

Birth deficit and infertility in Greece: A fading nation...

It is evident, that the political, economic and social consequences of low birth rates are expected to become dire in the following years. The gradual population decrease combined with the corresponding decrease in the work force and the increase in life expectancy will on the one hand bring about a demographic ageing of the Greek population and on the other cause a chain reaction of social and economic shifts. It is expected that the sustainability of the social security system will be directly affected as will the size of the national debt and budget deficit, while at the same time the GDP will decrease, if the necessary measures are not taken in time. The surge in the number of births, immediately after the Second World War has postponed, for the time being, for about two decades, the complete demographic ageing of our country, since those born in that time period are still part of the economically active population. But the declining fertility rate and the ageing of the population is changing the structure of Greek society and family. Today for every 100 children under the age of 15 there are 71 people above the age of 65. By 2020, those figures will be even. The margins are tightening, Greece is ageing and the countryside is being abandoned while pensioners flood the cities, births are dropping and the demographic collapse is staring us in the face.

The statistical data from the Ministry of Education (released in September 2001) shows that between 1995 and 2000 586 schools closed down. In 2000 alone, 136 primary schools were shut and 176 secondary schools were merged (900 mergers in the last 7 years). In 1990 Greece had 813.353 primary students. In 2000 that number dropped to 643.457, that's 170.000 less in one decade! Primary schools in 1990 were 7.653, while in 2000 they dropped to 5.367, that's 1300 less in one decade! A study by the National Centre for Social Research found that the school population in our country in the decade 1991-2001 decreased by 1500-2000 per year! Data from two of the largest public hospitals in Athens showed that 34% of mothers giving birth there were foreign nationals. Foreign schoolchildren increased by 300% within 5 years reaching by 2000 112.877 nationwide, in Athens, they make up 19% of the primary and middle school student population (13.621 students).

The negative effects of low birth rates are significant in all European countries more so in Greece because:

1. Declining fertility rates: In 1980 Greece had the second highest birth rate in the EU but by 1999 the country was in last place while the number of deaths surpassed the number of births.
2. Over-ageing, that is the progressive ageing of the population which results in an insufficient workforce and fewer people of working age for every pensioner. Another consequence is a small closed consumer driven market with a corresponding tax base resulting in an anaemic economy. The constantly ageing population leads to rising costs in healthcare, pensions and social welfare as well as diminishing the human resources of the armed forces.
3. The uneven distribution of the population cause gaps in various geographic regions particularly in bordering areas.
4. Illegal immigration, with all its positive and negative reverberations. Greece has seen in the previous decade a huge influx of about 200.000 repatriates and refugees and about 650.000 illegal immigrants who presently make up nearly 8.5 % of the population. According to various demographic studies in a few years, in about 20,

Greece will be a country inhabited by an elderly populace. By 2025 the population is estimated at 13.5 million, of which no more than 10 million will be Greek and of those 20% will be above the age of 65. The armed forces saw a decrease of 30.000 available recruits from 83.000 in 2000 to 53.000 in 2013, with dire national defence implications. Another shocking fact is that in Greece there are about 100.000 births each year and about as many abortions.

Γεννητικότητα



Table 1: Fertility rate per year

It is worth noting that in a poor and devastated Greece, following the Second World War the fertility rate was one we wish we could have today. In contrast, the years of prosperity that followed saw a gradual decline in fertility rates. Here we should point out that this rate needs to be greater than 2.1 to sustain a healthy social body. (Table 1)

Γεννητικότητα



Table 2: Number of Births per Year.

So between 1981 and 1991 there is a drop in the number of births by 41% (table 2). According to the data from 1998 and 1999 there are about 100.000 births per year from a population of about 11.000.000 (census of 2001)

Σύγκριση γεννητικότητας στις βαλκανικές χώρες

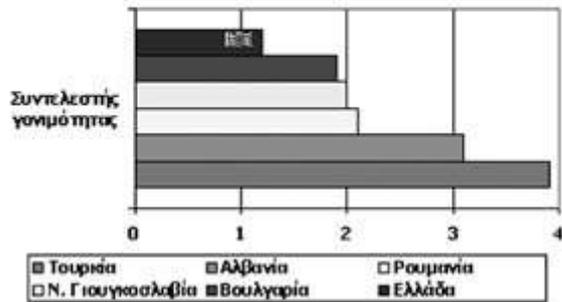


Table 3: Comparison of Fertility rates in Balkan countries.

