Ewa Frątczak
Iga Sikorska
Institute of Statistics and Demography, Warsaw School of Economics

CHANGING ATTITUDES AND BEHAVIOUR CONCERNING CONTRACEPTION AND ABORTION IN POLAND[1]

INTRODUCTION

During 2005 World Summit, governments committed themselves to 'achieving universal access to reproductive health by 2015, as set out at the International Conference on Population and Development' (A/RES/60/1)[2]. In the documents of Cairo Conference (1994)[3], Beijing conference (2005); Beijing + 5[4], the Millennium Development Goals 2000[5], legalisation of abortion is treated not only as a population policy instrument, but also as a part of women's reproductive rights. The legislative attitudes towards abortion vary significantly in particular countries. This is wider discussed in the publication titled Word Population Policies 2007 (UN, 2008). As regards legal regulations concerning abortion in the European Union countries, induced pregnancy termination is illegal in Malta. In other European Union countries, with the exception of Ireland, abortion is also legal for reasons

---

[1] The article is based on the paper 'Contraception, Abortion and Social Networks in Poland. Changes in the Period 2001–2006' presented during the European Population Conference 2008, 9–12 July, Barcelona, Spain, at the session 'Contraception and Induced Abortion in Europe'.

[2] UNDP, 2007, World Contraceptive Use 2007, Population Division, www.unpopulation.org.

[3] UN, 1996, Programme of Action adopted at the International Conference on Population and Development, Cairo, 5–13 September 1994, UN ICPD' 94, New York.

[4] UN, 2001, Beijing Declaration and Platform for Action with the Beijing+5 Political Declaration and Outcome Document, New York .

[5] UN, 2007, The resolution adopted by the General Assembly 55/2 United Nations Millennium Declaration, A/RES/55/2, (to remind: the resolution comprises eight basic objectives, i.e.: 1.Eradicate extreme poverty and hunger; 2. Achieve universal primary education; 3. Promote gender equality and empower women; 4. Reduce child mortality; 5. Improve maternal health; 6. Combat HIV/AIDS, malaria and other diseases; 7. Ensure environmental sustainability; 8. Develop a global partnership for development. In Poland, the Report on Millennium Goals for Development, Poland 2002, available on the website www.un.org.pl, was published in 2002.

other than a threat to the mother's life. The most liberal law in this respect is in force in United Kingdom and the Netherlands, where in practice abortion on request is permitted until the 26th week of pregnancy. In principle, in Austria, Belgium, Denmark, Finland, Greece, Germany, Luxembourg, and Portugal, legality of abortion is limited to first 12 weeks of pregnancy. The respective period in France is 10 weeks, in Italy 12 weeks and 6 days, while in Sweden it is 18 weeks.

Law allowing abortion for social and health-related reasons was introduced in Poland in 1956. New legal regulations have been in force since January 7th 1993, which was the date of introducing the *Law on Family Planning, Protection of Human Foetus and Conditions of Permissibility of Abortion.* This law allows for abortion in situations when pregnancy poses a threat to the mother's life, there is a possibility of a serious harm to the foetus confirmed by prenatal examination, and if pregnancy is a result of rape or incest. It is thought to be a restrictive one. Indeed, the number of abortions has declined substantially since the new law was introduced. In 2007, legally registered abortions amounted to mere 322, which in comparison with live births and induced abortions seem immensely small.

Figure 1. Live births, registered induced and spontaneous abortions (in thous.)
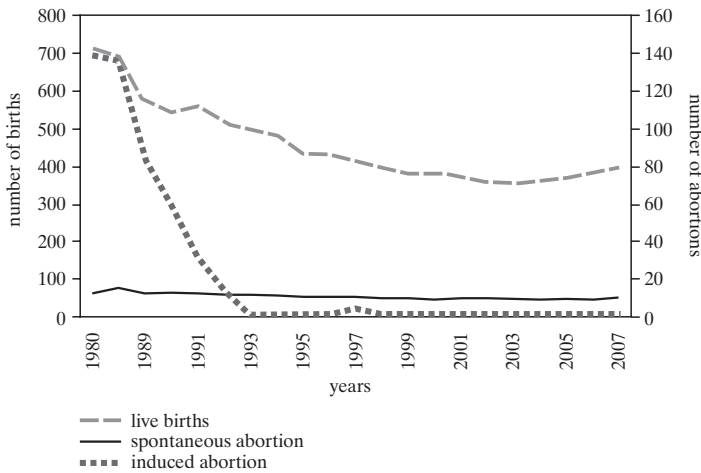
Source: The Report of the Council of Ministers concerning the execution of the Law of January 7th, 1993 on Family Planning, Protection of Human Foetus and Conditions of Permissibility of Abortion and the Effects of its Implementation in the year 2006, Warsaw, table 22, p. 62 and next, Warsaw 2007.

For instance, in the years 1980 and 1985 when law permitting abortion for social-related reasons was in force, the number of abortions accounted for as much as 20% of live births. From the data presented in Figure 1, one can conclude that a relation between voluntary abortions and live births was around 10–11% both in 1985 when live births amounted to 680 thous. and in 2001 when they declined to 368 thous. Hence, a question can be formulated about the Polish phenomenon of the almost-zero number of induced abortions. There is no clear answer to this

question and the issue of abortion should be discussed from both perspectives i.e. that presented by supporters as well that of opponents.

In Poland there are no reliable data related to unintended conceptions or illegal abortions. Nevertheless, it is worth to point out that during the entire observed period, the relation of voluntary abortions to live births is constant and that it has not exceed 12%. The declining number of abortions is the phenomenon observed not only in Poland – it is characteristic of many countries of this part of Europe.

Generally, a significant decline in the number of induced abortions has been observed in Europe since the beginning of the 1980s, particularly among the new European Union member states. Therefore, the decline observed in Poland is consistent with the general tendency; however, the official statistics seem not to be reliable.

According to the Federation for Women's Rights and Family Planning, a non-governmental organisation, *Anti-abortion law did not liquidate and probably did not reduce the number of abortions. The number of illegal abortions estimated by the Federation fluctuates within the band of 80–200 thousand a year. This would mean that abortion underground is quite well developed in Poland*[6]. At the same time, other arguments for such a low number of abortions exist: the progress in sexual education, better knowledge of family planning and contraception methods, availability of contraceptives, and effectiveness of the applied methods of contraception. All this leads to cultural and health-, as well as sexual education-oriented changes (awareness of abortion-related threats), which combined with unchanged attitude of the Catholic Church in Poland towards abortion, may contribute to a still lower number of abortions.

For the past quarter century the levels of legal induced abortions in Eastern Europe have been among the highest in the word. With easier access to induced abortion, many women and couples modify their fertility behaviour. Some women decide to terminate pregnancies that they would otherwise have carried to term, and some couples modify their contraceptive behaviour. In the Eastern Europe, there was a case, particularly in the 1950s and 1960s, that legal induced abortions could serve as modern contraceptive device commonly performed where they are available, i.e. they helped to reduce the number of unwanted birth.

According to Kulczycki (1995: 475), *liberal abortion legislation in Poland had far-reaching consequences. More people came to rely on abortion as a method of birth control than they would have done, had modern contraceptives been more widely available and their use and benefits better understood*. He has pointed out another aspect of a very high abortion level in Poland, i.e. the paradox of a high abortion rate coexisting in the society with a very high level of adherence to the Catholic Church that holds abortion to be a grave sin.

---

⁶ See: Federacja na rzecz Kobiet i Planowania Rodziny, 2000, *Skutki ustawy antyaborcyjnej – Raport Federacji 2000 [The effects of anti-abortion law in Poland, Report 2000]*, Warszawa, on the web, http://www.federa.org.pl/index.php?option=com_content&view=category&id=81&Itemid=75, p. 2.

It should be stressed that in the period of essential legal liberalisation, the Catholic Church attitude remained unchanged and was against abortion promoting natural methods of family planning.

Abortion in Poland, similarly to other countries all over the world, stirs strong controversies. The fundamental questions emerge concerning the exact moment of the beginning of a human's existence, and what exactly determines a human being? Discussion concerning abortion is also related to the women's rights to control their own bodies, with the state's responsibility to protect a child before birth. It also concerns the spousal and parental rights to decide about abortion, as well as the conflict between the mother's rights and the rights of an unborn child. In Poland, similarly to other countries, there are also active movements for and against legalisation of abortion, among the former is the Federation for Women's Rights and Family Planning.

The declaration states that the Federation acknowledges a woman's right to decide when, how many, how and whether to have children at all as the fundamental human right without which she cannot fully participate in the life of the society and develop in accordance with her own will. The Federation defends women's rights to family planning throughout actions on behalf of legal and safe abortion, available contraception, and solid knowledge concerning human sexuality.

On the other side, among organisations that are against legalisation of abortion are numerous movements associated in the Polish Federation of the Movements for Defending Life, established on 21st June 1992. In the Polish community of life defenders, the most significant organisation is the Human Life International – Europe located in Gdańsk. It constitutes the regional Office of the Human Life International (HLI) for the Central and Eastern Europe. The HLI Europe Office was established in 1993; the information about its activity is presented on the website: www.hli.org.pl.

The Report 2007 of the Federation for Women's Rights and Family Planning is well embedded in the discussion concerning the restrictive abortion law in Poland, as it concerns the reproductive rights in Poland in the context of the anti-abortion law in Poland[7].

Access to methods and means for responsible (conscious) procreation undoubtedly has a great significance on the establishment of conscious maternity. According to official report, report of the Council of the Ministers for the year 2006[8] (p. 37), *"in Poland, there have recently been registered and made available for sale advanced contraceptives that are medical products or pharmaceuticals, as well as medicines, curative means and pharmaceuticals used during pregnancy and necessary in the prenatal care, care for a pregnant women and used for the purpose of conscious*

---

[7] Federacja na rzecz Kobiet i Planowania Rodziny, 2007, *Prawa reprodukcyjne w Polsce. Skutki ustawy antyaborcyjnej. Raport 2007*. [Reproductive rights in Poland. The effects of anti-abortion law-Report 2007], Warszawa.

[8] The Report of the Council of Ministers concerning the execution of the Law of January 7th, 1993 on Family Planning, Protection of Human Foetus and Conditions of Permissibility of Abortion and the Effects of its Implementation in the year 2006.

procreation." In 2006, 38 medical products used as contraceptives were allowed for sale (gestagens and estrogens inluding two progestogens).

The available results of the questionnaire survey carried out by Z. Izdebski[9] indicated that over a half (58%) of the sexually active women used some methods of contraception during the last 12 months. Almost 28% of women have not used any contraception method. Among women, who used contraception, the most popular was partner's use of condom. It was admitted by 54% of the surveyed. The second most popular were contraceptive pills (30%), while the third – interrupted coitus (21%). The percentage share of the couples who have sex without the use of any contraceptives is decreasing, while the percentage share of couples using contraception has been evidently increasing.

Generally, it may be concluded that Poland lacks systematic studies on the use of contraception. Therefore, an attempt to fill that gap was undertaken in two sample-based retrospective surveys, carried out in 2001 and 2006. They included questions on issues of the broadly understood reproductive health in connection to family formation and dissolution. Both surveys will be described in detail in the third section. Their data are used in this article, which aims:

(i) to evaluate changes in contraception attitudes and behaviour and attitudes in respect to abortion in Poland in the period 2001–2006, and

(ii) to reveal how important is the role of religiosity and social networks for the use of contraceptives, and more general, for the reproductive behaviour of people at procreative age in Poland.

The article starts with theoretical considerations which focus on main issues of social change usually referred to when considering changes in procreative attitudes and behaviour: materialism and post-materialism, religion, secularisation and social networks. These theoretical considerations constitute a basis to clarify both the research objectives and hypotheses presented in the second section. Next, data sources and methods used in the study are described. To analyse attitudes and behaviour related to contraception two approaches were applied: the first is based on a descriptive analysis while the second make use of a binary logistic model and a multi-nominal logistic model. Main results of these two analytical approaches are presented in the subsequent sections. The summary comments conclude the article.

