-step, for example by the following scheme: (1) leaving home to study in a different town with continuing full economic dependence on the parents → (2) receiving an independent income (student loan) and thus reducing economic dependence on

parents → (3) replacing temporary accommodation with a permanent place of residence → (4) finding a partner and beginning cohabitation, gaining economic independence from parents.

It is not easy to decide which is the key event, by which the child is no longer statistically regarded as a member of the parents' household. Different criteria have been used:

1. a child is regarded as a child until attaining the adult age (18 years), and thus also a member of the parents' household. From then on, he or she will form a separate household;
2. child is regarded as a member of the household for a year after leaving home; a problem arises in the case when the child still spends some of the time (*e.g.* school holidays or part of it, weekends, etc.) at the parental home and uses the resources of the parental household;
3. child is no longer regarded as a member of the parental household if he or she has a cohabitation partner; at the same time, there are no general criteria (except subjective ones), to enable one to identify the point at which a friend becomes a cohabitation partner;
4. child is not regarded as a member of the parental household if he or she has a permanent place of residence, although this definition is not totally adequate, since there is no clear distinction between permanent and temporary accommodation. The problem is particularly obvious in the case of temporary residence in student accommodation
5. whether a child belongs to the household or not is decided by the household itself. However, the parents and children can have different opinions in this respect. Notwithstanding, for the parents a child will always remain a child by their status, through biological and family ties, if not through household ones.

In the 2000 census conducted in Estonia, criterion number 4 was implemented, in the Household Budget Survey conducted by SOE criteria 1–3 were used and in many survey samplings the 5th criterion has been used. These differences of opinion in distinguishing the transitions from one stage to the next in order to determine which household a person belongs to are of minor importance, because the situations described mainly involve one transition period between the life stages, which usually lasts for no longer than five years. Nevertheless, this is one of the reasons why the estimated number of households in Estonia is different according to different surveys, the differences being up to twenty or thirty thousand.
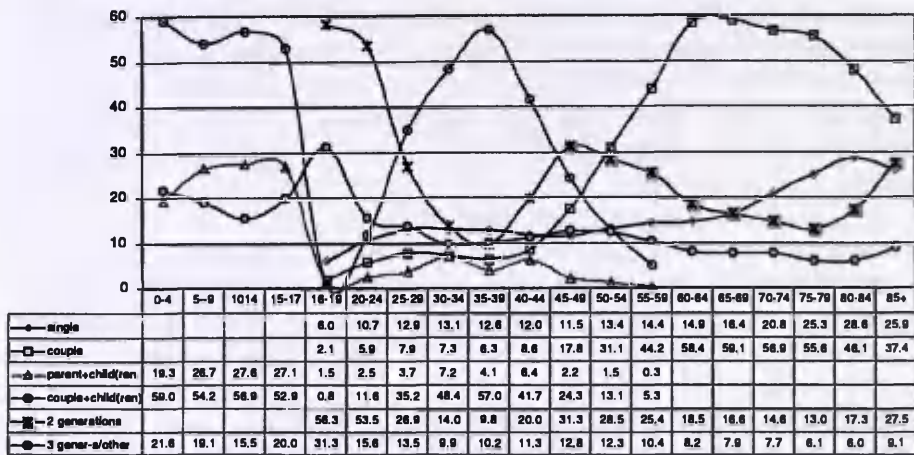
Estimating the duration of life stages

On the assumption that people's behaviour in establishing families has a stable pattern over a longer period of time, the duration of life stages can be determined by the distribution of family types and *vice versa*. The standard way to obtain the necessary information is via survey samplings among individuals and households, through which the structure of households and the status of household members in respect to each other are determined. As is the case in all survey sampling, the problem here is that some errors in estimating the size and composition of the households could not be avoided and estimating the impact of these errors is relatively complicated. The more important problematic situations are as follows:

- the probability of non-response varies between different types of households (however, the more members in the household, the higher is the inclusion probability of its members and also the member's readiness to respond). In addition, there may be a significant difference between the response probability of people staying at home (pensioners) and those who are employed;
- in the case of survey sampling it is not clear how to regard members of the household living away (for example students) — they may be (1) not counted at all; (2) counted twice (as in their parents' household but living away and *also* as a one person household); (3) regarded as a member of their parents' household, although they have formed their own household; (4) counted as a one person household, although in reality they are still members of their parents' household;
- some members of society cannot be included in the survey — they either cannot be reached or do not want to respond. As a result of such under-coverage, some types of household can remain under-represented or not represented at all, which can alter the picture of the whole society. Usually a significant proportion of the homeless remain outside the sample, as do representatives of other marginal groups, those living in dormitories and institutions, and also a considerable proportion of wealthy households.

An alternative method that can be used to determine the number and distribution of household types is to estimate the duration of life stages, which enables one to estimate the distribution of household types. If such calculations could be done in retrospect, conclusions about the structure and distribution dynamics of the households could be drawn. In the current paper the empirical data used for the calculations are mainly from NORBALT II (1999) and the Household Budget Survey conducted by SOE.
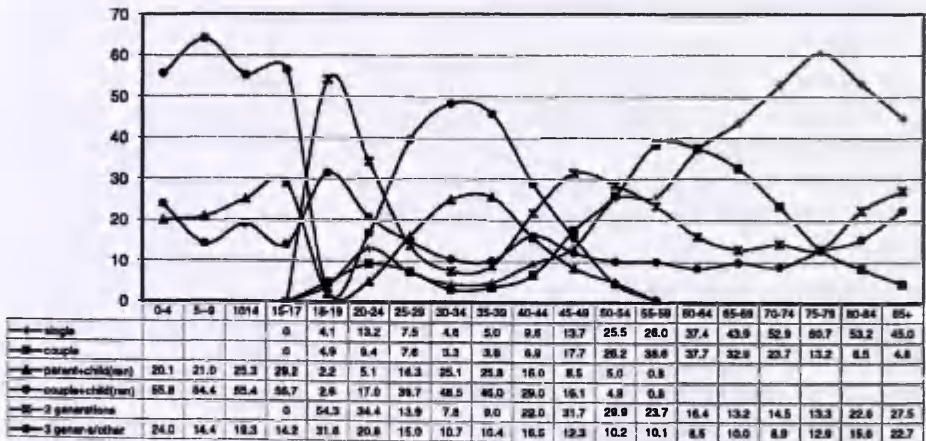
Using the empirical data at our disposal, men and women belonging to different household types by age groups will be analysed. It should be mentioned that generally people can belong to the same type of household

during different periods of life, but their status in the household can change. In the following, the figures given for the estimated number of the population in the tables below the figures 2 and 3 will be used to determine the dominant life stage for each age and to define the respective age groups.

	0-4	5-9	1014	15-17	18-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
single					6.0	10.7	12.9	13.1	12.6	12.0	11.5	13.4	14.4	14.9	16.4	20.8	25.3	28.6	25.9
couple					2.1	5.9	7.9	7.3	6.3	8.6	17.8	31.1	44.2	58.4	59.1	56.9	55.6	46.1	37.4
parent+child(ren)	19.3	26.7	27.6	27.1	1.5	2.5	3.7	7.2	4.1	6.4	2.2	1.5	0.3						
couple+child(ren)	59.0	54.2	56.9	52.9	0.8	11.6	35.2	48.4	57.0	41.7	24.3	13.1	5.3						
2 generations					56.3	53.5	26.9	14.0	9.8	20.0	31.3	28.5	25.4	18.5	16.6	14.6	13.0	17.3	27.5
3 gener-s/other	21.6	19.1	15.5	20.0	31.3	15.6	13.5	9.9	10.2	11.3	12.8	12.3	10.4	8.2	7.9	7.7	6.1	6.0	9.1

Source: Norbalt II, 1999

Figure 2. Life stages of men (percent of men in respective age)

|	0-4	5-9	1014	15-17	18-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
single				0	4.1	13.2	7.5	4.8	5.0	9.8	13.7	25.5	26.0	37.4	43.9	52.9	66.7	53.2	45.0
couple				0	4.9	9.4	7.6	3.3	3.8	8.9	17.7	26.2	38.6	37.7	32.9	23.7	13.2	8.5	4.8
parent+child(ren)	20.1	21.0	25.3	29.2	2.2	5.1	14.3	25.1	25.8	16.0	8.5	5.0	0.8						
couple+child(ren)	55.8	64.4	59.4	56.7	2.6	17.0	39.7	48.5	46.0	29.0	16.1	4.9	0.8						
2 generations				0	54.3	34.4	13.9	7.8	9.0	22.0	31.7	26.9	23.7	16.4	13.2	14.5	13.3	22.6	27.5
3 gener-s/other	24.0	14.4	16.3	14.2	31.6	20.8	15.0	10.7	10.4	16.5	12.3	10.2	10.1	8.5	10.0	8.9	12.9	15.6	22.7

Source: Norbalt II, 1999

Figure 3. Life stages of women (percent of women in respective age)

Since the estimates shown on the graphs are based on a survey sampling with a sample size of 14,000 household members, they are not very precise, thus the certain jigging of the graphs. Nevertheless, general conclusions can be drawn about the duration of men's and women's life stages and the dominant household types at different ages. It can be noted that by dominant household type, there are five different stages in a man's life, but six in a woman's. Using the duration of these periods, the age groups when a household type dominates are formally determined. The distribution shown relates to the time of the survey and does not include retrospective estimates.

Childhood

The majority of boys and girls live at home until they reach 18 years of age. In approximately three quarters of the cases mother and father live at home (one of them may be a step-parent and there could also be an adult sibling). Almost 15% of the families have only one parent (the number of children growing up in a single parent family increases as the age of the child rises) and other type of families comprise less than 10%. These include multi-generational families (approx. 5% of all families with children), including families with one grandparent. Approximately one per cent of the childhood population live alone or with a spouse or partner (figure 4).
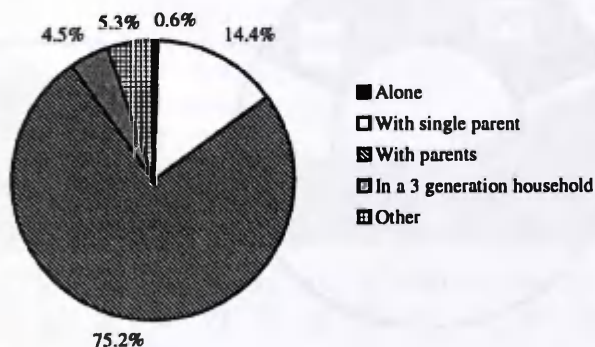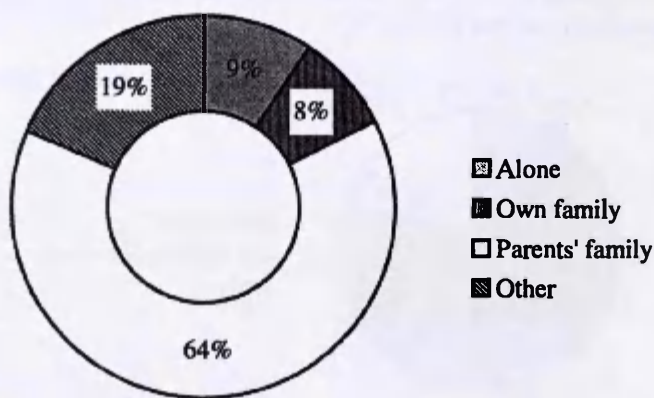

Source: SOE Household Budget Survey, 2000.

Figure 4. The distribution of child raising households (%)

Adolescence

In the current paper people aged 18–24-years old are regarded as adolescents. This group is divided into two — 18- and 19-year-olds and 20–24-year-olds. Getting into contact with adolescents is one of the greatest problems involved in

survey samplings. Also, it is quite difficult to determine their place of residence. According to Norbalt II (1999), more than 50% of all 18–19-year old young people continue to live in their parents' household. Also, over half of the 20–24-year old young men and one third of young women live with their parents.

Such a great proportion of adolescents living with their parents represents a change from the data drawn from earlier surveys. It could be argued that since they do not yet have a permanent place of residence, they regard the parents' home as their permanent place of residence, regardless of the fact that they live away for the majority of time due to work or studies. In addition, 15–30% of adolescents live with either relatives (in a multi-generational household) or with other members of a household. According to our data, the proportion of adolescents living alone is quite small, just 10% of 20–24-year old young men and 13% of 20–24-year old young women. Less than 10% of 20–24-year old adolescents live in two adult households with no children. The proportion of those who have established a family and have a child or children is just over ten per cent, the proportion of women being slightly higher. The analysis confirmed the assumption regarding the blurring of the line between leaving the parental household and establishing one's own.


Source: SOE Household Budget Survey, 2000.

Figure 5. Distribution of students at least 18 years of age by household types (%)

Fertile age

The fertile age, in this paper, is between the ages 25–44. The upper limit coincides with the upper limit of women's fertility that is most often used in the statistics (sometimes the upper age limit used is 49). In this age range the dominant family type among both men and women is that of a (married) couple with a child or children. According to Norbalt II (1999), almost 60% of 30–39-year old men and 50% of the same aged women belong to this family type. In addition, 10–15% of families contain representatives of the older generation as well as children. The second most frequent family type among women is the single parent family: almost one sixth of 30–39-year old women raise their child or children without their spouse. The proportion of single fathers is significantly smaller, hardly ever reaching a few per cent. The proportion of 30–39-year old women is smallest in one person households, couples with no children and two adult generation households — the total proportion of all these households is approximately just 5%. The proportion of women of this age who live with their parents also remains below 10%. However, it is characteristic of men throughout this age group that approximately 12–13% are single. It could be argued that they are divorced men, whose children are living with their mothers. The proportion of men living with their parents is slightly higher than that of women (figures 6a, 6b).
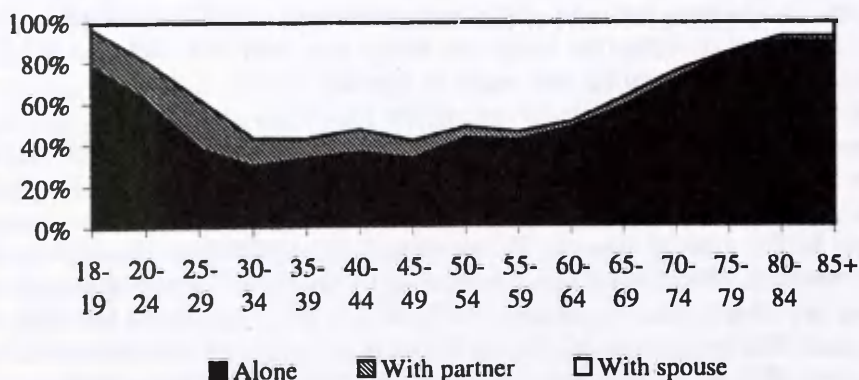
Source: Norbalt II, 1999.

Figure 6a. Women's co-habitation dynamics during a lifetime (%)
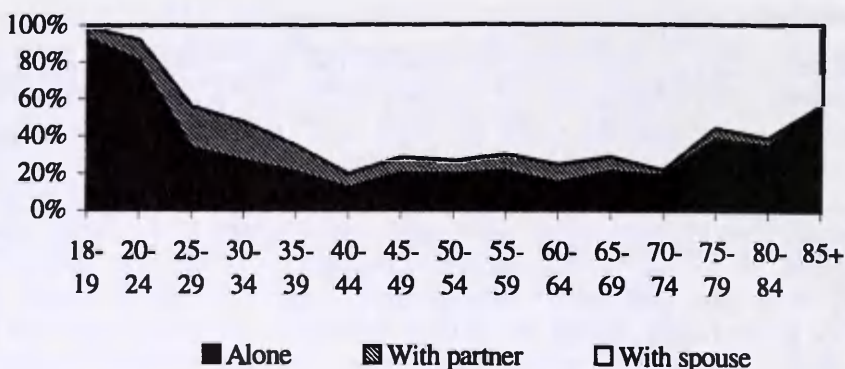
**Figure 6b.** Men's co-habitation dynamics during a lifetime (%)

Middle age

45–60-year old men and women are regarded as middle aged. The usage of this somewhat artificial age group is derived from the significant changes in household structures that occur in this age group. From the age of 40, the proportion of people living with a child or children starts to decline and the proportion of two adult generation households starts to increase. This shows that the children in the family have become of age, but continue living with their parents. The proportion of such families comprises almost one third of 45–49-year old men's and women's households and starts to decrease slowly from then on, but still remains as high as one quarter among the 55–59 age group. The proportion of families with minor children has fallen close to nil. From the forties onwards, the proportion of households consisting of couples with no children starts to rise. These are the families where children have left home upon becoming of age. In the case of women, the maximum level (40%) of those living as a married couple with no children is reached by the end of their middle age, when they are 55–59 years old. Almost 60% of men of the same age live with their spouse. The proportion of women living alone starts to increase in the same period. 13% of 45–49-year old women live alone, but the proportion is almost doubled among women 10 years older. The proportion of men living alone increases by only a few per cent during the same period (figures 6a, 6b).

Seniors

In the current paper, people are regarded as senior from their sixties. In the case of senior men, the majority live as couples with no children (over 50% of the cases). The proportion of men living in two adult households starts to decrease

moderately in the 70–74 range, accordingly the ratio of single men increases, whilst still remaining below 30%. The proportion of senior men living in multi-generational households also increases moderately. In the case of senior women, the situation is rather different: between the ages 60–64 the most frequent household type is the one person household. The proportion of women living alone increases to 60% in the 75–79 age group and starts to decrease from then on, on account of multi-generational households (figure 7).
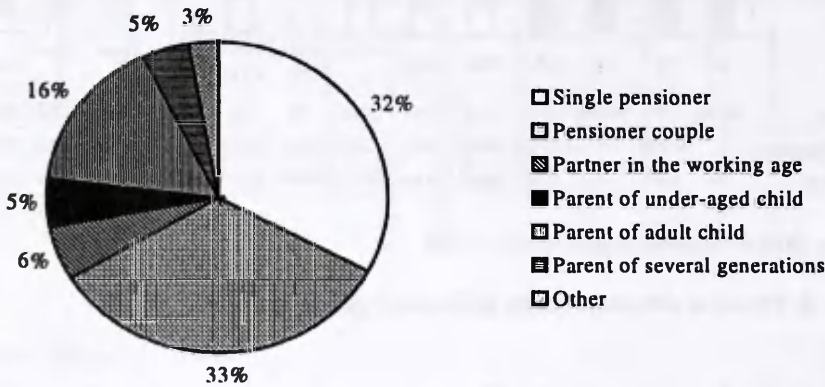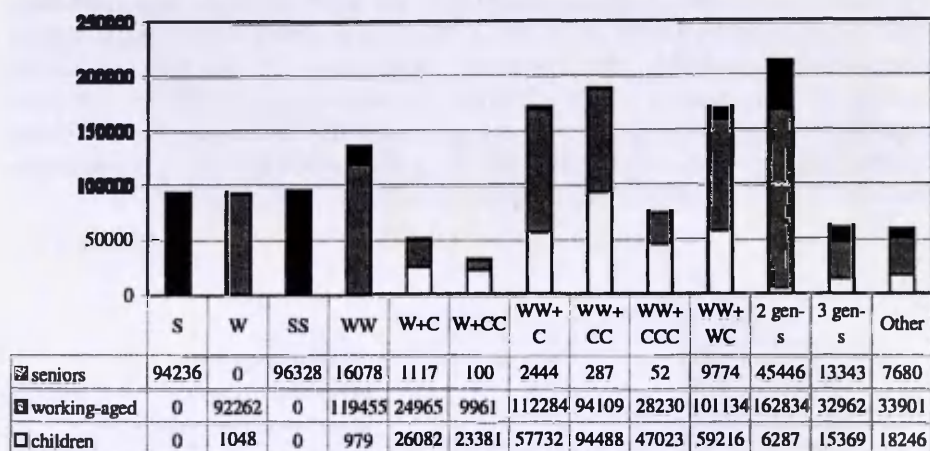

Source: SOE Household Budget Survey, 2000

Figure 7. Distribution of seniors by household type (%)

The composition of different household types and the age distribution of their members

When analysing the percentage distribution shown above, it has to be taken into account that on the one hand, the size of different age groups varies, and on the other hand, the proportions of men and women are not balanced in the older age groups. Nevertheless it is clear that the number of married men and women has to be generally equal (although the point where cohabitation is regarded as marriage is not precisely defined and thus the figures are based on the sample estimates).
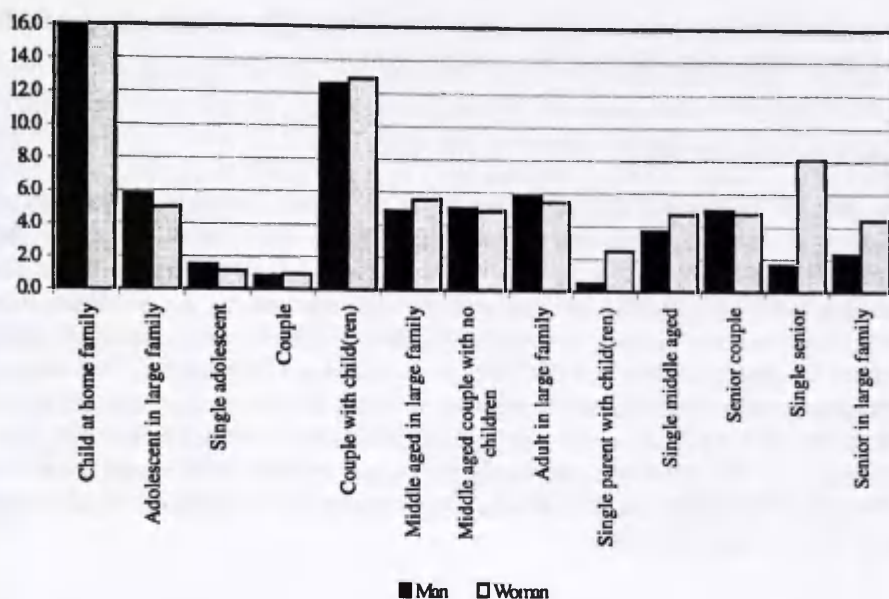
	S	W	SS	WW	W+C	W+CC	WW+ C	WW+ CC	WW+ CCC	WW+ WC	2 gen- s	3 gen- s	Other
seniors	94236	0	96328	16078	1117	100	2444	287	52	9774	45446	13343	7680
working-aged	0	92262	0	119455	24965	9961	112284	94109	28230	101134	162834	32962	33901
children	0	1048	0	979	26082	23381	57732	94488	47023	59216	6287	15369	18246

Source: SOE Household Buget Survey, 2000

Figure 8. People of different ages by household types (in numbers).

Figure 8 exhibits the estimates for the size of each household type in the population, dividing each group[2] into three age groups: children (up to the age of 18), those of working-age (between the ages 19–59) and seniors (at least 60-years of age). On the basis of this data, the duration of men and women's life stages can be estimated (figure 9). "Large family" is used to describe an extended family, *i.e.* at least three generations in a household. The results enable us to correct some generally held beliefs, which will be explained more specifically below.

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[2]   *The household types have been marked in the following manner:* S — single senior, W — single working-aged, SS senior couple, WW — working-aged couple, W+C — working-aged (single parent) with a child, W+CC — working-aged (single parent) with at least two children, WW+C, WW+CC and WW+CCC — working-aged couple, respectively with one, two or at least three children, WW+WC — working-aged couple with at least one minor and at least one adult child, 2 gen-s — two adult generations (with no children), 3 gen-s — at least three generations (with children or without), other — households, that do not meet the classification of any of the above households.

Bar chart with y-axis ranging from 0.0 to 16.0 (in increments of 2.0). Categories along the x-axis: Child at home family, Adolescent in large family, Single adolescent, Couple, Couple with child(ren), Middle aged in large family, Middle aged couple with no children, Adult in large family, Single parent with child(ren), Single middle aged, Senior couple, Single senior, Senior in large family.

Legend: ■ Man   □ Woman

Source: Norbalt II, 1999

Figure 9. Life stages of men and women (in years)

Single person households

It is generally believed that many adolescents in Estonia live in one-person households. This belief is supported by the unprecedented number of adolescents studying in higher educational institutions (approximately 50% of the young people of a relevant age). However, the survey shows that senior women are overwhelmingly dominant in the one-person households category, followed by middle-aged women and adult men. The proportion of single adolescents who form an independent household in Estonian society is small. It appears that the majority of young people (particularly young men) remain economically dependent on their parents' household during their studies, and thus they remain members of their parents' household. The fact that people do not rush to move in together with their partner was also proved in the Sexual Behaviour Survey conducted in Estonia (Haavio-Mannila & Kontula, 2001). It could be said generally that adolescents spend one year in a one-person household, whereas the number of single years among men in the so-called fertile age is three on average and only one-two for women of a fertile age. However, as early as in middle age a considerable proportion of women become single following the death of their spouse, separation from their spouse, or the children becoming independent. On average this single period lasts for a dozen years, often until

the end of the life course; at the same time, the single period among middle aged and senior men only lasts for a year or two.

Couples with no children

The second widespread belief is that there are many young couples with no children in Estonia. However, it transpires from the current analysis that although the proportion of couples with no children is indeed large in Estonia, it mostly consists of middle-aged or senior men and women, *i.e.* children from these families have already become independent. The contrary belief, that the number of young couples in Estonia is small, is proved by the fact that on average, a young couple remains with no children for less than a year. Also, the proportion of couples of fertile age with no children is small. On average, both men and women spend approximately five years in their middle age with their spouse or cohabitation partner alone. The duration of cohabitation in the senior age is, on average, the same.

Married couples with a child or children

It is often thought that a nuclear family, (*i.e.* a family with a spouse or cohabitation partner and minor child or children) has become a rarity today. The statistics proves the opposite — this is the most widespread household type among men and women of fertile age today, taking up on average, a dozen years of both men's and women's lives. It has to be stressed that the largest proportion of children is raised in this type of household. It can be claimed that, on average, children spend most of their childhood with two parents, although one of them could be a step parent (in the case of reconstituted families). It is significant that the age range of couples with children is fairly limited in Estonia today. The proportion of families with minor children, where either the man or woman is below the age of 25 or over the age of 45, is relatively small. This may demonstrate a shift in the reproductive behaviour of Estonians today in comparison with the recent past. In the 1970's and 1980's it was common for women to give birth to the first child and subsequent children at a relatively young age, *i.e.*, a woman, on average, had two or three children in a relatively short space of time. Women had often fulfilled their reproductive ambitions before the age of 25. During the past decade, however, the average age for giving birth has increased, which is why children of different ages are more likely to have parents of a similar rather than different age.

Single parent with a child or children

Contrary to general belief, the number of single parents has not increased significantly over the past years. As expected, the proportion of single mothers among single parents is greater than that of single fathers. In the majority of cases, the children in these families have not always been raised without their father; rather, have been left with their mother on the break up of the family, more rarely because of the death of their father. The high ratio of single parent families is rooted on the one hand in the high divorce rate (which has been the case in Estonia for years), and on the other hand in the considerable proportion of births which are illegitimate[3] (10–15%). The proportion of single parent households is reduced by non-formal cohabitation and (re)marriage.

As a rough calculation, every woman spends on average two to three years raising children alone, while men spend less than a year doing so. This period can end in finding a new partner, continuing to live together with the children after they have come of age or remaining single after the children have left home.

Two adult generation household

Surprisingly, one of the most typical household structures is a two adult generation household. These households can consist of a single parent with an adult child or children, or a (married) couple with one or several adult children. The members of these households can be of rather varied age, but there are no minor children. On average, an adolescent remains attached to the parental household for five years after the age of 18, men remaining so for almost a year longer than women. In addition, both women and particularly men of fertile age live with their parents, as it seems to be a refuge if their own family breaks down. The next life stage when both men and women probably live in a two adult generation household is when their children come of age, but do not yet have a household of their own. This period lasts up to five years. In addition, senior and middle aged children from different generations may live with their senior parent(s), one of the motives in this case being to provide everyday help and care for the senior.

Three generation households and other types of households

The traditional three generation households, where the parents, their minor children and senior grandparents live together, is not very common in Estonia. At the same time, some surveys (Senior Survey, 2000; Time Use Survey, 2001) show that the communication between the relatives is quite active, with

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[3]   According to the definition of Estonian Medical Birth Record, an illegitimate birth is one where the mother does not have a registered marriage or live in cohabitation.

relatives forming the primary support network. Often, the children's and parents' households try to move near by, but retain their own privacy.

Other types of households include households that include other relatives beside off-spring as well as households that include non-relatives. These households include a considerable number of children (for example as members of grandparents' household). At the adolescent stage, the period in a several generation household is considerable, usually accounting for at least one year — this could include living with an adult sibling as well as living in a relatives' or acquaintance's household during student years.

The timing of leaving the parental home, based on the retrospective calculations

Since one of the greatest changes in the duration of households is connected with the later start of independent life, the point at which adolescents have been leaving their parents' households during the past decades will be closely analysed, using the retrospective estimates from the Norbalt II (1999) to clarify the dynamics of the timing of the departure.

It could be assumed that in today's mobile society, leaving the parental home would take place at a younger age than decades ago, but this hypothesis cannot be proved empirically. The proportion of those now aged 35–50 who left their parents' home before attaining the age of 18 (and among older people even before attaining the age of 17) is 25%, whilst today only 16% of the 18–19-year olds have done so. Half of those now aged 25–50 left their parents' home, on average, at the age of 20. More than half of today's 20–24-year olds still live in their parents' household (figure 10).
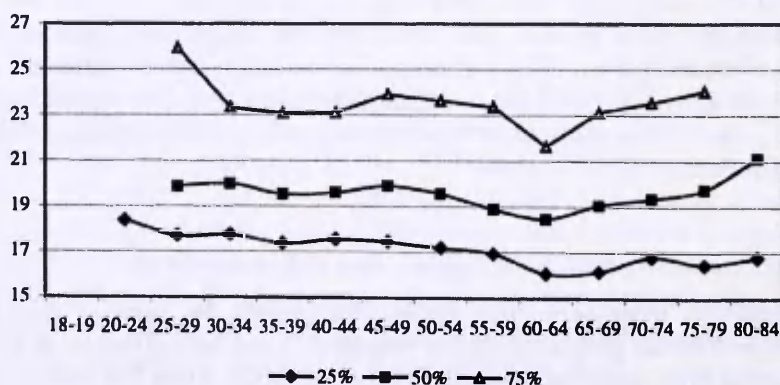
Source: Norbalt II, 1999

Figure 10. Age distribution quartiles of the time of leaving a parents' home of representatives of different generations

There are several possible reasons for this: the duration of secondary education is one year longer; education is available closer to home due to the development of a network of educational institutions; some young people are unemployed, so that a section of adolescents remain economically dependent and live in their parents' household. In addition, there are problems associated with getting an independent place of residence. There is also the Estonia-specific situation, whereby young people may choose not register officially themselves as away from their parents' home (it is not obligatory to do so), and so they only live there on paper.

In conclusion, it transpires that today, 80% of men and 90% of women have left their parents' household by their 35th birthday, the average age for doing so being 25 years for both men and women. Figure 10 shows the proportion of people leaving their parents' homes in different age groups. Regardless of whether they continue to live in their parents' home, the majority of young adults have a stable partner and a regular sex life (Haavio-Mannila & Kontula, 2001).

Conclusion

It is most appropriate to characterise the structures of households in Estonia today by people's life stages. Although these structures are very varied, there is a dominant household type in each life stage.

It transpires that both families and households in Estonia can be characterised by the same trends that have been described by Western family researchers in the USA and Europe. Contrary to widely held beliefs, the development of families in Estonia does not have a time shift in comparison with the developed countries, but many of the processes in Estonia are simultaneous with those of Northern Europe and ahead of the household and family structural changes in several Western European countries. Based on the current survey, the following trends have been noted:

1. During the last decades of the past century, the age for leaving home and forming one's own household rose in Estonia (the median age for leaving home rose to almost 25-years of age). The reasons for this are possibly rooted in longer educational careers, unemployment among adolescents and economic difficulties faced by young people, particularly problems for them in getting their own place of residence. At the same time, this trend is similar to the increasing tradition in Europe whereby adult generations stay living together for longer than they used to in the past.

2. An adolescent on average lives in a one person household for a year, which is followed by unregistered cohabitation. Cohabitation has become entirely acceptable by the young as a stage prior to marriage and its normal duration is regarded as one to two years (Juurmann & Kasearu, 2002).

3. After approximately a year of cohabitation, a child is born into the family. Unlike the situation a couple of decades ago, young people today do not rush to get married before the birth of their child, but the internal strength of the cohabitation — stability and reliability — is very important from the perspective of the young mother (Tiit & Käärik, 2001).

4. According to the Estonian Medical Birth Record (2001), the age of mothers having their first child has increased since 1995 continuously by approximately 3 months per year. Nevertheless, in the European context, the almost 27-year old Estonian mother is relatively young

5. Approximately half of adolescents want to register their marriages, about 20% of them want to get married. The main reasons for getting married are to obtain legal rights, to get an increased sense of security and so that children can have the same surname (Juurmann & Kasearu, 2002). One sixth of adolescents prefer unregistered cohabitation and one third are indifferent in this respect. The proportion of young people who neither wish to marry or start cohabiting, is, as in to the results of the earlier surveys, extremely small.

6. People get married later, often on the birth of their (first) child, and the number of marriages has decreased almost two fold in comparison with the period ten to fifteen years ago. The most frequent reasons for postponing marriage are economic difficulties and not having one's own place of residence (Juurmann & Kasearu, 2002). Based on the indigenous values of Estonians, having a private place of residence is an important prerequisite for establishing a family (Haavio-Mannila & Tiit, 1981). The problems related to a place of residence are partly due to the nature of the Estonian housing market (the lack of rented accommodation and high prices).

7. Although the majority of Estonians believe that there should be on average two children in a family (Norbalt II, 1999), the strategy of postponing having children also continues in the case of subsequent children. Notwithstanding that the proportion of women giving birth over the age of 30 is not large, it increases in all the older age groups of women giving babies to birth.

8. Regardless of the increasing variety of household structures, the most common household type today according to the current survey in Estonia is a married or cohabiting couple with children. However, the duration of such a household structure is less than 20 years, i.e. on average less than one third of the life course. Reasons for this are a concentration of the birth of children within a relatively short time-span and a relatively high divorce rate.

9. The absolute number of divorces has started to decline over the past years, but the ratio is still very high, being annually almost 80% of the marriages registered in the same year.

10. The number of single mothers in Estonia has already been high for a number of generations (since the World War II), and approximately one sixth of women of fertile age raise their child or children alone. This is amplified by

the relatively large proportion of illegitimate births (10–15%) and the high divorce rate.

11. Since many children who become of age continue living in their parents' household, many Estonian men and even greater proportion of women pass through the status of being an adult member in a two adult generation household.

12. Following the departure of their children from the parental home, a considerable proportion of (married) couples remain living in a two member household, forming quite a large group of middle aged and senior (married) couples with no children. They often maintain active contact with their children and support them, whilst still remaining an independent household. On average, this arrangement usually covers ten years of the lifetime of both men and women.

13. Households of more than two generations continue to be thinly spread, their ratio not exceeding 4% of all households. It may be that the reason that households with such a structure are less widespread than previously is that accommodation problems have by now been relieved to some extent, especially in the middle aged and senior age group.

14. Seniors prefer to live in an independent household for as long as possible. As a result of the privatisation of housing, the majority of the Estonian senior population has security of accommodation. Seniors of an advanced age (older than 80 years) move to a household with younger family members or to a care home.

15. There are several developmental stages in a household. The main ones can be described as follows: *living in the parents' household → getting married, raising children in the household formed by oneself → living in a two generation household with adult children → two member households with no children → living in a one person household after the death of spouse or cohabitation partner.* Also relatively common are the following alternative patterns based on family life events:

   • (cohabitation →) marriage → divorce or moving separately → single parent household;
   • (cohabitation →) marriage → divorce → (new cohabitation →) new marriage;
   • (cohabitation →) marriage → divorce → one person household.

In addition, there is the developmental course of the extended family. In this case the status of an individual in the family changes over the lifetime and naturally, the composition of the household also changes, but the type of the household remains the same throughout. This type of family is not very common in Estonia, existing slightly more in the rural areas. Less than one tenth of the population in different age groups belong to such large families.

In addition, as in all societies, there is the life course of the single person, which is characteristic of at least five per cent of men and women. It often begins with a relatively lengthy period living in the parents' household and continues in a one person household following the independence of siblings and the death of the parent(s).

A peculiar and new situation is the diversity and uncertainty of the structures of households in Estonia. In a situation where, according to the Estonian legislation, citizens do not have an obligation to register their place of abode, they can live in several locations without having determined their main address and which the household is to which they most belong. There are some cases where a nuclear family of a young adult couple with a small child live periodically in the households of the parent(s) of either partner, sharing their accommodation and resources. One reason for this is that Estonians are traditionally committed to their place of residence and to meeting the need of the older seniors for help and care. In these cases it remains unclear which household a person does actually belong to, since the definition of a household is based on the definition of the main place of abode. Also, in the case of an unregistered cohabitation, the family is not uniformly defined either, as that would also require having a common home. Similar confusion regarding terminology emerged in several cases during the Norbalt II (1999) survey. For example, one person gave her household type to be that of a single parent with a child, but claimed to be married/ in cohabitation and to be living together with the spouse/ cohabitation partner. Most probably it was a case of a permanent partnership, which was not documented in the questionnaire.

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Future reproductive behaviour in Estonia

Ene-Margit Tiit, Mare Ainsaar

A decrease in the fertility rate has become a social problem during the last decade, causing concern not only among social scientists and politicians, but also ordinary people. Although the fertility rate declined in the majority of developed countries during the last decade of the 20th century, in Estonia the fall in the fertility rate was dangerously rapid and because of a relatively old population it resulted in a negative natural increase (Labour Force, 2001). The aim of this paper is to analyse the reproductive behavioural patterns of the Estonian population based on the data of the Living Conditions Survey (LCS — Norbalt II, 1999) conducted by the Statistical Office of Estonia (SOE).