In relation to neighbouring countries a couple in Greece has 1.2 children, while one in Turkey has 4 (Table 3). Greece's position in the Eastern Mediterranean would be different, if it had the average population density of the EU. A major consequence of the demographic crisis is the quantitative and qualitative weakening of our national defence. The human resources of Greece will diminish, and by 2020 the gap with Turkey will be 10 to 1. From the data of a relative UN report, in 50 years the Greek population will decrease by 1.400.000 and go from 69th to 99th. (In the same period Turkey's population will grow by 20 million). These estimations are reinforced by Eurostat data on fertility shifting in EU countries. The average number of children per woman declined in Greece from 2.57 (1960) to 1.30 (1999).

A nation that is not in a position to renew its population is doomed to fade. The implications of demographic ageing have a negative impact not only on the economy, pensions, welfare, and healthcare but also on national defence and the prospect of surviving in an environment where our neighbours' populations are growing fast.

Σύγκριση γονιμότητας στην Ελλάδα με Ε.Ε. & Η.Π.Α.

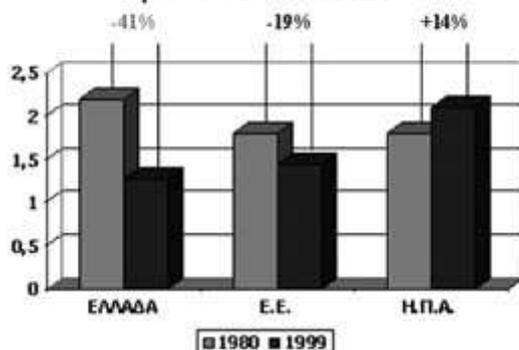


Table 4: Fertility rates in Greece, the EU and the USA

Comparing the fertility rates of the EU the United States and Greece, one can see a massive decrease of 41% within 20 years, while in the EU the decrease was about 19-20%. In The United States the fertility rate increased by 14% (Table 4). It is clear that the USA, after a steady

rising trend, have gained a positive fertility rate, that is to say greater than 2.1, which will maintain and sustain their social structure in the following years. In contrast the EU is on the opposite path having a gradual decline in its fertility rate, while Greece is a characteristic extreme example.

Σύγκριση γονιμότητας στην Ε.Ε. & Η.Π.Α.

Χώρα	1980	1990	% μεταβολή
Ιρλανδία	3.30	1.89	-42.7
Γαλλία	2.00	1.77	-11.5
Δανία	1.60	1.74	8.7
Φινλανδία	1.60	1.74	8.7
Λουξεμβούργο	1.50	1.73	15.3
Βρετανία	1.90	1.70	-10.5
Ολλανδία	1.60	1.64	2.5
Βέλγιο	1.70	1.54	-9.4
Σουηδία	1.70	1.50	-11.8
Πορτογαλία	2.20	1.48	-32.7
Γερμανία	1.60	1.37	-14.4
Αυστρία	1.60	1.30	-18.8
Ελλάδα	2.20	1.30	-40.9
Ιταλία	1.60	1.21	-24.4
Ισπανία	2.20	1.19	-45.9
Ε.Ε. 15	1.80	1.45	-19.4
Η.Π.Α.	1.80	2.05	13.9

Table 5: Fertility Rates of EU countries and the United States.

The biggest shift took place in the decade between 1980 and 1990 where Greece was the 3rd country after Spain and Ireland with a decline in births of 40% (Table 5)

Θνησιμότητα

ΕΤΗ	ΓΕΝΝΗΣΕΙΣ	ΘΑΝΑΤΟΙ	ΦΥΣΙΚΗ ΚΙΝΗΣΗ
1940	179.500	93.830	86.670
1950	151.134	53.755	97.379
1961	150.716	63.955	86.761
1971	141.136	73.719	67.307
1981	140.953	86.261	54.692
1991	102.620	95.498	7.122
1996	101.500	100.656	844
1997	101.995	99.924	2.071
1998	100.894	102.668	-1774
1999	100.643	103.304	-2661

Table 6 Deaths and Births/death rate

The dramatic drop in births took place in the 1980s, where from 140.953 births in 1981, Greece dropped to 102.620 in 1991. In 2000 there were 98.506 births (Table 6). The gloomy observation here is the fact that the number of deaths overtook those of births according to

the data from 1998 and 1999 (Table 6). As already mention, the minimum replacement fertility rate is 2.1. In Greece the fertility rate is about 1.2, and if that wasn't enough, there is a sharp distortion of the age pyramid well underway, that is to say an increase of those aged above 65 and a decrease in the number of those aged 9 and under (Table 7).