THEORETICAL CONSIDERATIONS

In Poland, cultural transformations coexist with economic, social, and administrative changes. It is difficult to discuss any of these changes separately. The amount of studies and surveys, which would explain the phenomenon of radical changes in the countries under transformation, is far from satisfactory. We are

---

[9] UNDP, 2007, The Report on Health of Women at Procreative Age 15–49 Years. Poland 2006, Warsaw.

confident that changes in attitudes and behaviour of generations at the procreative age have (and will have in the future) a overwhelming significance while making the decisions of family forming, entering a relationship or having a child. Attitudes and behaviours are interrelated with alterations in the systems of values and norms (which includes social, religious, legal norms, etc.). In the literature devoted to the subject there are many theoretical considerations related to the norms, values, attitudes, and behaviours. Our theoretical considerations include the following aspects of social changes: materialism and post-materialism, religion and secularisation, social networks.

MATERIALISM AND POST-MATERIALISM, RELIGION AND SECULARISATION

Changes in demographic behaviour come from growing values of individual self-realisation, personal preferences, and freedom from traditional forces of authority (mainly religion). It was possible thanks to gaining freedom from material concerns in modern societies. The post-materialist values theory is associated with the second demographic transition theory (Lesthaeghe and Van de Kaa 1986). The former is often mentioned in the publications of the authors of the second demographic transition. In order to interpret trends in family formation, union dissolution and patterns of family reconstitution in Western nations in the 1960s, Lesthaeghe proposed three theories (Lesthaeghe 1998: 6): the theory of increase of female autonomy; the theory of relative economic deprivation and the theory of ideational shift. The theory of ideational shifts stresses a greater individual autonomy in ethical, religious, and political domains. In explaining demographic behaviour a priority is given to: materialism and post-materialism, religiousness and secularisation, confidence and trust. These issues were given much attention in publications by Inglehart (1977, 1997, 2003) and Inglehart & Welzel (2005). More advanced methods are employed in the studies on the life course to investigate links between value orientations and life course transitions (e.g. Lesthaeghe and Moors 2002; Billari and Liefbroer 2007; Miller and Pasta 1995). These studies include, among others, attempts to define selection and adoption effects in investigating transitions between different phases in the life course and identifying a role of values in determination of subsequent choices and a given (actual) behaviour.

INVESTMENT IN EDUCATION

The next possible explanation, which can be useful in our research, is the effect of ideational changes. The idea of changes in the value system of society and the impact of these changes on behaviour concerning contraceptives use, more generally on fertility behaviour, is a part of the theoretical explanation connected with the Second Demographic Transition (Lestheaghe, Van de Kaa 1986). The changes in the lifestyle and opening towards new ideas concerns to a greater extent the

younger part of the society than the older one. This results in pluralisation of the society including the processes of de-secularisation and individualisation. Similar changes are observed in the Central and Eastern Europe (e.g. Koytcheva, Philipov 2008; Frejka 2008). The younger part of the society who decidedly invests in education is more susceptible to change in the system of values[10].

Growing numbers of people with tertiary education, particularly among young generations, will undoubtedly contribute to an increasing number of people susceptible to changes in a value system, and consequently to changes in attitudes and behaviour respective to use of contraceptives, including modern contraception.

Religion and its significance for the demographic behaviour is not addressed very often in both demographic surveys and analyses. One of the reasons which may explain such situation is secularisation experienced by many European countries. Therefore, an influence of religion has been becoming a less significant factor. Nevertheless, according to Philipov and Berghammer (2007: 273) *Modifying the secularisation hypothesis, recent sociological research on religion in Europe indicates, however, that its importance for societal life should not be underestimated. Religion experienced a significant transformation along with the overall ideational shift. Recent decades have witnessed the emergence of notions like 'post-modern' religion and 'believing without belonging', used to denote new trends in the development of religiosity*. The importance of religion in the study of contemporary fertility and family changes in Europe was pointed out by Lesthaeghe and Surkyn (1988). In Poland the importance of religion in studies on contraceptive use and fertility cannot be ignored.

Secularisation may concern different levels of the societal life. Two of them are significant: an institutional level and an individual level. The first refers to institutions, economic, political, and social ones, which are removed from the control of religion. At times this control might have been direct, with ecclesiastical authorities also having authority over the operation of these institutions (e.g. A. Cline, http://atheism.about.com/mbiopage.htm.). In Poland, despite a formal separation of the state and the church guaranteed by the Constitution, the Church influence may be observed in public as well as private lives of citizens. The influence manifests itself in various ways. On the catholic websites one may find texts concerning new challenges in the era of secularisation. To respond to these new challenges it is recommended to develop the Christian civilisation and a moral revival of the society as well as to undertake various initiatives targeted at repositioning the Christian values into the centre of human life.

Changes taking place in religiosity and morality of the Poles certainly influence the changes in reproductive attitudes and behaviour of the young and middle-aged generations of female and male Poles. According to Mariański (2001), there may be four scenarios (models) determined for the changes of values and moral norms in

---

[10] During the period of transformation in Poland, number of tertiary students increased by over three times. According to the CSO data the gross enrolment rate increased from 12.9% at the beginning of the 1990s to 48.9% (growth by 280%). In addition, women more often than men continue education in tertiary schools.

contemporary societies. The first comprises secularisation of morality, understood as abandonment of the Christian morality model (in a broader sense – a religious model), which is often described as a moral crisis. The second concerns individualisation of morality, often connected with the postmodernist deterioration of the values, particularly those of universal character (downfall of meta-narration, promotion of unlimited freedom and autonomy of an individual). The third scenario constitutes transformation of values, deterioration of the old values and creation of new ones adjusted to the pluralist society (transformation or reconstruction of values). Finally, the fourth includes reorientation of moral values in the Christian spirit (or in a broader sense – in a religious spirit), sometimes of a fundamentalist character, or a moral revival without religious one (revitalisation of morality).

Analysing the results of two Polish Retrospective Surveys, carried out in 2001 and 2006, Dębski, Balicki (2007: 19–20) provided the following conclusions concerning religiosity in Poland in the years 2001–2006:

- as compared to other European countries, Poland is a country with a high share of believers of the Roman-Catholic denomination;
- Poland is a mono-religious country with a strong predominance of the Roman-Catholic religion, not showing any more significant signs of extra-religious pluralism;
- Poland is a country with high inter-religious pluralism;
- the Roman-Catholic Church in Poland is changing its functions held on behalf of the society;
- religiosity of the Poles is increasingly dealing with privatisation rather than secularisation of religion.

SOCIAL NETWORKS

Social networks became an important aspect for understanding reproductive behaviour and changing levels of fertility. Hence, they can be used in studies on attitudes towards contraception. Diffusions of new values and contraceptive methods were a driving force of the downward trends in fertility in developing countries (Bongaarts and Watkins 1996). The processes connected with the controlled level of fertility rest on personal communication networks providing the channels through which people learn about new social evaluations of fertility, gender-specific role models, or alternative biographical perspectives. They also influence individuals to adopt new contraceptive methods (Kohler 2001, Valente *et al.* 1997, Entwisle *et al.* 1996, Rosero-Bixby and Casterline 1994). Short social networks' description should illustrate supportive personal relationships. Individuals' personal preferences and resources depend on, among other things, personal relationships and social networks. These are in general characterised by communication and exchange as well as by the transmission of norms as a by-product of the first two relational contents (Mitchell 1973). Thus, social networks matter for purposeful decision-

making (Schweizer 1996: chapter 4, Burt 1982), because communication influences individuals' perceptions of the expected advantages of different courses of action.

Communication networks expose individuals to information and structures of interpersonal influence. **Individuals can passively receive information or they can** seek it actively. In both situations, their positions in communication networks determine their exposures to information of different content and quality (Freeman 1979, Granovetter 1973).

Moreover, people do not make decisions based exclusively on information. They also want to be convinced that particular behaviour will lead to positive results (Rogers 1995). Personal evaluations, experiences, and opinions serve this purpose, if they are communicated by network partners who belong to their peer groups or occupy similar network positions and who mention the topics the individuals have to decide on (Friedkin 1993, Marsden and Friedkin 1993, Burt 1987). Peer groups are influential as they build a substantial part of individuals' daily life. They also tend to build cohesive networks of high density that distribute information quickly, but that also produces homogeneous evaluations and normative pressures fuelled by repeated interactions and mutual dependencies (Coleman 1990: chapter 11, Friedkin 1982). Individuals in similar structural positions exert influence because they are in similar, and therefore comparable, social situations. Due to this comparability, people evaluate the advantages of different courses of action by virtually performing these activities through their counterparts (Burt 1982) or by learning directly from them, if said counterparts already perform activities they actors are considering (Marsden 1998, Friedkin 1993).

Social networks become an important factor in explaining processes of declining fertility. The onset and pace of the first demographic transition in Europe and the contemporary decrease of fertility in developing countries rest on, among other things, the diffusion of new evaluations of fertility, children, family size, or gender roles as well as on the dispersion of information, experiences, and opinions about the use of modern contraceptives (Bongaarts and Watkins 1996). Communications about these topics expose individuals to information and structures of interpersonal influence that finally alter their subjective perceptions of high levels of fertility and of the means to control reproduction (Bühler and Kohler 2004, Kohler 2001, Kohler *et al.* 2001, Montgomery and Casterline 1993, 1996).

There is, however, not much insight into the relevance of communication networks for fertility decisions outside the specific context of the diffusion of innovative reproductive behaviours. From a theoretical point of view, it is argued that social networks are one of the causes of lowest-low fertility in Europe, as they distribute role models of late entries into reproduction (Kohler *et al.* 2002). Many publications, especially those based on findings of recently conducted studies in the Central and Eastern European countries like Poland, Hungary, Bulgaria, Russia (Koytcheva, Philipov 2008; **Bühler and Frątczak 2007, Philipov** e*t al*. 2006) emphasise the meaning of the influence of social networks on attitudes and behaviour, plans and intentions related to having children, families and more widely to the procreation.

MAIN GOALS AND HYPOTHESES

This article aims at evaluating of changes in attitudes and behaviour in respect to contraception and abortion in Poland in the period of 2001–2006 and indentifying a role of religiosity and social networks for the use of contraceptives. To achieve the first goal the following research questions have been formulated:

- What are the current attitudes and behaviour connected with contraception and abortion (elements of reproductive behaviours) of people of procreative age in Poland? What types of changes were observed between 2001 and 2006?
- What is the relationship/connection between current attitudes and behaviour regarding contraception and abortion and religiosity in the population at procreative age? What types of changes were observed between 2001 and 2006?

To investigate how important are social networks for the use of contraceptives, and more general, for the reproductive behaviour of persons of procreative age in Poland, some working hypotheses were established:

H1. Under the conditions of the intensive changes being in place during the transition period in Poland, the traditional system of norms and values is being transformed towards more broad-minded (contemporary), which means a diminishing role of religion and its influence on creating attitudes and behaviour.

H1a. Among part of the society, the strong relation between religiosity and the attitudes and behaviour towards abortion and contraception may be observed. People, for whom religion plays important and very important role in their life, differ from the others in these attitudes and behaviour.

H1b. The observed differences are not so much an indication of the secularisation process as of the individualisation of religion in Poland.

H2. In the attitudes towards contraception and abortion, a significant factor is the individual characteristics of a person and his/her family environment. Especially, an increasing level of education followed by extended education process, observed in Poland particularly since 1989, influences changes in attitudes and behaviour concerning abortion and contraception.

H3. In Poland, similarly to other Central and Eastern European countries, social networks play a significant role in creation of social capital, managing solutions of various situations in life (coping strategy), they influence attitudes, behaviours, wishes and intentions. In particular, social networks in Poland have a positive impact on attitudes and behaviour in relation to contraception since they may provide information on the methods of contraception (particularly peer networks) and support the use of appropriate methods of contraception and conscious family planning.

DATA SOURCES AND METHODS

Basic data for the analysis come from two Polish Retrospective Surveys 2001 and 2006 entitled "The evaluation of changes in attitudes and reproductive behaviours of young and middle generations of female and male Poles and their influence on the process of family, union, household formation and dissolution". The 2001 survey was conducted by the Institute of Statistics and Demography, Warsaw School of Economics, in co-operation with the Central Statistical Office. The 2001 survey was based on a random sample of Poland inhabitants aged 18–54. The sample consisted of 3348 respondents (1724 women and 1624 men). The 2006 survey was carried out by the Institute of Statistics and Demography on a random sample of 1492 respondents aged 18–54, living in towns with 20 thousands or more inhabitants. Both surveys used the same questionnaire.