Reproductive trends in Europe

The birth rate has decreased in the whole of Europe during the past two decades (figure 1). From the 1970s the birth rate started to decline rapidly in the Republic of Ireland and the Southern European countries (Italy, Spain, Portugal, Greece), which had

Tabel 1. Change in the total fertility rate between 1980–1999

Turkey	−2,02
Ireland	−1,41
Romania	−1,2
Spain	−1,01
Czech Rep.	−0,97
Poland	−0,93
Greece	−0,9
Bulgaria	−0,87
Russia	−0,76
Estonia	−0,76
Latvia	−0,74
Portugal	−0,72
Lithuania	−0,65
Hungary	−0,61
Island	−0,51
Italy	−0,39
Austria	−0,3
France	−0,23
Germany	−0,23
UK	−0,2
Sweden	−0,2
Belgium	−0,16
Holland	0,04
Norway	0,14
Finland	0,14
Denmark	0,14

previously enjoyed relatively high levels of fertility. After political changes in the 1990s, birth rates started to fall in the Central and Eastern European transition countries. According to David Coleman (1996), Estonia belongs to the Eastern European countries' group in terms of its demographic development characteristics. In 1999 there were only eight countries in Europe where the total fertility rate (number of children per woman) was lower than in Estonia

(First..., 2001). Since 1999 the birth rate has started to increase in Estonia and several other European countries. Even so, the positive shift has been relatively small and the decreasing trend is continuing in several Eastern European countries.

Processes at a social and individual level influence changes in reproduction. On a social level the main factors are rapid political, economic and social changes, as well as the general demographic and socio-economic situation (*e.g.* the proportion of population in the fertile age band, socio-political measures, economic wealth of the nation, etc.). The greater the number of people affected by the changes in the society, the greater the expected change in demographic behaviour. Changes on the macro level affect behaviour on the individual level, including reproductive behaviour — attitudes towards family planning and decisions on having children.

In Europe the decrease in the birth rate is associated with several factors. Among the most frequently mentioned are: a change in the timing of giving birth, an increase in employment among women, socio-economic reasons and changing values and attitudes in population groups (Lutz, 1989; 1999).

One of the most common reproductive behavioural trends in Europe is the postponement of having children, which causes a fall in the birth rate (Bongaarts, 1999; Hinde, 1990; Study, 1991; Kierman, 1998; 1995). The connection between employment among women and the birth rate lies in the fact that a working woman has to choose whether to have a family and children or to work and have greater economic independence (Some & Anker, 1985; Burghes *et al.*, 1999). In most cases it has not been possible to determine the trend in the reciprocal influence on the number of children and employment among women, *i.e.* to ascertain whether working women have less children because of their work or women with a few or no children have the possibility of working more (Lutz, 1999). There are also international comparative studies that show no correlation between female employment and the birth rate (Study ..., 1991). According to some authors, the key to resolving the tension between women's employment and having children would be to increase the value of marriage, to decrease the working hours for men (Retherford *et al.*, 1999) and to develop a more suitable time usage for mothers. A multitude of behaviour patterns are feasible as in the contemporary society women are polarised — some are more devoted to their work and career, others to home and family (Hakim, 1996). Many researchers have, however, stressed the correlation between women's education and the number of children (Donaldson & Loraine, 1991).

The number of children in a family depends on a number of economic circumstances (Donaldson & Loraine, 1991; Faus-Pujol, 1995; Easterlin, 1975). The change in reproduction has been associated with the economic situation of the family as well as the escalating price of raising children (Ermisch, 1996). In addition to direct expenses, other costs are also taken into account when calculating the "price" of children, such as a decrease in the level of a house-

hold's income per capita with every additional child, the price of the wife not working, *etc.* (Gauthier, 1996; Donaldson & Loraine, 1991). Nevertheless, there are big differences in reproductive behaviour in different social groups in different countries (National..., 1998).

One of the factors influencing reproductive behaviour is the attitude to family planning, which reflects how highly children and family life is valued compared with other opportunities for self-realization. Undoubtedly the attitude is connected with other factors such as employment, education and equal rights. A decrease in the number of children has also been associated with the process of individualization, increasing personal freedom and "child-king"-attitude replacement with "adult-king"-behaviour. It is believed that the increasing value of personal freedom results in more cautious decisions concerning such long-term commitments as marriage and having children. The number and timing of cohabitations also have an impact on reproductive behaviour (Lutz, 1999). The reasons for a decrease in the birth rate in Estonia have been analysed by Tiit (1993), Ainsaar & Oras (2000), Tiit & Käärik (2000).

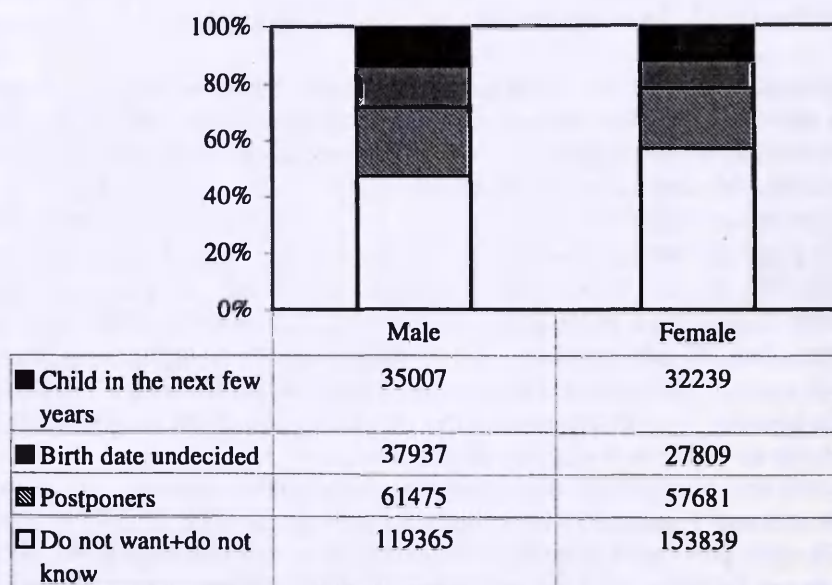## Reproductive behaviour initial data and its analysis

The sample of the LCS carried out in the Baltic States in 1999 consisted of 4,726 randomly selected persons and their households. The data of the survey was formed by a self-weighting stratified random sample (Pedersen & Tyldum, 2000) and calibrated according to regions, gender and age groups based on the current statistics calculated on the basis of the census conducted in 1989. In the current paper the weights have been rectified on the basis of the 2000 census (Oja & Tiit, 2002, in the current edition). In Estonia an additional set of questions measuring reproductive behaviour was added to the questionnaire (6 questions, incl. 28 sub-questions). The additional questions were as follows.

1. *How many children should there be in a family in Estonia today?* The aim of this question was to understand the prevailing social attitudes towards the number of children in a family in Estonia.
2. *Would you like to have (more) children?* Compared with the last question this was more specific, where the respondent presumably based the answer on a more personal approach to having children — if the respondent did not have any children, were they planned or if the respondent already had a child (children), were more children planned.

These two questions were put to all 18–45 aged respondents, 2,473 in total. They represented almost 520,000 of the Estonian population. Provisionally in this paper we will refer to this population group as *the population in the fertile age*. The fact that justifies this name is that 97.3% of neonates' mothers and 9.1% of fathers in 2000 belonged to this age group (Eesti Meditsiiniline..., 2001). 1,044 respondents answered in the affirmative to the second question,

representing 270 000 of the population. We will provisionally refer to them as *child wishers*.

3. *Why do people want to have children?* The aim of this question consisting of a list of nine sub-questions was to find out the motives for having children from the respondents who had answered in the affirmative to the last question, *i.e.* the *child wishers*. Respondents had to mark all applicable motives.
4. *How many children (altogether) would you like to have?* Child wishers were asked the total number of children planned in the family (the number could include existing and planned children).
5. *Do you plan to have children within the next two years?* This guiding question was asked of *child wishers*, dividing them into two groups — those 67,000 whose preparedness for a child was active (affirmative answer) and those who wanted to postpone having children (negative answer). The latter population group, whose size was 120 000 people, represented by 480 respondents, will be provisionally referred to as *postponers* (figure 1).

	Male	Female
■ Child in the next few years	35007	32239
■ Birth date undecided	37937	27809
▨ Postponers	61475	57681
☐ Do not want+do not know	119365	153839

Figure 1. Future reproductive behaviour of Estonian population in the fertile age

6. *Why do people postpone having children?* The *postponers* were asked a set of questions consisting of 17 sub-questions. The aim was to find out the reasons for postponing having children.

The reproductive behaviour of the population in the fertile age was analysed according to their socio-demographic characteristics, the nature of their households and the subjective valuation of their economic situation. The wish to have or not to have children was estimated using a logistic model and the number of children wanted was estimated using a linear model. In both cases a set of optimal background variables was chosen. Correlation and factor analysis methods were used to analyse the reasons for wishing to have children and postponing having children.

The number of children wanted in an Estonian family

According to NORBALT II (1999), the number of children wanted by men and women are very similar. It is generally believed that there should be two children in a family — almost 60% of the population in the fertile age are of this opinion (figure 2), almost 30% of them think that there should be three children in a family. Only ten percent are in favour of having one child in a family.
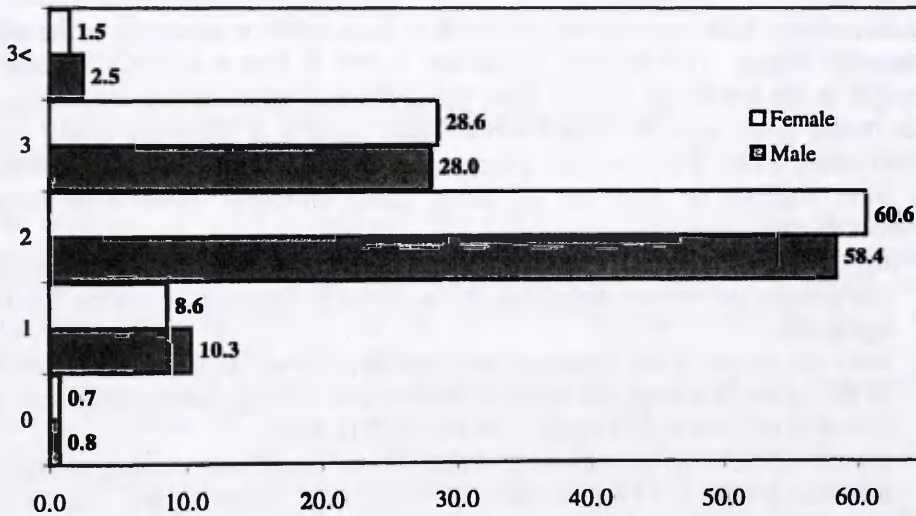

**Figure 2.** The number of children wanted in a family (%)

Social and demographic factors influencing
the reproductive behaviour

About half of the population in the fertile age (43% of women and 52% of men) want to have children in the future, including those who do not yet have any children. On average both men and women want to have 2.3 children in their family. This result does not differ a great deal from the results of similar surveys previously conducted in Estonia. The only exception is the survey carried out in 1990 among students, where the number of planned children was much higher (Tiit *et al*, 1990). The wish to have children was greatly dependent on the respondent's gender and age, the composition of the household, the social status, education and nationality of the respondent. The influence of all the above mentioned factors will be analysed in the following paragraphs. The influence of economic wealth on the wish to have children and on the number of children planned was relatively small and contradictory; it will be analysed in the last part of the article.

The impact of gender and age on the wish to have children

In accordance with expectations, the wish to have children decreases as the age increases (figure 3). The most important reason is that a majority of older people in the fertile age already have the number of children they want, since ten-twenty years ago in Estonia women gave birth at a relatively young age (Rahvastik, 2000). There are also people who for some reason have decided not to have children or have had to accept being childless. There were three remarkable regularities:

- men are slightly more enthusiastic about having children than women in all age groups; the biggest differences between the estimates occur in the 30–35 age group;
- there are people in the youngest age group who do not wish to have children in the future, although the majority believe that having children born into a family is necessary, according to NORBALT II, 1999;
- the cut-off point in age when the probability of people not wanting children becomes greater is 31 for women and 35 for men. There are few women in their 40s who want to have more children. Therefore the planned child bearing age is quite similar to the actual distribution of age of the fertility rate amongst Estonian women (Rahvastik, 2000).
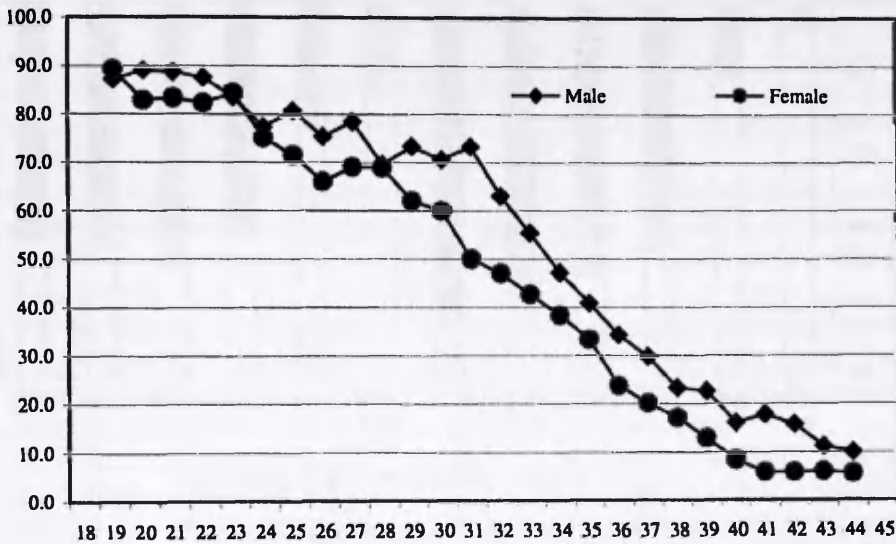
Figure 3. Wish to have (more) children by respondent's age and gender (%) Smoothed data (moving average method)

## The impact of household composition on (future) reproductive behaviour

As expected, the wish to have children and the number of children planned is influenced by marital status, cohabitation with a partner as well as the number of existing children. Unfortunately the survey did not enable us to specify the number of existing children, but just the number of people under the age of 18 living together with the respondent.

According to the survey, less than half of the fertile population in Estonia are married (45%), the figure was practically the same for men and women. However, 56% of them lived together with a spouse or a partner (figure 4). Also, the majority of single respondents did not live in a one-person household — 14% of them lived together with both parents and 13% lived together with one parent. In accordance with expectations, people living together with their parents belonged to the younger age groups of the fertile population. Almost a quarter of 18–24 year old respondents lived together with their partners, whereas the majority of the cohabitations (60%) were not registered. Cohabiting was also quite common in the 25–34 age group.
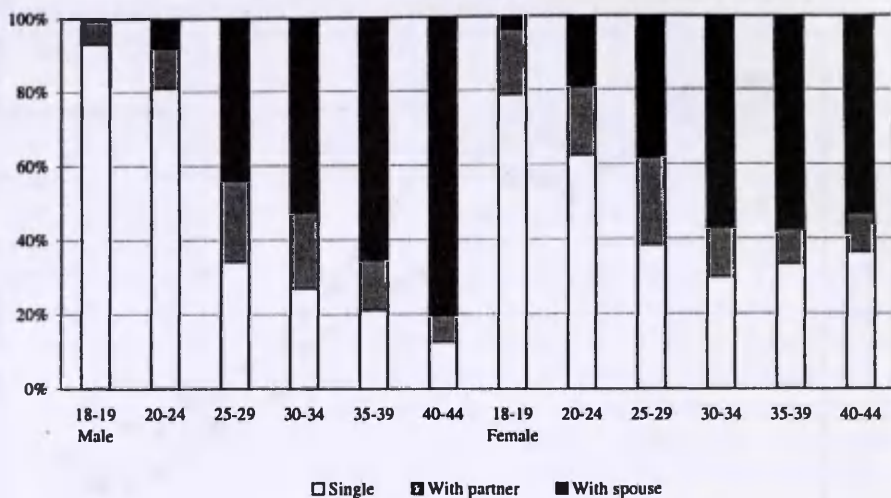
Figure 4. 18–44 aged male and female by the type of cohabitation (%)

The wish to have children depended on the number of existing children, being greater for people who did not have any children. Cohabitation with a partner had a slightly lesser impact on it (figure 5).
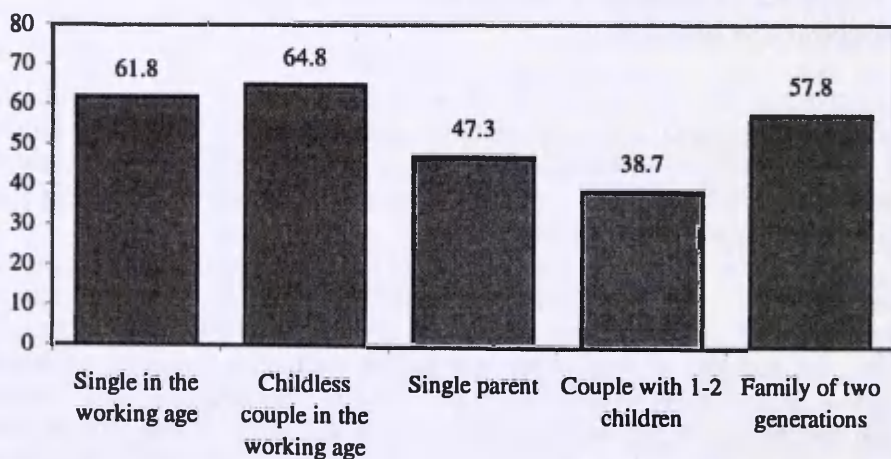
Figure 5. Wish to have (more) children by household types

Significantly, 15% of people in the fertile age did not have children under the age of 18 and did not plan to have any children. Approximately half of those not wanting to have children lived in a household of two generations. Presumably, some of the respondents in their 40s lived together with their adult children. The influence of the composition of households on reproductive behaviour could be summed up as follows:

- out of the families that already had a child or children about one third wished to have more children (respectively 38% of men and 34% of women); presumably the majority of such families already had the number of children they wanted;
- slightly bigger — on average 40% — was the proportion of single parents who wished to have (more) children; the reason for this wish could have been the desire to create a more favourable social environment for raising the child, either to found a new or re-establish the old family;
- childless men wanted to have children in the future the most (71% of married men, 68% of men living with their parents and 67% of single men);
- both childless women and women living with their parents were considerably less keen on having children than men in similar positions. The difference in the figures was almost 15%. Those who were most in favour of having children were the single women (60%).

Table 2. Wish to have (more) children among the fertile population (total estimate and the percentage of fertile population)

Respondent's gender and household type	Wishes to have children (total estimate)	Does not wish to have children (total estimate)	Percentage of child wishers (%)
Single male	22,600	10,500	63
Single female	13,500	8,000	60
Married, childless male	15,400	5,700	72
Married, childless female	6,800	5,100	53
Single father with a child	4,300	3,000	56
Single mother with a child	13,300	14,200	45
Married man, with children	32,400	49,600	40
Married woman, with children	32,700	57,300	36
Male from a 2 generations family	38,600	16,700	63
Female from a 2 generations family	27,500	22,800	52
Male from a 3 generations family	8,600	6,900	52
Female from a 3 generations family	10,700	9,500	49
Male from other family type	11,000	6,600	60
Female from other family type	10,200	9,100	52

Fertility is influenced by the number of families with different reproductive behaviour in the society. Although the analysis showed that households with children were less keen on having more children than the childless households, they will have more children born in the near future than the childless households. The groups that follow are childless adults still living with their parents, single men and single mothers. The reason for this is a relatively small number of young childless households in the Estonian population (Kutsar & Tiit, in the current edition).

The impact of social and professional status on reproductive behaviour

Respondents were divided into groups according to their social and professional status: workers, temporarily unemployed, students, unemployed looking for work and inactive. The highest proportion of child wishers was among students and inactive respondents. The wish to have children varied according to gender and professional position. Unemployment was a reducing factor for men to want children. In the case of women the results were not so clear (table 3), since for women there are besides employment presumably other very important factors that determine the wish to have children.

Table 3. Wish to have (more) children by respondent's social status (% of corresponding group and total estimate)

	Male		Female	
	%	Total estimate	%	Total estimate
Entrepreneur	42	7,800	17	1,200
Working white collar	62	46,900	40	56,400
Working blue collar	46	43,800	34	11,700
Unemployed	47	11,400	44	10,200
Student	82	16,200	86	22,300
Other inactive	43	8,100	40	15,700

The relation between the wish to have children and social status (including professional activity) is undoubtedly influenced by the age of respondents, both in the case of men and women.

The impact of education on future reproductive behaviour

47% of respondents with general secondary education wished to have children in the future. In analysing the impact of education on the wish to have children we will put the emphasis on the impact of professional education. In the survey the majority of people without professional education had acquired general secondary education, but many of them pursued further education. The number of child wishers among the respondents with professional secondary education was less than average, both among men and women (it was also a relatively older group) and was above average among respondents with higher education (figure 6).
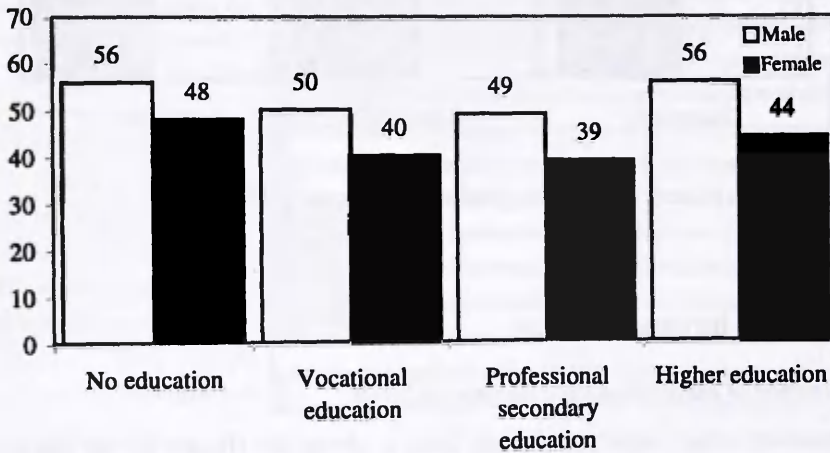
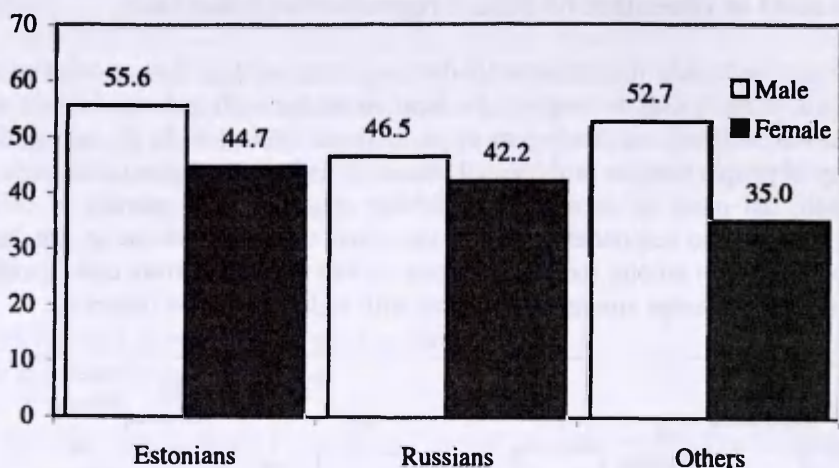**Figure 6.** Wish to have children by gender and level of education (%)

The impact of nationality and domicile on future reproductive behaviour

It can be drawn from the analysis that Estonians were slightly keener on having children than representatives of other nationalities (figure 7). There was no difference in the distribution of the wish to have children between the urban and rural areas.

Figure 7. Wish to have children by gender and nationality (%)

Motives for having children

Occurrence of motivations for having children

Respondents were asked to choose from a given list (figure 8) the important reasons for having children. All applicable reasons could be marked. *"Having a child is natural"* and *"children help to avoid loneliness in old age"* were mentioned most. Women mentioned slightly more often specific and family oriented reasons (they wanted to have *"a companion for the existing child"*, *"a child with the current partner"*), whilst men mentioned more general and patriotic reasons (*"having a child is natural"*, *"children are needed for the survival of Estonian nation"*). Personal reasons were equally important for both men and women (*"children help to avoid loneliness in old age"*, *"a child is self-realization"* and *"children secure cohabitation"*).
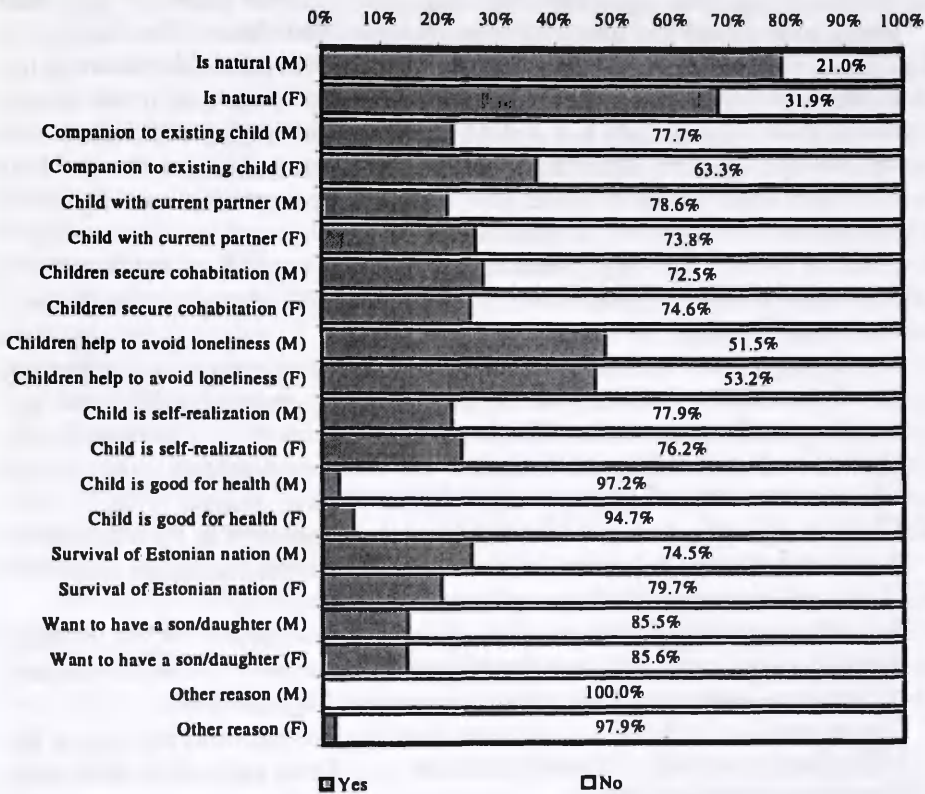
Figure 8. Motives for having children by gender (%)

The motives below are listed in the order of frequency, taking into account the proportion of child wishers in the total population (134 000 men and 118 000 women).

1. *It is natural to have a child, everyone has posterity who would continue their life* — almost three quarters of child wishers agreed with this motive, common to all humanity. It was regarded as more important by respondents who were young (83%), with basic education (85%), single (83%), and in cohabitation (80%).

2. *Children help to avoid loneliness in old age* — 48% of child wishers regarded this motive as important. Divorced (50%), unmarried (49%) and single (49%) respondents were all concerned about loneliness in old age. This motive was seen as particularly important by people with secondary education and it was also dependent on the age of the respondent, being equally significant for 18–24 year olds (50%) as well as over 35-year olds

(55%). It was less significant for respondents 25–34 years of age, who presumably do not feel lonely or cannot imagine their future to be lonely.

3. *The existing child needs a companion* — almost 30% of child wishers in the fertile population thought this motive to be essential. Above all it was important to those who already had a child, therefore for married respondents and widows (45%). The importance of this motive increased as the level of education improved and it was also regarded as more important by older respondents (37% of over 35-year olds).

4. *Children cement marriage/cohabitation relations* — 28% of child wishers, including one third of married respondents and 27% of co-habiting partners marked this motive.

5. *The desire to have a child with the current husband/partner* was important for almost 25% of child wishers, dominated by married (32%) and co-habiting (42%) respondents. The importance of the motive increased with higher levels of education (marked by 31% respondents with higher education) and was slightly influenced by the increase in age.

6. *Child is self-realization* — 23% of child wishers answered in the affirmative. It was rather more important for the respondents with secondary education (26%), and even more so for people in cohabitation (31%).

7. *A child is necessary for the survival of the Estonian nation* — 23% of child wishers agreed with this, the percentage of agreement was higher among people in cohabitation (27%) and over 35 years of age (26%).

8. *Desire specifically to have a son or a daughter* was an essential motive for 15% of child wishers. The most dominant group was married couples, who already had children (27%).

9. *Having a child is good for one's health and looks* — this motive was regarded important by less than 5% of child wishers — there were rather more respondents who had higher education (5%), were married (6%) or relatively older (over 35 years of age).

It turned out that the correlations between motives were all positive, but not very strong and in most cases statistically not significant. The highest correlation (0,26) was between the motives *"children cement marriage"* and *"children help to avoid loneliness in old age"*.

Reasons for wanting children and background variables factor analysis

In order to analyse the connection between the reasons for wanting to have children and the background variables of the reference population group, a factor analysis was undertaken. Background variables (gender, age, education, professional status, type of cohabitation and economic status) were added to the

motives for having children (figure 8). Four important factors influencing the reproductive behaviour could be determined as a result of the factor analysis.

Age and social maturity factor. The level of this factor is determined by a higher than average age of child wishers, which is positively correlated with education (especially professional education), and by professional status — the majority are in employment and live together with a partner (more frequently husband), and their economic situation is rather more positive. The most important motives for having children are firstly a wish to have a companion for the existing child and then to have a son or a daughter.

Motivation factor. This factor combines mostly different motives for having children and is hardly (if at all) connected with the background variables. The most important motives include having children in order for the Estonian nation to survive, securing marriage (cohabitation), avoiding loneliness and as a means of self-realization. There is a positive (but small) correlation with the other motives — having a child with the current husband/partner, the belief that a child is good for one's health and looks. The only background variable that correlates with the motives is the valuation of the economic situation — the better the economic situation, the greater the number of children wanted.

Citizenship/nationality factor. The important variables in this case are nationality, the language of the form and the valuation of the economic situation. The valuation is lower for non-Estonians. Their most important motives for having children include the wish to secure marriage, avoid loneliness in old age and the desire to have a son/daughter.

Gender factor. The most important background variable here is [the] gender, which is correlated with professional status. The positive level of this factor indicates higher unemployment among women and the most important motive for having children is to have a companion for the existing child.

The above mentioned four factors describe ca 40% of the observed variables (motives for having children and background variables) and it became evident that the motives and background variables have a weak correlation. The most often marked motive — it is natural to have children — was not described by any factors as it expresses a prevalent attitude and is not related to background variables.

The following significant conclusions could be drawn from the factor analysis:

- the majority of motives for having children have a relatively weak correlation with the respondent's background variables, *i.e.* people belonging to different social, gender and age groups have similar motives for having children;
- persons of mature age and socially more mature (better educated, of higher professional status and economic level) are motivated to have another/ additional child (to have a companion for the existing child, to have a son/daughter).

Motives for postponing having children

Almost 42% of child wishers in the fertile age were not planning on having a child within the next two years. The recent years' statistics of the population confirm the trend to postpone having children (Tiit & Puusepp, 1997) — the average age of mothers at the time of the birth of the first child has risen, but the proportion of first births has been close to constant. The more important reasons for postponing having children will be highlighted below. The respondents could choose between 17 reasons on the form and could mark all that applied to them.

Table 4. Reasons for postponing having children. The percentages show the proportions of postponers in the population, including 61 000 men and 58 000 women (*i.e.* people, who would like to have more children, but not in the next two years)

	Female	Male	Total
Financial problems	45.9	46.5	46.2
Want to have economic security before having children	39.8	39	39.4
Too young	32.8	38.9	36
Dwelling problems	30.1	29.3	29.7
No partner	24.6	28.9	26.9
Current situation in Estonia does not favour children	30.9	26.8	28.7
Studies	35.5	23.8	29.3
Uncertainty about the future	27	19.7	23.2
Health problems	5.6	5.3	5.5
Partner does not want to have children now	5.8	4.4	5.1
Fear of losing job	7.1	3.2	5
Unwanted career adjournment	7.6	2.9	5.1
Not good/unstable relationship with partner	5.1	2.7	3.9
Too old	4.4	2.6	3.4
Difficulties with raising children	5.3	2.5	3.9
Partner too old	0.3	2.1	1.2
Partner too young	3.4	1.7	2.5

Financial problems was the most common motive for postponing having children (table 4), mentioned by 46% of postponers (*i.e.* people in the fertile age, who would like to have more children, but not in the next two years), including 59% of the respondents born in Russia, 68% of the unemployed and 56% of married respondents. Significantly, this motive occurred more frequently in the urban areas (49%) than in the rural areas (37%), although the income level in the rural areas is considerably lower than in the urban areas. Analysing the motive according to the level of education, it appears that financial problems are the most frequent reason for postponing having children among the people with secondary education (50%) and, understandably, for the poor and people

on the poverty line (62–64%). Significantly, financial problems were not so important for students (38%) and were a bigger obstacles for those who studied (51%). The importance of financial problems as a motive for postponing having children increased with age, being named by 55% of the respondents over 35 years of age.

The wish to have economic security before having children was an important motive for 39% of postponers, being heavily dependent on the age of the respondents (figure 10). The wish to have economic security before having children decreased with age and was named by 49% of 25-year old respondents, 32% of 25–34 year olds and 21% of 35–44 year olds. The importance was influenced to a certain extent by nationality — it was marked by 42% of Estonians and 38% of Russians. It was also more important for the single respondents, being named by 45% (compared with 30% of the people living together with a partner) and for urban people — 42% (compared with 33% of rural people). This motive was important for 49% of those who considered themselves poor and for 32% of those, who were on the poverty line.

I am too young — thought 36% of postponers, including 65% of 18–24 year old respondents and 62% of students, 59% of people living with their parents and 53% of those, who did not have a partner.

Accommodation problems appeared to be an important motive for postponing having children for 30% of the population group. This motive was dependent on education, but the impact of the level of education is not monotonic. It was important for 27% of people with basic education, 32% of people with secondary education and 28% of people with higher education. According to expectations, the accommodation problems were influenced by the economic situation of the household. The motive was important for 20% of people who were economically well off and 34% of those, who considered themselves poor. The respondents who did not mention having accommodation problems were also more optimistic about the future. Analysing accommodation problems by employment status showed that students have the fewest problems (25%), whilst they caused concern for 32% of the employed and 35% of the unemployed respondents. Accommodation problems were highly dependent on domicile — they were considerably more important for people living in average (38%) and small (36%) towns. Only 21% of people living in the bigger towns (Tartu, Narva, Kohtla-Järve and Pärnu) named accommodation problems as a reason for postponing having children, which is similar to that of rural people.

Studies of the respondent or the partner — this motive was named by 29% of postponers. As was to be expected, it is highly dependent on respondent's age, education and social status (figure 9). It was regarded important by 45% of 18–25-year olds and 15% of 25–34-year olds, 38% of respondents with secondary-, 26% of respondents with basic- and 15% of respondents with higher education. It is remarkable that not all students considered studies as an important reason for postponing having children: only 68% of students had

named its importance. This motive was also important for 8% of the respondents who were not students, but whose partner was studying or was planning continuing studies. The frequency of the motive was influenced by economic status — 35% of people who were well off and 17% of people who considered themselves as poor named it. In accordance with expectations, this motive occurred more frequently among the respondents who lived together with their parents (44%).
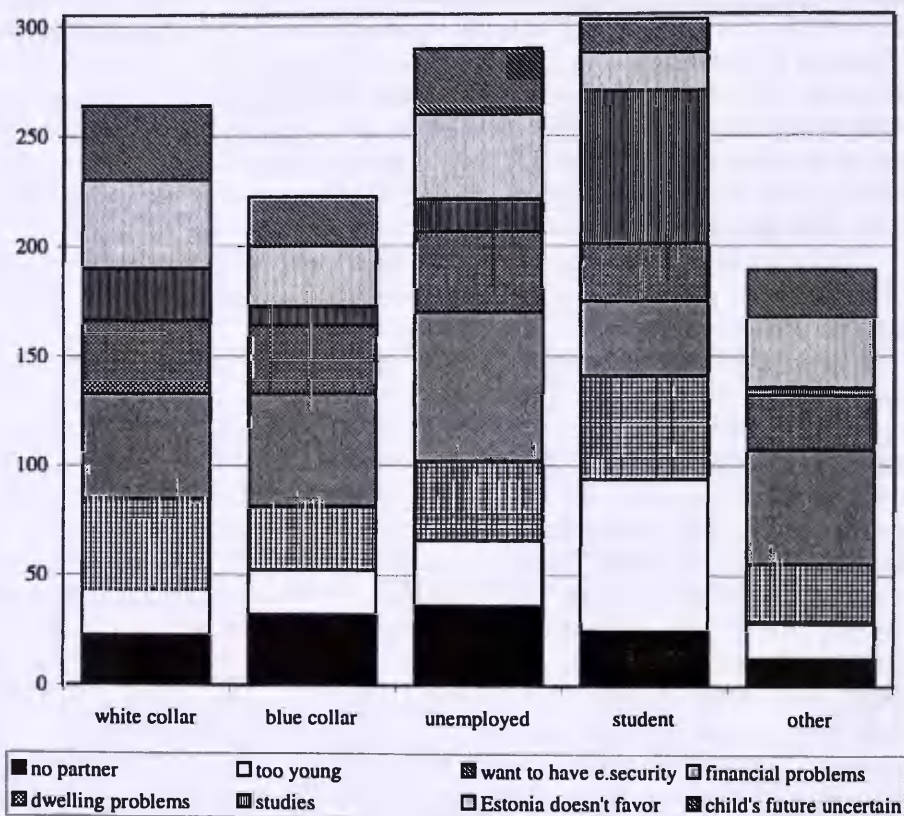
Figure 9. Most frequent reasons for postponing having children by social status (number of respondents)

The current situation in Estonia does not favour children — 29% of postponers agreed with this motive. Frequency depended on age (21% of up to 25-year olds and 39% of over 35-year olds) and education (24% of postponers with basic and 33% of postponers with secondary education). The impact of nationality was

insignificant — it was important for 28% of Estonians and slightly more important for others. On the other hand, citizenship had a major impact on the importance of this motive — it was named by 27% of citizens and 48% of non-citizens. In addition, the professional status of the respondent influenced the motive's importance — it was marked by 38% of unemployed and 33% of employed postponers and only by 19% of student postponers. Also, the status of cohabitation influenced the importance of the motive — it was named by 41% of married postponers. 25% of people who considered themselves to be economically well off and 37% of people who were on the poverty line regarded the motive as important.

No suitable partner. This was an important motive for 27% of postponers (for 30% of men and 25% of women). As expected, it was more important to those who lived without a partner (43%) or with parents (37%). Not having a partner was a greater problem in the rural areas (33%) than in the urban areas (24%), but no important ties with age, education or professional status occurred.