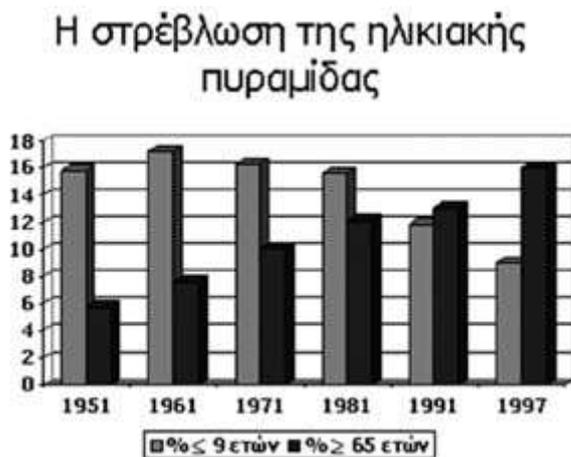


Table 7: Shifting of the age pyramid.

While in 1961 the percentage of children under the age of 9 was at 18% by 1997 it had dropped to 9%, in contrast the percentage of people above the age of 65 almost doubled by 1997 (Table 8).

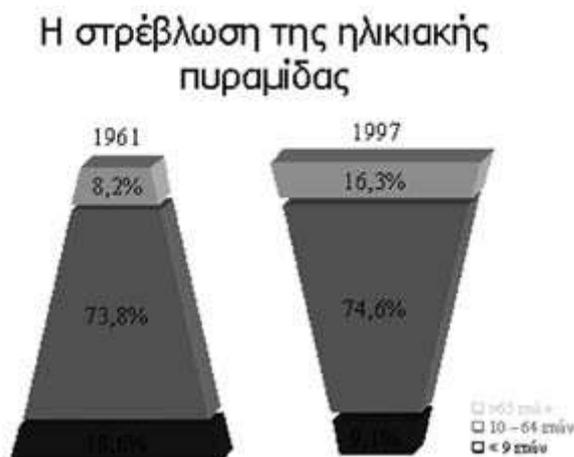


Table 8: Shifting of the age pyramid

In 1971 the percentage of Children below the age of 14 was 25.36% this dropped to 9.1% by 2001. In contrast by 2001 the percentage of people above the age of 65 nearly doubled (Table 9)

Η στρέβλωση της ηλικιακής πυραμίδας

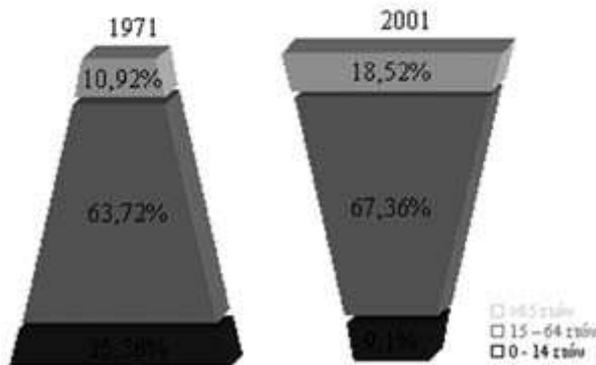


Table 9: Shifting of the age pyramid

What are the main contributory factors of demographic ageing?

1. The increase of life expectancy. (Today the life expectancy for women is 80-82 and for men 78-80).
2. The sudden deaths of young people, due to car accidents, various illnesses, AIDS drugs etc.
3. The decrease in the number of births, which is a real problem for Greece.

Greece is ageing and as a result we have large population gaps in geographical areas of the country, especially in regions bordering other countries. The ageing of the population doesn't just increase the cost of pensions and healthcare but also threatens productivity and economic growth thus devaluing Greece's position in the global economic map. In an attempt to analyse the causes of low birth rates one would say that they are economic and at the same time social. The decrease in the number of marriages, the increase in the number of divorces, the increase in the average marriage age, the postponement and delay in having the first child are some of the economic and social reasons. There is a direct correlation between low birth rates and low fertility rates.