Full information about the surveys, the sampling scheme, assessment of the results' quality, principles for editing data sets, organisation of data bases with specification of variables, as well as the questionnaires used can be found in Frątczak and Pęczkowski (2002) for the 2001 survey, and in Frątczak e*t al.* (2008) for the 2006 survey[11].

The analyses presented here refer to three groups of the questions on procreation, contraception and abortion asked in the survey. Questions concerning procreation were mostly directed to those with their own families and concerned the actual number of children: *How many children do you have? What factors decided on having/giving birth to subsequent children in your case?* as well as procreation plans: *Do you plan to have the next child (children)? If you definitely are not going to have any more children, what are the reasons for that? If you don't plan any more children, or you are not sure about it, what influences your decisions? If you don't want to have any more children for reasons not related to age or health then what would make you decide to have the next child (children)? If you plan to have children in the future, write how many? If you plan to have children in the future, write when?*

Questions on contraception concerned sexual life: *At what age did you initiate sexual life? At what age did you initiate regular sexual life?* and contraceptives: *How old were you when you started using contraceptives? Which of the following measures and methods did you use during your first intercourse? What contraceptive method are*

you currently using? Which of the contraceptive methods are you going to use in the future? If you don't use any of the above-mentioned methods, what caused it? as well as question on opinions of used contraceptives: *What is your opinion concerning the use contraceptives? If you refuse using contraceptives, write why? If you allow using contraceptives in some situations, write in which?*

Finally, questions concerning abortion were: *What is your opinion about abortion? If you decidedly disapprove of abortion, write why? In which situations abortion may be allowed? What do you think about married couples with two children and a very small flat, who terminate pregnancies?*

Another group of the survey questions concerns social networks. The unique data on 12 different types of networks was gathered. For the purpose of this article we only used information about three types of networks.

The empirical analysis consists of descriptive and model approaches. The relationship between contraceptive use, social networks and other socio – economic characteristic of the respondent is evaluated on the logistic regression models, which employed variables defined on the selected questions asked in the questionnaire.

ATTITUDES AND BEHAVIOUR RELATED TO CONTRACEPTION AND ABORTION – A DESCRIPTIVE APPROACH

Analyses on attitudes and behaviours related to contraception and abortion presented in this section address the following questions:
- What is the respondent's opinion concerning the use of contraceptives and abortion?
- What is the respondent's age at sexual initiation and at initiation of a regular sexual life?
- Which type of contraceptives have the respondents currently used and which type they are going to use in future?

To answer these questions we took into account the importance of the religion for the respondent as a variable which differentiates both attitudes and behaviour[12].

In presenting below basic findings the following rules are applied:
- all results are structured according to the above questions;
- if empirical results indicate that there are no essential differences between 2001 and 2006, results are shown only for one year, as a rule this is mainly the year 2006;
- if the results are different for two periods, results for both years i.e. 2001 and 2006 are presented.

---

[12] There is a little difference in the answering pattern on the question "What is your opinion on using contraceptives?" between the compared years. First of all, in the year 2006, men were much more eager to answer the set of questions concerning contraception and abortion than women (in previous round the proportion was opposite) and this fact needs to be taken into account while interpreting and comparing results from both surveys.

What are present attitudes towards the use of contraceptives and abortion? How does religiosity differentiate these attitudes?

Figure 2 shows respondents' distribution by answers to the question: *What is your opinion concerning using contraceptives?*

Figure 2. Opinions about using contraceptives by sex, Poland, 2001 vs. 2006 (in % of respondents)
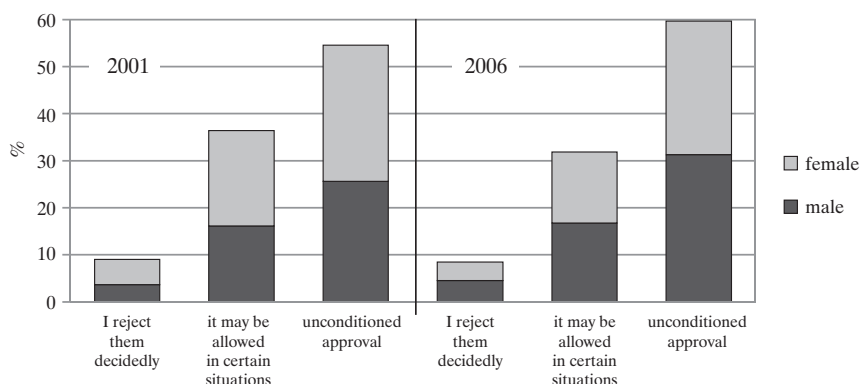
Source: Based on the Polish Retrospective Surveys 2001 and 2006.

Less than 10% of the respondents reject contraceptives totally, over 30% claims that they may be allowed in certain situations. It means that almost half of respondents approve of the unconditional use of contraceptives. Worth noticing is the fact that the society is becoming more liberal in its views about the contraceptive use. The share of people (especially women) who believe that contraceptives may be allowed in certain situations only is declining mostly in favour of those who approve their use unconditionally. What is more, using contraceptives is becoming increasingly more popular among men. Among those totally rejecting the use of contraceptives, the proportion was changing in given years. In 2006, a disapproval was noticed slightly more often for men rather than women.

How did the importance of religion in the respondent's life differentiate opinions on the use of contraceptives and the reasons for rejecting contraception?

Major reasons for rejection of the use of contraceptives in both years were religion and reasons related to health, although religiosity is becoming more significant while health-related issues are less important among those who do not accept contraceptives. There is a constant share of people refusing the use of contraception because of moral reasons (20%), other reasons are of little importance. This implies that over 70% of those respondents entirely rejecting contraceptives do so for religious or moral reasons. One should expect that a majority of respondents in this group would take advantage of natural family planning methods.

The highest share of respondents who definitely reject use of contraceptives has been recorded in the group of people who find religion to be very important

in life (4% out of total 9% of all respondents in 2001 and over 5% out of 9% in 2006). The lower the category of the religion importance, the lower is the share of persons who decidedly reject the use of contraceptives. In the group of people who find religion of little or no importance, the share of decisive opponents of contraceptives is almost unnoticeable and lowering in the last five years.

The second observation is following: the percentage of respondents who unconditionally accept the use of contraceptives is lowest (about 8% of all respondents) among those for whom religion is of major importance. The share of respondents who unconditionally accept the use of contraception grows with the decrease of the importance of religion. So, in the group of respondents who accept contraception unconditionally as many as one third find religion of little importance. People declaring that they are not religious mostly approve contraception unconditionally, although there is a little part of this group that sees some limitations. The majority of religious people believe that there are some circumstances when contraception might be accepted or even approved without any restrictions. Most of the respondents who claim that religion is rather important in their lives approve the use of contraception.

The presented results unequivocally indicate that the importance of religion in respondent's life is a criterion that strongly differentiates the respondents' opinions concerning the use of contraceptives, as well as their opinions concerning the reasons for rejecting the use of contraception.

Another feature by which attitudes might be differentiated is the educational level. In the largest group constituted by the people with secondary education the number of those who unconditionally approve of contraception exceeds the number of those who oppose to the use of contraceptives ten times. In the group of people who decidedly reject contraceptives, most have primary education.

It could be expected that these opinions may be differentiated by the age of respondents. The younger the respondents, the stronger is their approval for the use of contraceptives. The number of people totally against the use of contraceptives grows with age. Generally, respondents with elementary education, those living in small towns, and those aged 40 or more seem to reject the use of contraceptives far more often. Only about 1% of people with tertiary education reject the use of contraception, while most of them have nothing against it. People from big cities and young respondents usually approve of contraception most strongly. It is also interesting that being in a relationship results in stronger rejection of contraception.

In case of those who might accept contraception in certain situations, the most significant change is noticed in relation to the reason for not wanting children (no children at all, as well as no more children), which is connected with the changing trend in family structure (Figure 3). Men are becoming much more likely to accept contraception, if woman do not want children at all. Taking into consideration that the most popular contraceptive method is a condom, health-related issues, which account for about 20% of respondent's opinions, also play a role. Other reasons are of almost no importance.

Figure 3. Opinions about using contraceptives in some situations by sex, Poland, 2001 vs. 2006 (in % of respondents)
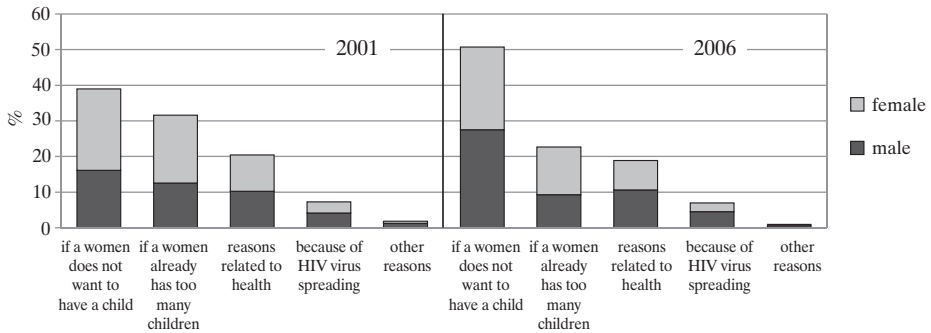
Source: Based on the Polish Retrospective Surveys 2001 and 2006.

As far as opinions on abortion are concerned, a mere 13% accepted unconditional abortion in the year 2001, the 2006 survey revealed a slight increase of approval (15% of all respondents). The highest share of this response was registered in the group of people who think it is admissible under some conditions: 68% accepted it with some conditions in 2001 and about 64% claimed that abortion might be allowed in certain situations five years later. The proportion of conditional disapproving is decreasing in favour of a more radical opinion. About 18% of respondents were totally opposed to abortion in 2001, in 2006 the share of people decidedly disapproving abortion increased by 3%. The share of women who opposed abortion (about 11%) was slightly higher than that of men in 2001, but the proportion is changing. Men are becoming more likely to accept abortion both unconditionally as well as in certain situations. Abortion is condemned more frequently by those living in cities between 20 and 100 thousand inhabitants, compared to those living in cities above 500 thousand. No significant differences occurred with respect to the age of respondents, except for the fact that people over 40 years old are in majority willing to accept abortion in certain situations. The general rule is that in each age group people accepting abortion in certain circumstances outnumber other opinions. The group of supporters is the smallest, with exception of the youngest respondents. No significant differences were noted with respect to the number of children and children planned in the future. Among those decidedly disapproving abortion the biggest group of people is the one with primary education, while among supporters of abortion the shares of particular education group are almost the same.

Not even 1% of those in the group of respondents who find religion very important accept abortion unconditionally, while the shares of those who definitely reject it and those who think it admissible under some conditions are almost equal and amount to about 10% and 13% respectively. Attitudes towards abortion are decidedly more differentiated among those who find religion 'rather important' and 'little important'. Among all the distinguished groups, the high share of those who find abortion acceptable in certain situations was recorded for the persons who declare religion as 'rather important' and it amounts to as much as 34%. People

who claim that religion is 'rather important' in their lives account for 9% and comprise strong opponents of abortion, less than 7% of them think that abortion is acceptable. Most liberal is the part of the society to which religion is of little or no importance. Hence, it can be concluded that this group of respondents is characterised by the greatest tolerance and objective attitude towards abortion. These results unequivocally show that the percentage of persons who unconditionally accept abortion grows while passing from the group of those who find religion 'very important', through 'less important', little important' to 'not important at all'. They prove that the attitudes towards abortion are the least differentiated in the group of the respondents who find religion very important.

Over 60% respondents who disapprove of abortion refer to religious reasons, 30% rejects abortion because of moral reasons, 5% because of health-related issues; other reasons are of little importance. In addition, the reasons for condemning abortion are differentiated by the importance of religion in the respondent's life. Over 45% of respondents are those who consider religion very important and 40% of those for whom religion is rather important condemn abortion due to religious and moral reasons. At the same time, among the respondents claiming that religion in their lives is of little or no importance, the largest group constitute those who disapprove of abortion because of moral reasons. In addition, some people who find religion of little importance still reject the idea of abortion because of religious reason. It should be remembered that abortion in Poland was legal due to social reasons for many years and it was often perceived as a method of family planning. Therefore, abortion was tolerated for many years in the country where most citizens are Catholic. Hence, it is not surprising that among the persons who find religion important and very important in life are some who present the attitudes permitting abortion.