Insecurity about the future was a significant motive for relatively older postponers. It was named by 19% of up to 25-year olds and 32% of over 35-year olds. The rate of occurrence was slightly influenced by the level of education, which also correlated with age. The motive was important for 19% of postponers with basic education and 26% of postponers with higher education, for 29% of non-Estonians and slightly fewer Estonians (21%), including mostly people with Russian citizenship (40%). Professional status had a small impact on insecurity — it was important for 27% of employed and 28% of unemployed and only 15% of student postponers. The occurrence of insecurity was slightly higher among urban (25%) than rural postponers (19%). The influence of the economic situation turned out to be quite contradictory: it was an important motive to postpone having children for 33% of those living on the poverty limit, but only for 10% of those who considered themselves to be poor.

The following listed reasons were named relatively less often.

My partner is too young (3%). The majority of them were 15–24 years of age and over a half of them were students. More than half of them were cohabiting with a partner, and the rest of them, more often than not, lived with their parents. *"I am too old"* was also named as a reason for postponing having children (3.5%), 21% of them were older than 35 years of age. *"My partner is too old"* was marked by 1% of all postponers.
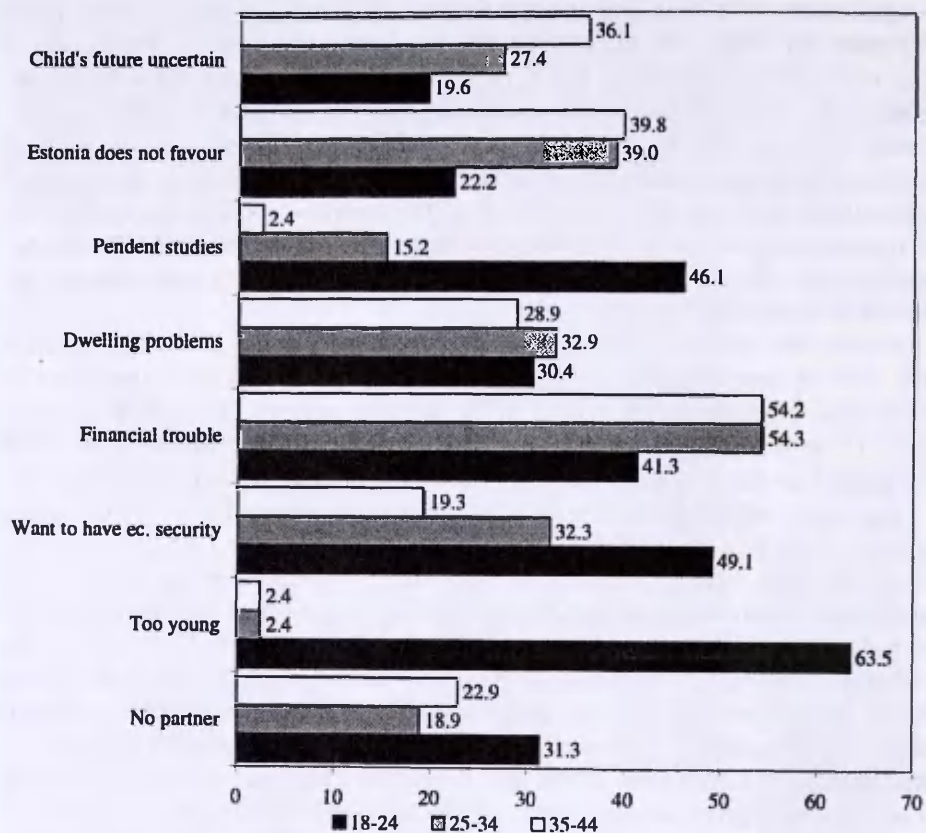
Figure 10. The reasons for postponing having children by respondent's age (%)

Relationship with partner is not good/unstable — this was a motive for postponing having children for only 4% of postponers. Significantly, bad relationships were mostly named by older respondents with higher education (7% of respondent with higher education and over 35 years of age). The occurrence of this motive was the same for respondents living together with a husband or a partner and for those living separately. However, bad relationships did depend on the economic situation of the family — it was marked by 6% of the families, who considered themselves to be poor or on the poverty line.

Partner does not want to have a child (now). This motive was named by 5% of postponers, including 10% of those living together with a spouse or a partner and 7% of over 35-year olds. It occurred more often in wealthy families (7%).

Fear of losing a job or partner losing a job was marked as an important motive for postponing having children by only 5% of postponers. The occurrence frequency of the motive dependence on the respondent's level of education was noteworthy — it was characteristic for 12% of respondents with higher and 4% of respondents with secondary education, but not mentioned by respondents with basic education. There was also a strong dependence on age groups — 12% of 35–45 year old postponers and 9% of 25–34 year old postponers feared being made unemployed, but the figure was below 1% in the youngest age group. The majority of respondents for whom the motive was important lived together with a spouse or a partner and worked, but did not study. Respondents living in bigger towns feared losing their job the most (9%), followed by Tallinn citizens (6%). The rate was 3% both in small towns and in rural areas.

Unwanted career break was an important motive for 5% of postponers, being most frequently (7%) mentioned in the 25–34 age group; followed by the youngest age group (5%). The motive was important for only 1% of postponers over 35 years of age. It was most important for respondents with higher education (10%), for people with lower levels of education the importance rate was 4%. The motive was more important for Estonians (7%), urban dwellers (6%) and for those who were economically well off (9%).

Difficulties with raising children were named as an important motive by only 4% of postponers. It caused more concern among respondents with higher education (6%), and for married people.

Own or partner's health problems, including problems with having children were important for 6% of the sampled population. As expected, the proportion of older respondents was much greater — the motive was important for 18% of over 35-year-old respondents, 6% of 25–34 year old respondents and 1% of respondents in the youngest age group. Accordingly, a higher level of education accounts for the increase in the importance of the problem (3% of respondents with basic, 4% of respondents with secondary and 11% of respondents with higher education). Russian women named the problem more frequently (10%) than Estonian women (4%), it was also more frequent among the unemployed (9%) than the employed (6%), and relatively more often named among married people (9%). Those claiming to live on the poverty line marked the motive quite frequently.

Factor analysis of the motives for postponing having children

Three factors became apparent in the factor analysis of the motives for post-poning having children. The co-effect of the three factors describes almost one third of the total dispersion of all motives. These factors cover over 80% of the motives, leaving out only the relatively marginal, rarely occurring motives (less than 5%).

Economic determinatives factor. This factor accounts for over 13% of total dispersion of the motives and is most strongly connected with the following: "accommodation problems", "uncertainty about future", "financial problems", "Estonia does not favour having children", "want to have economic security before having children".

Age factor accounts for 11% of total dispersion of the motives. It is a two-way factor. One trend can be viewed as a youth factor, connected with motives like "I am too young", "my or my partner's studies", "want to have economic security before having children". The other trend within the factor is connected with advanced years, "health problems", "I am too old", "I fear losing my job".

Partner's factor accounts for 8% of total dispersion of the motives. It has a slightly more mixed structure than the previous factors and is two-way, similar to factor 2. The most important motive connected with this factor is "no suitable partner". The other trend within the factor (*i.e.* there is a partner) is connected with the motives "partner is too young", "partner does not want to have children" and "unwanted career adjournment".

Joint analysis of the motives for postponing having children and background variables

In order to determine the validity of the motives for postponing having children, a joint analysis of the motives and background variables was carried out. Factor analysis describes the behaviour and attitudes of the population group (61 000 male and 57 000 female), who postpone having children. Four factors were found which describe one third of the observed variables and motives. It became apparent that the connection between the motives and background variables is rather loose. Age became the first factor, economic attitudes the second and citizenship the third.

The age factor is connected with the respondent's age, having/not having a partner, marital status, level of education and studying/ not studying. The factor is two-way and describes 14% of the observed variables. The youth trend is characterised by a relatively younger age group, being single and not having a co-habiting partner, lower professional education (continuous pursuit for better education) and not belonging to the work force. The reasons for postponing having children are related with youth — "I am too young", "my or my

partner's studies", "want to have economic security before having children". The older trend is characterised by advanced age, being married and living together with a partner, a higher level of educational and professional status. The reasons for postponing having children are "my or my partner's health is poor", "fear of losing job" and curiously enough "I am too old".

The economic attitudes factor is not significantly connected with any background variables. Economic motives (pecuniary trouble, want to have economic security, dwelling problems) are apparently more connected with attitudes and expectations than with respondent's socio-economic situation, age, nationality or other variables. The economic attitudes factor describes 8% of the total dispersion of variables.

The citizenship factor is mostly connected with the non-citizen status and filling out the form in Russian, also a rather lower estimation of the economic situation. The dominant motive for postponing having children is lack of money. The citizenship factor describes 6% of the total variance of the variables.

The partner factor. Not having a partner is associated with a relatively big household (seemingly households of several generations), more frequently with not being in the labour force and with speaking Russian. The factor describes 5% of the variables.

Economic situation as a factor influencing reproduction

Do wealthier families wish to have more or less children?

On the conscious level, postponing or not having children is often justified by financial trouble. On the other hand there is a widespread notion that there are generally less children in the wealthier families. The current survey aimed to clarify the importance of the economic situation as an influencing factor on reproductive behaviour in Estonia today.

The economic situation was specified in the survey by objective variables as well as the respondent's self assessment. There was a positive correlation between the objective and subjective assessments, but in most cases this was not very strong (table 4). It is presumed in the analysis that a person's behaviour is connected primarily with the knowledge of oneself, which is why the subjective assessment of one's situation is mostly used (*we are poor / we are on the limit of poverty / we are neither poor nor rich / we are not rich, but we are well off*).

It became apparent that the households in a better economic situation were more motivated to have more children (figure 11). The motivation to have another child decreased as the assessment of the economic situation of the household worsened (table 4). The same trend was true for men and women.

Wealthier families wished to have another child more frequently, but a smaller total number of children — the number of children wanted had a negative correlation with the income per household member. In order to explain the paradox, further analysis was carried out. It transpired that families with more children wanted to have a greater number of children in total. As expected, families with more children belonged mostly to the lower income quintile. Belonging to the lower income quintile might be the cause of the negative correlation between the total number of children wanted and the income quintile. To clarify the matter further, the partial correlation coefficient between the number of children wanted and income quintile was calculated, eliminating the influence of the number of existent children. It turned out that the value of the partial correlation coefficient was practically nil (0.002). Therefore in cases where the number of existing children is the same, there is no correlation between the number of children wanted and the income level.
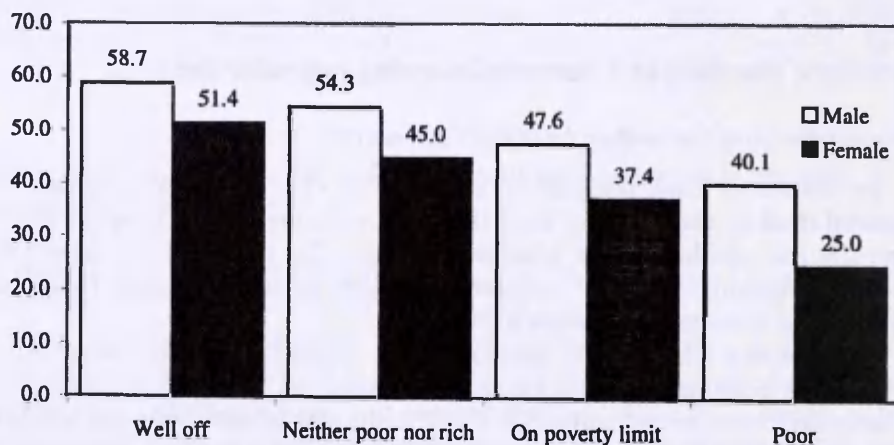
Figure 11. Wish to have children by gender and economic situation (%)

Table 5[1]. Correlations (r) between economic background variables and variables describing reproductive behaviour

Background variables	Want to have children			Motives for postponing having children				
	Want to have more children	*Total number of children wanted in the family*	*Plans to have children within the next 2 years*	*Financial problems*	*Want to have economic security before having children*	*Career*	*State in the country does not favour*	*Uncertainty about child's future*
Scale:	0 — no, 1 — yes	N	0 — no, 1 — yes	0 — no, 1 — yes				
Gender (1-male; 2-female)	−0.102	−0.103				0.106		0.085
Age	0.584	0.203	0.202	0.100	−0.235	−0.056	0.154	0.111
<18y children in the family	−0.309	0.47	0	0.124	−0.097		0.095	
Variables describing the economic situation of the household								
Family's income quintile**	0.175	−0.128	0.221	−0.143	0.105			
Rent problems**	0.055		0.121	−0.215	−0.128	0.087	−0.106	
Spending opportunities*	0.071		0.148	−0.080				
Wealth estimation**	0.084		0.177	−0.224		0.097	−0.066	
Possibility to borrow 200$**	0.071		0.184	−0.192		0.078		
Income *per capita* **	0.199		0.229	−0.145	0.087			

Correlation between the economic situation of the household and the motives for postponing having children

It transpires from Table 4 that people not content with their economic situation tend to postpone having children for several years. The decision to have a child in the next couple of years is mostly made by older people (who still want to

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[1] In table 5 only statistically significant (on 0.05 level) correlation coefficients have been presented, relatively stronger correlations |r| > 0,2 (describes at least 4%) are shaded, correlations |r|>0,4 (describes at least 16%) have emphasised shading.

* *Spending opportunities* is an integrated variable, where the consumption opportunities of different goods have been summed.

** All the variables describing economic background are coded in a way that a smaller value shows a worse situation.

have a child); younger people prefer to postpone it. The economic situation of the household is of considerable, but not of primary, importance when making this decision.

Financial problems as a motive for postponing having children was dependent on all variables, both subjective and objective, describing the economic situation. The rest of the motives had less dependency on the economic background variables, and the motives "*The current situation in Estonia does not favour having children*" and "*Uncertainty about the future*" had practically no correlation with the variables describing the economic situation.

Considering the general number of households in different wealth groups, it can be estimated that in the near future the highest number of children will be born to families of average economic income, who, according to their own subjective assessment, are neither poor nor rich.

Reproductive behaviour models

A *model to estimate the probability of children's birth*

In order to analyse the impact of social and demographic variables on the wish to have children, a logistic regression model to estimate the wish to have children was developed.

$$\ln\left(\frac{p}{1-p}\right) = b_0 + b_1 X_1 + \ldots + b_k X_k,$$

the model predicts the likelihood (p), that a person does not wish to have more children. The regression coefficients b_i in the model are presented in table 6.

Table 6. Arguments and their values of not wanting children risk model

	R-square	Additional argument	b	Exp(b)	P
1	0.429	Respondent's age	0.2	1.221	<0.01
2	0.273	Size of the family	0.384	1.313	<0.01
3	0.493	Income *per capita*	−0.239	0.787	<0.01
4	0.498	Education	−0.372	0.689	<0.01
5	0.504	Respondent's gender	0.459	1.582	<0.01
6	0.506	Marital status	−0.116	0.891	<0.05
7	0.506	Children (<15y)	(−0.088)	(−1.092)	>0.05
8	0.506	Intercept	−6.349	0.002	<0.01

In the first column of table 6 the arguments are listed according to their significance using step-wise procedure, in the second column there is a determination

coefficient's standardised analogue R^2, showing the description level of the logistic model. As seen in the table, the most important risk factors are the respondent's age and the size of the family. It transpires that women are more cautious when planning to have the next child than men. The likelihood that no more children will be born into the family is decreased by the household having a higher income, a higher level of education for both parents and stable family relationships. The model describes over 50% of people's intentions of having children, whereas the three first arguments — the size of the family, respondent's age and income *per capita* are responsible for the high level of description.

A model to estimate the total number of children wanted

In addition a linear model to estimate the total number of children wanted by the respondent was developed. The linear model for the number of children wanted is in the following form:

$$Y = b_0 + b_1 X_1 + ... + b_k X_k,$$

The arguments were selected out of a great number of background variables using step-wise procedure so that each step would result in the best possible model. The selection of arguments was completed based on the requirement that all the arguments had to be significant on the 0.05 significance level (table 6).

Arguments in the model are presented in table 7 in the order of addition. On each step the determination coefficient describing the model is marked. As seen in the table, the best model comprises of 7 arguments and its level of description is 0.41. The third column contains the arguments added to the model and the according standardised regression coefficients (*beta*-coefficients) are in the fourth column. The *beta*-coefficients would be the coefficients used in the regression model if all the variables were standardised. The significance probability of the according variable is in the last column.

Table 7. Arguments and their values of the model to estimate the total number of children wanted

	R-square	Additional argument	B	p
1	0.218	No of under 15-year olds in a HH	0.603	<0.01
2	0.375	Respondent's age	0.431	<0.01
3	0.387	Language of filling the form	−0.131	<0.01
4	0.396	Respondent's level of education	0.089	<0.01
5	0.402	Respondent's gender	−0.074	<0.01
6	0.405	Cohabitation	−0.193	<0.01
7	0.41	Marriage	0.155	<0.05
8	0.411	Income *per capita*	−0.035	>0.05

The number of existing children and respondent's age have the greatest influence on the total number of children wanted in the family — those who already have children in the family and those who are older want to have more children in total in the family. The next argument added is the language in which the form is filled in — the Estonian speaking respondents want to have more children on average. The number of children wanted increases with higher levels of education, gender (male), cohabitation with a partner and being married, but the total co-influence of all the latter arguments is less than 2%. The first argument that does not have a significant influence is income per household member. The optimal model does not take this argument into account.

The comparison of two models (tables 6 and 7) brings out a seeming contradiction:

- a greater number of children in a family (and a greater sized family at the same time) decreases the wish to have another child, but increases the total number of children wanted;
- older age (and higher levels of education, social status and being married) decrease the wish to have more children, but increases the total number of children wanted;
- younger age increases the wish to have children, but decreases the number of children wanted.

In fact the result is not contradictory, but shows that the respondents are at different phases of achieving the family model they want to have. Some of the respondents are near to achieving their model (they already have children and therefore the total number of children wanted is relatively big). Others do not have children yet; they want to have children, but the total number of children wanted is on the average smaller than for those who already have children. Due to the scheme of the questionnaire, the samples the two models are based on are partially different.

The wish to have children has a logical dependence on the economic variables: it is quite natural that families with children generally belong to the lower income quintiles than families with no children.

Generalizing factor analysis

In order to find dependencies between the two complexes of motives and background variables, a new factor analysis was conducted, where all the mentioned variables were combined (39 in all). It is also taken into account that the values of all the variables are known about a relatively small number of respondents — that is the postponers, who do want to have children, but postpone having them for at least two years.

The following results transpired.

The most important factor influencing reproductive behaviour is *age*, the most important reasons for postponing having children are young age and studies. The motives for relatively older people are more often to have a companion for their existing child or to have a child of particular gender. With increasing age the fear of losing a job and health problems mark an increase.

The next factor could be called *attitudes-motives factor*, as it relates motives, but lacks correlation with objective background variables describing the respondent. This factor is strongly correlated with the following motives for having children — "to have a child with the existing partner", "a child secures the marriage", "having a child avoids loneliness in old age", "a child is needed for the continuance of the Estonian nation", "a child is self-realization". Several motives for the postponement of having children also correlate with this factor — accommodation problems, wanting to have economic security before having children, financial problems, uncertainty about the future, current studies to a certain extent, the perception that the current situation in Estonia does not favour having children and the partner being too young.

The third is again the *language-citizenship factor*, which describes the background variables rather than the motives. The Estonian trend in this factor is characterised by Estonian citizenship, filling in the form in Estonian and a higher perception of the economic situation. The most important motive for having children is self-realization. There were no specific motives for the postponement of having children. The foreigners' trend in the factor is characterised by not having Estonian citizenship (incl. the citizenship of another country) and a lower perception of one's economic situation. The motives for having children are not very strongly represented: the most important of them is to strengthen the marriage (level 0,2). The most important motives for postponing having children are financial and accommodation problems and uncertainty about the future. Slightly less important are not having a suitable partner and the notion that the current situation in Estonia does not favour children.

These three factors describe a quarter of the total dispersion of the variables. The rest of the factors are of less significance and rather describe the exceptions.

The career factor describes persons whose household is usually small and who often do not co-habit with a partner. The perception of their economic situation is good, they are educated and employed. There is no leading motive for having children, the most important motive for not having children is — "not to step down the career ladder".

The loneliness factor characterises people who mostly work, but do not differ from the average population by any other variable. The motive for having children is to avoid loneliness but also the good impact that a child has on one's health and looks, also the continuance of the Estonian nation. The most

significant motive for postponing having children is the absence of a suitable partner and also the respondent's or partner's old age.

The gender factor is dependent on respondent's gender, the number of children wanted and the number of children propitious for the society. Men favour a greater number of children in both cases.

Conclusion

The future reproductive behaviour analysis among people of fertile age (18–45 years old) showed that the *average number of children expected* in an Estonian family (where more children are wanted) is 2.3 and the most favoured family model has 2–3 children. It also transpired that there have been no drastic changes in the nation's reproductive attitudes over a long period of time. In comparison with the previous surveys (Haavio-Mannila & Tiit, 1985), the number of people supporting very big (6–7-children) families has diminished; the current survey shows that only a very few favour the idea of having more than four children in a family. It is plausible that two-three children in a family has become an ideal model in Estonia today and prevails over the other family types. Thus, the same number of children is also wanted for one's own family.

A considerable number, almost 15% of people in fertile age, who did not have under-aged children, did not want to have them. A certain proportion of them were relatively older with children who were already adults, or did not want to have children due to health or other problems. However, the fact that almost a tenth of 18–24 year olds do not wish to have children leads to a presumption either that some of the younger people's ideal is of an independent and individualistic lifestyle or that they are not mature enough to imagine themselves as parents.

The wish to have children. In the current survey two variables describing the reproduction behaviour were studied — the wish to have children and the total number of children wanted in one's family. The latter was only studied in cases where the respondent wanted to have children. The dependence of the two variables on the background variables seemed contradictory in the first instance — for example younger respondents had a greater wish to have children whilst older respondents wanted more children in the family. However, this is fully logical, as the majority of older respondents already have children and the total number of children is the sum of existing children and more children wanted. Nevertheless, the trend towards a smaller total number of children in younger generations can be surmised.

Motives for having children. The prevailing motives for having children were "it is natural" and "children help to avoid loneliness in old age". Other significant motives were to have a companion for the existing child and to secure the relationship. However, there was virtually no correlation between the

motives and background variables (except for relatively trivial ties like wanting to have a companion for the existing child in a family with one child). This shows that the future reproduction behaviour of the population is mostly compatible with one model and that there are no groups of people, who would have a child with a specific aim in mind.

The motives for postponing having children. Almost 42% of those wishing to have more children do not plan to have them within the next two years. Thus, the postponement of children is an extremely important factor in the reproductive behaviour of today's population that has a significant impact on all reproduction figures. It transpired that the motives for postponing having children were positively correlated, which shows that the postponement is not caused by one, but by several combined motives. The correlations with the motives for having children and the background variables were rather weak, but confirmed the general findings.

Age as a factor influencing reproductive behaviour. As expected, it transpired that the background variables did not influence the reproductive behaviour independently, but formed certain complexes of variables. The most important of them is a factor describing the age and social maturity of the respondent. Advanced age is generally related with a higher level of education, higher family status (more often married and/or living in co-habitation with a partner), higher professional status (mostly working, rarely studying), more often living separately from one's parents and having a child/children in the family. Younger age is related with lower level of education, studying or inactivity in the labour market, rarely married, often no co-habitation partner and living together with parents, not having children or having only a few.

The wish to have children is most dependent on the *age factor* — younger respondents wanted to have children with a greater probability. The cut-off age, when the probability of not wanting to have more children exceeds the probability of wanting to have more children is 31 for women and 35 for men. However, there were men and women in their forties who still wanted to have children. Although 18–45 year old men are more motivated to have more children than women, this could partly be due to men being fertile for longer, since the average total number of children wanted by men and women was the same.

The level of education is directly dependent on the age factor. The current survey showed the greater readiness of women with higher education to have children. Up to now the impact of the level of education on reproductive behaviour in Estonia has been contradictory — although women with higher education have been oriented on a greater number of children, the number of children they actually do have remains smaller than the number of children women with lower level of education. The reason could be rooted in the starting of family life later due to the longer educational path and a greater likelihood of remaining single. Career pressure also contributes to it.

Other factors influencing reproductive behaviour. Quite a significant factor influencing reproductive behaviour is determined by the respondent's *nationality, mother tongue and citizenship.* Although the differences were not big, it did transpire that non-citizens were less motivated to have children and the estimation of their economic situation was lower. It also became apparent that Estonian citizens' wish to have children did not depend significantly on whether the respondent lived in urban or rural areas, although the previous surveys had shown that the number of children in a family in rural areas is slightly bigger.

The influence of the economic situation on reproductive behaviour. The previous surveys into 20–35 year olds (Ainsaar & Oras, 2000) have shown that there is a negative correlation between the number of children wanted and the economic status, *i.e.* wealthier people do wish to have more children in the near future, but the total number of children wanted remains below the average. The current survey once again proved the importance of economic motives in reproductive behaviour, where it was mostly expressed in the postponement of having children. It transpired that financial problems and poor economic situation are often the cause for postponing having children, *i.e.* people who cope relatively better in financial terms postpone having children due to financial difficulties less frequently. It also became apparent that the wish to have economic security before having children is correlated with the age factor, being more significant for the younger people.

On the other hand, the importance of financial problems as a reason to postpone having children increases with age and with a greater number of existing children, which in turn reduces income per household member. The earlier surveys (Ainsaar& Oras, 2000) have indicated the correlation between the number of existing children and financial problems as a barrier to having another child. This is because the Estonian child allowances only covering a relatively small part of the expenses associated with children (Käärik & Tiit, 2001).

An unexpected result of the analysis was that financial problems were named as a motive for postponing having children much more frequently in the urban areas (49%) than in the rural areas (37%), although the income level in the rural areas is, on the average, significantly lower than in the urban areas (Leibkonna elujärg, 2001). This could possibly be explained by the different "price" associated with raising children in the urban and rural areas. Another contradictory result of the analysis was that uncertainty of the child's future does not cause concern among the poorest. One possible explanation is that the group of people considering themselves as poor has lost interest in maintaining their economic situation. The second, contrary explanation is that the value of a child is higher than the value of the economic situation among this population group.

Empirical order of importance of the conscious reasons for the postponement of having children. In Estonia the *economic problems,* including accommodation problems top the list of the reasons for postponing having children.

Economic reasons influence both older and younger age groups. Different economic aspects (income, wealth, economic security) influence social groups differently — possibly the subjective wealth level is determinative, on which the contradiction between the real and the desired situation is based.

The second perfectly understandable reason for postponing having children is *young age* and *studies*. The readiness to have children in the near future is lowest among students. Financial problems are less important for students (38%) than for non-students (51%). This could be related to different life cycles and the fact that people name different barriers to having children that seem important for them at the time or things that they lack. Students bring out the accommodation problems more frequently. However, the economic problems are not of cardinal importance for the students, but rather their social immaturity, studies, economic dependence.

A decrease in the wish to have children as well as the postponement of having children was caused by *men's unemployment*, whereas the impact of women's professional status was of less importance in reproductive behaviour. There has been plenty of talk about the young career people's lack of interest in having children. However, *continuing the career* is a relatively unimportant motive for postponing having children (it occurred on average in 5% of the cases) and the correlation with the background variables is slight. It is more frequently mentioned by people with higher levels of education who consider themselves to be rich. The postponement of having children for career reasons is weakly correlated with the wish to have economic security before having children. The other side of the coin is the *fear of losing a job*, which occurs as a reason for postponing having children more often among older women with lower levels of education and also among non-Estonians. However its impact is relatively small.

An important and everlasting reason for postponing having children or not having children at all is the *absence of a (suitable) partner*, which is a relatively independent factor. In the current survey, both men and women named this reason, men rather more often, which shows the increasing conformity in reproductive behaviour patterns of men and women.

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A review of evaluations
of accommodation and behaviour strategies
in the housing market

Mai Luuk

Adequate housing is one of a human being's basic needs and the availability of accommodation that meets certain requirements for all population groups is one of the prerequisites for social stability in a society. The conditions that have influenced the development of the Estonian housing market in the 1990s have to be taken into account when assessing the problems related to housing. The need to view the housing problems from a broader perspective arises from the fact that the formation of the housing market is influenced by a number of external factors — economic development, land usage and construction policies, techno-logical changes, credit policy and changes in the socio-demographic structure of the population. The outcomes of techno-economic processes in the housing market (the renovation of the housing stock, the founding of housing and apartment associations, favourable loan terms for buying housing, the increasing price of public utilities, etc.) are mostly of a social nature and have an influence to a greater or lesser extent on the whole of the population.

Satisfaction with housing conditions is an important component of welfare. In addition to ensuring the mental and physical sustainability of the population, a socially just housing policy and a segmented housing market that meets different needs help to alleviate negative tendencies and serious social problems. The economic and social stratification of the population is amplified in the differentiation of the housing regions of the rich and the poor.

The current review addresses the social aspect of the housing problem. It analyses the issues that influence people's satisfaction with their living conditions and the possible behavioural patterns adopted for managing in the changed situation. The review is based on the data of the Living Conditions Surveys conducted in 1994 and 1999 (NORBALT I and II).

Ownership relations in the housing market

According to the Statistical Office of Estonia the total dwelling stock of Estonia on the 1st of January 2000 included 623,100 apartments and private (detached) houses with the total floor area of 33.6 million square metres. It transpired from the data of the census that approximately 5% of the units were unoccupied and about 5% of households had two homes (neither being a summer cottage). The public housing stock, (*i.e.* dwellings owned by the state and local government) consisted of 37,400 dwellings and the private dwelling stock included 587,500 dwellings. The privatisation of accommodation that started in the early nineties has significantly changed the pattern of ownership. Year by year the share of public housing stock has decreased and the private share has increased. At the beginning of 1994, 59% of the total number of accommodation units were in state or municipal ownership; by the 1st of January 2000 the share had decreased to a mere 6% (Marksoo, *et al.*, 2000). In comparison with the 1st of January 1995 the number of privately owned dwellings has more than doubled. The proportion of units in public ownership varied by county (in Saare county 2%, Hiiu, Põlva, Viljandi and Võru counties 3%, Lääne-Viru, Rapla and Tartu counties 4%, Tallinn city 6% and the highest in Ida-Viru county — 13%).

The higher than average proportion of non privatised apartments in Ida-Viru county can be explained as follows — the quality of housing to be privatised is relatively low, environmental conditions are poor, the Russian speaking population is badly informed and a large share of the population has economic difficulties. State housing policy and the fact that many apartments are still company owned must have an impact as well.

As a result of the privatisation of housing Estonia has become a home owning state — 94% of housing is privately owned. According to the Living Conditions Survey, 58% of households have become owner occupiers through privatisation. According to the housing surveys conducted by the Tallinn City Research Institute, people were stimulated to privatise the apartments they occupied by the fear of losing their accommodation should they not privatise it. As a result, a great number of people became apartment owners through this scheme, owning apartments in amortised and run-down blockhouses belonging to the state or municipality (Eluasemestrateegia ..., 2000).

A substantial proportion of the population (especially people on a low income and with economic difficulties) do not have the means as owners to invest sufficiently to maintain and enhance the quality of their accommodation. According to the Living Conditions Survey in 1999 the proportion of people who subjectively regarded themselves as poor or living on the poverty line was one third of the population. In the bigger towns (except Tallinn) the proportion of households who defined themselves as poor or at risk of falling into poverty was as high as 43%. (Marksoo, *et al.*, 2000)

Only 23% of the dwellings in private ownership belonged to members of apartment associations and housing associations on the 1st of January 2000 (Marksoo, *et al.*, 2000). Although the number of dwellings in associations has increased four fold in comparison with the 1st of January 1995, the formation of associations has not kept pace with the schedule planned in the framework of the housing policy. Households of different socio-economic composition and levels of economic performance still reside in the same blockhouses, and this obstructs the management and maintenance of the dwellings. Problems have occurred both in forming and managing the apartment and dwelling associations.

One result of the privatisation of housing in Estonia has been a problematic situation in the apartment buildings that were restored to the legal claimants. Owners and tenants living in them do not have the opportunity to implement their individual housing plans for the following reasons.

- Unlike other real estate owners, the owners of re-claimed dwellings lack the substantive opportunity to use their legal right of ownership and to act as private owners in providing a housing service. As a result the dwellings, most of which are more than 60 years old, cannot be repaired;

- It has not been possible for the tenants living in re-claimed housing to privatise their homes using privatisation vouchers, and this has put them in a relatively insecure situation legally, economically and emotionally. At the same time they might have a relatively favourable rent contract, and if they were to lose it, it would having to pay rent at the market rate, which is significantly higher.

According to the estimates of the Tenants Union and of local authorities this problem concerns approximately 22,500 households living in 5,300 dwellings restored to the owners (including over 2,000 dwellings in Tallinn). Resolving the problems of the re-claimed dwellings requires a flexible and mature approach from both sides, both in creating residential lease relations and in offering and accepting alternative housing options. In order to regulate the rights of owners and tenants fairly, the question arises of the state's role as the possible third party. One solution would be to build municipal blocks of flats to increase housing options for economically insecure families. However this possibilty is limited currently by the restricted financial resources of the local authorities (Eesti elamumajanduse..., 2000).

Quantitative indicators of dwellings

A dwelling is defined as a private (detached) house, a section of a terraced house or a flat which meets the generally acceptable and sanitary engineering minimum standards (Marksoo, *et al.*, 2000:35). Dwelling is a verbal synonym for living space, including the close surroundings of the living space.

In residential construction the state block of flats prevailed until the beginning of the nineties with 1–2 room apartments being predominant until the eighties. Construction of private residential accommodation peaked in the fifties and sixties. Private housing construction has been the most prevalent in Tallinn, Pärnu, but also in Western and Northern Estonia. More than half (57%) of the dwellings were built between 1961–1990. The rate of housing construction in the sixties and seventies and the first half of the eighties was quite high — more than 10 dwellings were built per 1,000 persons per year. The drastic decrease in the volume of housing construction during the past decade shows both in absolute figures and ratios. The lowest level (0.5 dwellings per 1,000 persons) in housing construction was in 1996. In the following years 0.6 dwellings per 1,000 persons have been built (Sotsiaaltrendid 2, 2001:107–108).

According to the Statistical Office of Estonia the average floor space was 23.3m² per person (Marksoo, *et al.*, 2000). According to the Living Conditions Survey (1999) one third of households lived in dwellings with 15–25 m² of floor space per household member. Dwellings are considerably more spacious in the rural areas than in the urban areas. One fifth of the households in the rural areas and only 8% of the urban households had more than 55m² floor space per household member. 72% of the households interviewed lived in blockhouses and 27% lived in private (detached) houses or in a section of a terraced house. In comparison with the survey conducted in 1994, no significant changes in the structure of the types of dwellings have occurred — in 1994, 75% of the interviewed households lived in blockhouses. Since only people with greater economic security can afford to buy a private house or a section of a terraced house, movement from apartment blockhouses to private houses has been rather moderate.

60% of the households in rural areas live on farms or in private houses, but in the urban areas 85% of the households live in apartment blocks (in Tallinn 91% of households live in apartment blocks). The population living in five or more storied apartment blocks has a higher than average proportion (41%) of single parent families (50%), couples with no children (45%) and couples with one or two children (44%). The population living in private houses and in farmhouses consists more than average (27%) of households with two retired members (41%) and households with many children (38%).

Housing needs go through a specific change according to the generation's life cycle. The founding of a family usually goes hand in hand with the need for more floor space. Additionally, changes in a household's structure (*e.g.* child birth) may create different requirements of the qualitative characteristics of a dwelling, for example the location of residence, amenities, external residential environment, etc.

The Estonian real estate market is primarily aimed at a wealthier population and offers opportunities for contracts of purchase and sale and for tenancy contracts for houses and apartments. Opportunities to exchange accommodation

are significantly fewer and thus the situation is quite frequent where single elderly people have bigger accommodation than they need and can afford. At the same time it is rather difficult to exchange a dwelling for a smaller one, since there is a lack of cheap apartments or they are in an unsatisfactory condition — run down, needing major renovation or lacking basic amenities.

The number of rooms per person decreases relative to the increase of the number of household members. On average 41% of households live in conditions where there is more than one room per household member. 33% of households live in dwellings where the number of rooms equals the number of household members and one quarter of households live in relatively crowded conditions where there are fewer rooms in the dwelling than household members. Most households with one or two members have more spacious conditions. In the rural areas a household has on average 3 rooms. In urban areas the 2–3 room apartments predominate and the population concentration is greater than in the rural areas. The biggest proportion (almost one fifth) of households who dwell in one-room apartments live in Tallinn.

Single parent households and households with many children have the greatest problems of space. 44% of single parent households with one or more children and two thirds of couples with three or more children have no more than 15m² of floor space per household member. At the same time, 38% of the single parent households regard themselves as poor or are at risk of falling into poverty, so that moving to larger accommodation and having to incur higher housing costs is quite unlikely in this target group.

The Estonian housing market is characterised by little diversity, resulting in limited choice — 75% of the residential floor space is in apartment blocks. Under the conditions of Estonia's liberal housing policy, opportunities for selling and buying newly built and existing homes are dictated by the lending policy of the commercial banks. Average individual savings at the end of 1999 were only 7,200EEK, which means that a household with average savings cannot afford to improve its living conditions (Marksoo, *et al.*, 2000:42).

The development of the housing market is greatly hindered by the lack of a well resourced population and by problems related to getting long-term loans, since the income level of the majority of households is relatively low and the self-financing rate to get a loan is rather high. Another serious problem is the escalating price of housing and people's limited capacity to pay consistently for the increasing cost of services (electricity, water, etc.).

Amenities and external environment

One of the most complicated problems for the Estonian housing sector is the improvement of living conditions and increasing the availability of amenities, which primarily depend on the population's ability to invest in housing. In

comparison with 1994 the proportion of homes with a bath- or a shower-room has slightly increased (from 71% to 73%) and the proportion of homes with a landline telephone has increased significantly (from 55% to 70%). Even so, the quality of living conditions depends to a great extent on the type of housing. In the majority of multi-apartment block houses the apartments have all the amenities and more than 90% of the apartment buildings have a sewerage system and cold running water. However 68% of the households living in private houses or farmhouses lack hot running water, 64% do not have a water closet, 47% lack a sewerage system and 38% do not have cold running water.