What can affect decreasing birth rates?

1. Demographic factors,
2. Social and economic factors
3. Psychological factors
4. Medical factors
5. Indirect factors which will be analysed further down.

Demographic factors

Decreasing infant mortality: Families in the past would have more children with the hope that some of them survived. Today with the decrease of infant mortality, as well as other factors of course, this percentage has decreased. In Greek families the goal is usually 1 or 2 children. Internal and outward migration: Rural families which were traditionally larger moved to the

city. Immigration abroad contributed to the decrease as well as the ageing of the reproductive population. A decrease in marriages and an increase in divorces.

Θάνατοι γυναικών και νεογνών κατά την κύηση

	1970	1980	1985	1990	1995	2000
Γυναίκες	28,3	16	9	1	1	0,5
Νεογνά (όρατα)	38,7	22,2	19,6	10,4	8,4	4,5
Νεογνά (θάνατοι)	32,8	17,9	13,4	9,3	7	3,2

Table 10: Deaths of women and new-borns during childbirth

Deaths of infants as well as mothers during childbirth have drastically decreased in recent years, due to the improvement of medical care in Greece. This was aided by the development and use of new technologies as well as medical support. Maternal death rates from 28.3 in 1970 fell to 0.5 by 2000 (table 10). Infant mortality also dropped significantly due to modern clinics and well equipped facilities. Indeed a 700 gr infant has a astonishing survival rate of 85%. (Table 10)

Γεννήσεις ζώντων νεογνών στην Ελλάδα, κατά ηλικία της μητέρας

Ηλικία μητέρας	Γεννήσεις νεογνών
Κάτω των 15 ετών	27
15 – 19 ετών	3.604
20 – 24 ετών	20.846 36.268 25.597
25 – 29 ετών	
30 – 34 ετών	
35 – 39 ετών	9.384
40 – 44 ετών	1.602
45 – 49 ετών	154
50 ετών και άνω	24
Σύνολο	98.506

Στατιστική Επιθεώρηση 1999

Table 11: Births by the age of the mother

Most births occur between the ages of 20 and 34 (Table 11). Above the age of 35 and mainly above the age of 40 the percentage drops drastically even with medical assistance. The biggest percentage of births is between the age of 25 and 29. Between the ages of 25 and 35

the chance of conception during the fertile days is 25-30% per attempt, this drops to 20-25% between the ages of 35 and 40 and is almost at 0 after the age of 43.

Γαμηλιότητα

Έτη	Γάμοι	Συντελεστής γαμηλιότητας
1950	58.482	7,66
1961	70.914	8,46
1971	73.350	8,36
1981	71.178	7,31
1991	65.568	6,39
1997	59.814	5,69
1998	55.489	4,98

Table 12: Nuptiality

The decrease in the number of marriages (Table 12) is due to the modern way of life, and new lifestyle choices and standards like the single parent family: "you don't need to have a family to have a child". Changes in lifestyle often result in a corrosion of traditional Greek social values, making the traditional family unit less desirable. Unemployment, lack of higher education, and an unclear future for young people also contribute to the declining number of marriages.

Economic and social factors

Economic development, not just in Greece but generally in European countries is the main cause of a decreasing number of births. The recession and high unemployment, especially acute in Greece, results in marriages being postponed and financial difficulties in raising children. The employment of women and the insecurity of maternity are also significant factors.

The state has not taken the appropriate measures to safeguard and assist pregnant women and working mothers. Furthermore the state refuses to support methods of assisted reproduction which effectively help reduce low birth rates relating to infertility. The cost of raising a child, housing and the environment are also decisive factors contributing to decreasing numbers of births.

Bad family planning

In Greece family planning is non-existent. Only 5% of women use some method of contraception (pill, diaphragm etc.), while in European countries this average is 45-50%. There is a lack of information as well as phobias and a tendency for misinformation especially concerning hormones. Even during menopause the percentage of women who take hormone supplements is no more than 2.5-3%. This is unfortunately the image of a nation that is not informed correctly, that does not know how to get informed.