In addition, we will quote the answers of the respondents to the question: *What do you think about a married couple with two children and a very small flat who terminate pregnancies?* The possible categories of answers were: *I don't judge them; it is their private matter; they have no other way out; it is morally wrong; I have no opinion.* The respondents' answers were correlated with the importance of religion.

In 2001, the most frequent response was the one indicating the couple's decision is their private matter (almost 70%). The second most popular response was the one assessing the decision as morally wrong – 15% of the respondents – while 7% believe that the couple have no other option. The second survey shows a declining tolerance: more people think it is morally wrong; fewer have no opinion or accept abortion if couple sees no other option. The topic of abortion is becoming publicly discussed – a fact which was reflected in the results concerning terminating pregnancy as a private matter. Men are presenting more liberal point of view in this case.

Our analyses show the correlation between the religiosity of the respondents and the conviction of the spouses' right to make their own decision concerning abortion. Surely, such decision is taken within a certain context of economic, social and health conditions.

Figure 4. Opinions about a married couple terminating pregnancies by sex, Poland, 2001 vs. 2006 (in % of respondents)
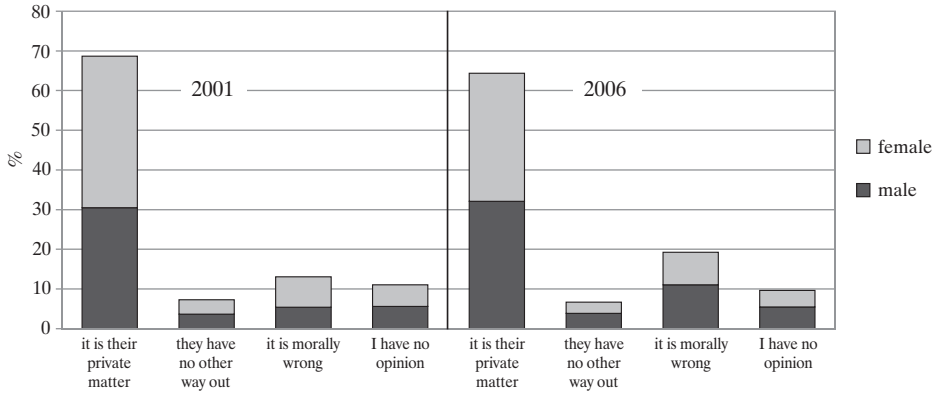
Source: Based on the Polish Retrospective Surveys 2001 and 2006.

At the end, respondents were asked a question about possible situations in which abortion may be allowed. The most often answer was that such circumstance may be too large number of children (over 60%). The respondents also declared that a significant reason for abortion was a difficult material situation of the mother. Far lower share of the respondents admitted that abortion might be a solution when child is heavily handicapped or the birth would be dangerous to the mother's health.

What is the age at sexual initiation and the initiation of a regular sexual life? How religiosity differentiates the age at sexual initiation and the initiation of a regular sexual life?

The data on the age of sexual initiation (Table 1) indicates that in 2001, on average, over 60 out of 100 people started their sexual lives at the age of 19 or younger. These proportions oscillate between 65% among males and 59% among females. In 2006, on average, 70 out of 100 people started their sexual life at the age of 19 or younger and there is still a difference between women and men (65% versus 73%, respectively). Most people started their sexual contacts at the age of 20–24 in 2001 as well as in 2006, but the 2006 survey revealed that the age at sexual initiation is decreasing. Females prevail in this age group.

The share of people who had their first sex at 25 or later is relatively low when compared with the already-mentioned age groups and it amounts to 3% in 2001 and 7% in 2006. In 2001, the proportions of people who had their first sexual experience at over 25 years of age are nearly 3% for males and around 4% for females, while in 2006 the respective shares are 9% and 5%. Strong differentiation can be observed among male and female populations in this age group. For some of them, first sexual contacts are followed by a regular sexual life. That situation occurs for a half of the respondents less than 19 years old. Both surveys confirm that there is a remarkable rate of people starting their sexual life before they are 15 years

old (28% in 2001 and 23 in 2006). Generally, men start their sexual contacts at the earlier age than women. Only one in four (one in five in 2006) women started sexual life when she was under 15, while in case of men the percentage was higher but also declined over time (from 30% to 25%).

Table 1. Respondents by age at sexual initiation and sex, Poland, 2001 vs. 2006

Age at sexual initiation	2001			2006		
	total	males	females	total	males	females
Less than 15	27.58	29.68	25.80	22.90	25.07	20.52
15–19	34.22	35.34	33.27	46.76	48.17	45.23
20–24	32.48	29.31	35.16	27.01	22.93	31.47
25 and more	5.72	5.67	5.77	3.33	3.83	2.78
Total	100	100	100	100	100	100

Source: Based on the Polish Retrospective Surveys 2001 and 2006.

Only one in four of those who find religion important experiences sexual initiation at the age of 15–19, while with those who find religion to be of little importance – the corresponding proportion is 50%. Therefore, it can be concluded that the less important religion is in the respondent's life, the earlier is the age at sexual initiation. This conclusion refers also to the relationship between the importance of religion and a regular sexual life.

The median age of sexual initiation of women and men aged 18–24 and 30–39 did not change over time and was the same for men and women (Table 2). In the age group of 25–29 year olds, the median age of sexual initiation declined by one year between 2001 and 2006 and showed the same values among women and men. Generally, both surveys show that the median age of sexual initiation is decreasing when moving to younger generations.

Similar differences by age are observed in the median age of the first use of contraception, which is declining among males and females within transitions to younger age, more visibly for 2006. Men start to use contraception earlier than women, although a stronger downward trend in the median age is noticed among females.

The results confirm that the age of sexual initiation has been decreasing for subsequent cohorts. Both women and men increasingly used contraceptives during sexual initiation. In the age group 18–24, the share of those using contraceptives increased from 88% to 96% for women and from 92% to 93% for men. Just as substantial increase concerns the group aged 25–29. These facts support the opinion about the shift in attitudes towards sexual activity in the Polish society. These changes relate more to younger than medium-aged generations. Even if contraceptives used during sexual initiation are not technically advanced, the increase in the number of those using them reveals the fact that there has been change towards better knowledge of contraception methods and contraceptives. Their accessibility encourages certain behaviour.

Table 2. First intercourse, first use of contraception and start of the regular sex life by sex and age cohort, Poland, 2001 vs. 2006

Selected indicators of sexual life	Age cohort	18–24	25–29	30–39	40+
		Males			
Median age at first sexual intercourse	2001	18	19	19	20
	2006	18	18	19	19
Median age of regular sex life	2001	19	21	21	22
	2006	19	19	21	21
Median age at first use of contraception	2001	19	19.5	20.5	23
	2006	18	18	20	20
% of respondents using contraception during first intercourse	2001	92.24	88.52	83.12	81.21
	2006	93.12	93.30	89.36	85.64
		Females			
Median age of first sexual intercourse	2001	18	19	19.5	20
	2006	18	18	19	20
Median age of regular sex life	2001	19	20	20	21
	2006	19	20	20	21
Median age of first use of contraception	2001	18.5	20	22	24
	2006	19	19	20	22
% of respondents using contraception during first intercourse	2001	87.84	88.87	79.93	72.22
	2006	95.89	94.97	86.23	76.75

Source: Based on the Polish Retrospective Survey 2001 and 2006.

Figure 5. The use of contraception during first intercourse by age, Poland, 2001 vs. 2006 (in % of respondents who started their sexual life)
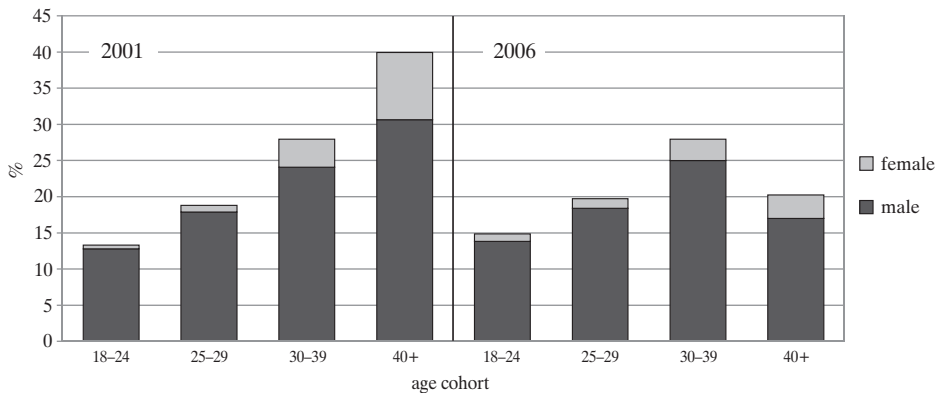
Source: Based on the Polish Retrospective Surveys 2001 and 2006.

The fact that there is a decrease in the median age at the first use of contraceptives and the growth in the ratio of those using contraceptives in older age groups, compared the 2001 and 2006 surveys results, may require further investigation. The respondents were more inclined to answer questions concerning their sexual behaviour, which seems to reflect the shift in the moral and cultural attitude towards sex. This might signal that it has ceased being a taboo.

The usage of contraception during the first intercourse broken down by age reveals that the group who used contraception least often comprised people over 40 years old, while in the youngest age groups the share of contraception users at first intercourse is higher.

What contraceptives are used? What contraceptives are planned to be used?

The analysis of the use of different types of contraceptives indicates that a condom is the most popular mean of contraception (around 25%), with coitus interruptus in the second position (18%) and using the calendar in the third (13%). Almost 24% of the respondents do not use any contraceptives. A condom is twice as popular among men as among women. Among those who do not use any contraceptives, women outnumber men 2 to 1. Chemical means and advanced contraceptives, such as pills, are still not very popular (about 10%). Pills are three times more popular among women than men. No significant differences were noted among respondents in respect to educational level or place of residence. Around 37% of the respondents use natural methods of family planning. When added to 21% of those who do not use any contraceptives, it means that 57 % do not use any form of artificial contraception.

It is worth noting, that the number of people in the reproductive age who use modern contraceptives has increased substantially in Poland over the last years. According to the data of Fertility and Family Survey 1991, the share of women using pills amounted to 4.6% and has recently increased by 200%. Certainly, compared to the countries in which state-of-the-art methods are very popular, e.g. the Netherlands, the share of female users of such contraception is relatively low. However, significant changes can be observed in this area. It should be remembered that state-of-the-art contraception is associated with suitable knowledge and some expenditure. According to 'National Report: Poland – Ten Years after Cairo' (Government Population Council 2004: 23) *"it may be concluded that the women's access to the safe and effective means facilitating responsible family planning is guaranteed in Poland"*.

The latest research revealed that there is still quite a substantial group of people not using contraceptives at all, as well as those who prefer natural methods (sexual abstinence, coitus interrupted, calendar, thermal and ovulation methods). Natural methods of contraception gradually lose their popularity in favour of condoms and contraceptive pills. Condoms and coitus interruptus are mostly preferred by males. Contraceptive pills are increasingly more often perceived as the best solution by females.

Questions may be posed whether the importance of religion in the respondent's life influences on the use of contraceptive methods and how strong this influence is. A condom is used twice as frequently – and chemical means thrice as frequently – by the respondents who find religion to be of little importance, when compared with those who stress the importance of religion in their lives. Sexual abstinence is the method equally seldom used by both categories of respondents, while the calendar method is twice as frequently used by the respondents who find religion very important in life, compared with those who stated that religion is of little importance. These findings show that religiosity affects the respondents' behaviour in the sphere of contraception they use. Respondents who find religion very important in life more often than the others do use the so-called natural methods, e.g. the calendar, ovulation method, while less frequently chemical method or state-of-the-art contraception. Hence, a conclusion can be drawn that persons who stress importance of religion in their private lives more often than other respondents behave in agreement with the values they believe in, including the recommendations of the Catholic Church, i.e. natural methods of contraception and family planning.