The availability of amenities differs significantly in the rural and urban areas and no noteworthy changes have taken place in this respect during the period between the two surveys (figure 1). In the urban areas more households use the cheapest fuel — gas than in the rural areas. Additionally, the proportion of dwellings with central heating, hot running water, bath- or a shower-room and water closet is greater in the urban than in the rural areas. However, the proportion of households with the use of a sauna is greater in the rural than urban areas.
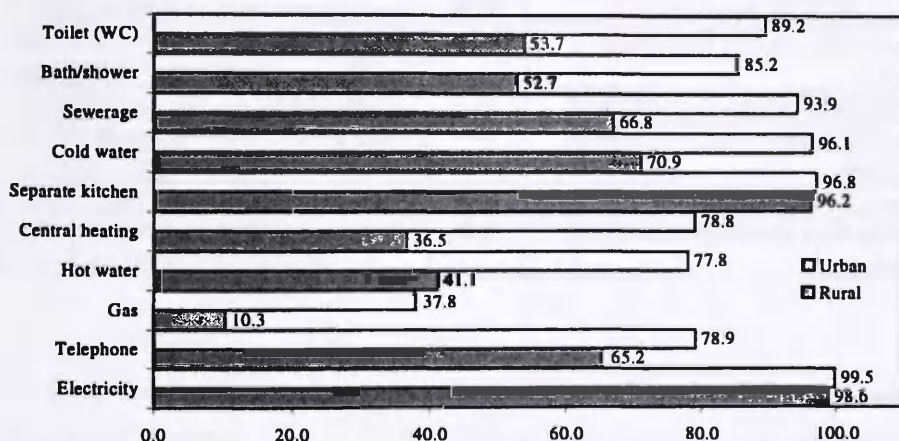
Figure 1. Amenities in urban and rural areas, 1999 (%)

Factors disturbing the external environment

In addition to amenities the Living Conditions Survey also dealt with factors affecting the external environment. The factors most frequently mentioned were noise pollution, dust and exhaust fumes from traffic (table 1). Damp and humid rooms caused more concern for people living in rural areas and small towns. Noise pollution, dust and exhaust fumes from traffic were the most frequently mentioned factors in Tallinn and North-Eastern Estonia.

Negative factors relating to the dwelling itself (in particular cold and humid rooms) are more frequently mentioned by households with a lower level of income — families with many children, single parent households and pensioners.

Table 1. Factors disturbing the external environment and the region with the highest level of disturbance (%)

Disturbing factors associated with dwelling (all respondents), %		Region with the highest disturbance level, %	
Noise from the neighbouring apartment, staircase	44.3	Tallinn	58.2
Cold and difficult to heat rooms in the dwelling	29.9	Rural regions and small towns	33.1
Damp and humid rooms in the dwelling	26.0	Rural regions and small towns	32.5
Factors disturbing the external environment, %		**Region with the highest disturbance level, %**	
Noise from the street/road	44.8	North-Eastern Estonian towns	50.7
Road dust, exhaust fumes from traffic	41.2	Tallinn (exhaust) Small towns (dust)	44.0 46.3
Noise from the railway or aircraft	13.5	Tallinn	22.5
Smell from garbage and sewerage systems	10.7	North-Eastern Estonian towns	17.2
Smoke, dust or smell	10.0	North-Eastern Estonian towns	17.7
Noise from industry/construction work	4.6	North-Eastern Estonian towns	6.8

Valuation of the dwelling and housing-related expenses

The floor space

It transpired from the Living Conditions Survey (1999) that 83% of the population is satisfied with the floor space of their dwelling (table 2). Since the number of square metres per household member is greater than average in the rural areas, the satisfaction level with the floor space among the rural households is higher (88%). The floor space satisfaction level is lowest in Tallinn.

One tenth of the households with a single parent or many children are very dissatisfied with their floor space, but the possibility of them moving to a larger dwelling is rather limited because of their low income. This is also reflected in the fact that 16% of single parents rent their accommodation from private owners at the market price, which means that the possibility of improving their

living conditions is almost non-existent because of their small income. Presumably, some of the single parents were left without apartments that were being privatised when the family broke up and thus the proportion of those in rented accommodation is relatively high.

Almost one third of the population would like to have more floor space. White-collars and entrepreneurs with higher than average income are the most likely to be able to realise their wishes. Almost one third (31%) of the rural population, one fifth of the urban population and 41% of entrepreneurs expressed their desire to move to a private house.

Table 2. Satisfaction with the living conditions and the region with the highest dissatisfaction level (%)

Satisfaction components	Very satisfied or generally satisfied	The region with the highest level of dissatisfaction	
Dwelling			
Floor space/size of dwelling	82.8	Tallinn	23.3
Privacy, detachment	81.6	Tallinn	24.2
Dwelling conveniences	73.1	Southern-Estonia	32.5
General satisfaction with the conditions of dwelling	82.0	Tallinn	22.3
External residential environment			
Cleanliness and tidiness	74.4	Tallinn	30.9
Traffic intensity	74.6	Urban	27.4
Safety	71.2	Tallinn	43.8
General satisfaction with the external residential environment	80.4	Tallinn	26.3

Privacy of the dwelling

As is to be expected, the rural population is more satisfied with the privacy (detachment) of their dwelling. People living in Tallinn are the least satisfied, where being private in the big apartment buildings with a highly concentrated population means that people are enclosed within their own dwelling. But there is another aspect to privacy — families with many children and single parent households with many children express higher than average dissatisfaction; almost one third are not content with the level of privacy of their dwelling.

Amenities in the accommodation

Evaluations of amenities are lower than other satisfaction components, but still remain at a relatively high level. The urban population, which lives in multi-

apartment buildings with shared services, is more satisfied with amenities (75%) than the rural population (68%), for whom the elementary amenities (water closet, hot running water, bath or shower) are often unavailable. One third of the Southern Estonian rural and small town population are dissatisfied with the level of amenities in their dwellings.

General satisfaction with the external residential environment

The rural population has a higher general satisfaction level with their external residential environment (87%). In Tallinn the proportion of the population which is satisfied is ten per cent less and thus the dissatisfied proportion population is higher (22%). In comparison with other household types, pensioner households are the most satisfied with their residence (94%) and single parent families are the least satisfied (27%).

Satisfaction with the external residential environment is the lowest in Tallinn by all the satisfaction components surveyed in the research. Based on the results of the survey, it can be claimed that according to the subjective evaluations of the Estonian population the external residential environment and living conditions are worst in Tallinn, particularly in terms of safety, tidiness and cleanliness. For example 84% of the rural population regard their residential area as safe, whereas only 56% of the Tallinn population share that opinion.

Views on housing-related costs

Nation wide on average 49% of the respondents were satisfied with the level of housing costs in 1999, including 72% of households living in apartment blocks (table 3). 62% of the households living in apartment blocks and 88% of households living in private houses did not encounter problems paying for their housing once during 1999. The urban population (in particular people living in Tallinn) were the most critical of housing costs; here several housing costs (district heating, public water supply, etc.) are higher in comparison with the other regions. In Tallinn, where the market is oriented to a wealthier rather than poorer population, there are practically no opportunities for moving to cheaper accommodation, but presumably such opportunities must exist in small Estonian towns — almost one quarter of the respondents in small towns said that they wanted cheaper housing.

Table 3. Satisfaction with the cost of dwelling by region and household type (%)

Target group	Satisfied	Rather dissatis- fied	Very dissatis- fied
All respondents	49.1	30.6	20.3
Urban population	39.4	35.0	25.6
incl. Tallinn	36.6	38.1	25.3
Rural population	73.8	19.3	6.9
Single pensioner	50.7	29.2	20.1
Pensioner family	52.4	33.6	14.0
Working age (without children)	54.8	26.8	18.4
Single parent	37.0	32.7	30.3
Working couple (with 1–2 children)	44.8	32.1	23.1
Working couple with many children	61.3	24.7	14.0

71% of the households did not encounter any problems in paying for housing costs during the past 12 months. The non-Estonians living in the towns of Ida-Viru county had the biggest difficulties paying for their rent and utilities. Pensioners are the most dutiful rent payers. Urban families with children tend to have greater cash flow problems than rural families with many children, as the housing costs in the rural areas are significantly lower.

Housing costs are mostly higher in apartment blocks, where the apartments also have more amenities. Thus the need to change accommodation does not only depend on reasons related to the lifecycle of the population, but also to the income and economic situation of the household and to the social and housing policy of the state.

Housing costs in Estonia comprise 16–18% of the total expenditure of households. The figure is relatively close to that of the developed countries, where the housing costs exceed 20%, but it is still higher than in several other transition countries, where dwellings have not been privatised to the full extent and the housing costs are subsidised by the state.

Satisfaction with the infrastructure of the residence

The Living Conditions Survey (1999) showed that out of the elements of residential infrastructure, people are most pleased with the availability of shops, schools, pre-school child care facilities, post office and primary healthcare services (table 4). People are the least satisfied with the local work and business opportunities and cultural, recreational and entertainment establishments. Nevertheless, general satisfaction with the residential infrastructure is high — 82% of the population were satisfied. However, it has to be taken into account

that 70% of the population lives in the urban areas, where the services above mentioned are very close by.

Table 4. Satisfaction with the infrastructure elements and the region with the highest dissatisfaction level (%)

Infrastructure elements	Very satisfied or generally satisfied	Region with the highest dissatisfaction level	
Post office	85.4	Southern-Estonia	21.8
Primary school (also as part of basic or secondary school)	88.1	Rural areas,	19.2
		Southern-Estonia	13.9
Primary health care services (family doctor, hospital, medical assistant)	82.7	Rural areas,	28.0
		Central Estonia	23.6
Public transportation	80.3	Rural areas,	43.1
		Central Estonia	36.4
Shop	88.4	Rural areas	22.9
Cultural, recreational and entertainment establishments	42.4	Rural areas,	64.4
		Central Estonia	59.6
Pre-school child care facilities	85.2	Rural areas	25.1
Work and/or business opportunities	36.8	Rural areas,	72.3
		North-Eastern Estonia,	71.1
		Central Estonia	71.6
Household's general satisfaction with the services offered in residential environment	81.6	Rural areas,	31.4
		Central Estonia	24.4

The rural population is significantly less satisfied with their residential infrastructure. They are the least pleased with the local work and business opportunities (72%), the availability of cultural, recreational and entertainment establishments (64%) and the provision of public transport (43%). 28% of the rural population is dissatisfied with the availability of primary health care services, every fifth rural respondent is not pleased with the availability of other primary services namely — shops, schools, child care facilities.

82% of the households are satisfied with the services offered in the residential neighbourhood; 69% in the rural areas, 86% in Tallinn. Almost one third of the rural households interviewed are not satisfied with the services offered in their residential neighbourhood. The most problematic regions in terms of the availability of services are North-Eastern and Central Estonia, where the problems of unemployment, modest leisure faciliies and the poor provision of public transportation have come together.

Behaviour strategies on the housing market

It transpired from the 1999 Living Conditions Survey that 68% of households have carried out minor or major home repairs during the past three years (table 5).

Table 5. Renovation of the dwelling in 1997–1999 (% of all households)

Renovations	Per cent of households
Painted/wallpapered walls or ceiling	51.8
Changed or repaired window frames	13.8
Repaired bathroom or shower room	15.3
Repaired or modernised the heating, water or electricity supply system	19.3
Installed meters for cold or hot running water	33.9
Other repairs	21.0
No repairs	31.8

Mostly the repairs were simple — painting and wallpapering, installing water meters (which is important in respect of the economic consumption of water) and repairing or replacing heating and other technical systems. Almost one third of the respondents had not done any repairs. This is a rather high figure, as the question concerned three years and at least in one fifth of the cases the repair works were major that are usually undertaken only once over more than ten years. A proportion of the population cannot afford the renovation needed to maintain the technical level of the housing stock and the required level of housing quality because of the current lending terms. 40% of households on the poverty line and 59% of poor households have not done any repairs on their accommodation during 1997–1999.

The readiness to carry out repairs is in direct association with the income level of the household. 83% of the households in the upper income quintile and only 60% of the households in the lower income quintile have done repairs to their accommodation. Two member working families and families with children did the most repairs in their accommodation (80%), single pensioners did the least, only 45% of them undertaking repairs.

14% of the interviewed households would like to change residence in the future. The main motives are to move to a larger floor space (28%) or to a private house or a section of a terraced house (22%), 18% of the respondents would like to move to a less expensive residence.

Conclusion

- As a result of the privatisation of housing, Estonia has become a home owning state. At the same time a high proportion of the population (in particular people with a low income and economic difficulties) are unable as owners to invest sufficiently to maintain or improve the quality of their accommodation. Little diversity and thus limited choice is characteristic of the Estonian housing market — 75% of the total housing floor space is in big apartment blocks.

- In comparison with the survey conducted in 1994, there have been no significant changes in the structure of housing types. Since buying a private house or a section of a terraced house can only be afforded by economically secure people, the movement from apartment buildings to detached or semi-detached houses has been relatively modest.

- The Estonian real estate market is primarily aimed at a wealthier population and offers opportunities for contracts of purchase and sale or tenancy contracts for houses and apartments. Opportunities for the housing exchange are significantly fewer and thus the situation where single elderly people have larger accommodation than they need and can afford is quite frequent. At the same time, moving to a smaller dwelling is relatively complicated, as there is a lack of cheap apartments or the quality is unsatisfactory.

- Single parent households and households with many children have the greatest floor space difficulties. At the same time, 38% of the single parent households regard themselves as poor or are at risk of falling into poverty, so that moving to a bigger dwelling and having to incur higher housing costs is quite unlikely in this target group.

- The availability of amenities continues to be greatly differentiated in the urban and rural areas and there has been no significant changes in this respect during the period between the two surveys. Pensioner households are the most satisfied and single parent families the least satisfied with their accommodation.

- Satisfaction levels with the external residential environment are the lowest in Tallinn, where the physical and social environment and living conditions are subjectively the worst in Estonia, particularly in terms of the safety, cleanliness and tidiness of the external environment.

- The urban population (in particular people living in Tallinn) is most critical about housing costs; they face several housing costs (district heating, public water supply, etc.) which are higher than in other regions. In Tallinn, where the market is oriented to a wealthier rather than poorer population, there are practically no opportunities to move to cheaper accommodation, but such opportunities do exist in small Estonian towns — almost one quarter of the respondents in small towns said that they wanted a cheaper housing.

- During the past 12 months slightly less than one third of households have encountered problems in paying for their housing expenses. Non-Estonians living in the towns of Ida-Viru county had the greatest difficulties paying for their rent and utilities. The smallest number of housing cost debtors is among the pensioners. Urban families with children tend to have greater problems of cash flow than the rural families with many children, since the housing costs in the rural areas are significantly lower than they are in the urban areas. Housing costs are higher mostly in the apartment blocks, where the apartments also usually have more amenities.
- The rural population is significantly less satisfied with the residential infrastructure. They are the least pleased with the local work and business opportunities, the availability of cultural, recreational and entertainment establishments and with the provision of public transportation. One quarter of the rural population is dissatisfied with the availability of primary health care services, every fifth rural respondent is not pleased with the availability of other primary services namely — shops, schools and child care facilities.

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Changing labour market in Estonia, 1994–1999

Ülle Marksoo

The Estonian labour market has gone through a major change during the past decade. Transition to the market economy, restructuring of the economy and liberal economic policy brought with it a decline in employment and an increase in unemployment. In addition to the increase in unemployment, the number of inactive people, who were unable to adapt to the new conditions and gave up their search for a job, also increased.

The decline in employment and the increase in unemployment and inactivity during the past decade are characteristic not only of Estonia, but of all the Central and Eastern European countries. The rates of employment and activity are significantly lower and unemployment higher in the transition countries than in the European Union on average. There has been an upsurge in unemployment amongst young people and the job seeking duration has become longer.

The decline in employment was particularly fast in the first years of transition. There were a number of reasons for this. First, the extent of initial labour hoarding was such that production could easily be increased without additional labour. Second, in order to become more competitive, enterprises were forced to cut costs, including labour costs, and invest in new technologies, many of which are labour-saving. Third, the number of new jobs in many transition countries was still not sufficient to make up for those lost and to provide openings for new labour market entrants (O'Leary *et al.*, 2001). Calculations have been made that around 3 million new jobs are needed to bring the Central and Eastern European countries employment rate up to that of the European Union (European Commission, 2001b).

In the new economic situation the necessity to examine the processes in the labour market arose due to the need to compare the processes in Estonia with the processes in the other countries. The need to collect statistical data that would be based on international definitions and on internationally comparable methodology thus gained importance. The first Labour Force Survey was conducted in Estonia only in 1995, so it could be claimed that the Living Conditions Survey conducted in 1994 in the framework of the NORBALT project was the first extensive survey that enabled adequate valuation of the processes in the labour market. The labour force section of the survey was in concordance with ILO standards and therefore internationally comparable. The survey in 1999 (NORBALT II) was conducted based on the same methodology.

Unlike the Labour Force Survey, the Living Conditions Survey provides a wider view of a person's ties with the labour market, *e.g.* in relation to one's health, living environment, dwelling place, values or economic coping.

The aim of this paper is to highlight the changes in the Estonian labour market based on the 1994 and 1999 Living Conditions Surveys' labour force data and to describe the background of those changes. The population's economic activity and adaptability to circumstances in the market economy are analysed. The analysis focuses on the unemployed as one of the most socially vulnerable groups of the population. The paper seeks to answer questions such as why some people lose their jobs more easily than others, what the behaviour is of the unemployed in the labour market, *i.e.* if and how people who have become unemployed start seeking a job, what the duration of job seeking depends on and what are the groups at risk in the labour market who are unable to find a job and need state aid to manage.

Estonian labour force trends in 1989[1]–2000

Estonia was still part of the Soviet Union in 1989–1990 and was closely connected with the Eastern market. At that time, the employment rate was over 70%, the number of those in employment was over 800,000 and unemployment was not recognised as a problem. The epoch-making years that influenced the processes in the labour market were 1991, when Estonia regained its independence and 1992, when the Estonian kroon was adopted and the economic reforms started.

A wave of dismissals connected with the economic reforms brought with it an increase in unemployment: in the years 1991–1995 it grew from 1.5% to 9.7%. Primarily, it was the inefficient jobs which disappeared — mostly in industry and agriculture, where the number of employees was artificially high. The first companies to go bankrupt were closely connected with the eastern market and were unable to continue selling their products. Economic growth has been positive since 1995 and peaked in 1997. According to the Labour Force Surveys the employment rate of the population aged 15–74 in 1995–1998 was 58% and the unemployment rate was around 10%. The next drastic decline in employment followed the economic crisis in Russia in 1998 and 1999, which caused the unemployment rate to increase to a record 14.8% by the beginning of the year 2000 when the number of unemployed exceeded 100,000.

The years 1994–1999 [viewed in the paper] reflect a relatively stable period in the labour market. According to the Living Conditions Survey, unemploy-

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[1] The first Labour Force Survey conducted in 1995 by the Statistical Office of Estonia also included a retrospective section dating back to the year 1989. Thus there are comparable statistics based on the ILO methodology about the situation in the labour market in Estonia since the year 1989.

ment had increased to around 10% by the year 1994 and was on a similar level in 1999 (table 1).

Table 1. The development of the labour market in 1994–1999 (% of the population at least 15 years of age)

The main indicators of the labour market[2]	1994	1999
Employment rate	55.5	54.2
Unemployment rate	10.4	9.9
Labour force participation rate	62	60.1

Since the unemployment rate only reflects the share of people seeking a job and not everyone who has lost a job, the employment rate shows the extent of the wave of dismissals better. The employment rate declined by 1.3 percentage points in the reference period. The decrease in male employment was faster than female employment and therefore, all in all, the unemployment of males was greater.

The third indicator, the labour force participation rate, characterises people's economic activity. During the five reference years, the labour force participation rate decreased by 2 percentage points. Since a decrease in employment was not followed by an increase in unemployment to the same extent, it could be concluded that the number of those not seeking a job after becoming un-employed and those who left the labour force increased with the years. Esto-nians gave up job seeking and became inactive more frequently than non-Estonians, particularly in the rural areas.

Changes in employment

Gender-age structure of the employed

The gender structure of the employed population was fairly stable in 1994–1999: men composed 51% of the employed in 1999 and 52% five years prior to it. The number of employed people decreased among both men and women (respectively by 6% and 3%) and in almost all age groups. The only exception was the 55–64 age group, where the increase in the number of employed was due to the raising of the retirement age in 1994[3]. In five years the retirement age of men and women increased by 2.5 years. This resulted every year in more people who were approaching their retirement remaining in the labour market, but they were more

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[2]   See the definitions of the main indicators of the labour force in the Appendix.

[3]   The retirement age began to rise in 1994. It will reach 63 for both men and women by the year 2016. In 1999 men retired at the age of 62.5 and women at the age of 57.5. In 1994 the respective ages were 60 and 55 years.

likely to be dismissed. However, in comparison with other age groups it was more difficult for those approaching retirement to find a new job.

Since women are on average involved in their studies for longer and devote a certain period to raise children, men tend to integrate into the labour market on average earlier than women and the employment rate for young women is considerably lower than for men of the same age. Thus, during the period observed, there were more males among the employed up to the age of 35, but more females in the 35–54 age group (the male and female ratio is also similar in the population). Since the retirement age of men is higher than that of women, there were more men among the employed in the 55–64 age group than women. All in all, the employment rate of men (61%) was considerably higher than the employment rate of women (49%).

The changes in employment rates between 1994 and 1999 (figure 1) were accounted for mostly by the increasing influence of students in the youngest age group of the labour force and the increase in the retirement age in the older age groups. The youth employment rate declined over the five years for men (from 49% to 35%) and women (from 35% to 27%). Acquiring an education became more popular, the duration of studying prolonged and the private higher educational institutions provided an opportunity for those young people who were not admitted to the state universities based on their exam results. There was also an increase in the numbers of young people striving for a degree course in the universities in Estonia and abroad. Thus the entry of the education-oriented young to the labour market was postponed.
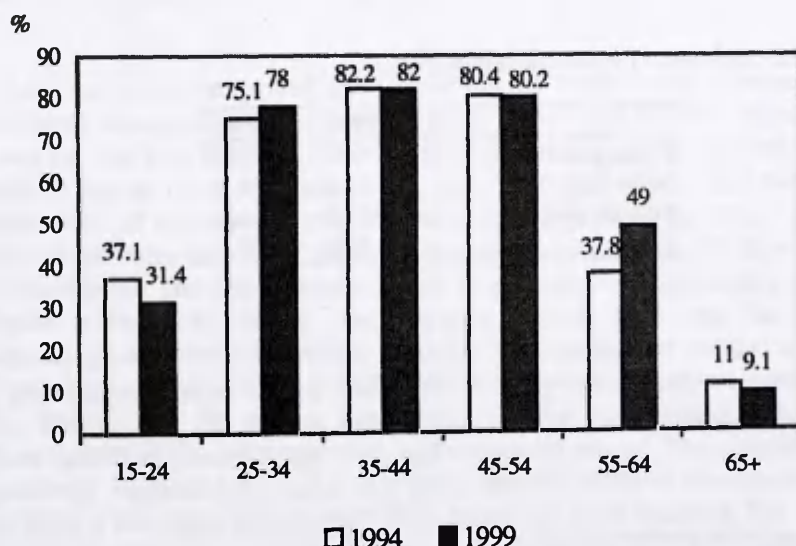

Figure 1. Dynamics of the employment rate by age group (%).

Economic activity

Important shifts in the structure of the economic activity of the employed took place in the 1990s. As a result of the economic restructuring, the proportion of people engaged in agriculture and industry decreased significantly and the proportion of those employed in the service sphere increased. In 1994 16% of the employed were engaged in agriculture, fishery and forestry (Marksoo, 1996), whereas by 1999 the figure had dropped to only 8%. The rapid decline of employment in agriculture caused high unemployment in the rural areas, which still persists today. The situation is particularly hard in the south-eastern counties of Estonia. Considering that the average proportion of the employed population engaged in agriculture in the European Union was 4.5% in 1999, it could be assumed that the percentage of those employed in agriculture in Estonia could decrease further. Any increase in the number of jobs in the rural areas will probably be accounted for in the main by the cultivation of alternative activities.

The greatest number of jobs created during the period observed were in the service sector. The proportion of the spheres of activity and the number of those employed in the tertiary sector[4] increased. Due to the rapid development of the private sector the number of those employed increased most in trade, financial services, business and real estate activities. In comparison with the average of the EU countries, where over 68% of the employed are engaged in the service sector, a continuing increase in the numbers employed in the service sector could be expected in Estonia.

Table 2. The employed by economic sector (%)

	1994	1999
Primary sector	15.7	7.9
Secondary sector	26.4	32
Tertiary sector	57.9	60.1
Total	100	100

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[4] *Primary sector* — agriculture, hunting, forestry, fishery; *secondary sector* — mining, quarrying, manufacturing, electricity, gas and water supply, construction; *tertiary sector* — trade, transport, public administration, education, health care, service, etc.

Occupations

Changes in the structure of economic activities caused significant shifts in the occupational structure of those employed (figure 2).
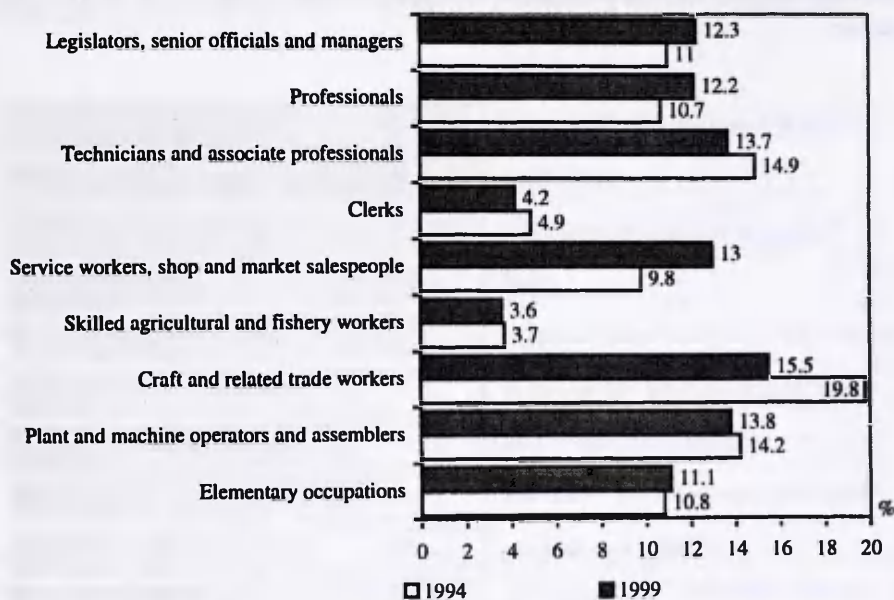
Figure 2. The employed by occupation (%).

During the reference period the proportion of white-collar workers [in the employed] increased and the proportion of blue-collar workers declined. The reason for this was that as a result of the restructuring of the economy, the less qualified labour force was more likely to be laid off. White collar staff have a higher level of education (figure 3) and their situation in the labour market is more secure since they can find a new job relatively more easily. Thus not only the relative but also the absolute figure of the number of managers and chief executives increased during the reference period. However, the share of associate professionals decreased slightly. The number of service and sales-people increased most rapidly due to the development of private entrepreneur-ship. The biggest fall was in the number of craft and related trade workers whose qualifications no longer met modern requirements. The adoption of new technology required knowledge and skills that the workers who received their education a few years or decades before could not have obtained. Not everyone was capable or motivated to be retrained. Since less labour was needed after the implementation of the new technology, lay-offs were inevitable.

It transpired from the analysis of the levels of education[5] of the employed by occupation (figure 3) in 1999 that professionals had the highest level of education, 83% of them having tertiary education. At the lower levels of occupational distribution the proportion of workers with basic education was noticeably higher and the proportion of workers with higher levels of education smaller.
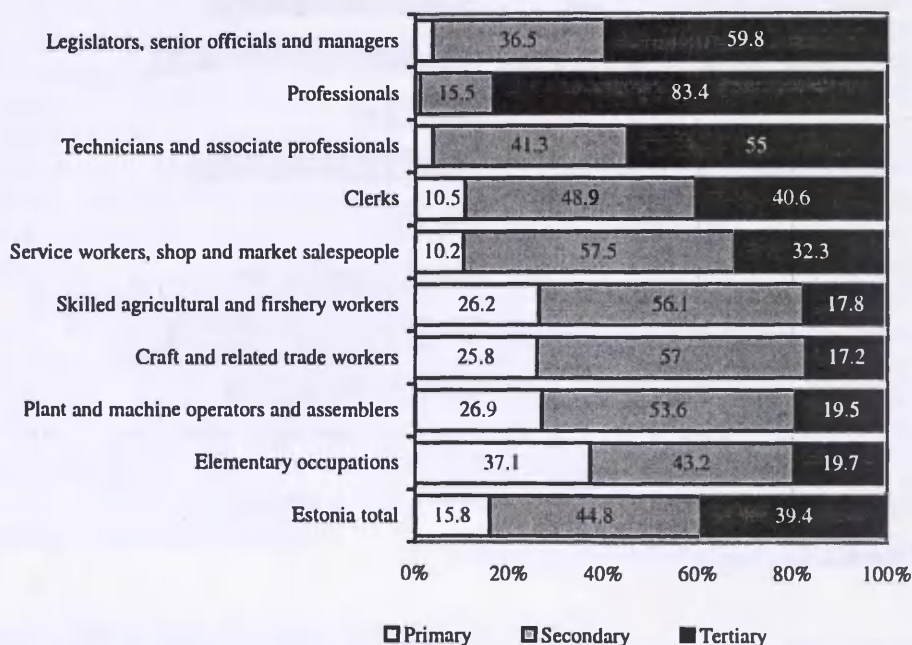
Figure 3. The level of education of the employed by occupation (%)

Similar tendencies occur in the comparison of the occupational dynamics in Estonia with other European countries. The new jobs created require highly qualified professionals everywhere. Thus the proportion of chief executives, professionals as well as service and salespeople increased in all the member states of the European Union during the years 1994–1998 (European Commission, 1999).

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[5]   *Levels of education according to the ISCED-97 classification: below upper secondary education* — primary and basic education; *upper secondary education* — secondary education, vocational education, technical education based on secondary education; *tertiary education* — post-secondary technical education based on secondary education, Bachelor's degree, Master's degree, Candidate of sciences / doctorate.

Working hours

In comparison with 1994 the number of people working normal hours (40 hours per week) in their main job had increased by the year 1999. During the same period the share of people working less than 15 hours and more than 40 per week had decreased (table 3).

Table 3. Distribution of the employed by the hours worked per week in main job, 1994 and 1999 (%)

Working hours per week	1994		1999	
	Employed (thousands)	%	Employed (thousands)	%
1–15	21.9	3.4	11.9	2.0
16–35	76.3	11.7	69.9	11.5
36–40	375.7	57.8	383.7	63.3
sh. 40	365.8	56.2	374.7	61.8
41–60	141.7	21.8	120.6	19.9
61 and more	34.6	5.3	19.8	3.3
TOTAL	650.3	100.0	605.9	100.0

Agricultural workers did the most overtime in their main job: 53% of them worked for longer than 40 hours per week. The workload was also heavier for 36% of managers and 32% of service people. Workers 25–49 years of age had the longest working weeks, a quarter of them working for more than the 40 hours which is regulated by the law. Only 14% of those in employment worked part-time (less than 35 hours per week).

Additional work

Although the law has stipulated a 40-hour working week, many work longer hours. Both in 1994 and in 1999 9% of the employed did additional work. In 1994 11% of men and 8% of women had a second job. However five years later the situation was *vice versa* — 10% of women (including 15% of single mothers) and 9% of men were engaged in additional work. In both reference years there were around 11–12% of those seeking to earn extra income, including 17% of women raising children alone. A situation in which the increase in salaries is slow or non-existent, but the prices of goods and services increase continuously creates problems in managing, even in households where all adult members are employed. Working overtime is one of the options to improve the economic capacity of the household.

However, working overtime cannot be viewed merely as a means of improving the economic situation. It transpired from the analysis that the greatest

proportion (22%) of those working overtime were professionals, in particular people working in the educational field (ca 1/5 of education and science workers), as well as civil servants and health care workers. Interestingly, although managers often worked overtime in their main job, 13% of them also had a second job. The higher the income quintile, the greater was the proportion of households with additional work, *i.e. additional work can take the household to a higher income quintile.* Additional work was done in 13% of households belonging to the highest income quintile; at the same time only 6% of the families belonging to the lowest income quintile were engaged in additional work. A paradoxical connection transpires — the lower the occupational position of the worker, the lower the probability of having a second job beside one's main job, whilst the proportion of those who would like to have additional work is greater and the economic need for additional work is more apparent. It did transpire from the survey that additional work was mostly sought by the adult members of the poorer families. Unfortunately their chances of finding additional work were slimmer — they mostly lacked the relevant qualification or the qualification they had did not meet the requirements.

Unemployment

Gender-age structure of the unemployment

In 1994 and 1999 the average rate of unemployment remained at around 10% and there were no significant changes in terms of age groups. However, unemployment did increase to a certain extent in the age groups over 45-year-old (figure 4). Unemployment among young people (15–24 years of age) at the start of their career also became a problem: in 1999 young people comprised one fifth of all the unemployed. Young people who left school before acquiring a basic education were more likely to be unemployed. According to Heinlo (2001) on average 700 young people in the 7th to the 9th grade per year quit day school during the years 1992–1999. According to the Education Act education in Estonia is compulsory until the age of 17 or until the basic education is completed. One can apply to the employment office from the age of 16 and those young people who have terminated their education before that find it practically impossible to gain employment.

In addition to the young people with a low level of education unemployment also threatens young people who do not have a command of the Estonian language. According to the 1999 survey the unemployment rate among young Estonians was 14%, but significantly higher among young non-Estonians — 22%. These were mostly young people from Ida-Viru county, who encountered unforeseen difficulties finding a job even after their graduation from a local vocational school.

The duration of unemployment among the young is shorter compared with other age groups. 54% of the unemployed sought work for up to 6 months on average, but according to the 1999 survey 76% of the young unemployed managed to find a job within 6 months (79% in 1994). Although the average duration of unemployment among the young is shorter than in the other age groups and there are fewer long-term unemployed among the young than in the member states of the European Union, the situation of the young unemployed in Estonia will become more difficult. The reason for this is that the number of vacant jobs will be reduced with the increase in retirement age, and pensioners tend to keep their jobs if they can because pensions are small. In a situation where few new jobs are created, the job applicants are often expected to have prior work experience, which the fresh school graduates mostly do not have.
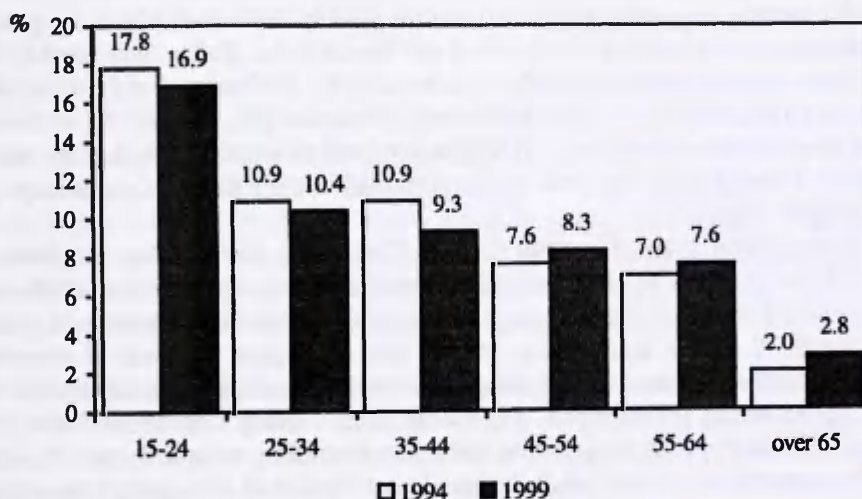
Figure 4. Dynamics of the unemployment rate by age group (%)

Although unemployment is a problem among both genders, higher unemployment among men than women is characteristic of Estonia, in spite of the male employment rate being higher than the female employment rate by 12 percentage points. The reason could be that women give up the search for a new job after becoming unemployed more easily and decide to stay at home, *i.e.* become economically inactive. Finding a new job was particularly hard for those unemployed over 45 years of age who lacked professional education or whose skills did not meet the changing requirements of the labour market. On the other hand, given the extraordinarily high employment rate of women in the Soviet Estonia, the decline in employment is to a certain extent quite natural.

Registered unemployment usually stands at half of the unemployment rate described in the Labour Force Surveys, because not all of the unemployed register themselves at the state employment office. There are significantly more women than men among the registered unemployed. For example in January 2000 women comprised 56% of job seekers and 64% of those receiving unemployment benefits. This could be explained firstly by women being more willing to turn to the employment office for help on becoming unemployed and secondly by the fact that under the current law, women who raise children under the age of 8 can register themselves as unemployed repeatedly[6] without restriction.
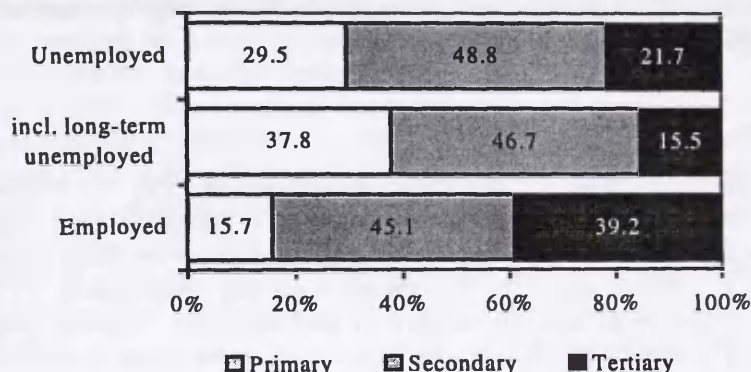
Level of Education

In the market economy the labour force quality indicator which is gaining importance is the level of education of the labour force. Today, it is notably harder for someone with a general education and no professional skills or qualifications to find a job. Also, when someone loses their job, there are more favourable opportunities for those with higher levels of education to find a new job or acquire a new profession. This is also reflected in their shorter than average job seeking duration.

It transpired from the 1999 Living Conditions Survey that the level of education amongst the unemployed is significantly lower than that of the employed, and the proportion of people without a professional education is greater (figure 5). Yet once again it was proved that the higher the level of education the greater the opportunities to compete in the labour market and the smaller the risk of becoming unemployed. According to the Living Conditions Survey the unemployment rate among people with post-secondary technical education and higher education was 6%, while it was almost three-fold among the labour force with basic education — 17%.

The level of education of the unemployed has an important impact on the duration of job seeking. Those seeking a job for longer usually have a lower level of education. As shown in the results of the survey the share of long-term unemployed with basic education was 38% and the share with higher education was 16%. The respective figures for the short-term unemployed were 29% and 24%. The level of education of unemployed men was considerably lower than that of unemployed women.