Psychological factors

The various psychological factors include stress and anxiety related to the modern way of life, the loss future prospects, pessimism and low self-esteem.

Medical factors

Medical factors include various sexually transmitted infections such as Chlamydia. A high number of abortions and related medical complications, secondary infertility and perinatal mortality. And, as already mentioned the low percentage of women on contraception. The lack of medical training and information is of major importance. Indeed there is no sex education in schools nor do teachers have the proper training to teach it. The lack of widespread preventive medicine programs is an undisputed fact. Very few of the general public know, even the rudimentary fundamentals of how and when fertilisation takes place. The lack of knowledge is astonishing even amongst medical students. Many subjects remain taboo, there is insufficient information and there is often much misinformation. Indirect factors include nutrition, which plays a decisive role, environmental pollution, drugs and traffic accidents. Greece is first in Europe in the number of traffic accident victims. The numerical equivalent of a small town (2500 people) is lost each year. Victims are usually young people, their deaths not only lowers the population but also decreases the prospect of future demographic development as they are of reproductive age. 7000 people are left disabled each year from traffic accidents. A recent study by the University of Athens found that there are at least 100.000 people with HIV in Greece who are expected to die within the next decade. The Health Ministry announced that there are 300.000 people with hepatitis B and 50.000 with hepatitis C, which is mainly due to the uncontrolled influx of immigrants from poor countries with non-existent healthcare. Sexually transmitted diseases also have a negative effect on birth rates, the most common prevention being the use of condoms, which in Greece is not very "popular". Statistically 1 in 5-6 couples is unable to conceive with the number being close to 300.000 couples that have some sort of fertility issue. It is estimated that about 15% of couples of reproductive age have some sort of fertility problem. This percentage might not be accurate as it only includes those couple who have sought medical assistance. There are however couples that have accepted their infertility, don't have children nor actively try to. The number of people with fertility problems is increasing and this due in part to the view that fertility problems can be dealt with and thus dealing with it can be postponed.



Table 13: Factors of Infertility

There is a 40% chance that the reasons for infertility can originate from the woman and another 40% chance that they originate from the man. The remaining 20% concerns both partners (table 13). The reasons are usually: For women various hormonal factors, Fallopian tube factors range between 30-35%, Endometriosis and unexplained infertility. For men, various cause which we will not go into.

Αριθμός εκτρώσεων / 1000 γυναίκες

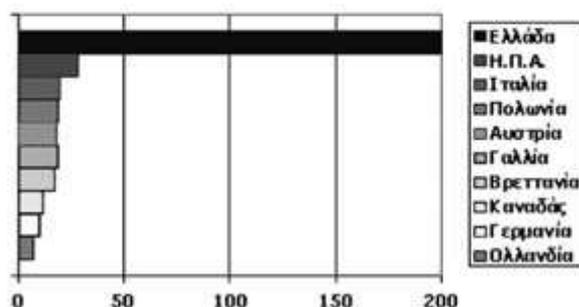


Table 14: Number of Abortions/ 1000 women.

Another cause of low fertility and at the same time low births rates are abortions. There is no official data but in Greece they are estimated at troubling figures. The number of abortions each year is greater than the number of births. It is truly sad when these numbers are compared to other European countries (table 14). Furthermore Greek women often present gynaecological problems, possibly caused by the use of abortions as a contraceptive measure.

In vitro fertilisation – Contribution to low birth rates

Assisted reproduction is one of the fastest growing sectors of gynaecology in recent years. The successful fertilization of a human egg outside the body and the birth, in 1978 of Louise Brown, the first child born after conception by IVF, was a revolutionary development in the