The highest share of respondents who definitely reject the use of contraceptives has been recorded in the group of people who do not need it because of the lack of sexual activity (almost 15%). Infertility or pregnancy is of little importance. The share of decisive opponents of contraceptives because of their acceptance of possible pregnancy amounts to nearly 10%. In case of 7% of the respondents, there are some other reasons for rejecting contraception.

The lower the category of religion importance, the lower is the share of contraceptives rejection. Among people who find religion of little importance, the share of decisive opponents of contraceptives is quite big (around 8% use none of them, and nearly 3% use coitus interruptus).

Figure 6. Respondents by currently used contraceptives and being in a relationship, Poland 2006 (in % of respondents)
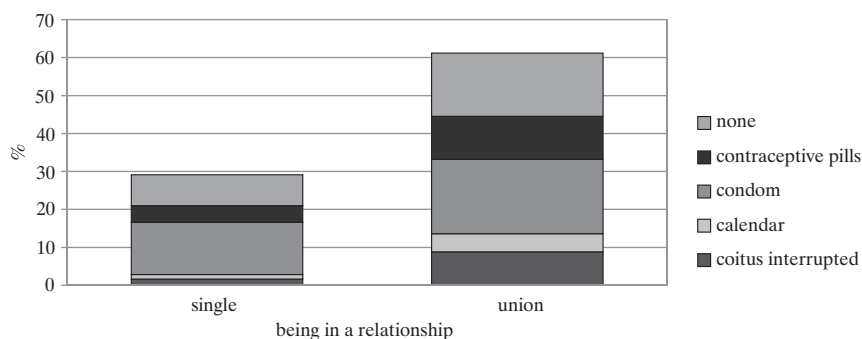
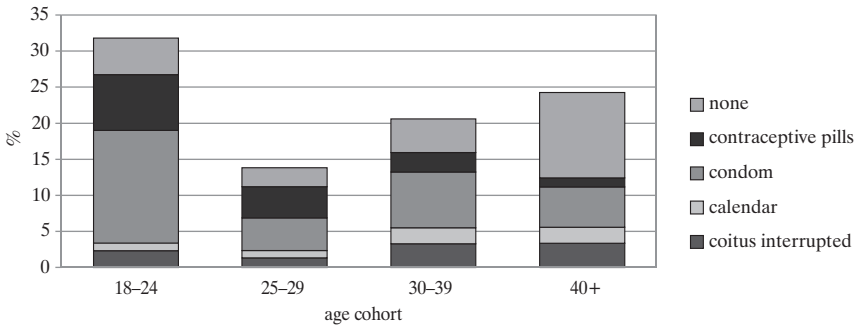Source: Based on the Polish Retrospective Survey 2006.

Most respondents who claim that religion is very or rather important prefer natural contraception or no contraception. Regardless of the religion importance,

the most popular contraception method is the condom. Contraceptive pills are preferred by those who are either not or little religious, while ovulation method is mainly used by very religious people. Current contraception use, broken down by the education level, reveals that 8% of the respondents with primary education as well as with higher education prefer not to use contraception at all. Education level plays little role for respondents' choice of contraception methods.

Being in a relationship determines the preferences of the contraception method. Among singles, the most popular contraception method is a condom (a half of the single respondents). Almost 8% does not use any contraception. People in relationships are much more likely to use contraceptive pills (one sixth of the respondents in a relationship, Figure 6). One third of the respondents prefer a condom. Natural methods (coitus interruptus and calendar methods) are chosen by almost 13% of people in a relationship.

The largest diversification of the contraception use is observed when the respondents are broken down by the age cohort. Almost half of the respondents from the youngest cohort choose condoms (Figure 7). Contraceptive pills are preferred by most people under 30 years old. Coitus interruptus and calendar methods are not seen as a solution for young people. The lowest level of unprotected sex is observed in the cohort of 25–29 years of age, the highest among the oldest respondents.

Figure 7. Respondents by currently used contraceptives and age, Poland, 2006
(in % of respondents)

Source: Based on the Polish Retrospective Survey 2006.

As regards the future use of contraception in particular age cohorts, an increase in the planned use of contraceptive pills is noticeable (Figure 8). Natural methods seem to be replaced with more advanced ones, although there is also some rise in not using of contraception among people over 30 years old.

Only around 6% of people without children will reject the use of contraceptives, but for those with three or more children this figure is over 5% (Figure 9). A very high percentage of people not planning to use contraceptives is seen among people with one and two children; however, these are also the groups where contraceptive pills and condoms are of relatively significant importance. Respondents with three

or more children rarely plan to use any of the mechanical or chemical contraceptive methods, except from a condom. Generally, the more children respondents have, the bigger is the proportion of those preferring coitus interruptus and calendar methods as their future contraceptives.

Figure 8. Respondents by contraceptives methods to be used and age, Poland, 2006 (in % of respondents)
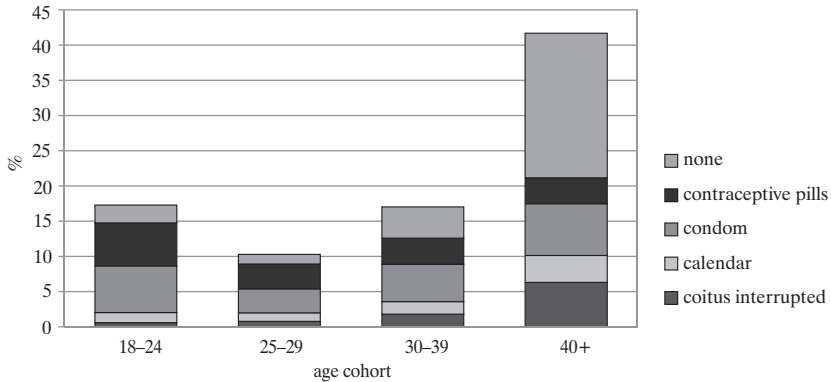

Source: Based on the Polish Retrospective Survey 2006.

Figure 9. Respondents by contraceptives methods to be used and a number of children, Poland, 2006, (in % of respondents)
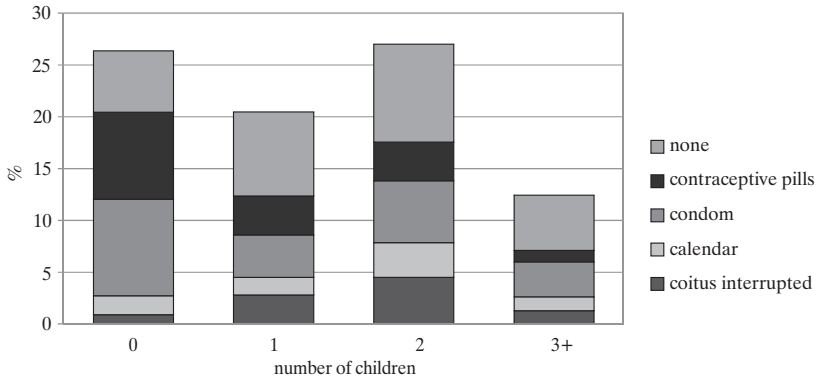
Source: Based on the Polish Retrospective Survey 2006.

A DESCRIPTIVE ANALYSIS OF SOCIAL NETWORKS

The surveys included a few questions concerning social networks, among them the following questions were asked:

1. With whom did you talk about the advantages and disadvantages of having children, during the past year?
2. With whom did you talk about the advantages and disadvantages of being in a partnership, during the past year?
3. With whom did you talk about using contraceptives, during the past year?

The data on answers given to these questions is used for constructing variables that cover structures of interpersonal influence and fertility-related social capital. Fertility-related communication is reflected by the number of network partners with whom the respondents talked about the 'advantages and disadvantages of having children' during the past year. The members of this communication network, who meet the respondent at least once a month, represent influential peers. The data do not allow for a direct measurement of structurally similar network partners, because this requires detailed information about the personal relationships of the network partners.

The structures of interpersonal influence are represented by the number of network partners with whom the respondent talked about children, their relationship or contraceptives and who belonged to his or her family or were unrelated. The variables about interpersonal influence rest on the assumption that socially close network partners exert an influence on an attitude to contraception. The presented analysis focuses on the social network size broken down by the network type, sex and relation of the respondent to a closest person from the network. Three types of networks were distinguished according to a subject of contact, i.e. persons with whom the respondent talked about benefits and disadvantages of having children and being in a relationship, and about the contraceptives use. *Due to the network analysis, additional variables were created reflecting the relation of the respondent to the person mentioned on the first place in a social network.*

According to the obtained results, Poland is a country with relatively numerous social networks. For each question in 2001, more than 17% of all social networks consisted of 10 or more people (Figure 10). In 2006, the number of the largest social networks decreased, although it remained quite substantial (each net over 11% of respondents). The nets consisting of four to six people decidedly outnumber other categories (around 37% of responds in 2001 and over 43% in 2006).

Generally, the network size is slightly bigger for females, what seems to indicate that woman form close ties with more people than men do (Table 3). The relevant distributions are asymmetric with outliers, which overstates a coefficient of variation. A prevailing variation is observed among males rather than females (nets of women are more homogenous).

Figure 10. Social networks by the network size (number of persons), Poland, 2001 vs. 2006 (in % of respondents)
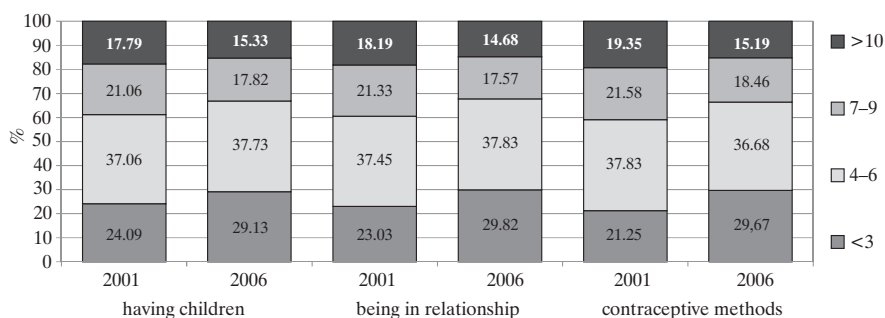
Source: Based on the Polish Retrospective Survey 2001 and 2006.

Table 3. Selected characteristics of the social networks

Year	Mean size	Standard deviation	Coeff. of variation
Total			
2001	6.06	4.01	0.66
2006	5.56	3.58	0.64
Males			
2001	5.65	3.94	0.70
2006	5.43	4.08	0.75
Females			
2001	6.42	4.03	0.63
2006	5.69	3.20	0.56

Source: Based on the Polish Retrospective Survey 2001 and 2006.

Any family related behaviour is taken within a certain context of economic, social and health conditions. Our findings show the correlation between distinguished aspects of family life and a relation of the respondent to the person from the social network. The role of relatives seems to decline slightly in respect to decisions about having children and being in a relationship is concerned in favour of other people providing social support to the respondents. However, when looking for advice on contraceptive methods, the respondents are more likely to turn or feel more comfortable turning to family members (Figure 11). The analysis on the relation between the respondent and the first person from the network list shows unambiguously that family members are the ones who are the most trusted and reliable. Although, the smaller the network, the more significant the role played by people who are not relatives.

The two subsequent diagrams present the size of the social network broken down by the relation to the people included in the network. In both observed years, less then 10% of the respondents had social networks with one or two people out of whom at least one was not related to the respondent. As noted before, the size of

the network is declining, as reflected in the decreasing percentage of social network exceeding six people and the rising number of smaller networks. The wider the net, the less important the role played by the relatives.

Figure 11. Social networks by the respondent relation to the person from the network, Poland, 2001 vs. 2006 (in % of respondents)
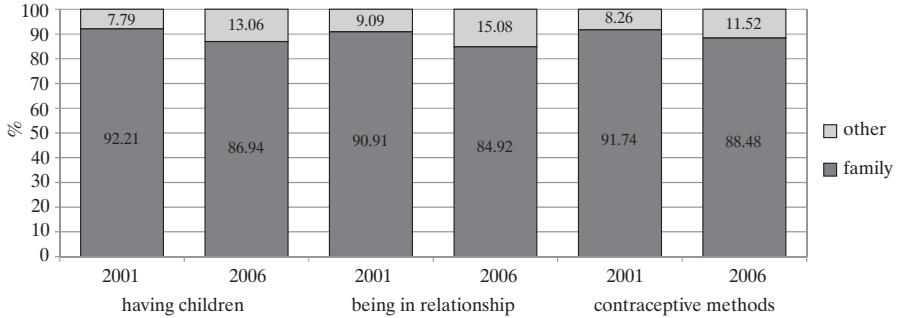
Source: Based on the Polish Retrospective Survey 2001 and 2006.