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[6]   According to the Unemployment Social Security Act the job seeker has to have been engaged in work for at least 180 days during the past 12 month, in order to be entitled to unemployment benefit. Entitelment does not rest on prior engagement in work for those raising children under the age of 8 (7 until the 1st of October 2000) or disabled children of any age.

Figure 5. Levels of education of the employed and unemployed in 1999 (%)

The level of education of the registered unemployed transpired to be lower than that of the job seekers on average. Since it is more difficult for an unemployed person with a lower level of education to find a job, it is to be expected that they turn to the employment office more frequently. People with a higher level of education are more likely to seek a new job by asking their relatives or friends, contacting employers directly or by using private employment agencies. Professionals with high qualifications are often headhunted and thus their job seeking duration is the shortest in comparison with other groups of the unemployed.

Unfortunately the Estonian educational system has not been able to keep pace with the changes in the economy. Vocational education and professional training have not been sufficiently flexible to meet the needs of the labour market, the weakest link being the post-basic and post-secondary vocational education. Unemployment is also high among the group of the population with only a basic education (Eamets *et al.,* 2000).

The nature of unemployment in Estonia is mostly structural — although the rate of unemployment is higher than the European Union average there is an insufficient qualified labour force in Estonia. A developing economy prefers professionals and skilled workers with high qualifications; therefore the education acquired years ago is no longer competitive in today's labour market. However, there are still vocational schools that "produce" the unemployed (*e.g.* specialising in agriculture and mining and quarrying). This shows that vocational education needs thoroughly reforming.

In order to stay competitive in the labour market one should possess the professional skills and knowledge that the society needs at the given moment in time. People must be prepared to have additional training or retraining if

necessary, regardless of age. Thus the principle of life long learning has been increasingly propagated in Estonia.

Reasons for becoming unemployed

The most frequent reason for becoming unemployed in 1999 was redundancy (in 29% of the cases). The threat of redundancy became greater with the increase of age and peaked (42% of the cases) in the oldest working population age group, *i.e.* 55–64 year olds. The second most important reason (17%) for becoming unemployed was the closure of the enterprise. Another relatively frequent (14%) reason was leaving the job on one's own initiative, particularly among people in the peak working age (25–49 years old). 8% of the unemployed had never worked before. The majority of them were young people (15–24 years old), who had discontinued their studies or had not found a job after their graduation. 38% of the young lacked prior work experience. Unlike the other age groups, leaving the job on their own initiative topped the list of reasons for becoming unemployed among the young (in 26% of the cases), while workers over the age of 55 left the job on their own initiative very rarely.

In 1994 redundancies were also the main reason for losing a job, but leaving the job on one's own initiative was the second most important reason. The decreasing significance of the latter reason during the past five years could be explained by the intensifying situation on the labour market, so that people tend to consider the opportunities for finding a new job before leaving their old job.

The extent of the redundancies and the creation of new jobs have varied greatly region by region. During the whole transition period there have been two regions in Estonia where unemployment has been continuously high. These regions are north-eastern and south-eastern Estonia. The industrial enterprises that were established within the framework of the former economic policy and oriented to the Eastern market either went bankrupt or the manufacturing was restructured, thus causing an extensive wave of unemployment. As a result of this policy several Estonian towns such as Kohtla-Järve, Narva and Sillamäe were badly affected. Other small mono-functional settlements were also affected, where the bankruptcy of the only employer brought the life of the whole village to a standstill. The unemployment rate in north-eastern Estonia is the highest up to the present time.

The other area that suffered from major lay-offs was the agricultural sector. Those agricultural regions that could not rapidly re-orientate to the demands of the market economy after the liquidation of the state and collective farms were most affected, for example the counties of south-eastern Estonia — Põlva, Võru, Valga and Jõgeva. The fall in agricultural employment was significantly faster in Estonia than in other countries, leaving no time to adjust to the changes. Many former farms collapsed and the increase in farming remained

smaller than expected, which is why unemployment stayed high in those rural areas throughout the transition period. However the rate of unemployment still remains below that in north-eastern Estonia.

Experiencing a tense situation in the labour market makes many workers to feel insecure about their future. In 1999 43% of workers said that they feared losing their job within the next two years. 10% of Estonians and 23% of Russians were afraid of being made redundant, 10% of Estonians and 22% of Russians were afraid of the closure of their enterprise. In total 35% of Estonians and 60% of Russians thought their job was insecure. Thus, Russians were substantially more concerned about the preservation of their jobs than Estonians.

Economic activity and occupation prior to unemployment

Unlike the survey conducted in 1994, the Living Conditions Survey in 1999 asked the unemployed questions about their economic activity and occupation before unemployment, which provided information on the fields of activities and occupation groups where most people had been made redundant (tables 4 and 5). It transpired that the highest percentage of the unemployed in 1999 had previously been engaged in manufacturing (27%). Half of the male unemployed had been engaged in manufacturing or construction and half of the female unemployed had been engaged in manufacturing or trade, where the turnover was considerable. Also there were plenty of previous transport and agricultural workers among the unemployed, but representation of other fields of activities was noticeably smaller.

Compared with 1994 the number of agricultural workers had almost halved by the year 1999 and no greater numbers of people were made redundant in agriculture in 1999. However there were lay-offs in food manufacturing enterprises that had to either close down or to re-orientate their business to the Western market after the economic crisis in Russia.

Table 4. The unemployed by activity before unemployment, 1999 (%)

Previous activity	% of the unemployed	Unemployment rate, %
Primary sector	10.1	11.4
Secondary sector	43.7	12.1
incl. manufacturing,	27.5	11.7
construction	12.9	15.4
Tertiary sector	46.2	7.2
incl. trade,	17.5	10.1
transport	8.4	8.2
Total	100.0	9.2

It transpired from the analysis of the former occupations that the share of blue-collar workers among unemployed men is substantial. 82% of unemployed men had previously worked at crafts and related trade occupations, plant and machine operators and assemblers or had had elementary occupations. Among women the greatest proportions were of previous service and sales workers (28%), elementary occupations (19%) and associate professionals (16%).

Table 5. The unemployed by occupation before unemployment, 1999 (%)[7]

| Previous occupation	% of the unemployed	Unemployment rate, %
Legislators, senior officials and managers	8.9	3.5
Technicians and associate professionals	9.4	6.5
Clerks	(4.6)	(10.0)
Service workers, shop and market sales workers	13.6	9.6
Craft and related trade workers	24.1	13.6
Skilled agricultural and fishery workers	3.1	8.1
Plant and machine operators and assemblers	15.4	10.2
Elementary occupations	20.9	15.6
TOTAL	100.0	9.2

Ways of job seeking

On losing their job people used various ways to seek another (figure 6). The higher the level of education of the job seeker had, the more actively different options were used. The most prevalent way was to ask one's relatives, friends and fellow students (76%). People with higher education are in an advantaged position as their circle of friends is greater and therefore the chances of finding a job better. According to the Labour Force Surveys conducted by Statistical Office of Estonia it proved to be the main way of finding a job. For example, in the year 2000 38% of those who started working within the past 12 months had acquired their job through relatives or acquaintances (Statistical Office of Estonia, 2001). Probably the small size of Estonia has an influence on the matter, as there is a relatively great number of relatives and acquaintances compared with a large country. 62% of the unemployed contacted employers directly (men more often than women) and only 53% sought a job through the state employment office (women and the middle-aged more often). These three means of job seeking of the unemployed[8] were also most prevalent according to

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[7]   Per cents in the parenthesis are based on 20–39 persons in the sample.
[8]   In the 1994 Living Conditions Survey only the main way of seeking a job was marked. but in the 1999 survey all the ways used by the unemployed were marked.

the 1994 survey. Seeking a job through a private employment office or starting one's own business were not widespread among the unemployed.
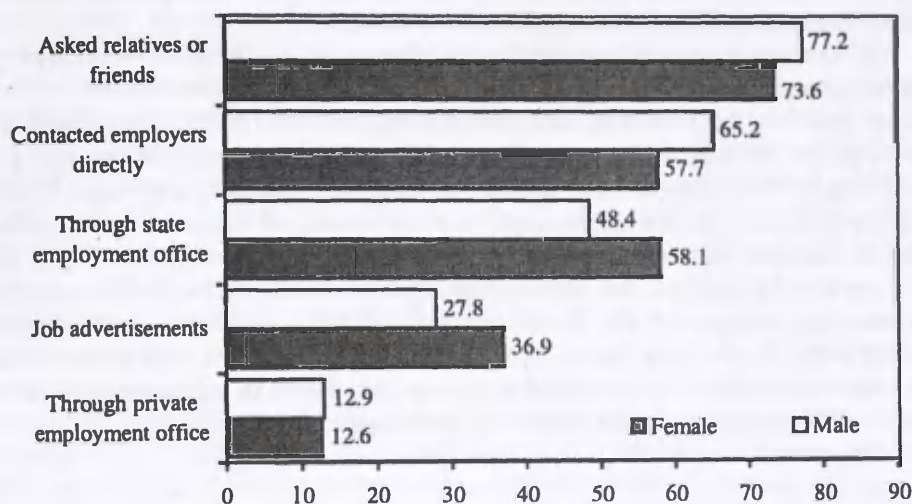
Figure 6. Steps taken to find a job in 1999 (% of the unemployed)

The ways of seeking a job varied by age groups. In comparison with other Central and Eastern European countries, where 2/3 of the young turn to the state employment office in order to find a job, only half of them use the help of their friends or acquaintances and only a few contact the employers directly (European Commission, 2001a), the job seeking behaviour of Estonian youth in the labour market was quite the contrary. Only 2/5 of young people registered in the state employment office. The majority turned to their friends to find a job (73%) and 65% contacted the employer directly. Young school graduates were more eager to find a job through job advertisements and private employment offices. The higher the age of the job seeker, the more likely did he/she register at the state employment office as unemployed and used the help of acquaintances in the search for a job.

Registering oneself at the state employment office has not been popular in Estonia, particularly among the young and job seekers with higher education. The reason for this is that there are rarely any suitable jobs to offer to people with higher education. In addition, the prevailing attitude among employers is that the state employment office could not offer them a qualified labour force and thus the employers do not inform the state employment office of vacancies. Qualified job seekers in turn do not register at the state employment office due to the small number of vacancies and quite often the jobs offered do not meet the skills and qualifications of the job seeker. Hence it is a vicious circle and in

order to break out of it, a change in the way of thinking of the employers and job seekers is needed. Another important reason for not registering is the low level of unemployment benefit with those who have been unemployed for more than 9 months no longer having the right to receive it[9].

In analysing ways of job seeking in relation to the duration of unemployment, it emerged that during the total job seeking period four main ways were used based on the 1999 data. Interestingly, the methods of seeking a job did not change in order of importance during the period of unemployment, but job seeking intensity did (table 6). During the first year job seeking through friends and acquaintances, contacting employers and turning to the employment office became increasingly more intensive. During the first three months 49% of the unemployed turned to the state unemployment office, within half a year the percentage increased to 60. The intensity of job seeking through advertisements decreased. The share of the unemployed wanting to start their own business was extremely small and it decreased further as the period of unemployment went on. 13% of the unemployed turned to private employment offices.

Table 6. Main ways of job seeking by the duration of unemployment in 1999 (% of the unemployed)[10]

Steps taken to find a job	Duration of job seeking			
	0–3 months	4–6 months	7–11 months	12≤ months
Asked relatives and friends	72	76.9	83	74.6
Contacted employers directly	57	59.6	67.2	64.7
Through state employment office	49.3	54.1	59.6	54.8
Advertised or responded to job advertisements	37.3	33.7	(30.2)	27.8
Other	22.7	19.1	21.7	15.1

Long-term unemployment

According to the 1999 Living Conditions Survey long-term[11] unemployment was a problem both among Estonians and non-Estonians, comprising approximately

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[9]   Until the 1st of October 2000 the right to receive the unemployment benefit was up to 6 months, exceptionally up to 9 months.

[10]   *per cents in the parenthesis are based on 20-39 persons in the sample*

[11]   Usually the term long-term unemployed is used for people who have been unemployed over 12 months, but in this article also these job seekers have been included who have been seeking for a job for 12 months. As we are dealing with a very big number (27% of the long-term unemployed) including these people in the long-term group will rise the credibility of the analysis.

30% of the unemployed in both cases. The young were in a more favourable situation than the other age groups, although the unemployment rate was high, the job seeking duration was shorter compared with other age groups. Thus, those aged between 15–24 years who were unemployed comprised 15% of the long-term unemployed, in the 45–54 year-old age group the respective figure was 40%.

It transpired from the survey that the more peripheral the region where the unemployed lived, the greater the probability of prolonged job seeking and long-term unemployment. Transportation problems could have hindered the job seeking of those living far from the centre — the closing down of public transportation routes or high ticket prices. Thus, after the deduction of the cost of transport from the salary, the income might not have significantly exceeded the unemployment and social benefits received. It also transpired to be more difficult to find a new job after having lost a job in a mono-functional settlement compared with people who lost a job in a poly-functional settlement.

Another problem in finding a job for the long-term unemployed is their decreasing attractiveness for the potential employer. Since the qualification becomes dated during one's unemployment, employers prefer to hire people who have been unemployed for a short term or head-hunt working people. Also, of course, the long-term unemployed have to compete for vacant jobs not only with the short-term unemployed but also with new entrants into the labour market, who have acquired a contemporary education, have the knowledge of foreign languages and of various computer programmes.

Not all of the unemployed become long-term unemployed. A great deal depends on one's activity, level of education and willingness to learn a new profession. Low levels of education significantly increase the probability that upon losing a job, one becomes long-term unemployed. In the whole of Europe the core of the long-term unemployed is comprised of people who lack pro-fessional qualifications.

Inactivity

People outside the labour force are regarded as inactive, *i.e.* they do not work or look for work. According to the 1999 survey 80% of the inactive people were students and pensioners, the rest were housewives, people not working due to health problems, mothers on parental leave or discouraged workers, who had given up seeking work. During the period between the two surveys the proportion of inactive people in the working-age population increased from 38% in 1994 to 40% in 1999. The inactivity of young (15–24 years old), 35–54 year-olds and people over the age of 65 increased. The inactivity of 55–64-year-olds decreased due to the prolonged working age. The growing trend towards an increasing proportion of inactive people in the working-age population has been observed in all the European transition countries and Estonia is no exception.
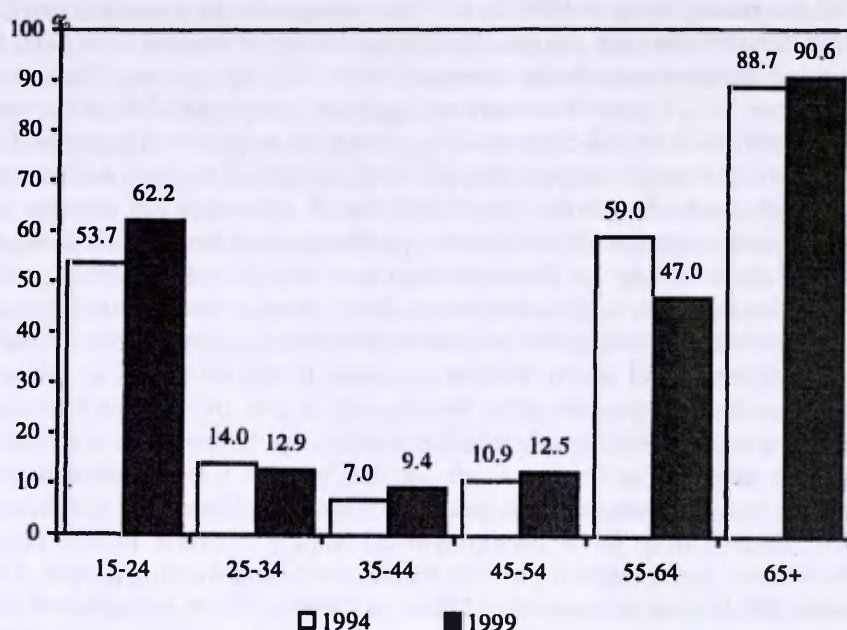
Figure 7. Dynamics of inactivity rate by age group (%)

The greatest change in the structure of the inactive group between 1994 and 1999 was the increase of students from 18% to 27%, which was also reflected in the increase of the inactivity rate in the young age group in general (figure 8). Thus, students constituted over a quarter of all inactive people in 1999. Secondly, inactivity due to health problems increased, which can be explained by a lower competitiveness in the labour market of the people with poor health. According to the Living Conditions Survey the number of ill and disabled people in the inactive population increased by over 40% in five years, but due to a decline in reproduction the number of mothers on parental leave decreased significantly.
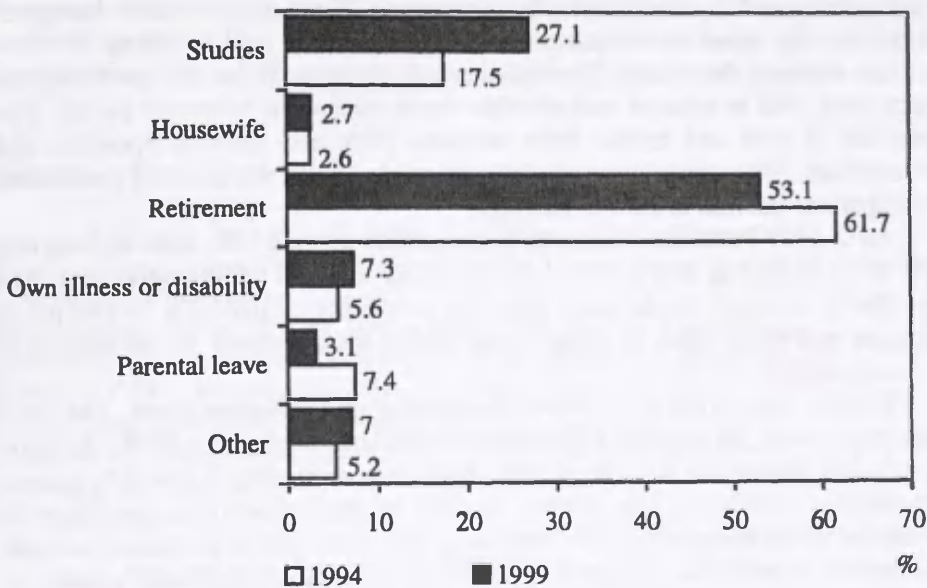
Figure 8. Dynamics of inactivity reasons (%)

The proportion of discouraged workers in the inactive population increased between 1994 and 1999, mostly in the rural areas, where it is particularly difficult to find vacancies. There were also people who had lost hope of, and interest in, finding a job due to long-term unemployment and losing their qualification. Their main source of subsistence was social allowances and it is an extremely difficult task to bring them back to the labour market.

Conclusion

Based on the two Living Conditions Surveys it can be concluded that the labour market was relatively stable between 1994–1999. The unemployment rate remained at around 10% both in 1994 and 1999, whilst the unemployment rate for men remained slightly higher than that for women. The employment rate decreased by 1.3 percentage points and the inactivity rate increased by 2 percentage points.

The greatest changes took place in the structure of economic activity and the occupation of the employed. The decline of the agricultural, forestry and fishery sectors as a proportion of the employment market continued (from 16% to 8%) and the service sector share increased. Due to the rapid development of private entrepreneurship the number of people employed in trade, financial services,

real estate and business activities increased. Similarly to other European countries the share of white-collar workers increased and the share of blue-collar workers decreased. The number of top executives and professionals increased both in relative and absolute terms during the reference period. The number of craft and related trade workers, plant and machine operators and assemblers, service workers and shop and market sales workers and elementary occupations decreased most drastically.

As in 1994 9% of the employed had a second job and 12% were seeking one in 1999, indicating that their salary level was low and additional income was needed to manage. At the same time, the possibility of finding a second job is limited and more open to people with higher qualifications whose income is already higher.

The unemployment rate did not increase in the reference years. The most common cause for becoming unemployed was still redundancy (29%). Leaving one's job voluntarily became slightly more rare as finding a new job became increasingly difficult. The greatest number of men were made redundant in manufacturing and construction and the greatest number of women were made redundant in manufacturing and trade. There was also a significant number of transport and agricultural workers among the unemployed.

Job seeking methods had not changed over the years. The main ways to find a job were to turn to relatives, friends and acquaintances (76%) and to contact the employer directly (62%). Job seeking through the state employment office came only third (53%).

There is structural unemployment in Estonia. Although unemployment is high, employers complain about the lack of a qualified labour force. The reason lies in the fact that the skills and qualifications of the unemployed often do not meet the requirements of the labour market. Acquiring education and continuous life-long learning are the best ways to avoid becoming unemployed. It is difficult for non-Estonians who do not have a command of the Estonian language to find a job. Thus, if the unemployment rate among Estonians was 8% in 1999, then the unemployment rate among non-Estonians was 13%.

During the period between the two surveys the proportion of inactive people in the working-age population increased. The increase is accounted for by the following groups: students, people with health problems and discouraged workers with low competitiveness who have lost faith in finding a job. The proportion of mothers on parental leave decreased in the structure of inactivity.

In circumstances of high unemployment social groups inevitably emerge which suffer from the difficulties of the transition period more than others. It is particularly difficult for the young and for people approaching retirement to find a job, for people with a low level of education and for the long-term unemployed, the disabled and the unemployed who do not have command of the Estonian language. Constant stress and a concern about coping affect people's physical and mental health, which is why the unemployed stop job seeking and

drop out of the labour force. Thus the active labour market policy aimed at the high risk groups strives to maintain people's ability to work and their positive attitude towards life in order to be competitive in today's labour market.

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APPENDIX

Definitions

To describe the economic activity of the population, it has been divided into three groups according to the international standards: employed, unemployed and inactive.

Employed — a person who during the reference week:
1. worked and was paid as a wage earner, entrepreneur or a free-lancer;
2. worked without direct payment in a family enterprise or on his / her own farm;
3. was temporarily absent from work (but no more than three months);
4. was on pregnancy or child-birth leave.

Unemployed — a person who fulfils the following three conditions:
1. he or she is without work (does not work anywhere at the moment and is not temporarily absent form work);
2. he or she is actively seeking work;
3. he or she is available for work in the course of two weeks if there should be work.

Labour force / economically active population — persons who wish and are able to work (total of employed and unemployed persons).

Inactive population — persons who do not work nor look for work. This includes for example non-working pensioners, students, housewives, discouraged workers, people unable to work, etc.

Discouraged worker — non-working persons, who would like to work and would be available for work as soon as there was work, but who are not actively seeking work because they do not believe in the chance of finding any.

The following indicators have been used in the paper to characterise the labour market:
Employment rate — the share of the employed in the working-age population (15 years and older).
Unemployment rate — the share of the unemployed in the labour force, *i.e.* the total number of the employed and unemployed.
Labour force participation rate — the share of the labour force in the working-age population.
Inactivity rate — the share of the inactive in the working-age population.

Income and deprivation poverty, 1994 and 1999

Mart Einasto

Definition of poverty

The rate of poverty is one of the main indicators of the level of development of a society; its changes reflect the social health of a society. The scientific study of poverty is just over one hundred years old, during which time various approaches have been used for measuring it. At the most general level, Ringen (1988) distinguishes between *direct* and *indirect* approaches to the study of poverty. Indirect approaches are based on the valuation of resources. It is presumed that the level of resources in one's possession determines the living standard. Direct approaches attempt to measure poverty directly. The main difference between the two approaches is that the use of resources (and the creation of well being), depends on a person's behaviour and preferences. Even when two individuals have similar resources, the outcome may differ, since consumption preferences vary, as do the abilities to use the resources. Andreß (1998) argues that the size and the composition of the household and general socio-economic situation also have an impact on the real living standard. The aim of the current paper is to make a comparative analysis of the poverty rates and poverty risks in 1994 and 1999, using direct and indirect methods of measurement . The paper is based on the data of the Living Conditions Survey conducted in the respective years.

The indirect (resource-based) method of defining poverty

The definition of poverty using the indirect method is based on the resources a person or a household has at their disposal. The most common resource at a household's disposal is income. Several studies have tried to include other resources in addition to income, for example property and savings (Garfinkel, *et al.*, 1977; Townsend, 1979). Additionally, some have made attempts to view knowledge, know-how, skills, health, the strength of personality etc as a resource (Andreß, 1998).

The poverty line is set using the indirect poverty methods of definition. The proportion of the population (people, households) remaining below the line is

regarded as poor, judged by the resources at their disposal. Poverty researchers can be divided into two major schools according to their approach to calculating the poverty line — the supporters of the absolute approach and those of the relative approach. Supporters of the *absolute approach* try to estimate the cost of the minimum goods and services basket which should be affordable by every individual or family, based on their income level. All people and households whose income remains below the cost of the basket are regarded as poor. Supporters of the *relative approach* claim that a poverty line cannot be calculated and there is no sense in calculating it, since people do not consume an exact package of goods and services anyway. They insist that instead of defining a poverty line, an income level should be defined, and the people and households whose income remains below the level should be regarded as poor.

The direct (deprivation based) method of defining poverty

Following Andreß (1998: 8), direct methods of measuring poverty are based on the outcome of using different resources. The direct methods take into account a person's living standard in a given society at a specific point in time.

In 1949 the term deprivation was adopted by Stouffer and his colleagues (Stouffer, *et al.*, 1949). Runcimann gave a precise definition of deprivation in 1966 and Townsend started the wider usage of the term in 1979. According to their definition, deprivation is when (a) people feel the lack of goods and services when they compare themselves with other people; (b) they cannot afford to buy the goods and services for economic reasons. Based on these criteria, deprivation is referred to as relative or subjective deprivation.

Although deprivation is based on the subjective evaluation of an individual, it also has an aspect that is objectively measurable — man's basic necessities. Doyal & Gough analysed the objective basic necessities and claimed in their book "Theory of Human Need" (1991), that the usage of an *objective deprivation concept* is justified and that measuring the respective indicators without considering people's subjective evaluations is expedient.

In order to measure *relative deprivation* a list of goods and services is compiled, but public goods are often also listed (free healthcare, education, etc). This list is evaluated from two perspectives: (a) how necessary each listed goods or service is in the society; (b) what the economic availability is of each listed unit for each specific respondent (Mack & Lansley, 1985). *Deprivation poverty* is defined as a set of necessary units, which a person cannot obtain due to economic difficulties.

The definition of poverty in the current study

Income poverty

The current study is guided by the relative income poverty measure, based on the Eurostat methodology (European Social Statistics, 2000). According to this methodology, the poverty line is registered at 60% of the average income median value per household member (equivalent weights 1; 0.5; 0.3). In comparison the respective OECD indicator is used, according to which the poverty line stands at 50% of the income median value (equivalent weights 1; 0.7; 0.5 — table 1).

Table 1. Average income and the relative poverty rate (EEK, per cent)

Indicator	OECD method (50% of the median value, equivalent weights 1;0.7;0.5)			Eurostat method (60% of the median value, equivalent weights 1;0.5;0.3)		
Reference year	Income median value (EEK)	Poverty line (EEK)	Poverty rate (%)	Income median value (EEK)	Poverty line (EEK)	Poverty rate (%)
1994	730	365	12.1	850	510	17.3
1999	1873	936.5	10.3	2105	1263	15.0

When evaluating income poverty it has to be born in mind that this method is limited. The first problem is a too short reference period for judging people's income level. In the Living Conditions Survey the reference period was one month, *i.e.* the month prior to the survey. In order to estimate the reliability of a one-month reference period when evaluating income levels, an additional question was included in the 1999 survey. The respondents were asked *"In comparison with other months, was the income of the previous calendar month much higher, somewhat higher, more or less the same, somewhat lower or much lower than usual?"*. The results confirmed the assumption that the probability of measurement error using a one-month reference period is relatively high. 82% of households who responded said that the income in the referent month was typical, but the respective figure was significantly lower (70%) among those households that have been classified as poor. In the majority of cases "the typical income" had been higher. However there must be a proportion of "not poor" people whose income during the reference period was un-typically high, and who would be classified below the poverty line according to their income during a longer reference period.

Secondly, the amount of reserves or savings was not specified at the beginning of the reference period. Even if a household had no income during the reference period, it does not necessarily mean that the household was poor, as they might have lived on their savings. In such cases it is not known whether it is the beginning of poverty or a temporary pause in monetary income. The

third problem relates to the recall of difficulties or measurement errors arising from uncertainty. People often forget to mention atypical incomes; this is especially true when one bears in mind the fact that respondents had to recall the incomes of other household members as well as their own. The fourth measurement problem is the intentional concealing of income, including undeclared income and legal income that the respondent does not want to reveal for some reason to the interviewer or the organiser of the survey. This could include rather widely used cash payments which have not been taxed, rent for letting an apartment etc.

The general distribution of income also has an impact, as the income distribution curve is very flat between the lower quartile and the median. This implies that relatively small changes in where the line is drawn classify very different population groups as either "poor" or "rich".

Despite the likely inaccuracy of the results, two reasons justify the implementation of income poverty methodology. Firstly, Estonia is, without doubt, very similar to all developed capitalist countries in the sense that the majority of goods and services are exchanged for money. The proportion of "non-monetary barter deals" in Estonia is certainly greater than in developed countries, but it is still marginal in the complete scheme of things. Thus, money has an important role in people's affairs. Secondly, relative income poverty is directly connected with the distribution of revenues in the society, reflecting its bottom end.

Deprivation poverty

The questions measuring deprivation poverty in the questionnaire of the Living Conditions Survey meet the basic criteria for measuring deprivation poverty: (a) it is economic deprivation and (b) the respondent has the possibility of identifying goods or a service as unnecessary for himself/herself. This method has been more specifically described by Einasto (1997: 56) as the *"quasi-consensus deprivation"* evaluation method[1]. The respondents were posed a list of goods and services and they had to indicate whether or not they had had to forego any of the listed items for economic reasons. One of the answers' categories was *"Not important for me / Unnecessary for me"*. The list was fairly short, containing 10 items in 1994 and 9 items in 1999. Four of them had comparable wording both years (figure 1).

The indicators characterising restrictions on diet and medical services were differentiated clearly from other indicators in both years' surveys. The only other comparable indicator was *"to receive guests"*, which was regarded as even

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[1]   The Living Conditions Survey is not specifically aimed at measuring poverty. Nevertheless, the questionnaire partly originates from the international methodology. The respective set of questions is provisionally called a short version of quasi-consensus deprivation evaluation methodology.

less important in 1994 than purchasing medication. However, this need is a social need, but it cannot be regarded as a basic necessity. Thus, in 1999 the most vital goods and services were selected from this short list to measure poverty. The households were classified as poor if, for economic reasons, they could not afford to (a) *"eat meat, poultry or fish at least three times a week"* and/ or (b) *"pay for necessary medication"*. It transpired that according to this definition 28.5% of households in 1994 and 16.7% of households in 1999 were poor. Significantly, in 1994 the number of households remaining below the poverty line according to the Eurostat definition was 11% smaller in comparison with the deprivation poverty figure (table 1). By 1999 the rates of income and deprivation poverty had converged (respectively 15 and 16.7%).
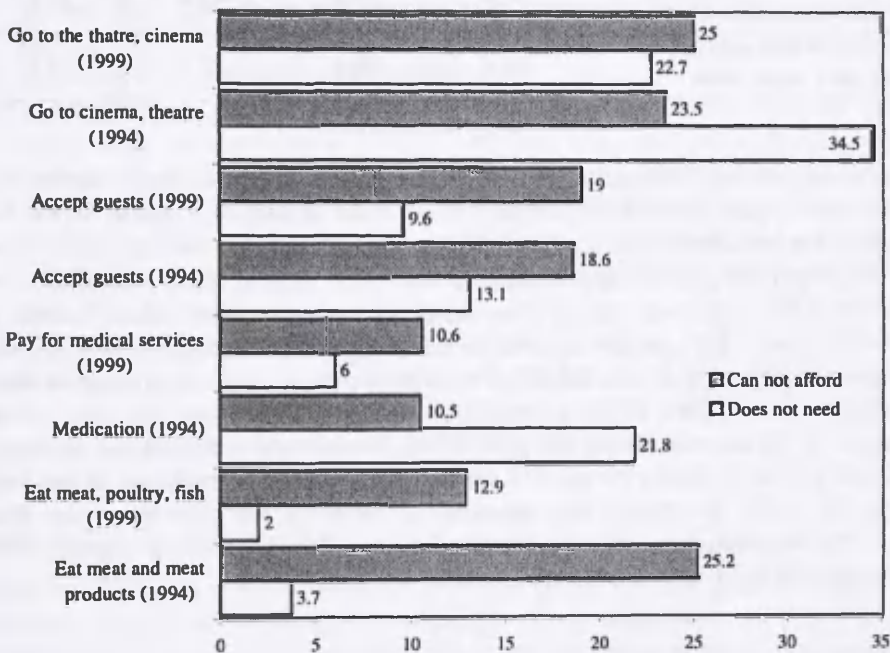
Figure 1. Distribution of deprivation indicators in 1994 and 1999 (% of households).

Compliance of income and deprivation poverty

Since both income and deprivation poverty measurement are either directly or indirectly based on the household's income, it could be assumed that the majority of households classified as poor according to income would also be classified as poor based on deprivation and *vice versa*. However, the data does not confirm this — compliance of poverty rates does exist, but is significantly smaller than expected in both reference years (table 2).

Table 2. Compliance of income and deprivation poverty (%)

	Deprivation poverty, 1994	Deprivation poverty, 1999	Income poverty, 1994	Income poverty, 1994
Share of the income poor among the deprived poor	47.1	44.8	–	–
Share of the deprived poor among the income poor	–	–	28.8	38.6
The income median value of the poor group (Eurostat consumption weights)	600 EEK	1500 EEK	392 EEK	962 EEK
Can not afford meat, poultry or fish three times a week	87.8	69.6	42.4	34.6
Can not afford medical services / medication	36.4	54.6	19.4	26.3

The comparison of indicators on which the poverty rates are based shows that there is a weak correlation between them, and it does not demonstrate the reasons for the small compliance of the poverty indicators. Although the income of the deprived poor is approximately one third greater, they still feel more restricted for economic reasons than the group of respondents whose income is actually lower. Despite the income level being lower, a significantly smaller proportion (by almost one third) of the income poor feel constraints on their consumption because of their economic situation. Therefore, having a small income or no income during the past month (which was the basis for assessing income poverty) cannot be used to explain consumption constraints in the long term. In order to specify the connections between the poverty types, four possible combinations will be observed (table 3). To enhance clarity, each combination is given a provisional name.

Table 3. Income and deprivation poverty combinations, 1994 and 1999

Income poverty ...	Deprivation poverty...	
	...does not occur	...occurs
...does not occur	*"Not poor"* (a) 1994 — 62.2% 1999 — 74.4%	*"Living beyond means"* (c) 1994 — 20.5% 1999 — 10.7%
...occurs	*"(Temporary) financial problems"* (b) 1994 — 9.1% 1999 — 8.3%	*"Entirely poor"* (d) 1994 — 8.2% 1999 — 6.7%

(a) The *"Not poor"* are households where the income level remains above the relative poverty line and consumption constraints for economic reasons are not identified.

(b) The *"(Temporary) financial problems"* are households, where the income of the last month remained below the relative poverty line, despite the fact that they do not feel under consumption constraints for economic reasons. Based on the assumption that incomes are generally monthly, it seems to refer either to a temporary reduction in income or to the recent termination of income. In neither of the cases has it yet had an impact on daily consumption. Furthermore some *"not poor"* can be included in this group if their income is received less frequently than on a monthly basis. Thus, a wealthy person who lives on annual dividends could be included in this group. Therefore, the word *temporary* is provisional and refers to the fact that having no income during the past month does not necessarily mean that consumption is generally constrained.

(c) Those *"Living beyond their means"* are households whose income level remains above the relative poverty line, but who feel constrained in their consumption for economic reasons. Generally, wealthy people cannot be included here, as they do not feel constrained in their consumption. However, some can be included accidentally — for example in a situation where a person who has had long-term financial problems has just improved their situation.

(d) The *"Completely poor"* are households whose income level remains below the relative poverty line and who feel daily consumption constraints for economic reasons. They have had low incomes for a long period and the small income of the past month is typical.

Assessing the level of economic coping

Both in 1999 and 1994 respondents were asked to assess their economic situation. On both occasions the endpoints of the scale were *rich* and *poor*. Although the wordings of the division points in between were not precisely identical, they still give an overview of the evaluations of the respondents (table 4). As expected, the majority of the income and deprived poor groups regard themselves as being "on the verge of poverty" or "poor". In the 1999 form, one of the answer options read *"We are not poor, but we live on the verge of poverty"*. The respondents preferred this option to classifying themselves directly as belonging among the "poor". The proportion of the income poor who regard themselves as "poor" is smaller than that of the deprived poor. In both 1994 and 1999 there were a few income poor who regarded themselves as rich.

Table 4. Assessment of the economic situation of the household in the income and deprived poor group, 1994 and 1999 (%)

Answer options 1994 / 1999	1994			1999		
	All respondents	Income poor	Deprived poor	All respondents	Income poor	Deprived poor
Rich / we are among the rich in Estonia	0.1	0.1	–	0.2	0.3	–
Economically secure / not rich, but cope well	11.8	6	1.6	10.4	2.6	1.6
We manage / we are neither poor nor rich	67.8	55.9	55.3	56.2	31.4	26.4
– / we are on the verge of poverty	–	–	–	22.7	35.4	38.4
Poor / we are poor	19.7	36.9	42.8	10	29.7	32.7

In both surveys the respondents were asked additionally about the economic situation of their household five years previously and what it could be like in five years time. Since there are 15 possible answer options for the questions measuring the past, present and future situations, the separate analysis of all the possible combinations is not practical. Thus, the options were consolidated into three different "scenarios". The development of the scenarios was based on the following logic:

(a) if the respondent could assess the future in five years time, only the change expected in the present and future were taken into account when classifying the response to a scenario;

(b) if the respondent was unable or did not want to assess the future (in both years almost one quarter of the respondents were unable to predict their economic situation), the classification was based on the evaluation of the situation five years before;

(c) a respondent remained unclassified (i.e. was not included in any scenario) if they refused to reply to any of the questions on which the classification was based. The logic for composing the scenarios is presented in table 5. To enhance clarity, the scenarios have also been given provisional names and the meaning of each scenario has been characterised by a figurative explanation.