Figure 12. Size of the social network by relation of the respondent to the person from the network, Poland 2006
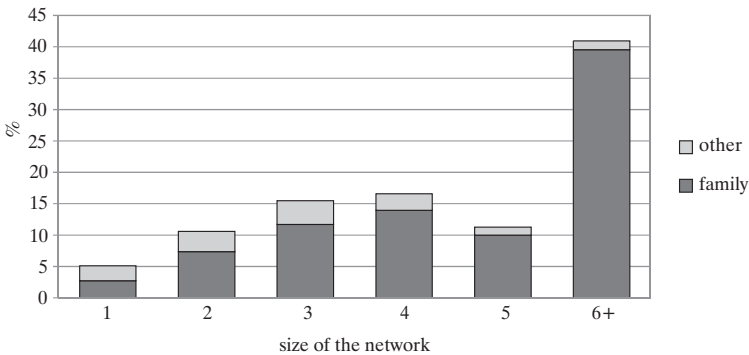
Source: Based on the Polish Retrospective Survey 2006.

Summing up, the size of social networks in Poland is impressive. However, the proportions of numerous networks are declining in favour of those around the mean size and the variation coefficient is stabilising.

A family member is still mentioned as the closest person, although a reverse trend is observed. This means that for all types of distinguished social networks the share of other people in the networks increases. The relatives are chosen to talk about family and fertility issues.

Networks change considerably once a union with a partner is formed. These new structures of interpersonal relationships will probably exert different influences on fertility intentions and on the attitude towards contraception. Therefore, the further analyses are supplemented with information about being in a relationship.

It also explains why the characteristics broken down by the relation of the person from the network to the respondent reveal the predominance of family members.

MODELING THE USE OF CONTRACEPTIVES

MODEL FORMULATION AND ESTIMATION

The purpose of a model approach is to achieve better understanding of changes in the use of contraceptives in Poland. Two types of the logistic regression models were applied: the binary logistic regression and the multinomial logistic regression. The dependant variable in the binary logistic model was defined as 0 for those respondents who do not apply contraceptives and 1 for those who do.

In the logit model, the probability of using contraceptives was predicted. To explore the more detailed relationship between the use of particular contraception methods and other respondent's characteristics the multinomial dependant variable was constructed. The first category consists of natural methods of contraception (sexual abstinence, coitus interrupted, calendar, thermal and ovulation methods). The second group includes mechanical and chemical contraceptives (condom, contraceptive pills, chemical means, intrauterine contraceptive spiral). In the third, the reference categories are the respondents rejecting contraception. The multinomial model focuses on a probability of using different types (III groups) of contraceptive methods with respect to the reference category rejecting contraceptives by females.

The binary logistic model was estimated both for male and female samples, whereas the multinominal logit model only for the female sample[13]. For both mentioned models, three groups of predictor variables were examined.

I. group, respondents related characteristics introduced to the models:
    Variable 1. being in a relationship (single or union);
    Variable 2. level of education (primary, secondary, higher);
    Variable 3. respondent's sex;
    Variable 4. respondent's age (18–24, 25–29, 30–39, 40–49, 49 and over);
    Variable 5. number of children (from 0 to 3 and over);
    Variable 6. respondent's intentions to have the first or another child.
    In the survey, these intentions were measured by the question whether the respondent '*plans to have the first or another child*'. The answers were recorded on an ordinal scale by the categories '*absolutely not*', '*no*', '*yes*', and '*definitely yes*', but for the analysis they were grouped in two categories 'yes' and 'no'.

---

[13] The sample, after all modifications and clearing, consists of 1486 observations in 2001 and 1492 in 2006. The sample from the 2006 survey was adjusted with appropriate weights to the population structure with respect to the age and sex. The differences in particular structures in 2001 were insignificant compared to the population structure. Due to the sparseness of data and the type of the analysis for each model missing data was excluded. Numbers of observations taken into account during estimation of each model are given in the tables presenting the final estimation results.

II. group, socio- cultural variables:

Variable 7. Three levels of religiousness importance in the respondent life were established: *'very important', 'rather important' and 'little important'* in respondents life;

The third group consists of two original questionnaire response categories *'little'* and *'not important'*, which were aggregated due to the limited number of responses from the *'not important'* category;

Variable 8. respondent's opinion concerning contraceptive use;

Variable 9. respondent's current place of residence;

Variable 10. respondent's place of living until 15 years old and the type of the family in which the respondent was growing up (intact or other);

Variable 11. Type of the family when respondent was growing up.

The information on the respondents' personal networks, as the central explanatory variables, was collected through name-generating and name-interpreting questions (van der Poel 1993, Burt 1984)[14]. To cover network influences on contraceptive attitude, the name-generating questions which addressed communications about different demographic topics (partnership, having children, contraceptive use) were asked. Name-interpreting questions cover basic characteristics of the network partners named and give information about the attributes of the respondent's relationships to these individuals. To explore the network-based determinants of attitudes to contraception two variables characterizing social networks were added to the model. Closeness of relationship to the respondent was used to create relative variable, which indicates whether the closest person is a member of the family or some other friend. Categorical variables of the social network size (1–6 and over) was introduced to the models to verify the importance of the phenomenon of the size of a network.

III. group, variables 12 and 13 describe the networks (compare page 20.):

Categorical predictor variables were coded as follows (a reference category in the brackets):

– ordinal coding: network size, education level, attitude to religion, age cohort, number of children

– reference coding: sex (male), relative (other), being in a relationship (single), opinion concerning using contraceptives (*'I reject them decidedly'*), next child (yes), the type of respondent's family while growing up (other), the place of residence (less than 500.000 inhabitants), the place where respondent lived up until 15 (town).

A more detailed information concerning variables used in the models is presented in the Appendix 1.

The estimation procedure consists of the following stages:

---

[14] Due to space limitations, only a very general description of the variables is given here. See Bühler and Frątczak (2005) for a more detailed presentation, especially of the control variables used in the analyses.

- the first stage (model I.) – the estimated model includes the variables charac-terising the respondent;
- the second stage (model II.) – the estimated model includes both the variables characterising the respondent and the socio-cultural variables;
- the third stage (model III.) – the estimated model includes the variables charac-terising the respondent, the socio-cultural variables, and the variables describing networks.

This procedure concerns both the binary logit model as well as the multinomial logit model. The detailed results of the models estimation are presented in Appendix 2. Not all groups of variables turned out to be statistically significant. Here, comments on main findings are given.

RESULTS OF MODEL ESTIMATION: MAIN FINDINGS

On the basis of the binary models (basic and extended) the following comments about main results can be formulated.

The number of children is definitely important for the respondents' decisions concerning the contraceptive use. The more children respondents have, the more likely they are to apply contraceptives. Although, in the year 2006, it was noticed that people without any children are less likely than those with children to use contraceptives, which might reflect the fact that they are willing to have a child. However, the variable defined by plans concerning a child in the near future does not significantly differentiates the attitudes towards contraception.

Age turned out to be essential only in case of respondents older than 40 years, who, when growing older, are increasingly less likely to apply contraceptives.

The level of education does not play a role in the contraceptives use. Persons with higher education level reveal even lower probabilities of contraceptives use than those of primary education. The higher education starts to matter when fertility intentions are accounted for, i.e. there is a substantial interaction between education attainment and plans to have a child in the future. Precisely speaking, highly educated respondents who do not plan children in future, are the most willing to use contraceptives.

The symptom of the changes in the priorities according to family-planning is the rising role of stability, which is reflected in the model by the variable 'being in a relationship'. Although, the value of the estimate confirms previous findings that being in a relationship as referred to the single respondents leads to the lower levels of the contraceptive use.

Adding to the model the variables representing the socio-cultural environment of the respondents, the model reveals its influence on the attitudes towards the contraception and individual behaviour. Being raised in an intact family leads to lower contraceptive use, which might be the result of feelings concerning a higher level of security, a higher acceptance of pregnancy and a stable future. However, in 2006 this influence is found not significant. Instead of a family type, the current

place of residence is significant, pointing to the fact that people living in cities bigger than 500.000 inhabitants are more likely to use contraceptives than those living in smaller towns. The probabilities of the contraceptive use differ by the respondent's opinion concerning the use of contraceptives. The most noticeable difference is between those who decidedly disapprove and those who unconditionally approve contraception. Among those who approve contraception the probability of contraception use is the highest.

In the most extended binary model two additional variables were added – the religion variable and the social network size variable. The attitude to religion does not occur significant, but still opinions about contraception matter for contraception use. This all may signal the diminishing role of religion and its influence on people's attitudes and behaviour concerning contraception. Religious values do not correspond directly with the contraception behaviour, however they may influence it through views about contraception. This seems to be not so much an indication of secularisation as the individualisation process of religion in Poland, because the opinion itself, as an indicator of individual attitudes towards the use of contraceptives, determines a final behaviour.

Social networks in Poland, similarly to other Central and Eastern European countries, play a significant role in the creation of social capital, although examining a real influence of the network size on the respondent's attitude to contraception requires less sparseness of the data. The obtained results show that there is a relation only between small networks and contraceptive use, the rest of findings is unreliable. The estimate indicates that there is a high probability of contraception use among the people with small support from the others.

Estimation of the multinomial logistic regression models based on the female sample only is supposed to reveal features that are of essential importance for women when they decide about appropriate contraceptive methods or about not applying contraception at all. Model I, which includes respondent's characteristics, shows that, in 2001, not only the decision whether to have children or not was significant to the contraception use, but also that planning children in the future had the greatest importance. The fact that in 2006 the number of children is not so important reflects the changing attitude to the family-planning issues. Contraception is becoming a widespread method of avoiding unwanted children, but not avoiding children at all.

According to age cohort, the older the respondents, the more popular are the natural methods of contraception. In general, a significant difference between the contraception use and not using them at all, is noticed only in case of mechanical and chemical methods. The older women are less likely to apply contraception.

For females' use of contraception the relationship is constantly important. Being in a union essentially increases the probability of using contraceptives and significantly influences the methods of contraception they use. The strong effect of being in union for the methods used in comparison to the non-usage disappears in 2006. Additionally, natural methods are becoming less popular, while the other contraception methods are more often perceived as a good way of contraception.

CONCLUDING REMARKS

The main purpose of the study was to evaluate changes in attitudes and behaviour regarding contraception and abortion in the years 2001–2006 taking into account the role of religiosity and social networks. In the descriptive analysis both contraception and abortion attitudes were under considerations as well as contraception behaviour, the model approach focused on contraception use only.

The descriptive analysis showed that the **growing number of people accepts** contraception unconditionally. Among those, who approve contraception in some situation the most significant and gaining on determinant is the number of children.

As regards attitudes towards abortion some symptoms of polarisation are observed. According to the dominant opinion it is a couple's decision to terminate a pregnancy while the opposing group perceives abortion as strongly immoral. **Importance attached to religion also matters for their opinions. However, simulta**neously a strong disapproval is declared among persons who do not regard religion as important in their life. In addition, some religious people permit abortion.

In the years 2001–2006 the age of sexual initiation decreased, which was accompanied by the increasing share of people who used contraception at the first intercourse. The latter is the positive result of spreading knowledge about family planning. However, methods of contraception are rather slowly modernised – condoms are still the most preferred means followed by contraceptive pills. The natural methods are in use, chosen mostly by couples. In addition, regardless of the relationship status the percentage of people declaring no contraception use is still quite remarkable.

Age is a strong predictor of both contraception use and a method chosen. The oldest age groups are more prone either to reject any contraception or to choose natural methods. Condoms are the most popular among both the oldest and the youngest, while contraceptive pills are preferred by people under 30. Model estimates confirm as well that **getting older decreases the range of contraceptive** methods and its use. **Contraceptive pills are gaining on the importance when future** contraceptive behavior is concerned, especially among women dedicated to their fertility intentions.

The descriptive findings indicate that the importance of religion in respondents' life differentiates their opinions about contraception, declared reasons for rejecting the use of contraception as well as methods in use. Religious women, who decide to use any method of contraception, definitely choose natural ones. Moreover, those respondents who select mechanical and chemical contraceptives mostly approve contraception or approve it conditionally. In the binary model of contraception use the religion variable was not significant, however. What seems to affect contraception behaviour is opinions about contraception. The probability of the contraception use is the highest among respondents who declare approval for its unconditional use. We consider these findings as a sign of the diminishing role of religion, since religion does not influence directly the contraceptive behaviour, but it may affect it through shaping views about contraception. In our opinion this

seems to be not so much an indication of secularisation as the individualisation process of religion in Poland.

Moreover, the increasing rate of responses to the questions about partnerships, family, children and contraception suggests that intimacy issues are not a taboo anymore.

Summing up, all these findings seem to support our hypotheses H1, H1a and H1b about undergoing changes in norms and values which affect the role of religion and its influence on attitude towards contraception and abortion as well as contraception behaviour.

Descriptive results suggest that education influences attitudes towards contraception contrary to attitudes to abortion. However, it does not differentiate the methods in use. The model estimates indicate that the level of education does not play a role neither in the contraceptives use nor in the method selected. There is a substantial interaction between education attainment and plans to have a child in the future – for people with higher education, who do not plan children, the probabilities of the contraceptives use are the highest. In sum, these results are against the hypothesis H2 about the education impact on attitudes regarding contraception and abortion and the use of contraception.

Social networks are relatively numerous, however, their size has shrinked over time. The inner-family networks are still dominant but there is a slight shift towards non-family networks, which are becoming a respectful source of information and support concerning family-planning. People receiving small support from the others seem to use contraception more often than those having stronger support. What is more, results show that there is a higher probability of contraception use among people with small support from the others. In general, these findings seem to be supportive for the hypothesis H3 about a possible influence of social networks on attitudes towards contraception and its use.

LITERATURE

Billari F.C., Liefbroer A.C., 2007, *Should I stay or should I go? The impact of age norms on leaving home.* "Demography", No. 44 (1), 181–198.

Bongaarts J., Watkins S.C., 1996, *Social Interactions and Contemporary Fertility Transitions*, "Population and Development Review", No. 22, 639–682.

Bühler Ch., Kohler H.-P., 2004, *Der Einfluss starker Beziehungen auf die Nutzung moderner Kontrazeptiva in Kenia*, "Zeitschrift für Soziologie", No. 33(1), 5–25.

Bühler Ch., Fratczak E., 2005, *Learning from others and receiving support: the impact of personal networks on fertility intentions in Poland*, Rostock, MPIDR Working Paper WP-2005-017, on the web, http://www.demogr.mpg.de/papers/working/wp-2005-017.pdf.

Bühler Ch., Frątczak E., 2007, *Learning from Others and Receiving Support: The Impact of Personal Networks on Fertility Intentions in Poland*, "European Societies", No. 9, 359–382.

Burt R.S., 1982, *Toward a Structural Theory of Action. Network Models of Social Structure, Perception, and Action*, Academic Press, New York.

Burt R.S., 1984, *Network Items in the General Social Survey*, "Social Networks", No. 6, 293–339.

Burt R.S., 1987, *Social Contagion and Innovation: Cohesion versus Structural Equivalence*, "American Journal of Sociology", No. 92, 1287–1335.

Cline A., on the web, http://atheism.about.com/mbiopage.htm.

Coleman J.S., 1990, *Foundations of Social Theory*, Belknap Press, Cambridge.

Council of Ministers, 2007, *Sprawozdanie Rady Ministrów z wykonania w roku 2006 Ustawy z dnia 7 stycznia 1993 roku, O planowaniu rodziny, ochronie płodu ludzkiego i warunkach dopuszczalności przerywania ciąży oraz o skutkach jej stosowania [The Report of the Council of Ministers concerning the execution of the Law of January 7th, 1993 on Family Planning, Protection of Human Foetus and Conditions of Permissibility of Abortion and the Effects of its Implementation in the year 2006]*, Warsaw.

Dębski M., Balicki J., 2007, *Religia – wartości i normy*, [in:] *Studium porównawcze wyników dwóch Polskich Badań Retrospektywnych 2001 i 2006. Raport syntetyczny z badania empirycznego zrealizowanego w ramach projektu badawczego: Nr 2H02B 006 25*, Instytut Statystyki i Demografii, SGH, Warszawa.

Entwisle B., Rindfuss R.R., Guilkey D.K., Chamratrithirong A., Curran S.R., Sawangdee Y., 1996, *Community and Contraceptive Choice in Rural Thailand: A Case Study of Nan Rong*, "Demography", No. 33, 1–11.

Federacja na rzecz Kobiet i Planowania Rodziny, 2000, *Skutki ustawy antyaborcyjnej – Raport Federacji 2000* [*The effects of anti-abortion law in Poland, Report 2000*], Warszawa, on the web, http://www.federa.org.pl/index.php?option=com_content&view=category&id=81&Itemid=75.

Federacja na rzecz Kobiet i Planowania Rodziny, 2007, *Prawa reprodukcyjne w Polsce. Skutki ustawy antyaborcyjnej. Raport 2007* [*Reproductive rights in Poland. The effects of anti-abortion law- Report 2007*], Warszawa.

Frątczak E., Pęczkowski M., 2002, *The evaluation of changes in attitudes and reproductive behaviours of young and middle generations of female and male Poles and their influence on the process of family, union, household formation and dissolution – Polish Retrospective Survey 2001*, SAS User's Guide, SGH, SAS Institute Polska, Warsaw.

Frątczak E., Gach U., Pęczkowski M., Sienkiewicz K., 2008, *The evaluation of changes in attitudes and reproductive behaviours of young and middle generations of female and male poles and their influence on the process of family, union, household formation and dissolution – Polish Retrospective Survey 2006,* SAS User's Guide, SGH, SAS Institute Polska, Warsaw.

Freeman L C., 1979, *Centrality in Social Networks: I. Conceptual Clarifications*, "Social Networks", No. 1, 215–239.

Frejka T., 2008, *Overview Chapter 3: Birth regulation in Europe: Completing the contraceptive revolution*, "Demographic Research", Vol. 19(5): 73–84.

Friedkin N., 1993, *Structural Bases of Interpersonal Influence in Groups: A Longitudinal Case Study*, "American Sociological Review", No. 58, 661–872.

Friedkin N.E., 1982, *Information Flow through Strong and Weak Ties in Intraorganizational Social Networks*, "Social Networks", No. 3: 273–285.

Granovetter M., 1973, *The strength of weak ties,* "American Journal of Sociology", No. 78, 1360–1380.

Inglehart R.F., 1977, *The Silent Revolution*, Princeton University Press, New York.

Inglehart R.F., 1997, *Modernization and Postmodernization*, Princeton University Press, New York.

Inglehart R.F., 2003*, Culture and Social Change: Findings from the Value Surveys*, Brill Academic Publishers, Leiden.

Inglehart R.F., Welzel Ch., 2005, *Modernization, Cultural Change and Democracy: The Human Development Sequence*, Cambridge University Press, New York.

Kohler H.-P., Behrman J.S., Watkins S.C., 2001, *The Structure of Social Networks and fertility Decisions: Evidence from South Nyanza District Kenya*, "Demography", No. 38, 43–58.

Kohler, H.-P., 2001, *Fertility and Social Interactions: an Economic Perspective*, Oxford University Press, Oxford.

Kohler H.-P., Billari F.C., Ortega J.A., 2002, *The Emergence of Lowest-Low Fertility in Europe during the 1990s*, "Population and Development Review", No. 28, 641–680.

Koytcheva E., Philipov D., 2008, *Bulgaria: Ethnic differentials in rapidly declining fertility*, "Demographic Research", Vol. 19, 361–402, on the web, http://www.demographic-research.org/special/7/.

Kulczycki A., 1995, *Abortion Policy in Postcommunist Europe: The Conflict in Poland*, "Population and Development Review", No. 21(3), 471–505.

Lesthaeghe R., Surkyn, 1988, *Cultural Dynamics and Economic Theories of Fertility Change*, "Population and Development Review", No. 14(1), 1–45.

Lesthaeghe R., Van de Kaa D., 1986, *Twee demografische transities*, [in:] R. Lesthaeghe, D. Van de Kaa (eds.), *Bevolking – Groei en Krimp, Mens en Maatschappij*, Van Loghum Slaterus, Deventer.

Lesthaeghe R., 1998: *On Theory Development: Applications to the Study of Family Formation*, "Population and Development Review", Vol. 24(1), 1–14.

Lesthaeghe R., Moors, 2002, *Life Course Transitions and Value Orientations: Selection and Adaptation,* [in:] R. Lesthaeghe, W.G. Axinn (eds.), *Meaning and Choice*: *Value Orientations and Life Course Decisions,* NIDI/CBGS, Haag/Brussel, 1–44.

Mariański J., 2001, *Kryzys moralny czy transformacja wartości? Studium socjologiczne*, TN KUL, Lublin.

Marsden P.V., 1998, *Diffusion through Social Networks*, paper prepared for the workshop Social Processes Underlying Fertility Change in Developing Countries, National Research Council, Commission on Behavioral and Social Sciences and Education, Committee on Population, Washington, 29–30.

Marsden P.V., Friedkin N.E., 1993, *Network Studies of Social Influence*, "Sociological Methods & Research", No. 22, 127–151.

Miller W.B., Pasta D.J., 1995, *Behavioral intentions: which ones predict fertility behavior in married couples?,* "Journal of Applied Social Psychology", Vol. 25(6), 530–555.

Mitchell J.C., 1973, *Networks, Norms, and Institutions*, [in:] J. Boissevain, J.C. Mitchell (eds.), *Network Analysis: Studies in Human Interaction*, Mouton, Hague, 2–35.

Montgomery M.R., Casterline J.B., 1993, *The Diffusion of Fertility Control in Taiwan: Evidence from Pooled Cross-Section Time-Series Models*, "Population Studies", No. 47, 457–479.

Montgomery M.R., Casterline J.B., 1996, *Social Learning, Social Influence, and New Models of Fertility*, "Population and Development Review", No. 22, 151–175.

Philipov D., Berghammer C., 2007, *Religion and fertility ideals, intentions and behaviour: a comparative study of European countries*. "Vienna Yearbook of Population Research", 271–305.

Philipov D., Spéder Z., Billari F.C., 2006, *Soon, Later, or Ever? The Impact of Anomie and Social Capital on Fertility Intentions in Bulgaria (2002) and Hungary (2001)*, "Population Studies", No. 60, 289–308.

Rogers E.M., 1995, *Diffusion of Innovations*, The Free Press, New York.

Rosero-Bixby L., Casterline J.B., 1994, *Interaction, Diffusion and Fertility Transition in Costa Rica*, "Social Forces", No. 73, 435–462.

Schweizer T., 1996, *Muster sozialer Ordnung. Netzwerkanalyse als Fundament der Sozialethnologie*, Dietrich Reimer Verlag, Berlin.

The Government Population Council, 2005, *National Report: Poland – Ten Years after Cairo*, Warsaw.

UN, 1996, *Programme of Action adopted at the International Conference on Population and Development*, Cairo, 5–13 September 1994, UN ICPD' 94, New York.

UN, 2000, *The Resolution adopted by the General Assembly 55/2 United Nations Millennium Declaration*, 2000, A/RES/55/2.

UN, 2001, *Beijing Declaration and Platform for Action with the Beijing+5 Political Declaration and Outcome Document*, New York.

UN, 2008, *World Population Policies 2007*, New York.

UNDP, 2007, *Raport: Zdrowie Kobiet w wieku prokreacyjnym 15 – 49 lat. Polska 2006* [*Report: The Heath of Women in Reproductive Age 15-49 years old*], Warszawa.

UNDP, 2007, *World Contraceptive Use 2007*, Population Division, on the web, www.unpopulation.org

Valente T.W., Watkins S.C., Jato M.N., Van der Straten A., Tsitsol L.-P., 1997, *Social Network Associations with Contraceptive Use among Cameroonian Women in Voluntary Associations*, "Social Science & Medicine", No. 45, 677–687.

van der Poel M., 1993, *Personal Networks. A Rational-Choice Explanation of their Size and Composition*, Swets & Zeitlinger, Lisse.