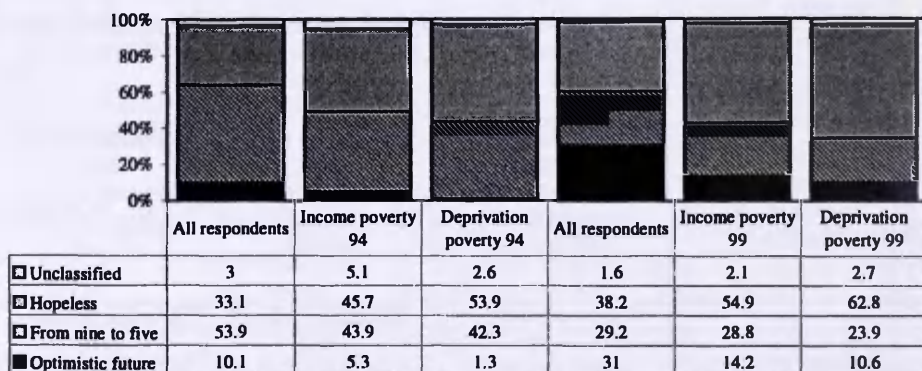**Table 5.** Economic situation change assessment groups

		Situation in five years time / Situation five years ago		
	Phrasing of the questions 1994 / 1999	Position improves +	Position remains the same 0	Position worsens ⎯
Current economic situation	Rich / we are among the rich in Estonia; Economically secure / not poor, but cope well (sign '+')	"Optimistic future" (++) Is good and will even improve	"Optimistic future" (+0) Is good and will remain good	"From nine to five" (+−) Is good, but will get (slightly) worse
	We make ends meet / We are not rich, nor poor (sign '0')	"Optimistic future" (+0) Make ends meet, assumes (slight) improvement	"From nine to five" (00) Make ends meet and this is the way it will remain	"Hopeless future" (0−) Make ends meet, but the situation will get worse
	On the poverty line / − Poor / poor (sign '−')	"From nine to five" (−+) Is bad, but (slight) improvement is expected	"Hopeless future" (−0) Is bad and will remain bad	"Hopeless future" (−−) Is bad and will get even worse

(++; +0; 0+) "Optimistic future": these households are rich or in an economically secure situation, and continuation of the situation or further improvement is expected. In the case when an economically secure household was unable or did not want to assess the future, the change during the past five years was taken into account — if the situation had improved or remained on the same "wealthy" level, the household was classified under this group.

(+−; 00; −+) "From nine to five": these households are neither rich nor poor and will presumably remain on the same level for the next five years. If the "rich" thought their situation would get worse, they were classified in this group. Also the "poor" who hoped to become "rich" were classified in this group.

(0−; −0; − −) "Hopeless future": the households which regarded themselves as poor and feared that the situation would worsen or remain the same. If the poor households were unable or did not want to assess their future, the change in the assessment during the past five years was taken into account — if the situation had got worse or remained on the same "poor" level, the household was classified under this group.

In 1994 the prevalent scenario was *"From nine to five"* — over half of all the households evaluated their opportunities in this way and only every tenth household was optimistic about the future (figure 2). 1999 is characterised by the households falling into two categories — "the optimists", who make up almost one third of the respondents, and "the pessimists", whose proportion has increased in comparison with 1994. The proportion of households who were classified in the *"From nine to five"* scenario has decreased significantly during the five years. This is a clear sign of the society being stratified into "the optimists" and "the hopeless".

	All respondents	Income poverty 94	Deprivation poverty 94	All respondents	Income poverty 99	Deprivation poverty 99
☐ Unclassified	3	5.1	2.6	1.6	2.1	2.7
☐ Hopeless	33.1	45.7	53.9	38.2	54.9	62.8
☐ From nine to five	53.9	43.9	42.3	29.2	28.8	23.9
■ Optimistic future	10.1	5.3	1.3	31	14.2	10.6

Figure 2. Future expectations by poverty group and reference year (per cent)

The subjective poverty assessment has the best concordance with deprivation poverty. The correlation between the subjective poverty evaluation and deprivation poverty is 0.41 (based on the 1999 data), whilst the correlation with income poverty is just 0.333. The prevailing attitude among both the income poor and the deprived poor regarding future expectations is "hopeless". In comparing 1999 with 1994 the share of "optimists" has slightly increased in both poverty groups, but unfortunately the share of "hopeless" respondents has increased to almost an equal extent. Nevertheless, future expectations are fairly similar in both poverty group types — the main difference is that the share of the "hopeless" is greater by almost one tenth among the deprived poor and the proportion of "optimists" is rather smaller. The scenarios will be analysed according to the above mentioned economic coping assessment combinations (table 6). The economic coping assessment combinations will provisionally be called poverty types.

Table 6. Economic coping assessment combinations (poverty types) by the scenarios in 1994 and 1999 (%)

Reference year	1994				1999			
Poverty types Scenario	"Not poor"	"(Temporary) financial problems"	"Living beyond means"	"Entirely poor"	"Not poor"	"(Temporary) financial problems"	"Living beyond means"	"Entirely poor"
"Optimistic future"	14.2	9.9	1.7	0.3	36.3	19.7	12.5	7.6
"From nine to five"	59.3	53.3	45.7	33.5	30.4	32.9	23.8	24.2
"Hopeless future"	23.8	31.1	50.7	62.1	32.1	46.6	61.5	64.2
Unclassified	2.7	5.7	2	4.1	1.1	0.8	2.1	4.0

(a) The *"Not poor"* have, as expected, the most positive mindset. Both in 1994 and 1999 the proportion of "optimists" was the greatest in this group, and by 1999 they were already in majority. At the same time, the proportion of the "hopeless" is almost one third.

(b) The *"(Temporary) financial problems"* group has the highest proportion of "optimists" and the smallest proportion of "hopeless" in comparison with the other groups. This poverty type could be said to comprise of the income poor, whose incomes have decreased relatively recently and for whom it has not yet had a long-term impact. Part of the group hopes for improvement, part of it does not see any improvement opportunities. The respondents in this poverty type could therefore be described figuratively as people constantly on the poverty threshold.

(c) The *"Living beyond their means"*: in this group the proportion of "optimists" is smaller and the proportion of "hopeless" is greater. The members of this group do feel significant consumption constraints for economic reasons, although their income level, based on the past month, is rather higher than that of the next group.

(d) The *"Completely poor"* group is the one where the proportion of "optimists" is the smallest and the proportion of "hopeless" the largest. Thus it is a group where, according to various evaluations, poverty is the most embedded (constrained consumption, income level below the poverty line, pessimistic future expectations). The proportion of respondents with this attitude is almost two thirds of the poor group.

It has to be added to the above interpretation, that the data cannot be used it to extrapolate different stages of a "process of impoverishment". The current approach of viewing the poverty types as separate stages is rather a result of logical analysis.

The probability of poverty in different socio-demographic groups

Although poverty is experienced individually, it is the household, as an economic entity that shares its incomes and expenses, that bears the risk of poverty. The socio-demographic status of the household is determined by the status of the head of the household[2]. The general factors that increase the risk of poverty in Estonia are those that might be expected. Although the differences between the different referent poverty risks are significant, they all have common characteristics (appendix 1). The probability of poverty is the highest in the following groups.

Occupational status of the head of household. Any occupation reduces the probability of poverty, while unemployment increases it. Thus the proportion of the poor is greater among the households where the head of the household is unemployed or retired. They can most often be described as "living in complete poverty" and "living beyond their means", whilst the probability of poverty among the employed poor is rather of the "temporary financial problems" type. A separate group, which is similar to the employed, consists of student households, where the poverty is of "temporary financial problems" type. The impact of occupational status is also as expected — the probability of poverty is lower in households with a "white collar" head of household and higher with a "blue collar" head of household. A similar correlation also describes the impact of education — the higher the level of education of the head of the household, the smaller the probability of poverty.

The type of household, i.e. more specifically *the ratio of dependants and earners.* A high risk of poverty is characteristic of pensioner households, families with many children and single mothers. Two-parent households with three or more children also have a higher risk of poverty. Both groups are characterised by higher "complete poverty" and "living beyond their means" types of poverty risk. The households that consist of two working-age generations or of a couple with one or two child(ren) have the lowest risk of poverty. These households would be rather characterised by the "temporary financial problems" type of poverty. The type of households that are unclassified mostly consist of cohabiting non-relatives who are not partners (for example students living as one household) and families with whom a distant relative lives– thus no conclusions can be drawn about the poverty risks of this group.

The demographic characteristics of the head of household have a rather smaller impact. The gender and the nationality of the head of the household influence the probability of poverty. In the case of both "completely poor" and "living beyond means" types of poverty, the probability of poverty is higher in the households where the head of the household is non-Estonian or female. Due to the high ratio of dependants in those households where the head of the

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[2]   Head of household denotes the person with the highest income.

household is over 65 years of age, it is expected that the probability of poverty is high. The probability of poverty is also higher in the years prior to the retirement. It is lowest among the households where the head of the household is between 25–49 years of age. The younger households (15–24 years old) can rather be characterised by the "temporary financial problems" type of poverty. The place of residence has a clear impact on the probability of poverty. As expected, the households living in Tallinn have a relatively lower probability of poverty. This is arguably rooted in the better work opportunities and higher than average income. The rural areas with a high risk of poverty are characterised by near average "complete" and "living beyond their means" types of poverty probability and a high "temporary financial problems" proportion of households. The highest probability of poverty is in the big and small towns.

The main changes in the household poverty risks between 1994 and 1999

The general risk of poverty has decreased during the period of five years between the two surveys (appendix 1). The proportion of households classified as not poor increased by 12% by the end of the nineties. The greatest decrease has been in the "living beyond their means" type of poverty (by 10%). The "complete" and "temporary financial problems" types of poverty have remained virtually stable in society (both have decreased by a mere 1%). In the case of the relative poverty line (60% of the income median value), an increase in the level of income is not followed by a decrease in the proportion of the poor. It is quite different in the case of deprivation poverty. This has been determined in absolute figures and thus does decrease as income increases. We can conclude therefore that both the general living standard and that of the poor have improved to a certain extent during the past five years, but also that the general distribution of income in society has remained more or less unchanged. The most important changes are as follows.

- *The probability of poverty in households where the head of the household is unemployed has increased two fold* — the share of "not poor" unemployed in 1999 was only 19%. The "complete" (16%) and "temporary financial problems" (10%) types of poverty have increased.
- The probability of student household poverty has increased by almost two thirds. The increase is mainly accounted for the "complete" (25%, *i.e.* almost six fold) type of poverty.
- The probability of poverty in a regular service worker's household, *i.e.* a household where the head of the household is a non-manager white-collar worker, has increased by 5%. The "temporary financial problems" and "complete" type of poverty have escalated.

- The risk of poverty in households where a single mother raises two or more children has not decreased, but the "complete" type of poverty has increased.

Comparing the change of probability with the average, it can be claimed that poverty has decreased most in the following groups.
- In pensioner households (24%) and, it follows, also among households where the head of the household is over the age of 65 (23%) and approaching retirement (18%). Poverty has decreased in all poverty types, the "entirely" type of poverty having fallen by most.
- In non-Estonian households (16%) poverty has dropped mainly because of a decrease in "living beyond their means" type of poverty. The "entirely" poverty type has remained unchanged, whilst the "temporary financial problems" type of poverty has even increased slightly.
- In the households with a male head of the household (18%) poverty has fallen in the "entirely" and the "living beyond their means" types of poverty. The poverty of households with a female head has decreased less than the average in Estonia.
- Single parent with one child (18%). Interestingly, the poverty of parents with two or more children has increased. This could be explained by an increasing number of unregistered cohabitations so that households where the other parent's income is a major contributor to the budget are classified as single parent (mother) households. This is indirectly confirmed by the fact that the "living beyond their means" and "entirely" types of poverty have decreased the most. These households are so to speak "masked" by the single mothers, who indeed have to cope alone without external help.
- Poverty has fallen in households in Tallinn (17%) and in small towns' (21%). This is mainly accounted for by a decrease in the "living beyond their means" type of poverty.

Structure of poverty

The structure of poverty is by and large similar to the description of the probability of poverty — the groups with a higher poverty probability also form a larger share of the poverty type. However, there are a few specific features — the probability of poverty in some relatively small groups (the unemployed, single mothers) is relatively high, but they do not form a significant proportion in the structure of the poverty type. In the following, a brief overview is given of the composition of the groups and the main changes in the second half of the nineties (appendix 2).

In the structure of the *"not poor"*, those households with an employed head of household form the majority; there are slightly more white-collar than blue-collar workers. The poverty rate of the white-collared is lowest among top and

middle managers and that of the blue-collared is lowest among skilled workers. By household type, the not poor are mainly households with children. The only significant change in the not poor group in comparison with the mid-nineties is the increase in the proportion of the employed (from 71% to 81% by the end of the decade). The increase is mainly accounted for in the rise in the proportion of the white-collared.

In the structure of the *"temporary financial problems"* type of poverty, economically inactive adult households form a large share. Their proportion in the structure has decreased by 11% during the five years, whilst the proportion of households with an employed head of household has escalated from 41% to 58%. The regular white collared and skilled workers account for the greatest share in the employed structure. The proportion of unemployed people is relatively large in this group (14% in 1994 and 11% in 1999). Also this group mostly characterises Estonians, although their proportion has fallen by approximately 10%. When analysing this group by age, it transpires that the proportion of people in the optimum working age has increased the most. Households with a male head of household are dominant in this group, their proportion having increased by 10% during the five years.

In the structure of the *"living beyond means"* type of poverty, the proportion of economically inactive people is even larger. In 1994 the inactive accounted for 46% of this group. By 1999 the share of households with an employed head of household accounted for over a half of all the poor of this type. The proportion of households with an unemployed head of household is small in the structure of this group. Members of the skilled labour force form the majority of the people of working age in this group. By 1999 the proportion of regular white-collared workers has increased significantly. In both reference years the proportion of households with a non-Estonian head of household is significantly greater than average in the structure of this group. These types of households more often live in bigger towns.

In the structure of the *"completely poor"* type of poverty, the proportion of economically inactive people is the largest in both 1994 and in 1999. Households with an unemployed head of household account for the largest proportion in the structure of this group. In comparison with other groups, the proportion of households with the head of household being an unskilled worker is also the highest, the share of non-Estonian heads of household greater than the average and the share of pensioner households is larger.

Discussion

The analysis methodology used in the current paper leaves open the following four topics.

The first topic to be discussed touches upon the adequacy of deprivation poverty operationalisation. The answer options on one scale included the material consumption possibilities as well as that of having no need for the respective goods or service. Thus there was a methodological contradiction. For example, in the case where a person is classified as poor according to one criterion (*e.g.* income), but that person deems some of the listed goods or services unnecessary (*e.g.* meat product or medical service), then he or she is classified as "not poor" according to deprivation poverty. However, the number of such cases is minimal. We could posit a hypothetical example of a person who would be "deprived poor" according to several indicators, but is a vegetarian, who did not need any medication during the reference period, so that he would probably not classify himself as deprived poor. Nevertheless, this does not play an important role in the analysis of the risks and structure of poverty: even if the proportion of the poor were ten fold higher among the vegetarians than in the rest of the population and none of them needed medication, the maximum error would be 0.2–0.4%, which remains within the limits of statistical error.

The variations in question phrasings in different years could be discussed in an analogous manner:

- In 1994 a person was regarded as poor if he/she "*had often had difficulties buying meat and meat products or medication during the past 12 months*";
- In 1999 a person was regarded as poor if he/she "*cannot afford in their household to eat meat, poultry or fish at least three times a week or pay for necessary medical expenses*".

The wording of the set of questions was generally the same in both years. There was a similar answer options on the scale concerning the consumption unit (goods or service) "*it is not important for me / I do not need it*". The rest of the points on scale in 1994 measured frequency: "*often*", "*sometimes*" and "*never*"; but affordability in 1999: "*yes, easily*", "*yes, but it is difficult*" and "*cannot afford*". The contextual level of difficulty of the questions was still the same, although the wording was rather more abstract in 1994. However, since the listed products and services were analogous and the frequency scales were of the same length, it could be claimed that the measurement error remains within the limits of statistical error. The author of the paper regards the measurement error arising from the difference in wording small enough and thus the respective poverty measure can be used and the data of the two surveys compared.

The second issue is the hypothesis that the poverty types used reflect the different "stages" in the process of becoming impoverished. The analysis of subjective poverty and the logical interpretation of the poverty risks seem to

confirm the hypothesis. Nevertheless, the current data does not prove the hypothesis. This would require either a representative household panel survey over time (a longitude study) or at least a single study, based on which the development of respondent's current status could be modelled using retrospective questions. Unfortunately there is no such data, as this was not the aim of the current survey.

Thirdly, the analysis of different combinations of socio-demographic characteristics was left out of the current paper. Based on the analysis of the current paper, a deceptive impression could be left that these characteristics do not significantly influence the probability of poverty and that the main characteristics that do have an impact are the type of household and the occupational status of the head of the household. However, this is not the case. The probability of poverty does certainly differ in various combinations of different demographic variables (*e.g.* in the case of elderly male and female households), but the volume of the analysis would be much greater than the current overview allows.

The fourth topic of discussion which has not been touched upon is the contradiction between the decrease in general poverty risks and the "optimism" of people's future expectations. Although the general risk of poverty has fallen in society (regardless of the measuring method used), the proportion of people whose future expectations are pessimistic has increased. This refers to stratification in society — despite slightly reduced poverty, future opportunities have not improved. Therefore it does seem that society is being divided into two strata — into "hopeful" and "hopeless" people.

Conclusion

Several facts that describe the poverty in Estonian society in 1994 and 1999 were demonstrated as a result of the current analysis. In brief the following.

In comparison with the mid-nineties the level of income poverty and deprivation poverty has decreased by the end of the nineties. According to the comparison of poverty type combinations that have been developed through different concepts of measuring poverty rates, the most drastic fall (approximately 10%) was in the "living beyond their means" type of poverty, *i.e.* a situation, where the household's consumption possibilities, including primary consumer goods, are clearly restricted, although the amount of money at their disposal should objectively enable it.

Employment is an increasingly effective cure for poverty. In 1994 the cure was not as effective. Unemployment is an obvious factor that increases poverty, whether the reason be age, job loss or studies.

The social security of the elderly has improved in the nineties — the poverty rate has decreased most among households with an aged head. Unfortunately

the economic security of another at risk group, single mothers, has not improved in the same way. The probability of poverty in student households has also increased.

Several generations living in a household is a poverty-reducing factor — both in 1994 and 1999 the poverty risk was lower than average in two working-age generation households and the risk was smaller in the case of three generation households (including minors) than in the single mother and pensioner households.

Although employment does reduce the probability of poverty, it does not give a one hundred per cent guarantee against it. The probability of poverty has increased during the nineties in the cases where the head of the household is a regular white-collar worker, *i.e.* working in the service sector. The poverty of households where the head of the household is an unskilled blue-collar worker has increased analogously. Poverty among households where the head of the household is a skilled worker or has professional secondary education has decreased slightly.

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Appendix 1. Poverty risks by the status of the head of the household in 1994 and 1999 (%)

Reference year	1994				1999			
Poverty type Status indicator	"Not poor"	"Temporary financial problems"	"Living beyond means"	"Entirely poor"	"Not poor"	"Temporary financial problems"	"Living beyond means"	"Entirely poor"
	62.0	9.3	20.4	8.3	62.0	9.3	20.4	8.3
Education								
basic education	48.3	9.6	27.6	14.5	61.9	11.0	15.7	11.4
secondary education	65.2	10.0	17.8	7.0	76.6	8.4	9.5	5.5
secondary professional education	67.8	8.7	17.9	5.6	78.2	7.9	10.8	3.2
higher education	74.8	8.2	14.8	2.2	89.6	3.1	5.5	1.8
General employment status								
employed	74.1	6.4	16.6	2.9	82.0	6.6	8.6	2.8
unemployed	36.0	20.4	14.5	29.1	18.6	30.2	6.2	45.0
inactive adult	45.1	12.0	29.0	13.9	57.7	10.8	17.7	13.9
Employment status								
employer or self-employed	76.2	14.0	7.9	1.9	86.2	8.9	4.0	0.9
employed — white-collar	78.8	5.7	13.9	1.6	83.3	6.1	7.9	2.7
employed — blue-collar	69.3	5.7	20.7	4.3	79.7	6.7	10.3	3.3
unemployed	36.0	20.4	14.5	29.1	18.6	30.2	6.2	45.0
student	62.9	22.9	9.5	4.8	42.5	22.5	5.0	30.0
retired	39.6	10.1	36.5	13.8	63.7	8.3	20.3	7.8
Occupational status								
White-collar — top executive	81.4	7.7	10.0	0.8	90.7	2.2	5.6	1.5
White-collar — middle manager	78.6	5.2	14.9	1.2	84.9	6.3	5.8	3.1
White-collar — not a manager	73.4	8.2	14.8	3.6	68.0	12.3	12.1	7.6
Blue-collar — skilled worker	73.0	5.0	19.0	3.0	77.6	7.5	9.7	5.2
Blue-collar — unskilled worker	57.0	8.6	25.8	8.6	64.5	12.4	11.8	11.2

Appendix 1 (continued). Poverty risks by the status of head of the household in 1994 and 1999 (%)

Reference year	1994				1999			
Poverty type Status indicator	„Not poor"	"Temporary financial problems"	„Living beyond means"	„Entirely poor"	„Not poor"	"Temporary financial problems"	„Living beyond means"	„Entirely poor"
	62.0	9.3	20.4	8.3	62.0	9.3	20.4	8.3
Nationality								
Estonian	65.4	10.3	17.1	7.2	78.8	7.7	8.6	4.8
Non-Estonian	55.5	7.3	26.8	10.4	71.4	8.0	13.5	7.0
Age								
15–24	70.1	12.1	11.4	6.5	75.9	8.2	10.0	5.9
25–49	68.2	9.7	15.4	6.6	78.9	8.1	8.0	5.0
50–64	56.5	8.0	25.2	10.4	74.6	7.1	12.4	5.8
65+	44.4	7.9	36.3	11.5	67.2	7.8	17.1	7.8
Sex								
Male	65.6	9.2	18.8	6.4	83.4	5.4	8.1	3.1
Female	58.8	9.4	21.9	10.0	67.7	10.7	13.0	8.6
Household type								
One person household — retired	25.6	19.9	25.2	29.2	60.3	9.9	23.3	6.4
One person household — working age	56.7	14.0	12.4	16.9	66.6	11.2	8.9	13.3
Couple without children — retired	48.8	2.4	47.5	1.3	81.6	1.8	14.7	1.8
Couple without children — working age	74.3	5.0	16.3	4.5	82.2	5.6	7.1	5.1
Single parent with one child	48.1	16.0	15.1	20.8	65.7	12.9	10.9	10.5
Single parent with 2 or more children	54.2	10.4	18.8	16.7	54.0	12.2	14.4	19.4
Couple with 1 or 2 children	72.5	8.3	14.9	4.4	79.2	8.9	7.7	4.1
Couple with more than 2 children	60.6	12.4	19.0	8.0	74.6	12.3	7.4	5.7
Two generation household	64.9	8.1	20.4	6.6	77.4	5.9	9.8	6.8
Three generation household	66.9	9.9	17.9	5.3	76.3	9.4	8.3	6.0
Other types	56.5	7.5	28.6	7.5	74.2	6.3	11.3	8.3
Residence								
Capital	65.6	6.9	21.4	6.0	82.9	5.0	9.1	3.0
Big town (>50.000 pop.)	60.7	8.1	21.6	9.7	67.6	9.2	13.5	9.7
Small town	56.3	6.4	27.8	9.5	76.9	6.3	10.7	6.1
Village	63.9	13.9	13.8	8.4	69.5	11.9	10.2	8.4

Appendix 2. The structure of poverty by the status of the head of the household in 1994 and 1999 (%)

Reference year	1994				1999			
Poverty type Status indicator	„Not poor"	„Temporary financial problems"	„Living beyond means"	„Entirely poor"	„Not poor"	„Temporary financial problems"	„Living beyond means"	„Entirely poor"
	62.0	9.3	20.4	8.3	62.0	9.3	20.4	8.3
Education								
basic education	23.6	31.5	41.1	53.4	20.7	35.2	36.9	52.3
secondary education	29.5	30.3	24.5	23.7	22.6	23.5	19.6	22.1
secondary professional education	31.0	26.6	24.8	19.3	35.8	34.4	34.5	19.8
higher education	15.9	11.6	9.6	3.5	20.9	6.9	8.9	5.8
General employment status								
employed	71.5	41.2	48.6	21.0	80.8	58.4	59.2	31.1
unemployed	3.8	14.3	4.6	22.9	0.7	10.8	1.7	19.8
inactive adult	23.6	41.9	46.1	54.5	18.3	30.7	39.1	48.8
Employment status								
employer or self-employed	6.5	8.6	2.0	1.3	6.0	5.5	1.9	0.7%
employed — white-collar	37.4	19.5	19.8	6.4	43.4	28.5	28.8	15.7
employed — blue-collar	34.3	20.3	30.6	18.2	31.3	23.5	28.1	14.3
unemployed	4.1	16.9	5.0	28.3	0.7	10.8	1.7	19.8
student	2.6	6.9	1.2	1.7	0.5	2.5	0.4	4.1
retired	15.0	27.5	41.3	44.1	15.9	18.6	35.4	21.5
Occupational status								
White-collar — top executive	25.0	27.2	13.8	6.4	25.1	6.5	14.5	7.2
White-collar — middle manager	15.9	12.1	13.6	6.4	13.3	10.5	8.5	8.5
White-collar — not a manager	13.5	17.3	12.2	16.7	15.2	29.4	25.4	29.4
Blue-collar — skilled worker	37.6	29.5	44.1	39.7	34.7	35.9	40.6	40.5
Blue-collar — unskilled worker	8.0	13.9	16.3	30.8	4.1	8.5	7.1	12.4

Appendix 2 (continued). The structure of poverty by the status of the head of the household in 1994 and 1999 (%)

Reference year:	1994				1999			
Poverty type	„Not poor"	"Temporary financial problems"	„Living beyond means"	„Entirely poor"	„Not poor"	"Temporary financial problems"	„Living beyond means"	„Entirely poor"
Status indicator	62.0	9.3	20.4	8.3	62.0	9.3	20.4	8.3
Nationality								
Estonian	69.7	73.4	55.5	57.5	67.0	63.9	53.9	55.8
Non-Estonian	30.3	26.6	44.5	42.5	33.0	36.1	46.1	44.2
Age								
15–24	14.1	16.2	7.0	9.8	4.6	4.9	4.5	4.9
25–49	51.9	49.4	35.7	37.9	60.5	60.4	45.3	51.9
50–64	24.1	22.8	32.8	33.2	22.7	21.2	27.9	24.3
65+	9.8	11.6	24.5	19.1	11.9	13.5	22.4	18.9
Sex								
Male	50.5	47.5	44.0	37.1	59.7	37.8	42.6	30.1
Female	49.5	52.5	56.0	62.9	40.3	62.2	57.4	69.9
Household type								
One person household — retired	2.8	14.5	8.4	24.0	6.9	10.2	18.7	8.2
One person household — working age	7.3	12.1	4.9	16.3	7.1	10.8	6.7	15.7
Couple without children — retired	6.6	2.2	19.6	1.4	9.5	1.9	12.0	2.4
Couple without children — working age	10.9	4.8	7.3	4.9	9.0	5.5	5.4	6.1
Single parent with one child	1.9	4.1	1.8	6.0	5.0	8.9	5.8	8.9
Single parent with 2 or more children	1.9	2.4	2.0	4.4	2.3	4.7	4.3	9.2
Couple with 1 or 2 children	28.9	22.0	18.1	13.1	22.4	22.7	15.2	13.0
Couple with more than 2 children	5.0	6.8	4.7	4.9	5.6	8.3	3.9	4.8
Two generation household	19.3	16.0	18.4	14.7	16.5	11.4	14.6	16.0
Three generation household	12.4	12.3	10.2	7.4	10.2	11.4	7.7	8.9
Other types	3.0	2.7	4.6	3.0	5.5	4.2	5.8	6.8
Residence								
Capital	28.1	20.0	27.9	19.3	30.0	16.3	23.0	11.9
Big town (>50.000 pop.)	19.6	17.5	21.2	23.4	18.2	22.4	25.3	29.0
Small town	19.6	14.8	29.5	24.8	22.9	16.9	22.1	20.1
Village	32.7	47.7	21.4	32.4	28.9	44.3	29.6	38.9

The population's sense of security and factors affecting it

Silja Kurik, Erik Terk

The level of legally defined crime is usually low in a stable society in which permanent social structures have developed, where the horizontal and vertical mobility of the society is low, and where the behaviour of people is determined by well defined social relations which reproduce themselves from generation to generation. Problems relating to security and crime go hand in hand with a rapidly changing world. Reasons for these problems have been sought among various developments within society — ranging from the general globalisation of the world on the one hand to the process of individualisation on the other. According to Taylor (1999) "absolute asocial individualism" has become dominant in the Western world. This is expressed in the weakening of inter-personal social ties in comparison with the traditional social order and in a declining impact of family impact and control over people's behaviour. Based on this idea, one of the reasons for a rise in criminal behaviour is said to be the inability of people to adapt to the rapidly changing and increasingly complex social order. The renewal of society is also associated with the increasing level of crime (Raska, 1991).

Law and order is a social process linking citizens and the environment, through which people create and maintain optimal conditions for a safe life. Security can also be defined as a situation where adequate control exists over possible physical, material or moral danger (Ernits, 1999). The aims of the current paper are to give an overview of the sense of security felt by the Estonian population in the socio-economic context based on the data of the Living Conditions Surveys conducted in 1994 and 1999; and to analyse some of the developments in the relationship between the population's sense of security and crime.

The connection of crime and a sense of security with the socio-economic factors

The origins of crime are both individual and social. Having said that, it is not possible in truth to name any uniformly defining specific criminal factors, either individual or social, the elimination of which would reduce the number of crimes committed linearly (Raska, 1991). Criminological surveys have shown

that the main reasons for the spread of crime are poverty, unsatisfactory living conditions, low levels of education and other shortcomings of a social nature. Theoretically, it could be concluded that with the rise in the wealth of society crime would decrease. In reality, however, crime is influenced by poverty and social stratification as well as by several other factors (including immigration, which for example in the member states of the European Union has caused serious crime related problems). In addition to poverty and social stratification, the unstable development of society and the insecurity of the population about their future act as hotbeds for crime. The surveys conducted in several European countries demonstrate a strong correlation between the increase in inequality and increased crime (Taylor, 1999). Thus, economic growth alone may not be a sufficient prerequisite to reduce crime and to increase the sense of security in society.

The Estonian economic inequality GINI coefficient — 37,5 in the year 1999 — is one of the highest among the post-socialist countries, not to mention the Western countries with high living standards (Sotsiaalministeeriumi haldusala arvudes..., 2000; Milanovič, 1998; Terrell, 1996; EBRD Transition Report, 2000; Commander, 1999). The Living Conditions Survey demonstrated that the lowest average income per family member is in South-Eastern Estonia (1,495 kroons), the second lowest in Ida-Viru county (1,535 kroons). Income levels in Tallinn and Harju county are significantly higher than in the rest of Estonia — the average incomes are respectively 2,514 and 2,469 kroons, i.e. almost a thousand kroons higher than the above-mentioned (figure 1).
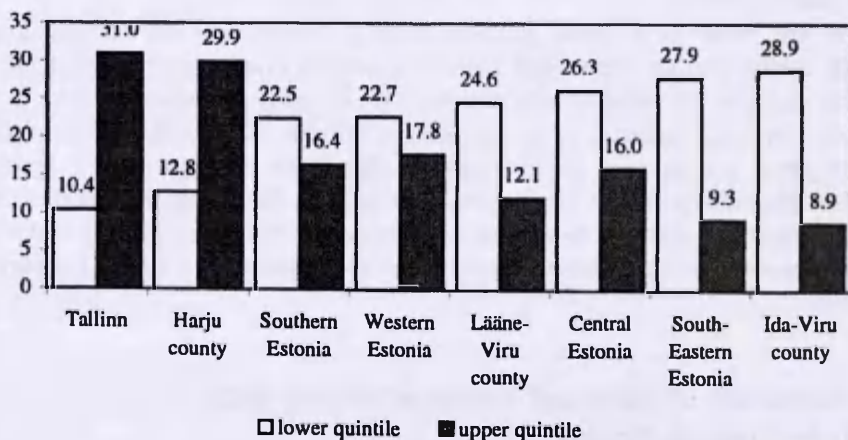
Figure 1. Division of households into the upper and lower income quintile in different regions of Estonia (%)

Incomes, in turn, are strongly correlated with the situation in the labour market. According to the Living Conditions Survey, the highest level of unemployment[1] in 1999 was in Ida-Viru county, where more than 8% of the population was seeking work (the Estonian average is 5%) and only 39% of the working-age population was employed (the Estonian average is 45%). The proportion of the population in employment in Southern-Estonia was also only 39%, although the level of unemployment was on the Estonian average.

Job security has increased slightly. In 1996, 48% of people were afraid of losing their job and becoming unemployed and only 27% thought that this would not happen (EKI-TEST, 1996; 1997). According to the Living Conditions Survey in 1999, just over one third of the respondents were afraid of losing their job and almost half of the respondents were confident of retaining it. However, to analyse this by regions, it transpires that people living in Ida-Viru county (55%) and Tallinn (40%) were the most concerned about losing their job. Of the possible reasons for losing one's job, people in Ida-Viru county were most afraid of being made redundant (47% of the people were afraid of losing their job). People in Tallinn (where 38% of the people were afraid of losing their job) regarded other factors as more important than being made redundant or the business closing down. Thus it could be assumed that people working in Tallinn have more personal, rather than business, related problems when it comes to concerns about losing their jobs. The majority of people can no longer count on working in one job (and one enterprise) for all of their life. The number of employment situations that guarantee life-long employment is diminishing fast. To use a parallel with the Western societies, it can be said that they too admit today that the "quality of life" (in particular in terms of material consumerism) which was natural for the older generations is only achievable by today's generation through a high level of mobility and flexible professional skills. Only 40% of society in the United Kingdom feel secure about their future employment prospects, and even they cannot be sure of their job being retained, since the number of "life-long" jobs decreases with every year (Taylor, 1999).

When comparing living standards and unemployment levels of the regions with the crime rate (estimated through the number of victims of crime), it transpires that the crime rate is higher where the level of unemployment is high and the income levels low or, at the other extreme, where incomes are high and the unemployment level is low or medium (figure 2).

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[1]   ILO unemployment definition is applied in the unemployment analysis.
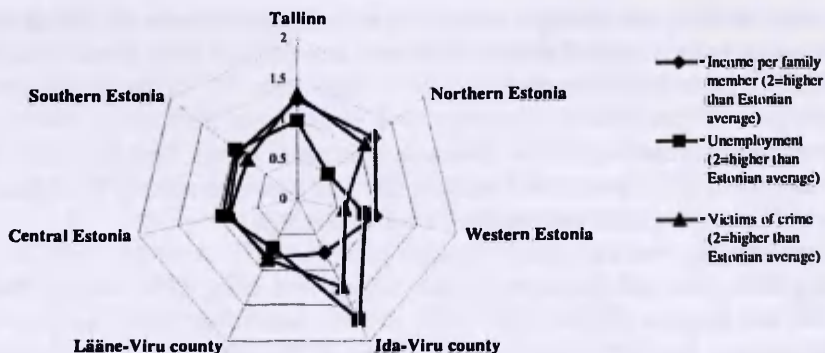
Figure 2. Social differences in comparison with the Estonian average by regions (1=average)

Generally there is a connection between an increase in unemployment and an increase in crime (both figures have continuously increased in Estonia in the 1990's), but the connection is not entirely linear. For example, the unemployment rate in Southern-Estonia is the second highest after Ida-Viru, but the crime rate is one of the lowest in Estonia. In addition, the unemployment rates in Tallinn and Harju county are significantly lower than in Ida-Viru county, but the crime rate is high in both regions. Based on the above figure, it could be claimed that security is threatened both by lagging regional development (Ida-Viru — low income and high unemployment) and also by higher than average living conditions (Tallinn — the highest incomes, average unemployment).

Population's contacts with crime and their sense of security

In Estonia, as in other transition countries, change from one economic system to another has brought with it social instability, which is expressed in an increase in crime, the number of suicides, and in people's subjective insecurity and fear (Estonian Human Development Report, 1997). Although the transition period in Estonia could be regarded as more or less completed today, new factors creating insecurity have occurred (*e.g.* the impact on the open Estonian economy of the crisis in the world's economy).

The low quality of life and insecurity about the future in important spheres of life continue to be one of the most important problems in Estonia. Social security is an important factor in safeguarding the economic and social integration of society. The development of economic and social factors in turn influence the security among the population, including the sense of security in

terms of crime. Based on the surveys ordered by the Chancellery of *Riigikogu* of the Republic of Estonia, the main sources of insecurity for the Estonian public are: (a) the economic situation — the danger of being made redundant and thus the threat of becoming marginalised in society; (b) insecurity about the physical protection of oneself and one's family (including fear of crime and concern about the availability of medical assistance); (c) insecurity about the future of the state and the nation (Kirch, 1998). The listed factors all mutually influence one another (the last probably to a lesser extent as it is defined in more general terms than the first two, which affect people more personally).

The impact of economic and social factors varies by regions in Estonia. Also the crime rate varies in different Estonian towns and counties. Almost half of all crimes are committed in Tallinn, where one third of the Estonian population lives. The capital region is the fastest developing region in Estonia with the highest standard of living, but also the highest rate of registered crime. The second highest crime rate is in the industrial region Ida-Viru, which is also characterised by the highest level of unemployment and poverty.

It transpired from the Living Conditions Survey that the number of victims of crime has not increased during the five years. Figure 3 demonstrates that the proportion of the population defining themselves as of victims of crime in 1994 and in 1999 is practically unchanged, with, if anything, a slightly downward trend.