APPENDIX 1: LIST OF VARIABLES USED IN THE MODELS

Dependant variables:	Categories:
Binary	Use contraceptive (estimated probability)
	Do not use any contraceptive method
Multinomial	Natural methods
	Mechanical and chemical methods
	Do not use any contraceptive method

Predictor variables used in the model estimation (coding scheme)	Categories of variables (reference category)
Being in a relationship (reference)	in union, single (reference),
Education level (ordinal)	Primary (reference), secondary, higher
Sex (reference)	female, male (reference)
Age group (ordinal)	18–24 (reference), 25–29, 30–39, 40–49, 49 and over
Number of children (ordinal)	0 (reference), 1, 2, 3 and more
Do you plan to have child in the future (reference)	yes (reference), no
How important is religion in your life (reference)	very important, rather important, little importants (reference)
Opinion concerning using contraceptives (reference)	decidedly disapprove (reference), approve in certain situations, unconditionally approve
Place of respondent's current residence (reference)	above 500.000 inhabitants, less than 500.000 inhabitants (reference)
Place of living up until 15 years old (reference)	city, town (reference), rural areas
Type of family, when respondent were growing up (reference)	intact, other (reference)
The closest person from the social network	family, other (reference)
Social network size (ordinal)	0, 1, 2, 3, 4, 5, 6 and more

APPENDIX 2: RESULTS OF THE MODEL ESTIMATION

Table A1. Logit regression model I

Variable	Class	2001			2006		
		beta	std error	signifi-cance	beta	std error	signifi-cance
Intercept		0.27	0.40		1.68	1.09	
being in a relationship	union				0.72	0.26	**
age cohort	25–29	–0.03	0.48		–0.22	0.90	
	30–39	0.01	0.36		–0.89	0.40	**
	40–49	–0.69	0.25	**	–0.11	0.28	
	49+	–0.81	0.21	**	–1.66	0.27	**
number of children	1	1.26	0.37	**	0.81	0.41	**
	2	1.74	0.39	**	1.30	0.46	**
	3+	1.31	0.42	**	1.48	0.52	**
education level	higher				–1.39	0.74	***
	second				–0.16	0.50	
do you plan to have next child	no				–0.92	0.74	
education * next child	higher/no				1.89	0.80	**
	second/no				–0.40	0.58	
(-2 log L)		821.27			706.99		
C2 (df)		55.3236 (7)			89.7354 (13)		
Pseudo R2		0.10			0.21		
N		742			558		

*Results are significant at the level: ** α = 0.05; *** α = 0.10.*

Table A2. Logit regression model II

Variable	Class	2001			2006		
		beta	std error	signifi-cance	beta	std error	signify-cance
Intercept		−1.83	0.65	**	1.10	1.19	
being in a relationship	union	0.58	0.32	***	0.75	0.26	**
age cohort	25–29	−0.05	0.49		−0.27	0.92	
	30–39	0.09	0.37		−0.97	0.40	**
	40–49	−0.65	0.25	**	−0.08	0.29	
	49+	−0.83	0.22	**	−1.70	0.28	**
number of children	1	1.22	0.38	**	0.84	0.42	**
	2	1.71	0.41	**	1.34	0.46	**
	3+	1.34	0.43	**	1.55	0.53	**
education level	higher				−1.52	0.75	**
	second				−0.30	0.51	
do you plan to have next child	no				−1.10	0.74	**
education * next child	higher/no				2.07	0.81	**
	second/no				−0.23	0.58	
family	intact	0.64	0.33	***			
place2	city				−0.44	0.25	***
place2	rural				0.21	0.25	
opinion about using contraceptives	it may be allowed in certain situations	0.78	0.32	**	0.72	0.46	
	unconditioned approval	1.18	0.32	**	0.95	0.45	**
(−2 log L)		876.60			706.99		
C2 (df)		76.6482 (11)			99.2498 (17)		
Pseudo R2		0.14			0.23		
N		742			558		

*Results are significant at the level: ** α = 0.05; *** α = 0.10.*

Table A3. Logit regression model III

Variable	Class	2001			2006		
		beta	std error	signifi-cance	beta	std error	signifi-cance
Intercept		–2.77	0.75	**	–0.18	1.26	
being in a relationship	union				0.77	0.27	**
age cohort	25–29	0.12	0.49		–0.26	0.94	
	30–39	–0.01	0.37		–1.01	0.41	**
	40–49	–0.64	0.26	**	–0.11	0.29	
	49+	–0.88	0.22	**	–1.77	0.28	**
number of children	1	1.23	0.39	**	0.84	0.42	**
	2	1.77	0.41	**	1.41	0.47	**
	3+	1.41	0.44	**	1.56	0.55	**
education level	higher				–1.33	0.74	***
	second				–0.27	0.52	
do you plan to have next child	no				–0.92	0.75	
education * next child	higher/no				1.83	0.80	**
	second/no				–0.20	0.60	
attitude to religion	rather important				0.29	0.25	
	very important				0.03	0.27	
opinion about using contraceptives	it may be allowed in certain situations	0.77	0.33	**	0.72	0.47	
	unconditioned approval	1.15	0.33	**	1.01	0.48	**
network size	2	1.65	0.53	**	0.86	0.51	***
	3	–0.40	0.39		–0.11	0.43	
	4	0.11	0.33		–0.14	0.38	
	5	0.10	0.34		1.00	0.41	**
	6+	0.09	0.28		–0.58	0.37	
(–2 log L)		876.60			706.99		
C2 (df)		87.6001 (15)			112.3096 (24)		
Pseudo R2		0.16			0.25		
N		742			558		

*Results are significant at the level : ** α = 0.05; *** α = 0.10.*

Table A4. Multinomial regression model I

Variable	Class	Category of dependant variable	2001			2006		
			beta	std error	signifi-cance	beta	std error	signifi-cance
Intercept		natural	–3.16	1.06	**	–1.67	1676.90	
		mechanical chemical	–1.48	0.75	**	14.16	1143.50	
being in a relationship	union	natural	1.65	0.60	**	0.77	0.41	***
		mechanical chemical	0.61	0.46		0.75	0.38	***
age cohort	25–29	natural	–0.72	0.92		1.14	1676.90	
		mechanical chemical	–0.49	0.76		–13.97	1143.50	
	30–39	natural	–0.28	0.66		–0.42	0.64	
		mechanical chemical	–0.91	0.61		–0.34	0.57	
	40–49	natural	–0.28	0.38		–0.57	0.49	
		mechanical chemical	–1.39	0.37	**	–1.56	0.46	**
	49+	natural	–0.79	0.32	**	–1.49	0.41	**
		mechanical chemical	–1.28	0.38	**	–1.45	0.41	**
number of children	1	natural	2.47	0.93	**			
		mechanical chemical	1.32	0.65	***			
	2	natural	3.26	0.97	**			
		mechanical chemical	1.95	0.70	**			
	3+	natural	2.61	1.00	**			
		mechanical chemical	1.38	0.75	***			
do you plan to have next child	no	natural	0.32	0.59		1.33	0.57	**
		mechanical chemical	1.70	0.55	**	1.50	0.51	**
education level	higher	natural	0.23	0.35				
		mechanical chemical	1.07	0.36	**			
	second	natural	0.03	0.34				
		mechanical chemical	–0.43	0.34				
(–2 log L)			814.51			664.98		
C2 (df)			110.0205 (22)			79.2361(12)		
Pseudo R2			0.26			0.23		
N			423			367		

*Results are significant at the level : ** α = 0.05; *** α = 0.10*

Table A5. Multinomial regression model II

Variable	Class	Category of dependant variable	2001			2006		
			beta	std error	signifi-cance	beta	std error	signifi-cance
Intercept		natural	–3.35	1.14	**	–1.38	1674.90	***
		mechanical chemical	–4.92	1.34	**	12.85	1139.20	
being in a relationship	union	natural	1.56	0.60	**	0.76	0.41	***
		mechanical chemical	0.73	0.48		0.81	0.39	**
age cohort	25–29	natural	–0.82	0.94		0.88	1674.90	
		mechanical chemical	–0.46	0.78		–13.58	1139.20	
	30–39	natural	–0.26	0.67		–0.37	0.64	
		mechanical chemical	–0.75	0.62		–0.47	0.58	
	40–49	natural	–0.31	0.39		–0.53	0.49	
		mechanical chemical	–1.35	0.38	**	–1.62	0.47	**
	49+	natural	–0.73	0.32	**	–1.57	0.42	**
		mechanical chemical	–1.44	0.39	**	–1.35	0.42	***
number of children	1	natural	2.38	0.96	**			
		mechanical chemical	1.30	0.67				
	2	natural	3.29	1.00	**			
		mechanical chemical	2.03	0.73	**			
	3+	natural	2.69	1.03	**			
		mechanical chemical	1.64	0.78	***			
do you plan to have next child	no	natural	0.35	0.59	**	1.31	0.57	**
		mechanical chemical	1.76	0.57		1.57	0.51	**

Variable	Class	Category of dependant variable	2001			2006		
			beta	std error	signifi-cance	beta	std error	signifi-cance
education level	higher	natural	0.22	0.35				
		mechanical chemical	0.97	0.38				
	second	natural	0.00	0.35				
		mechanical chemical	−0.30	0.35				
opinion about using contraceptives	it may be allowed in certain situations	natural	0.21	0.42		0.21	0.68	
		mechanical chemical	2.71	1.08	**	0.34	0.80	
	uncon-ditioned approval	natural	0.22	0.44		−0.26	0.67	
		mechanical chemical	3.70	1.08	**	1.21	0.77	
place where lived up to the age of 15	city	natural	0.70	0.42	***			
		mechanical chemical	−0.81	0.48	***			
	rural	natural	0.13	0.29				
		mechanical chemical	−0.11	0.31				
(−2 log L)			924.53			664.98		
C2 (df)			158.0288 (30)			100.0232 (16)		
Pseudo R2			0.35			0.29		
N			423			367		

*Results are significant at the level: ** α = 0.05; *** α = 0.10.*

CHANGING ATTITUDES
AND BEHAVIOUR CONCERNING CONTRACEPTION
AND ABORTION IN POLAND

The study on changes in attitudes towards contraception and abortion and the contraception use among generations at the procreative age in Poland is based on the data coming from two Polish Retrospective Surveys carried out in 2001 and 2006.

Poland is a country with very restricted abortion law, very few legal abortions. Additionally, available data on contraception show that its use and methods applied are still far from patterns observed in other countries of Europe. In parallel, Poles have changed considerably their procreative behaviour after 1989 – TFR dropped to the lowest-low level (1,2 in 2003) and despite some improvements fertility in Poland remains low (TFR reached 1.4 in 2009).

In the last two decades the Polish society, considered to be a traditional Catholic society, is undergoing a deep social transformation, including also changes in values and norms (social, religious, legal norms, etc.), important for attitudes and behaviour related to family. The unique data coming from two surveys makes it possible to investigate how views on abortion and contraception evolve over time and to analyse contraceptive behaviour. Descriptive and model-based analyses refer to relevant determinants usually mentioned in the literature: the education attainment, the role of social networks and the religiosity as well as some personal attributes.

The results revealed that the increasing number of people accepts contraception unconditionally. For those who declare their approval for contraception in some situation the number of children is a decisive determinant. Contraception patterns are being slowly modernised - condoms are still the most preferred means followed by contraceptive pills. The natural methods are in use mostly by couples. In addition, there is still quite remarkable the percentage of people declaring no contraception use.

Attitudes towards abortion seem to undergo some polarisation. The dominant opinion claims that it is a couple's decision to terminate a pregnancy while the opposing group perceives abortion as strongly immoral. The role religion in people's life also matters for attitudes towards abortion. However, a relatively strong disapproval is declared also among persons who do not regard religion as important in their life while some religious people permit abortion.

As hypothesised, Poles' attitudes regarding family-planning and their behaviour changed considerably. Results of testing the role of the education attainment, social networks and the religiosity reveal the complexity of family-planning decisions, which strongly depend on the socio-cultural background and personal preferences. The picture seems to suggest the diminishing role of religiosity and ongoing individualisation process in terms of methods of birth control.

Key words: family-planning, contraception attitudes and behaviour, abortion attitudes, contraception methods and means.