Has experienced during the past 12 months ...
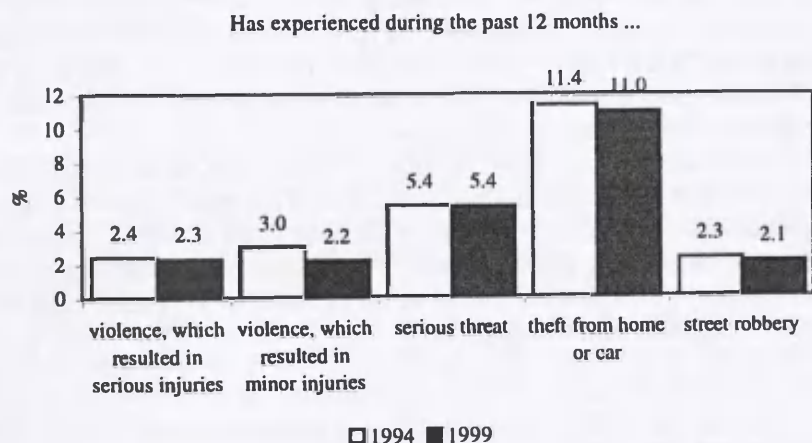
Figure 3. The number of victims of crime by the type of crime in 1994 and 1999 (%)

The situation by regions is more or less the same according to both the statistics of registered crime and to the survey among the population (figure 4). Since not all the crimes are reported, the real number of victims of crime must be higher.
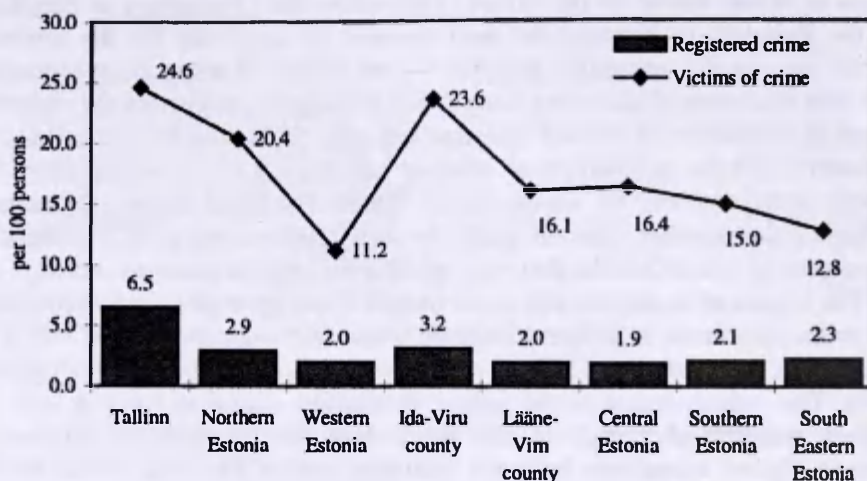
Figure 4. The number of registered crimes and victims of crime, 1999 (per 100 people)[2]

It transpired from the Living Conditions Survey (1999) that only approximately half the victims of crime reported the offence to the police. The percentage was higher in the case of criminal offences against property (car theft — 81%; theft from apartment or car — 62%). According to the survey, people living in Tallinn are the most likely to inform the police than are other Estonians. According to the "Victim Survey 2000" the main reasons for not informing the police are (a) *the police could not have done anything to help anyway* and (b) *the insignificance of the case or the damage.*

Since Tallinn and Ida-Viru have the highest crime rates, these regions have been compared with the rest of Estonia (table 2). It transpired from the analysis that the probability of becoming a victim of crime is much higher in Tallinn and Ida-Viru county than in the rest of Estonia. The frequency of street robberies is highest in Tallinn, whilst there is almost twice as much of violence in Ida-Viru county than in the other Estonian regions.

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[2]   Source about the registered crime: Police Board Development and Information Department, database division.

Table 2. The share of victims of crime during the past 12 months by residence (%)[3]

Have experienced ...	Regions		
	Tallinn	Ida-Viru	Other Estonia
... violence, which resulted in serious injuries	(2.3)	(4.9)	1.8
... violence, which resulted in minor injuries	(2.1)	(5.3)	1.8
... serious threat	5.4	7.7	4.9
... theft from home or car	15.5	12.5	8.5
... street robbery	5.1	...	(0.9)
... car theft	(2.9)	...	(1.3)

When analysing victimisation by socio-demographic indicators, the result is similar to those of the previous surveys (see *e.g.* "Victim Survey 2000"). Men become victims of both violence and crime more often than women. The probability of becoming a victim of crime is highest among young people, the urban population and people who do not live with a partner. Those with the highest probability of becoming a victim of theft are people in an urban family with more than nine years of education. In the urban areas, higher levels of education generally go hand in hand with a higher standard of living — so probably the urban population have more to steal and since they are (usually) employed (and hence often out of the home), their places of residence without adequate security provide good opportunities for burglars. The position in the labour market is only important in the case of economically inactive people — their apartments/cars are at risk only half as much as those of active participants in the labour force. This is arguably due to the fact that the majority of the economically inactive population consists of pensioners — their standard of living is often not high enough to tempt a thief and, since they spend more time at home, they create more obstacles to burglars.

In falling victim to crime certain differences transpire in the analysis of the economic welfare of the households. 56% of the victims of crime belong to the population group who regard themselves neither rich nor poor. This ratio represents the actual ratio (58%) of such households in the total population. Generally, no differences can be specified in the frequency of becoming a victim of crime by the standard of living of the households. The proportion of victims is 18–20% in all the reference groups, except for the poor, where the proportion of those becoming a victim of crime is 25%. The linear connection between falling victim to crime and economic welfare can be noticed by the types of criminal offence. The higher the standard of living of the household, the greater is the proportion of victims of theft. People who fall victims of an offence against the person tend to be rather poorer.

[3]   The percentages shown in parenthesis indicate that they are based on 20–39 people of the sample, three points instead of percentages show that the number of people remained below 20.

Fear of crime — the negative measure of sense of security

Being a victim of crime forms an objective basis for the level of one's sense of security. It is natural that people who have experienced violence or fallen victim to crime are more fearful because of that experience, *i.e.* their sense of security is lower than that of people who do not have such a negative experience. It transpired from the analysis that the experience of being a victim of an offence against the person in particular reduces the sense of security significantly and produces a fear of crime (table 3).

Table 3. The correlation between fear of falling a victim of crime and prior experience of being a victim of crime (1999, % of previous victims of crime)[4]

Has experienced …	Is afraid of assault and threatening (very much or to an extent)…		
	… on the street	…in public places	…at home
… violence, which resulted in serious injuries	61.1*	49.3*	(29.3)*
… violence, which resulted in minor injuries	70.1*	51.5*	(30.7)
… serious threat	66.7*	49.5*	33.8*
… theft from home or car	51.7	39.8	26.5*
… street robbery	77.4*	57.5*	(30.8)

* the correlation between fear and prior experience as a victim is statistically significant on the significance level p≤0,01

It seems that public spaces have become more secure for people over the five-year period. In 1994 people feared victimisation more in public spaces than on the streets. 57% of prior victims of crime claimed that they regarded public spaces as dangerous for themselves. The proportion of those who regarded streets as dangerous was 40% and ¼ of the victims feared assault or threats at home.

Nevertheless, the sense of security may not always correspond to the real probability of falling victim to crime. The earlier surveys have shown that the sense of security is significantly influenced by prior contact with crime, but it also varies by gender, age and region. (Ahven & Josing, 1999). Interestingly, although the risk for men of being murdered or sustaining physical injury and assault is several times higher than that for women, women's sense of security about crime is considerably lower than that of men. One of the explanations for

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[4]   The percentages shown in parenthesis indicate that they are based on 20–39 people of the sample.

the lower sense of security amongst women is the fact that they are physically weaker and thus they are less able to defend themselves.

It transpired from the Living Conditions Survey that 44% of women and 60% of men fear walking the streets, 74% of women and 86% of men feel fear of victimisation at home. Nevertheless, on the positive side, it should be noted that during the period between the two surveys, the sense of security increased among both men and women. The 1994 survey showed that 63% of women and 49% of men feared being assaulted in the street.
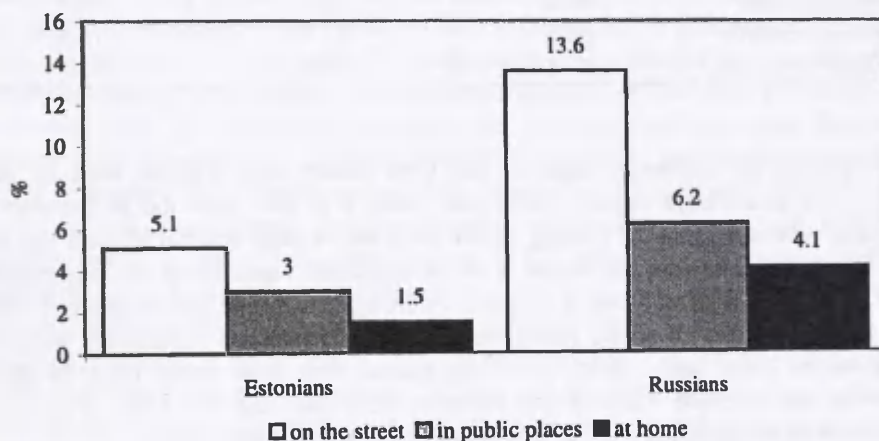
Figure 5. Fear of assault among Estonians and Russians (%)

Russians living in Estonia have a significantly greater fear of crime than Estonians (figure 5). Here it has to be taken into account that the majority of Russians live in the areas with higher crime rates, in Tallinn and Ida-Viru county — and in Tallinn not in the relatively safe Nõmme, but in Lasnamäe and Kopli. At the same time, the difference between the proportion of the Estonian and Russian populations who feel safe is not so significant, except for a fear of street assault. 54% of Estonians and 47% of Russians feel safe in this respect (80% of Estonians and 79% of Russians feel safe at home). In comparing the 1999 survey data with that of 1994, it transpires that there were similar trends between the nationalities then. The sense of security has increased slightly among both the Estonians and Russians.

Table 4. Fear of violence in different regions in Estonia, 1999 (%)

Region	Is afraid of assault and threat...		
	...on the street.	...in public places.	...at home.
Tallinn	57.1	39.8	22.3
Harju county	52.6	43.3	23.9
Western Estonia	33.4	26.5	12.4
Ida-Viru county	60.8	42.1	28.6
Lääne-Viru county	30.6	21.2	11.6
Central Estonia	37.1	28.2	16.8
Southern Estonia	38.5	31.7	15.9
Estonian average	47.1	34.9	19.7

Comparing the Estonian regions, Ida-Viru county and Tallinn with its surrounding area Harju county stand out, since it is here that the proportion of people who are afraid of falling victim to crime is high compared with the rest of Estonia (table 4). This result is to be expected, since these are the regions with the highest crime rate in Estonia. Although the crime rate in Harju county is not among the highest, many people living there are connected with the capital on daily basis. Also, there are places with high crime rates in Harju county, for example Paldiski and Maardu. Therefore, the low level of sense of security of the people living in Harju county is not so surprising.

Table 5. Fear of falling a victim of crime by the level of welfare in the population, 1999 (%)[5]

Is very much afraid of falling a victim of assault or threat ...	Valuation of the economic situation of the household			
	Well off	*Neither rich nor poor*	*On the poverty line*	*Poor*
... on the street	(6.3)	6.4	9.8	13.2
... in a public place	...	3.0	6.6	(5.5)
... at home	...	1.5	(2.8)	(7.7)

Table 5 shows that people who are economically worse off are more afraid of becoming a victim of street crime. This could possibly be due to the fact that poorer people moving around more on foot, which makes them an easier target

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[5]   The percentages shown in parenthesis indicate that they are based on 20–39 people of the sample, three points instead of percentages show that the number of people remained below 20.

for criminals than wealthier people, who have personal means of transport or take a taxi. It could also be assumed that the poor population groups have had more contact with crime during their lifetime, which is why they are more afraid of victimisation.

Measures applied by the population to enhance their security

Enhancing security is dependent on the understanding of society and its members as to what security is, and what measures are needed to safeguard it (Ernits, 1999). To enhance security, people's behaviour and attitudes have to change. People themselves can do quite a lot to protect themselves and their property.

A safe place of residence is important for people in order to help them to cope with the other factors causing instability, primarily the rapidly changing market economy and a labour market that requires high flexibility. The areas of private estates, where people have some space around their homes, are traditionally regarded as better living environments. The urban environment with big apartment blockhouses is regarded as less civilised. It transpired from the Living Conditions Survey (1999) that the satisfaction level with the safety of the neighbourhood is much lower in the bigger towns than in rural areas. Compared with other regions in Estonia, Tallinn and Ida-Viru county stand out in terms of the people's dissatisfaction with the safety of the neighbourhood, this being directly linked with the higher crime rate in these regions (figure 6).
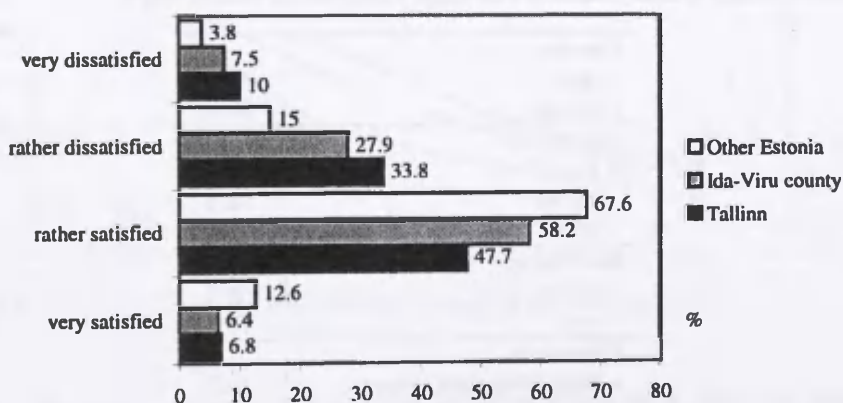
Figure 6. Satisfaction with the safety of neighbourhood (%)

A safe living environment in the urban areas is connected with the development of urban communities, to which not enough attention has been paid to up until

now. It could be claimed, using the example of Tallinn, that the market principle plays an important role in the development of neighbourhoods — the real estate market shapes them. On the one hand, this approach encourages the creation of elite districts; on the other hand, it causes the poorer districts to turn into ghettos. Nevertheless, it is not very plausible that neighbourhoods in Tallinn will develop into either "rich" or "poor", since the mobility of the population is relatively low. There would need to be a significant inflow of people for the districts to polarise, but the population of Tallinn is decreasing rather than increasing (Loogma, 1997). One of the tasks of the Safety and Integration Office, which started its work on the 1st of February 2001 in Tallinn City government, is to avoid districts turning into ghettos. Therefore, it could be hoped that more attention will be paid to the development of districts and that the self-regulating real estate market will be stifled.

In addition to more effective action by local government (*e.g.* teaching methods of self-defence, introducing the principles of neighbourhood watch), people can take measures themselves to protect themselves and their own property.

It transpired from the Living Conditions Survey that avoiding becoming a victim of crime is connected with several factors (table 6). Preventive safety measures are more likely to be used by people who have previously been a victim of crime. Due to the general distribution of crime, they are more often urban dwellers. People with higher education apply safety measures more often. The reasons for this could be the generally higher income of people with higher education as well as their greater awareness of the need to protect oneself.

Table 6. Users of safety measures by socio-demographic factors (%) [6]

Gender:	
– male	66.0
– female	82.8
Age group:	
– 18–24	69.8
– 25–49	74.3
– 50 +	77.8
Residence:	
– urban	68.1
– rural	78.2
Education:	
– basic education or less	70.7
– secondary education	73.9
– higher education	80.9

[6]   The percentages shown in parenthesis indicate that they are based on 20–39 people of the sample, three points instead of percentages show that the number of people remained below 20.

It also transpired that people who are more afraid of crime tend to take measures to protect themselves more often. Thus the proportion of women who do not apply any protective measures is half that of men (17% women and 34% of men). Also, the proportion of people who do not apply any safety measures is slightly lower among the Russians than the Estonians (respectively 21% and 27%). The proportion of people using different safety measures increases with age.

Safety measures are more likely to be taken (table 6) by people who are in an economically better situation. On the one hand, they have more financial means to do so, and on the other hand, they have more property that needs protection in comparison with those whose economic situation is poor.

The correlation between economic status and insurance (life, house, apartment, and property insurance) became apparent (figure 7). Interestingly, men tend to insure their lives and property more often than women do. Possibly the reason for the higher insurance activity of men lies in the traditional family relations in Estonia, where the man takes care of the well-being of the family, although the property and housing insured by the man belongs to other family members as well.
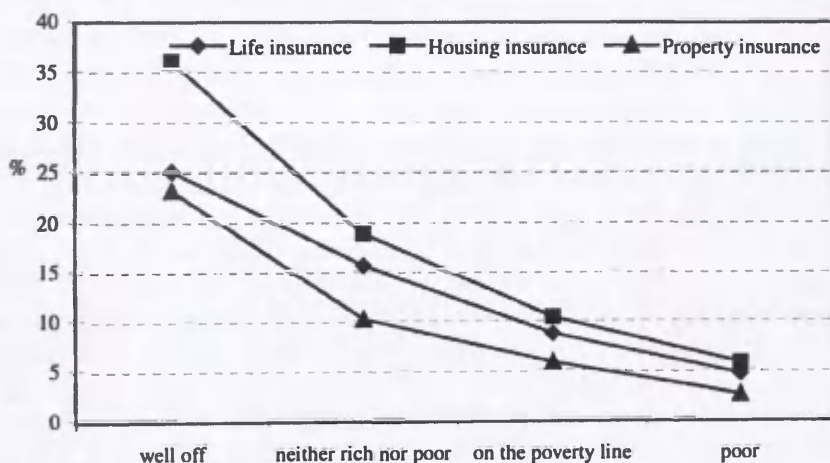
Figure 7. Having insurance by the economic welfare of the household (%).

People who are in an economically bad situation insure their lives and their property less often and use expensive safety measures much more rarely. At the same time, it cannot be said that they take more precautionary measures that are cost-free, for example avoiding dangerous places and not walking alone in the dark (table 7).

Table 7. Safety measures against falling a victim of crime (%)[7]

Safety measures	Valuation of the economic situation of the household			
	Well off	Neither rich nor poor	On the poverty line	Poor
Avoid going out alone	19.4	20.3	23.0	22.6
Avoid going out alone in the dark	47.1	48.3	51.5	45.8
Avoid dangerous places	53.9	60.1	57.4	47.4
Have a dog for protection	20.9	18.9	17.5	13.9
Have installed safety locks to the place of residence	33.1	21.2	12.1	10.9
Have installed alarm system to the place of residence	(6.6)	3.1	...	...
Carry a gas spray (tear gas, etc)	...	...	(2.6)	...
Carry a gun	...	(0.9)	...	...
Carry a knife or any other cut-and-thrust weapons	...	(1.0)	...	...
Other	...	(1.5)	...	...
None of the above	20.7	22.2	25.5	37.3

Conclusion

When comparing the crime rate (estimated through the frequency of vicimi-sation) based on the part of the 1994 and 1999 Living Conditions Survey data that deals with crime, it is seen that the crime rate has not increased significantly. However, the subjective sense of security has grown to a certain extent. This is probably related to an increased awareness of self-protection. Most people take measures to protect themselves — some avoid dangerous places and walking alone; those who have the means install safety locks to their homes. Nevertheless, there is no direct link between a sense of security, becoming a victim of crime and taking self-protection measures. The sense of security is lower among women, although men fall victim to crime more often. On the other hand, more women avoid dangerous places than men do. The use of safety locks, property insurance and other measures that require finance largely depend on the economic situation of the household. On the one hand, the richer population has more capacity to install security systems, whilst on the other hand they need such protection more, as they fall victim of crime against

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[7]   The percentages shown in parenthesis indicate that they are based on 20–39 people of the sample, three points instead of percentages show that the number of people remained below 20.

property more often than the poor do. The take-up of non-financial security measures is approximately the same among rich and poor households.

It transpired from the analysis of security in Estonia by region, that high unemployment and a region's low level of income generate offences against persons, whilst a region with moderate unemployment and high level of income has more trouble with criminal offences against property. Thus the rate of offences against the person is higher in Ida-Viru county, where the average income of household is one of the lowest in Estonia and the level of unemployment is the highest. On the other hand, criminal offences against property occur more often in Tallinn, where the standard of living is the highest in Estonia.

Will society be safer in the future? It is difficult to give an overall answer, as the factors involved have a differential impact. On the one hand, the standard of living in Estonia will most probably increase, which will hopefully be accelerated by the on-going accession to the European Union. At the same time, there are no grounds to forecast a rapid decrease in unemployment, but rather an increase in measures to alleviate social conflict. High unemployment is characteristic of the majority of the post-socialist countries (see the materials of the conference *"Labour, Employment and Social Policies in the EU Enlargement Process: Changing Perspectives and Policy Options"*, which took place in Baden in July 2001). Nevertheless, we have reasons to believe that economic development will gradually reach beyond Tallinn, although rapid development in the farther provinces and periphery (South-Eastern Estonia, North-Eastern Estonia) is not imminent. As a whole, the economic backdrop should improve. But is this sufficient to reduce crime and to raise the sense of security of the population? One cannot be too optimistic in this regard. Firstly, the after-effects of restructuring the economy are long lasting; they are as yet far from having appeared in full. Secondly, increasingly rapid globalisation acts as a reducing factor of as far as a sense of security is concerned.

Two sub-trends have to be mentioned here. Firstly, according to the majority of prognoses made on the international level "Criminal organizations and networks ... will expand the scale and scope of their activities" (Global Trends 2015, 2000). This was primarily said in view of drug trafficking, human trafficking and other types of "delicate" contraband, racketing, etc. On the other hand, globalisation brings with it large shifts in the way of life and the possibilities for even greater financial status stratification with the psychological reactions that follow these phenomena, which in turn create local conditions for a decrease in the sense of security and an increase in crime. It is true that the institutional development of society takes place in parallel and the accession to the European Union should have a balancing influence. However, there is no way to escape from the paradox — the scenarios which enable faster economic and social development most probably bring with them a worsening of social conflict, a decrease in security and an increase in crime. The Estonian Institute for Future Studies has published two scenario packages over the past few years

that illustrate the situation well. Among the "Estonia 2010" (1997) scenarios, the most progressive is the so-called *"scenario of the big game"*, which combines operating in both the Western and the Eastern markets and in addition to using the opportunities of the economic environment passively, starting to modernise both the economy and our way of life based on the implementation of information technology. As well as having many positive aspects, the scenario also contains negative ones — the unemployment of people with low qualifications, stratification, social tensions and a threat of "losing out". In addition to the North-Eastern Estonian towns, some districts in Tallinn are also in danger of turning into ghettos. Crime will still remain a problem in the future (Eesti tulevikustsenaariumid, 1997).

An analogous picture is revealed in the scenarios concerning the Baltic Sea region (Raagma & Terk, 2000). According to the scenario[8] that foresees the fastest development and many positive effects (*"scenario of the integrating region"*), Tallinn will start "boiling over". There will arguably be active migration into the capital, but with it social segregation, the danger of neighbourhoods becoming ghettos and a relatively high crime rate in the capital.

Beside these scenarios, success stories by nature, there are others which, by keeping more of the traditional way of life and patterns of human settlement, envisage a somewhat safer regime, including lower levels of crime, the price being slower economic development. That is if, in the conditions of low economic growth, very high unemployment is avoided or the results of unemployment are compensated for. The latter, however, is no easy task.

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[8]   This scenario will happen in the case if Estonia and Latvia accede to the EU and the economic relations between West, *i.e.* the EU and East, *i.e.* the CIS improve.

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Migration trends and reasons in Estonia in the 1990's

Mare Ainsaar

Migration is influenced by several micro and macro level factors. People mostly move to a place with better possibilities for living, working, studying and raising children. Thus the migratory flows could be regarded as indicators of social welfare. Surveys have shown that migration is selective in nature, offering better opportunities to more active people with better human, social and economic capital and greater freedom for changes. Also several macro level factors as territorial differences of demographic, socio-economic factors and social mobility conditions shape migration.

Migration is usually divided into internal and international migration. To define migration, it is important in both cases that the person crosses an administrative border for a permanent change of residence — the border of the local municipality in the case of internal migration and the border of the country in the case of international migration. International migration has changed powerfully a number and the structure of the Estonian population during 1945–1995. In the case of internal migration, the most interesting aspect is urbanisation. Both internal and international migration is registered permanently by Statistical Office in Estonia. Intra-municipality changes of residence are not registered in regular migration counts, but can be surveyed via pieces of research only (see for example Kährik & Ainsaar, 1998).

1983 has been regarded as an important migration turn around point, when for the first time in the last century net migration favoured rural areas. The current paper analyses migration patters during the last decade, namely the period from 1989–1999 in Estonia. It will contemplate migration flows and the reasons for changes of residence by social groups and migratory trends. The data on migration have been cross-referenced with economic possibilities, living conditions and the socio-economic status of the household. The author is primarily interested in rural-urban population change as a result of migration and the reasons for moving. The analysis is based on the data of the 1999 Living Conditions Survey. Migration is analysed by (1) the distance of migration — international, internal and intra-municipality migration are differentiated — and (2) migration behaviour and the wish to change residence. In the cases of internal and international migration the last change of residence, the reasons for change and the future plans were documented in the questionnaire

and in the case of a change of apartment, only the wish to change residence in the future was asked about.

Migration in Estonia, 1945–1999

In the recent history of Estonia there have been alternating trends in the migration flows. For years intensive immigration from the Soviet Union shaped the Estonian population (figure 1). As a result Estonia had become a country with one of the highest immigrant ratios in Europe by the beginning of 1990's. Although the differences between indigenous and immigrant populations were not a source of conflict, the demographic differences (Katus, 1994; Sakkeus, 2000; Tiit, 1993) and cultural and migratory behavioural differences were apparent. Specifically, immigrants were relatively more settled (Ainsaar, 1995) and preferred certain residential areas. Since the immigrants moved to urban areas, it had an important role in the whole urbanisation process of Estonia (Laas, 1987; Tammaru, 2001). Since 1990 Estonian net migration with foreign states has been negative.
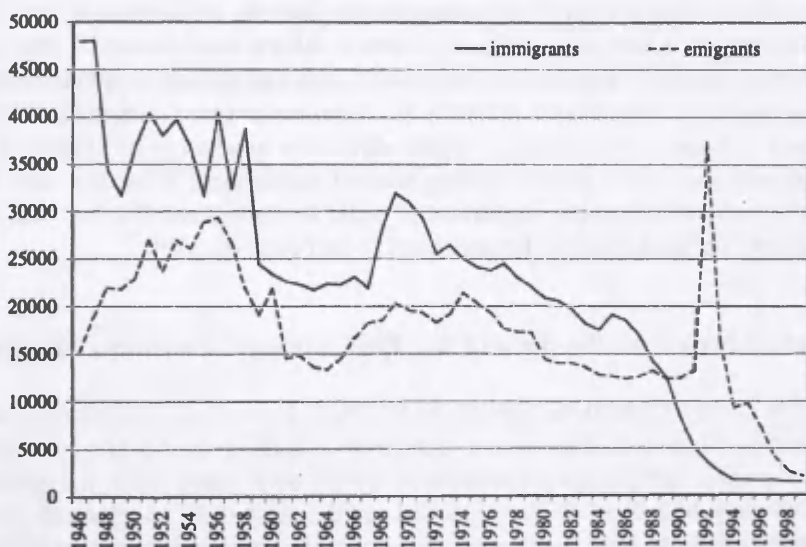

Figure 1. External migration 1946–1999

Until 1983 in Estonian internal migration there was a concentration of people migrating to the (bigger) towns. From 1983 an increased out-migration from Tallinn and Tartu to rural areas was noted, resulting in the first negative urban

net migration in Estonia in the last century (Marksoo, 1988; Tammaru, 2001). The fact that at first people mostly moved to the towns' immediate hinterlands has given grounds for calling the process hidden urbanisation (Kuddo, 1988). With the years the migration range widened, but selectiveness remained in respect of the economic indicators of the chosen destination (Ainsaar, 1999). Similar de-concentration processes had already started in the developed countries at the end of the 1960's (Jones, 1990). The developments of the last decade in a number of countries seem to prove de-concentration trends with the following characteristics: (1) out-migration from bigger cities; (2) suburbanisation; (3) people of older working age and pensioners leave towns; (4) differences between male and female migration persist, *i.e.* women still move to urban areas more frequently than men (Kupiszewski, *et al.,* 1997, Rees & Kupiszewski 1999).

The volume of officially registered internal migration has been relatively low in comparison with the previous decades and there is no clear understanding of the migration trends (Herm, 1999). Since the reliability of official statistics has decreased significantly with the registration of change of residence becoming voluntary (Tammaru & Sjöberg, 1999), the main and most reliable source of information has become survey-based analysis. Surveys have been published that support both urbanisation (Sjöberg & Tammaru, 1999) and de-concentration (Ainsaar, 1999) hypotheses during last decade. Presumably rural–urban migration is relatively balanced, since the volume of urban negative net migration has been small. Analysis has been made more complicated by the increased volume of commuting, vague *definition of change of residence* and the possibility of some people having several residences. Thus, the data from the surveys are all the more important in order to understand the real situation, although the methodological dangers have to be borne in mind.

Migration based on the data of the 1999 Living Conditions Survey

The 1999 Living Conditions Survey NORBALT II contained a thorough set of questions on migration. The respondents were asked for their place of birth, the reason for their last change of residence, where they came from, the length of time that they had lived in their current residence and about plans to change residence within the next three years. Similar migration questions were included in the Living Conditions Survey conducted in 1994. Unfortunately the possible responses used in the two surveys were different, which makes a comparison of the data in the two surveys methodologically impossible.

The Living Conditions Survey showed that 23% of the 4,727 respondents had been born abroad and 77% in Estonia. 8% of the respondents had lived for all of their life in the same settlement, 75% of the respondents had lived in

Estonia before their last change of residence and 17% of the respondents had arrived to Estonia during their last change of residence.

There is no clear scientific understanding as to whether people are more static or mobile by nature, *i.e.* whether they prefer to live the whole of their life in the same settlement or move from time to time. People probably have different migratory behaviour at different periods in their life and with different socio-economic status. According to the Living Conditions Survey people's mobility did not differ according to their professional status and gender. However, expected differences were revealed according to the type of the residential location — the bigger the settlement, the less people change residence; by age and level of education — the higher the level of education or the wealthier, the more likely the person was to change residence at least once in a lifetime (figure 2).

The reasons for migration depend on the distance and the direction (Mulder & Wagner, 1993). The earlier surveys dealing with immigration to Estonia have found the work migration most dominant reason of arrival (Laas, 1987). More than half (56%) of the 832 respondents in the survey who had moved to Estonia during their last change of residence, *i.e.* immigrants had migrated for family reasons, and work related reasons only came second (24%).

The dominant reason of internal migration in Estonia have been: to move to urban areas for family-related reasons (Ainsaar, 1990) work (Ainsaar, 1990; Tammaru & Sjöberg, 1999) and to improve living conditions (Ainsaar, 1999).
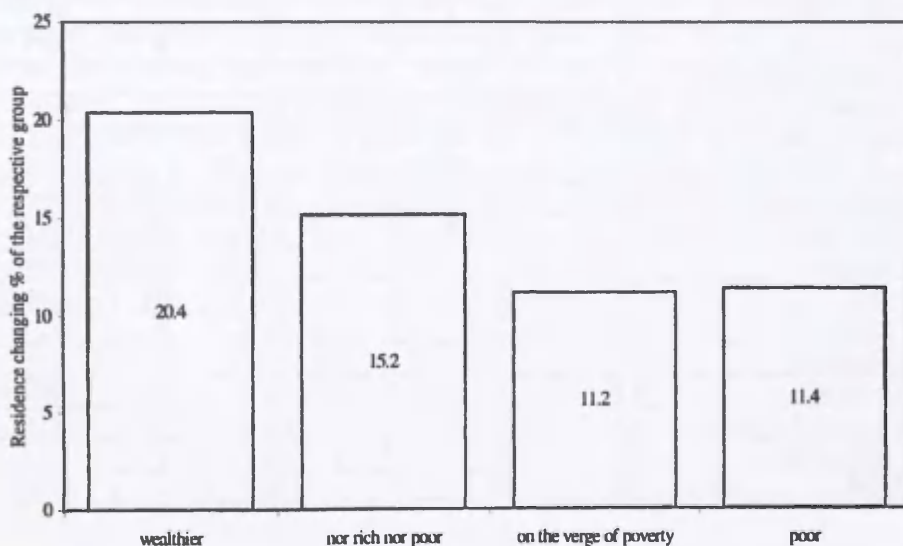

Figure 2. Residence changes during the past decade by self-determined wealth (%)

People move to rural areas primarily to improve living conditions (Lõo, 1987, Tammaru & Sjöberg 1999, Ainsaar 1999), for enhanced salary opportunities (Lõo, 1987) and, in the case of specialists, to find a suitable job (Kuddo, 1988). Up till 1990 migration to rural areas was undoubtedly influenced by the policy of compulsory job placement upon graduation from a university.

The data from the Living Conditions Survey show the change in the reasons for migration over time (table 1). For people whose latest change of residence took place before 1997, the predominant primary reason for moving was family-related, and work-related reasons came second. However, since 1998, work-related reasons have become the most frequent, family-related reasons are second and buying or exchanging residence is the third most frequent reason for moving. The data of the survey is insufficient to estimate reliably the change in the volume of migration over time, but the existing data do refer to the stability of migration intensity.

Table 1. The reason for moving to the current residence (%)

|	Purchase or exchange of residence	Work-related	Study-related	Family-related	Other	N (=100%)
Time of the previous change of residence						
1998–1999	24	38	4	26	11	84
1996–1997	28	19	6	32	15	135
1989–1995	21	25	6	40	7	471
Before 1989	9	29	8	46	8	2677
Current residence						
Capital	3	25	18	43	11	845
Bigger town (>50,000 pop.)	8	29	10	46	7	612
Smaller town	11	35	4	44	6	775
Rural area	20	27	1	43	9	1142
Gender						
Male	13	33	7	38	10	1251
Female	11	26	8	47	8	2123
Education						
No vocation	12	28	5	46	9	1328
Vocational educ	12	28	9	44	8	1461
Higher educ	10	34	11	38	7	564
Total	**12**	**29**	**7**	**44**	**9**	**3374**

Often a change of residence is course by various so-called push and pull forces. The selectivity of migration by age is generally known and it can be associated

with a person's life cycle. Migration could also be selective by gender, education and profession. For example, according to the previous surveys conducted in Estonia, women have a higher migration activity (Ainsaar, 1994; Marksoo, 1987) and shifted life cycles, *i.e.* women's migration intensity peaks earlier than men's (Ainsaar, 1994; Katus *et al.,* 1999). The growth of towns in Estonia has traditionally been accounted for by young women and pensioners, while families with children and specialists move to the rural areas.

Only time, the trend of, and the reason for, the change of residence were identified in the Living Conditions Survey. No differences in migration activity between men and women during the past decade emerged from the survey — 15,5% of men and 16,3% of women changed residence. It transpired from the survey that men had moved their current residence more frequently for work-related motives and women for family-related reasons (table 1). In the case of other motives there were no significant differences gender wise. The present top executives have moved slightly more to improve their accommodation, middle managers for work-, study-related reasons and the present lower level managers for family-related motives. Analysing the data by education groups, it transpired that people with higher education differentiated from the rest and migrated more often for work-related reasons. No significant differences could be observed in the analysis of the data by current financial status and by the reasons for the previous change of residence.

The reasons for, and composition of, the migration flow often depend on the geographical hierarchy of the destination and the place of departure. The analysis of the reasons for arrival show that family-related motives have been the most prevalent in all types of residential areas — the capital, other bigger towns, small towns and rural areas. People have moved to rural areas relatively more often to obtain favourable living conditions, to small towns with a population less than 50,000 to get a job and to the capital for the purpose of studying (table 1). The most important change in migration over the past decade has been an increase in the proportion of people who have moved to the capital for work-related reasons. Thus the proportion of work-related migration to Tallinn increased during the past decade from 25% to 35% of all migration reasons.
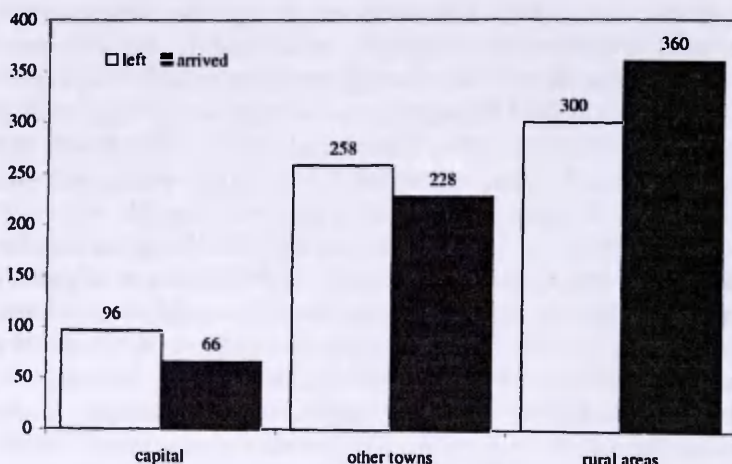
Figure 3. Net migration of the past decade by type of settlement (N)

Statistical data on the change of residence over the past decade is relatively unreliable from a geographical perspective. According to the Living Conditions Survey more people left towns for rural areas than vice versa during 1989–1999 (figure 3).

The following trends and reasons for a change of residence can be concluded based on the Living Conditions Survey:
1. before 1989 out-migration from rural areas, the main reasons for leaving were family-related (46%) and work-related (30%);
2. between 1989–1995 the dominant reasons for leaving small towns were still family-related (40%) and work-related (25%), whilst the rural net migration was positive;
3. between 1995–1997 the migration from small towns continued, but the prevailing reasons were family-related (32%) and residence-related (28%); rural net migration was positive;
4. between 1998–1999 people left small towns work-related (36%) and family-related (26%) reasons; rural net migration was positive.

The wish to change residence

Desired and actual behaviour in migration might not coincide. The desire to change residence does reflect possible migration trends and the willingness to migrate, but does not take the migration barriers into account. The wish to

change residence depends on the environmental conditions and the characte-
ristics of the person wanting to change residence. The previous surveys (see
Ainsaar, 1990) have shown that those who have changed residence more often
in the past have a tendency also to do so in the future. Some surveys show that
people in the middle class with a higher income change residence more in
comparison with other income and status groups in the population (Hartshorn,
1992). This is particularly true for long-distance migration if a job is changed at
the same time (Fielding, 1989; Johnson, *et al.*, 1974; Linnemann & Graves,
1983; Long, 1988). This last assertion has been partly proved in Estonia, where
the analysis of young people's life courses showed that the desire to change
residence within a settlement depended on the income level of the household
(Ainsaar, 1994).

There has been a lot of talk about the readiness of Estonian inhabitants to
leave their homeland. According to the Living Conditions Survey in 1999 1.3%
of the population planned to leave Estonia. In total, about 9% of Estonians
wanted a change of residence in the near future. 30% of all those who would
potentially change residence would like to move to rural settlements, 28%
would like to move to a town in the same county, 20% to Tallinn and 15%
abroad; 6% of those who wished to change residence did not know where they
would like to move. Almost 7% would like to change residence within the same
local government region.

Changing residence within the same settlement

The wish to change residence and the place of residence is, as expected, most
dependent on age (figure 4). Young people up to the age of 24 plan to migrate
(i.e. change the place of residence) the most, whilst the wish to change
residence within a settlement is more prevalent in slightly the older age groups
than in case of migration. The main motive for changing residence for younger
people is the insufficient size of the dwelling; for people over the age of 55, the
importance of the cost of the accommodation and the proximity of relatives
become increasingly significant (figure 5). To conclude, the desire to change
residence is most frequently rooted in the need for more floor space (33%), the
wish to move to a private house (27%) and the wish to find a cheaper residence
(16%).
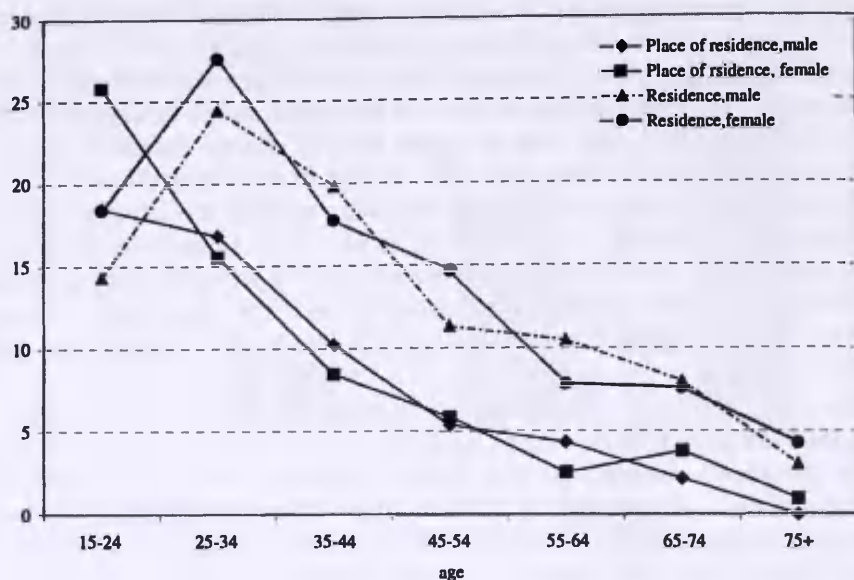
Figure 4. The desire to change residence and the place of residence by age and gender (%)
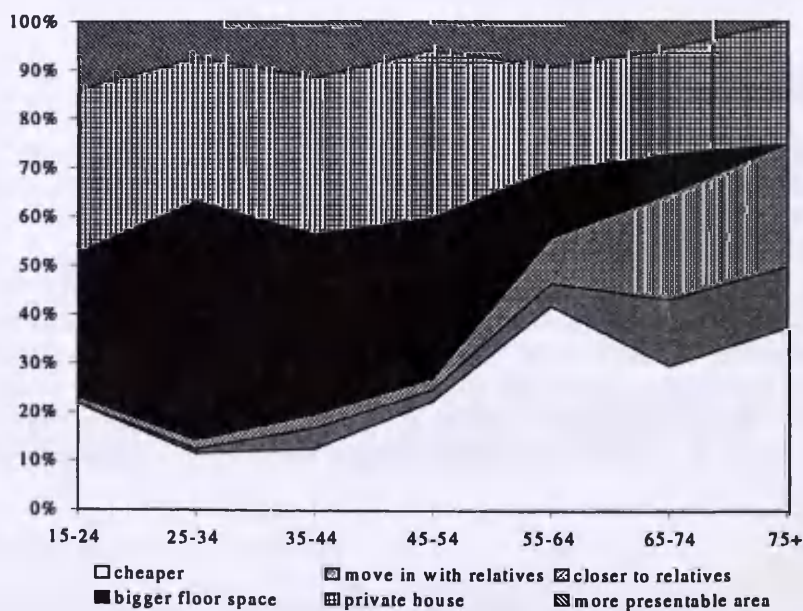
Figure 5. The desire to change residence within a settlement by age (% of the respective age group)

Compared with other population groups, there are more people in the wealthier and urban populations who desire to change residence. People who change residence are generally less satisfied with their current residence and its surroundings, but more satisfied than others with the availability of an elementary school, the cultural, recreational and entertainment establishments, pre-school child care facilities and work and business opportunities. Age is an important residence-related satisfaction indicator. Older people are generally more satisfied than younger people with almost all aspects of their accommodation (floor space, privacy, expenses, conveniences) and its surroundings, but less satisfied with the existence and availability of services. Surprisingly, older people were more negative in their evaluations of services aimed at young families (primary school, the cultural, recreational and entertainment establishments, pre-school child care facilities, work and business opportunities). The wish to move to another local government area (migration) made up approximately half of all the cases of change of residence.

Table 2. Main reasons for a change of residence by the current place of residence, planned destination and the socio-demographic characteristics of the person (% of those, who desire to change residence)

	Move to spouse	Move to parents	Move to children	Poor current living conditions	Work-related	Study-related	N =100%
Current place of residence							
Capital	23	8	4	2	6	4	91
Town (>50,000 pop.)	20	2	4	2	24	12	84
Other urban	10	6	2	2	49	5	105
Rural	16	3	5	2	38	3	151
Planned destination							
Capital	10	9	0	1	44	7	89
Rural within the same county	30	2	5	2	12	1	131
Other rural	14	2	2	2	47	6	119
Gender							
Male	18	3	2	3	30	3	179
Female	16	6	5	2	33	7	252
Cohabitation status							
Lives with a spouse	19	2	5	3	28	1	171
Lives with a partner	26	5	2	0	26	3	65
Single, no partner	12	7	4	2	38	10	192

	Move to spouse	Move to parents	Move to children	Poor current living conditions	Work-related	Study-related	N =100%
Education							
No vocation	18	5	4	2	31	9	166
Vocational education	16	3	4	2	38	2	184
Higher education	16	7	4	1	19	5	81
Professional status							
Working	17	6	3	2	27	3	257
Unemployed	19	2	12	0	57	2	58
Inactive	16	3	2	4	30	12	116
Total	**17**	**5**	**4**	**2**	**32**	**5**	**431**

Long-distance migration

Long-distance migration is planned mainly by a younger people. The most frequent motive for migration in the younger age groups is work, whilst amongst those of retirement age it is the need to change living conditions and to move in with children (figure 6). There is no great difference between the migration motives of men and women, but the satisfaction level with the current residence and the availability of services does differ. The motives for migration of people with different levels of education only vary in terms of work-related migration. Specifically, people with a vocational education wish to change their residence for work-related reasons twice as much as the average and people with higher education want to change residence less than the average.

Although there are no significant differences by the place of residence types, it seems that people living in the capital and bigger towns (>50,000 pop.) are more satisfied with their current residence and thus more static. People living in rural areas and smaller towns are less satisfied and therefore more willing to move. There are also differences in the reasons for migration by residence types (figure 7).

□ move to spouse ⊠ move to parents □ move to children ⊞ living conditions □ work ⊠ studies ■ other
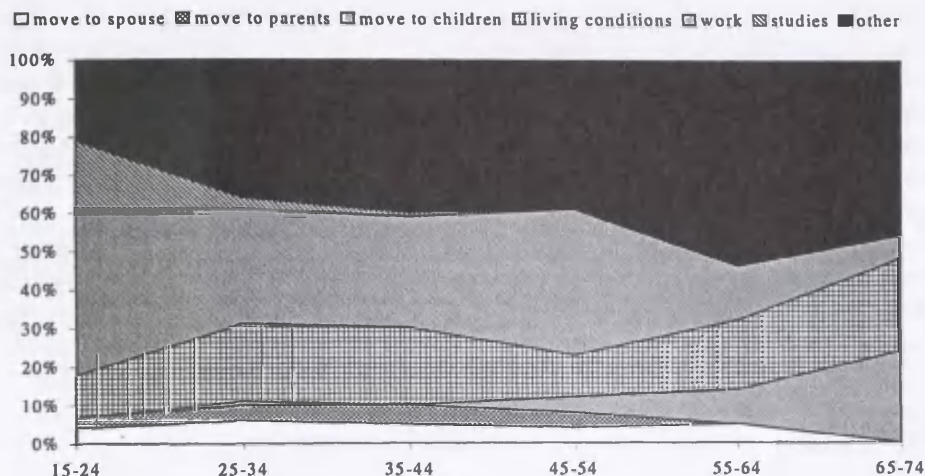
Figure 6. The reasons of the desire to change the place of residence by age groups (%)

Work-related migration is prevalent as a reason for leaving in rural areas and small towns, where unemployment is high. Changes of residence amongst the unemployed are work-related in more than half of the cases. The unemployed are considerably more interested in changing residence than other population groups (table 2). The majority of the unemployed plan to move to nearby towns.
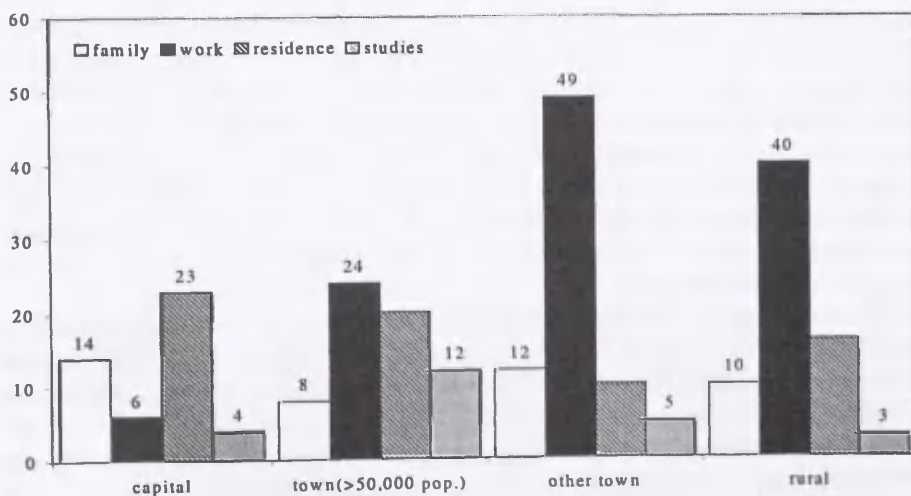
Figure 7. The reason for the desire to leave by the current place of residence (%)

Unsatisfactory living conditions pose the greatest problem for capital Tallinn citizens. Almost 1/3 of the potential migrants from the capital want to change residence to the rural settlements in surrounding Harju county. At the same time the contrary pattern exists — people living in rural settlements wish to move to towns and people living in towns less than 50,000 want to migrate to the capital or other bigger towns. The main attractions of a move to Tallinn are family ties, greater opportunities for work and better study possibilities. The desire to move to other towns is also mostly related to the hope of finding a job, whilst people moving to rural areas wish to improve their living conditions or to move in with their parents. The capital and other towns are the most desirable places for young people up to 24 year-old.

Discussion

The results of the Living Conditions Survey show that the majority of people (92%) change residence at least once during their lifetime. Thus a change of residence can be either a desired event or a situation forced upon one due to unsatisfactory living conditions for most of people. Mobility depends both on the type of place of residence as well as the individual characteristics of the person. Thus, there is no universal explanation for the desire of people to migrate, but it depends on the potential of different regions to fulfil the needs rooted in people's life strategies and on individual capital-related resource considerations.

It came as a surprise from the Living Conditions Survey that only 1.3% of the population planned to emigrate from Estonia. According to several previous surveys conducted in 1999–2001, the percentage of potential emigrants is significantly greater. This could possibly be due to methodological differences in measuring emigration plans. Since the first question asked in the Living Conditions Survey concerned the plan to emigrate and the next question the potential destination and not vice versa, the results should be regarded as more reliable, because the people who gave an affirmative response to emigration were arguably more confident both in the realisation of their plan and in the selection of the destination.

The second rather surprising result was the fact that the most frequent reason for immigration was not work-related, but family-related motives. However, the results must be approached with several reservations, because (1) some of the one-time (work) migrants have probably already returned by 1999 and (2) the predominance of family-related migration over work-related migration during the past few years could be due to administrative restrictions.

It is difficult to draw conclusions about general migration activity based on the data of the Living Conditions Survey, because only the last change of residence was identified. There were no differences in the levels of men and

women who did not migrate; however we cannot make final conclusions about the overall mobility of men or women during their lifetime, because only particular migration steps were counted in that survey.

Conclusion

In explaining the migration of the population the data of the Living Conditions Survey is an alternative to the data of official migration statistics. In the survey both actual migration behaviour during the last move and the desire to migrate and change residence were identified.

23% of the respondents had been born abroad and 77% had been born in Estonia. 8% of the respondents had lived all of their former life in the same settlement, 75% of the respondents had lived in Estonia prior to the last change of residence and 17% had arrived to Estonia during their last change of residence. 1.3% of the respondents in 1999 planned to emigrate from Estonia and 9% of the respondents planned to change their place of residence within the next three years. 30% of those who wished to change their place of residence would move to rural settlements, 28% would move to a town in the same county where they currently live, 20% would move to capital Tallinn and 15% would emigrate.

The official migration statistics of the past few years has proved the trend of people moving from urban areas to rural areas in Estonia and a decreasing trend of emigration year-by-year. However, contradictory results have been published from various surveys on internal and international migration. According to the Living Conditions Survey, more people left urban areas for rural areas during the past decade than vice versa. The survey results show a change in the reasons for migration during the reference period, an increase in the work-related migration being observed. Thus, since 1998 work-related migration has become the predominant reason for a change in the place of residence, with family-related motives being the second most frequent reason. Work-related migration is significantly prevalent among the reasons for leaving the rural areas and small towns, where the unemployment level is higher than in the capital and other bigger towns.

No significant differences transpired in the actual migration behaviour of men and women concerning migration activity, but there were differences in the motives for changing the place of residence — men tend to change the place of residence usually for work-related reasons, women for family-related reasons. It transpired from the analysis that the activity of changing the place of residence and the motives are influenced by the age of the person. However, it must be asserted that is was not possible to analyse the direct impact of life cycles on migration behaviour and thus it cannot be stated which is a more important factor — the age of the person or his/her period of life. Economic and

educational resources had an influence on people's actual and planned migration behaviour. People with better capital are in many cases more mobile.

The most important changes in the geographic aspect of migratory behaviour during the past decade were the following:

1. up to 1989 out-migration from rural areas, the main reasons for leaving rural areas were family- and work-related motives;
2. 1989–1995 out-migration from small towns was predominant; family- and work-related reasons continued to be the most frequent;
3. 1995–1997 out-migration from small towns continued, the most frequent reasons for leaving being family-related and the desire to improve living conditions;
4. 1998–1999 the outflow of people from small towns for work- and family-related reasons;
5. 1989–1999 during all the reference period the rural net migration was positive according to the Living Conditions Survey;
6. 1989–1999 the differentiation of migrants by age and destination continued. People migrating to the rural areas were slightly older (24–35 years and older) than average migrant, the main objective being to improve living conditions. The young still prefer to migrate to capital;
7. the proportion of work-related migration to capital increased significantly during the reference period.

If the migration plans of people in 1999 will be fulfilled, the population in capital will grow and in other towns and rural areas will shrink as a result of migration in near future.

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Recalculating expansion factors
of the Living Condition Survey samples based
on the data of the 2000 census

Urmas Oja, Ene-Margit Tiit

In order to generalise the results of the sample survey, it is necessary to know the total number of the population and its distribution according to the main variables. In the case of the Living Conditions Survey Norbalt II (1999) the initial data which was used was the age-sex and regional distribution of the population based on the 1989 census data and corrected by population events currently registered. However, the estimated population transpired to be over-estimated by 4.7% compared with the results of the 2000 Population Census (Eesti rahvastik, 2001); the bias varied for different regions and gender- and age groups. In order to correct the inaccuracy in the data and check its impact, expansion weights were recalculated based on the data of the 2000 census. It transpired that the data submitted by Statistical Office of the Estonia (SOE) for the 1st of January 2000 was suitable. This date differed from the time of the survey by less than three months (Pedersen et al, 2000), and therefore the under-estimation of the population because of any chronological bias in time can be no greater than a tenth of a percent, which is some forty or fifty times smaller than the bias caused by the previous population estimate.

The recalculations also had a second goal. Since three independent datasets were formed during the Living Conditions Survey, and the expansion weights (custom to the sampling theory) were adjusted so that they would be optimal for each dataset separately, it transpired that the estimates based on different datasets were not congruent. In the case of some practical tasks, however, several datasets may have to be used simultaneously and the inconsistency of weights may upset the calculations. The second goal of the recalculation of weights was to achieve the best possible concordance between them.

Living Conditions Survey samples

The design of the Living Condition Survey samples

The frame (*i.e.* a complete list of the population observed) of the Living Conditions Survey was the population database of Andmevara Ltd., which is regarded as an unofficial population register in Estonia and forms the basis for

all the surveys conducted by the Statistical Office of Estonia (SOE). The design of the Living Conditions Survey for selecting the so-called "address persons" was formulated so that such a person could be randomly selected from the population register (*i.e.* a randomly selected resident of Estonia).

The design of the survey was quite complex (see Pedersen, *et al.*, 2000; Tamm, 2001), but it turned out to be of cardinal importance when recalculating the weights, that the design used was self-weighting regarding the address persons (Traat & Inno, 1997). Thus, the inclusion probability t_i was the same for all address persons,

$$t_i = \frac{n}{N}, i = 1,2,...,n,$$ (1)

where i denotes the serial number of the address person in the sample, n is the sample size and N the population size.

Specific to the current survey, three separate samples were formed on the basis of the address persons, the sampling unit was different in all three.

1. *The household sample*, where a household is the sampling unit. A household is included in the sample together with an address person, *i.e.* the number of households in the sample is also n and the serial numbers of the household and the address person are compatible. A household is characterised by the number of its members p_i and the number of adult members q_i. The inclusion probability of the household s_i depends on the number of members belonging to it — the greater the number of members in the household, the greater the inclusion probability,

$$s_i = p_i t_i,$$ (2)

where t_i is the address person's inclusion probability calculated according to formula (1).

2. *The household members' sample* consists of all the members of all the households in the sample. The inclusion probability of every i-th member of a household equals the inclusion probability of the household s_i.

3. *The randomly selected persons' sample* comprises of one adult (at least 18 years old) from every household. It is presumed (based on the definition of a household) that there is at least one adult member in every household. Therefore the index i is compatible with the household index. Thus, all three samples are connected with one numeration. The randomly selected person's inclusion probability r_i depends on the number of members in a household and the number of adult household members,

$$r_i = \frac{p_i}{q_i} t_i,$$ (3)

where t_i is the address person's inclusion probability calculated according to formula (1).

Calculating the expansion weights

In order to get sample-based estimates for the population, expansion weights have to be calculated. The weights show how many population objects correspond to each object in the sample. The weights are the inverse of the inclusion probabilities (see Traat & Inno, 1997), thus the weight of an i-th address person is

$$w_i = t_i^{-1} = \frac{N}{n},$$

the weight of an i-th household is

$$v_i = \frac{1}{p_i} \frac{N}{n},$$

and the weight of an i-th randomly selected person is

$$u_i = \frac{q_i}{p_i} \frac{N}{n}.$$

It follows from the formulae that the sums of the weights should respectively equal the population N, the total number of households L and the number of adults in the population M.

$$\sum_{i=1}^{n} w_i = N, \quad \sum_{i=1}^{n} v_i = L, \quad \sum_{i=1}^{n} u_i = M. \tag{4}$$

Also, the sum of the weights of household members should equal the population:

$$N = \sum_{i=1}^{n} v_i p_i. \tag{5}$$

Additionally, it is natural that condition not only (4), but also (5) should be valid in all population groups, regardless of the regional, social, economic or other conditions they are determined by.

Since the three samples mentioned above are used for analysing data without additional restrictions, it is presumed that estimates for the same characteristics of the population based on the different samples are either equal or the discrepancy between the estimates remains within the limits of estimation error. This goal was also born in mind when calculating the new weights, preferring this option to that of optimising weights in the separate datasets.

If the weights of address persons are defined so that the first condition (4) is precisely met, then this yields a precise total number of household members (5). Differences can be caused only by calculation imprecision. But by linking the weights of address persons to the weights of randomly selected persons calculated using formula (3), the sum of these two weights should yield the third sum in formula (4) *estimate of the adult population*, that may not be equal to the respective number of the population. The bigger the sample size n, the better is the concordance and the smaller is the impact of the factors causing bias in the estimates.

Survey sampling non-response and taking it into consideration

Unfortunately, in the case of survey sampling not all subjects in the sample can be reached, causing a *non-response*. A non-response decreases the estimation precision, since the sample size becomes smaller than that planned and creates an increase in random error. Still worse, a non-response causes a systematic error in the estimates, *i.e.* a bias due to the non-respondents being different from the average respondents. Therefore, non-respondents do not form a random part of the planned sample. Should there be grounds to assume that a non-response is random (meaning that the non-respondents are not differentiated by any important variable from the respondents), then the impact of a non-response could be reduced by simply using a respectively bigger sample. However, more often than not, a non-response is not entirely random, but rather depends on certain variables important to the survey. For example, it is generally known that both the extremely rich and the very poor try to avoid filling in forms of any kind; single working people are harder to reach as they are rarely at home; households that have just moved to a newly built house can not be found in the register, etc. If it transpires that the probability of a non-response depends on the background variables that are being surveyed or are generally known, then the non-response can be compensated for using various mathematical-statistical methods.

It is practical to use the distribution of a non-response when calculating new weights to the existing data, which in this case were documented with sufficient precision (Pedersen et al, 2000). It turned out that the sample size planned initially had been 5500 households, which decreased due to over-coverage of the frame (no households residing at the address) to 5224. In case where the living place was in use, but the address person did not live there, the household living there was questioned (the so-called replacement household) and an adult was selected randomly to be included in the sample of randomly selected persons. This procedure does not cause a bias if the household that moved in is, in principal, similar to the household that moved out. This assumption has been

made. The total number of completed forms was 4796 and therefore the response rate was 91.2%.

Calculating new weights

Two important decisions had to be taken when calculating the new weights:
- to choose the strata for post-stratification in order to compensate adequately for uneven population changes and a non-response;
- to decide which of the three datasets (households, household members, randomly selected persons) should be determinative, and to link the weights calculated for it with the weights calculated for the other datasets.

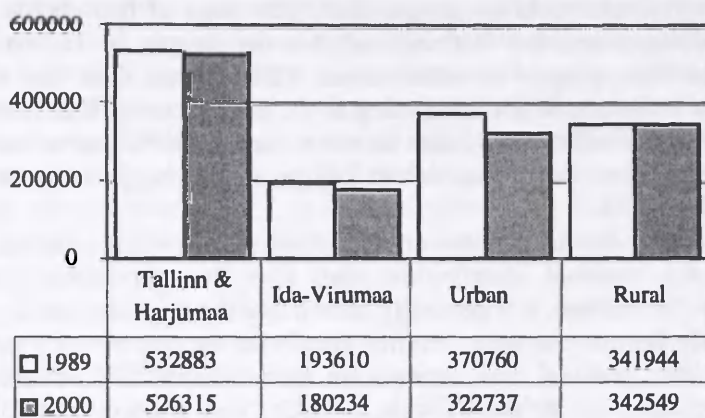*Choosing strata for calculating new weights*

One of the best known methods to compensate for a non-response is post-stratification (Traat & Inno, 1997). In order for it to be applied, the population is divided into certain parts, *i.e.* strata. The strata are chosen in a way to ensure that there are relatively similar surveyed subjects in each stratum and that their response activity would on average be the same, but the differences of the respondents in different strata would be significant. Quite often the geographical distribution is used as a basis for stratification.

A simple stratification scheme was favoured when recalculating the weights, dividing the population into four rather than the initial 35 strata according to the geographic variable:
- Tallinn and Harju County,
- Ida-Viru County,
- other urban areas in Estonia,
- other rural areas in Estonia.

This quite uncommon distribution was mostly favoured because the results of previous surveys had shown that it is quite significantly correlated with the wealth and lifestyle of households (Leibkonna elujärg, 2001). It was also important, since the reason for recalculating the weights was to correct the impact of the over-estimated population data and it became apparent that in the four strata described, the population estimates had changed quite differently (figure 1).

It transpires that the estimates were in concordance regarding rural dwellers, the population of Harju County had decreased by one percent, but the population of Ida-Viru had declined by 7% and the urban population by almost 13%. As a result, the ratio of the population in those regions changed. Also the response probability varied in regions if we compare the sample distribution with the population distribution in regions (figure 2).

	Tallinn & Harjumaa	Ida-Virumaa	Urban	Rural
□ 1989	532883	193610	370760	341944
▣ 2000	526315	180234	322737	342549

Source: Estonian population 2000, SOE, 2001 and Age composition of the population 2000–2001, SOE, 2001.

Figure 1. Changes in the population according to regions, 1989 and 2000 (N)

□ Tallinn & Harjumaa □ Ida-Viru ▣ Other urban areas ■ Other rural areas
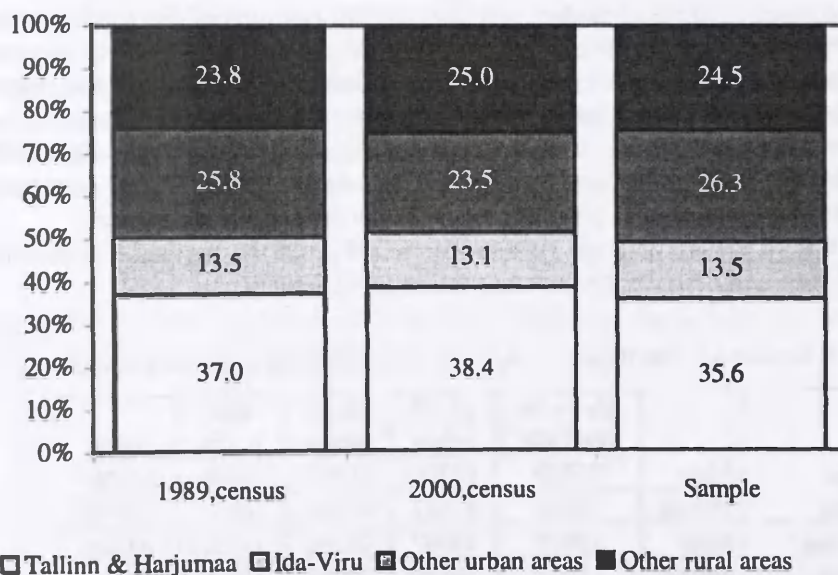
Source: Estonian population 2000, ESA, 2001 and the data of Living Conditions Survey

Figure 2. Relative representation of the regions (%).

These distributions should be comparative if the sizes of households were the same in different regions. It transpired that the sample in Tallinn was 7% smaller, but the sample in other towns 12% greater than the respective proportions in the population (according to the 2000 census). It is probable that the discrepancies in household size do not reduce the differences, but actually increase them, since the households in Tallinn are not bigger than the average Estonian household.

Unfortunately the estimation discrepancies between the censuses did not only concern regional distribution, but also the population gender-age distribution. In addition, it is generally known that the response activity rate and consequently the non-response depends greatly on the respondent's gender and age — middle aged and elder women are more co-operative, whereas young, men in particular are rather difficult to reach. This requires additional post-stratification of data according to gender and age groups.

Selecting the base dataset

In order to achieve concordance between the three datasets, one of them has to be chosen as the base dataset and its weights used to calculate the weights for the other datasets according to the formulae (1)–(3). Because of the need for post-stratification according to the gender and age groups, the object in the base dataset has to be a person. Unfortunately the address person was not specified in all the households and therefore the randomly selected persons' sample was chosen as the base dataset. As a result the sample size decreased by 1,5% to 4725 households, since it transpired that a randomly selected person did not correspond to some of the households (figure 2 has taken the decrease into account).

In total 8 gender and age groups were used in all the regions, the distributions being based on the 2000 census (table 1 and figure 3).

Table 1. Gender-age distribution in regional strata according to the 2000 census (N)

		Up to 18 years old	18–34 years	35–59 years	60+ years	Total
Harju	Male	56700	68796	80075	35694	241265
County	Female	53952	67847	97020	66231	285050
Ida-Viru	Male	19915	18207	29230	14251	81603
County	Female	19052	18434	34486	26659	98631
Urban	Male	38331	37327	45611	23448	144717
	Female	36887	41071	55652	44410	178020
Rural	Male	46145	35201	55731	27983	165060
	Female	43518	31310	53894	48767	177489
TOTAL		314500	318193	451699	287443	1371835

Figure 3 shows that the gender-age distribution varied in regions (see also the data of Tallinn and rural areas on figure 3), therefore it was practical to use three-dimensional region-gender-age distribution in post-stratification (the alternative would have been to analyse regional distribution and gender-age distribution independently, as is sometimes done when calibrating). Since there was no-one under the age of 18 in the randomly selected persons' sample, 24 gender-age groups were used in post-stratification. The smallest of them was Ida-Viru elderly male group comprising of only 14 000 citizens (1% of the population).
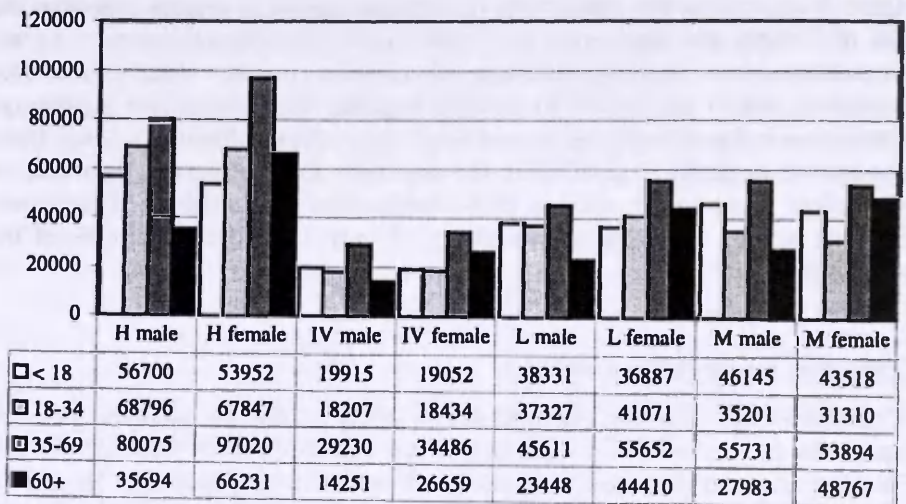
Computing new weights in strata

Formulae (1)–(3) are used in post-stratification stratum by stratum. The k-th stratum is denoted with G_k, where $k = 1, 2, ..., K$. In the current survey $K = 24$. For every stratum the respective number of adults in the population M_k and the sample size n_k. is known, which according to the selection design is also the number of households, randomly selected persons and presumed address persons.

The basis for computing weights according to the result of the formula (1) the inclusion probability of an address person t_k in the k-th stratum G_k, which is presumed to be constant throughout the stratum. For every i-th household the number of adult members q_i, the number of all the members p_i, and the stratum G_k belongs to, are known. Thus the inclusion probability $r_i(k)$ of the randomly selected person in the i-th household belonging to the k-th stratum is the following:

$$r_i(k) = \frac{p_i}{q_i} t_k.$$

Since weight is the reciprocal of inclusion probability, the weight of a respective randomly selected person is:

$$u_i(k) = \frac{1}{t_k} \cdot \frac{q_i}{p_i} = w_k \frac{q_i}{p_i}.$$

	H male	H female	IV male	IV female	L male	L female	M male	M female
□ < 18	56700	53952	19915	19052	38331	36887	46145	43518
□ 18-34	68796	67847	18207	18434	37327	41071	35201	31310
▣ 35-69	80075	97020	29230	34486	45611	55652	55731	53894
■ 60+	35694	66231	14251	26659	23448	44410	27983	48767

Source: Age composition of the population 2000–2001, SOE, 2001

Figure 3. Region-gender-age group sizes in the population. H — Harju county; IV — Ida-Viru county; L — urban; M — rural (N).

Based on the following formula

$$M_k = \sum_{i \in G_k} u_i = w_k \sum_{i \in G_k} \frac{q_i}{p_i},$$

it is easy to compute the address person's weight, *i.e.* the base weight w_k in stratum k,

$$w_k^* = \frac{M_k}{\displaystyle\sum_{i \in G_k} \frac{q_i}{p_i}}, \tag{6}$$

where M_k is the number of adults in the respective stratum (table 1). From this the estimates of household weight and randomly selected person's weight ensue m stratum k, respectively $v_i^*(k)$ and $u_i^*(k)$,

$$v_i^*(k) = \frac{w_k^*}{p_i} \mu_i^*(k) = w_k^* \frac{q_i}{p_i}. \tag{7}$$

In order to check the precision of computations the comparison between the k-th stratum population estimate

$$N_k^* = w_k^* \sum_{i \in G_k} p_i$$

and its known value N_k can be made.

If the base weight is estimated by formula (6) for each stratum and the estimations for the household weight $v_i^*(k)$ and for the randomly selected person's weight $u_i^*(k)$ are computed using formula (7), the necessary weights have been found and according to the assumptions, the following equations should hold (within the limits of computational precision):

$$N^* = \sum_{k=1}^{K} N_k^* = \sum_{k=1}^{K} \sum_{i \in G_k} w_k^* = \sum_{k=1}^{K} w_k^* n_k, \tag{8}$$

where N^* is the estimate of the total population and

$$L^* = \sum_{k=1}^{K} L_k^* = \sum_{k=1}^{K} \sum_{i \in G_k} v_i^*(k) = \sum_{k=1}^{K} w_k^* \sum_{i \in G_k} p_i^{-1}, \tag{9}$$
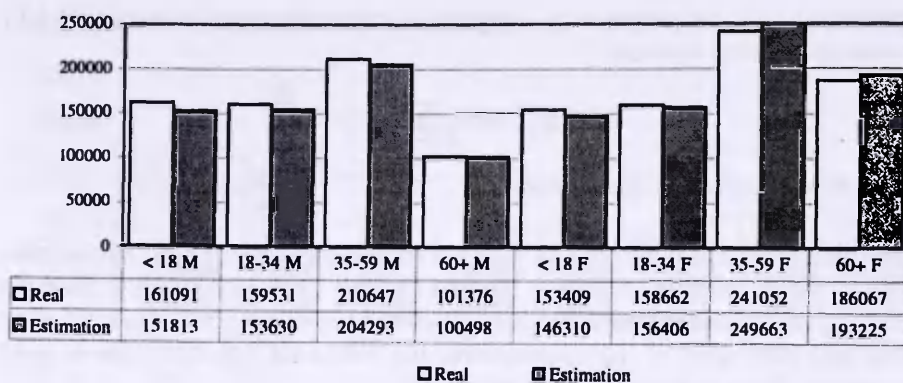
where L^* is the estimate of the total number of households.

Checking the results and precision estimation

To estimate the precision of the weights found, the distribution of household members' age has to be found, using formula (8) and comparing it with its actual distribution. Since the base weights are calculated based on another sample — randomly selected persons' sample — then the concordance of the respective distributions is not insignificant (figure 4).

It can be seen that the population is generally under-estimated by 1% based on the sample, whereas the under-estimation is the greatest (by up to 5%) in the under 18-year olds group. The older the age group, the more accurate is the estimated number compared with the actual one. The estimate and actual population ratio is also influenced by gender: in the case of women the estimate can give up to 3% greater population, in the case of men the under-estimation is about the same.

	< 18 M	18-34 M	35-59 M	60+ M	< 18 F	18-34 F	35-59 F	60+ F
□ Real	161091	159531	210647	101376	153409	158662	241052	186067
▣ Estimation	151813	153630	204293	100498	146310	156406	249663	193225

□ Real   ▣ Estimation

Source: Age composition of the population 2000–2001, SOE, 2001 and the data of Living Conditions Survey
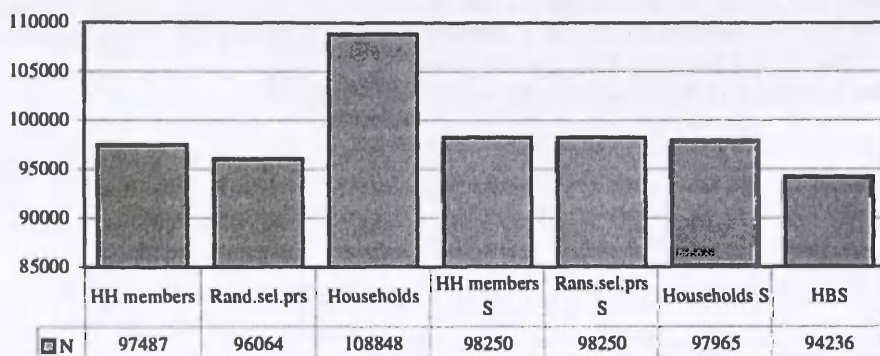
Figure 4. The ratio of actual and estimated population in gender and age groups (N)

The bias, which has been detected in the estimation, has a rational explanation.

- New-born babies are entered into the database of Andmevara Ltd immediately, but their addresses are added at a later date. Thus, the probability of children being included as an address person is smaller than their proportion in the population would presume.

- The bias in the adult respondents' population estimation caused by gender and age is in concordance with well-known differences in the levels of response activity. Although these differences were taken into account when assigning the weights of randomly selected persons, it still does not compensate for the weight differences of the household members, since apparently younger and male household members are also under-represented, perhaps because they form a significant proportion of household members who live away from home (Leibkonna elujärg, 2001).

Concordance of estimations based on different datasets

In order to check the concordance of estimations based on different datasets (household members, households, randomly selected persons) the estimate for single pensioner households was obtained using the original weights (columns 1, 2 and 3, see figure 5), recomputed new weights (columns 4, 5 and 6) and also based on the Household Budget Survey (column 7).

	HH members	Rand.sel.prs	Households	HH members S	Rans.sel.prs S	Households S	HBS
N	97487	96064	108848	98250	98250	97965	94236

Figure 5. Estimations for the number of single pensioner households.

It transpired that on average, according to the estimate based on the new weight, the number of pensioners is smaller by almost 2% (which is in good concordance with the reality), whilst the differences between estimates based on different datasets was reduced by some forty or fifty fold. The reason for the estimated number of households based on the budget survey being smaller was a slightly different definition — in budget surveys the members living away who are economically connected are considered to belong to the household, which reduces the number of one-member households to a certain extent.

In conclusion it can be confirmed that the results of the computations using the new weights are fully satisfactory, as on average the estimation bias is significantly smaller than that caused by the change in the population estimate. Methodologically it is of interest that with exceptionally simple measures a good concordance between the weights of different datasets was achieved, which ensures a good concordance between the estimations based on these datasets and their simultaneous applicability.

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The living conditions survey in Estonia is part of the larger NORBALT project with identical questionnaires and the same methodological approach in Estonia, Latvia and Lithuania. Many of the social indicators are used also in Scandinavian living conditions surveys, making Nordic-Baltic comparisons possible. Fafo Institute for Applied Social Science has conducted living conditions studies in the Baltic countries since the early 1990s in cooperation with local institutions. At Fafo we hope that these surveys have by now become institutionalised and that they will be repeated at regular intervals, so that trends in social developments can be followed and monitored and put into an international comparative perspective.

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