study of infertility, because it gave direct access to human gametes, the egg and sperm and by consequence the genetic material they carry. It made possible the in depth study of the mechanisms which govern the follicular phase, the ovary maturing, sperm and the process of fertilization, as well as early embryonic development and implantation. It further gave the chance to thousands of childless couples to have a child and many couples burdened by some genetic illness to have a healthy baby. These important developments gave rise to huge ethical, psychosocial and legal questions, which led to a heated debate ranging from enthusiasm to explosive condemnation. The initial impression that IVF was an unnatural transgression with the creation of "test tube babies", has all but disappeared. Today it is seen to be a simply bypassing of a natural process which for various reasons can't take place. This is encouraging for the future, but steps in this field need to be taken with caution, especially when taking into account that IVF has opened the gates to the study and processing of the genetic material found in human gametes. IVF today has succeeded in establishing a place where other methods of dealing with infertility have failed. Initially IVF was used in cases where women presented Fallopian tube obstruction. Gradually it was used in other cases of infertility such as low sperm count, endometriosis, unexplained infertility as well as where all other methods to deal with infertility had failed. In recent years there has been an improvement in the quality and a simplification of IVF protocol with the aim on the one hand to increase the odds of success which today are around 40% and on the other to reduce the disruption in the daily life of the couple. IVF has today been simplified to a great extent. Today we have a better understanding of the pathophysiology of ovulation disorder as well as their treatment, where significant improvements have been made with the use of recombinant gonadotropins and gonadotropin-releasing hormones. Consequently, laboratory tests and mainly the monitoring of oestrogen during ovulation have been reduced. The monitoring of ovarian follicles development has been greatly simplified, since we can know, using ultrasounds their pace of development and can know beforehand the reaction of ovaries.

The various protocols of stimulation have been simplified so as to inconvenience women as little as possible and reduce the chances of giving up after a potential failed attempt. Transvaginal ovum retrieval is done in 5 minutes, while the patient is lightly sedated and leaves the clinic within 30 minutes. Something that was inconceivable just a few years ago. The embryo transfer is now done painlessly and women are encouraged to continue their daily routine and not stay in bed as used to be the case in the past. This relieves them from the stress of waiting and helps them psychologically. Cryopreservation of embryos gives women the chance to repeat embryo transfer without having to go through a full IVF cycle avoiding costs of more therapies while maintaining the same chance of success. Intracytoplasmic sperm injection allows couple the chance to conceive when their only option in the past was a sperm downer. Blastocyst cultures improve the chances of success. Finally Pre-implantation genetic diagnosis allows for genetic profiling of embryos prior to implantation. This allows for the screening of genetic diseases or chromosomal disorders, gender selection for sex-linked diseases and with preimplantation it is possible to screen for aneuploidy. Thus the chances of a successful pregnancy are increased and at the same time those of an abortion are decreased as well as increasing the success rate in older women.

15% of couples don't manage to get pregnant after 12 months. In 40% of cases the problem is linked to the man and 40% of the time it's linked to the woman finally 20% of the time the reason cannot be determined: the so called unexplained infertility. In Greece, the nearly 200.000 abortions per year are the primary cause of inflammation of the fallopian tubes while the modern way of life is responsible for the decrease of sperm by 40% in the last 40 years.

The estimated number on infertile couples is estimated between 250.000 and 300.000, while more than 12.000 IVF cycles are done each year in Greece, with about 5000 births per year. In present day Greece, plagued by low birth rates with an ever decreasing population, IVF provides a substantial number of children to Greek society. Using personalised and adaptable criteria, taking into account the distinctive needs of each infertile couple, the aim of greater chances of success has been achieved. Reproductive technology for infertile couples is the last hope for the formation of a family for many people. The state has still not managed to effectively cover the needs which arise from the problem of infertile couples, who undergo IVF in Greece. The various technics are expensive and have high investment costs and require specialized personnel. Its effectiveness is directly linked to the cost of the investment which requires constant upgrading of equipment and medical knowledge. The contribution of the privet sector is substantial making up about 80% of the cycles done in Greece today. The states contribution is limited to the IVF wards in teaching hospitals, without offering the needed administrative and financial support for their further development.

The Social Insurance Institute's (IKA) decision to finance a substantial amount for each cycle of therapy as well as the medicine costs was a positive measure. Thankfully more insurance funds have followed but not all. Privet insurance companies don't cover the cost for they consider them too high. Unfortunately infertile couples, due to the sensitive nature of this social problem which is still considered taboo, will not actively fight for their rights as other social groups do. Some progress is being made however; the problem needs to be dealt with deeply, a big awareness campaign of national proportions. All the above show that we are standing at the edge of an abyss, we don't just need helping measures but radical and revolutionary changes. We need to realise that the conditions favour certain trends that are clearly being outlined in various levels on an international scale that threaten the marginalization of the cultural contribution of Greece on the world map. The demographic problem is one of the most significant dilemmas facing Greece which is linked to the very survival of the nation.

We all need to understand it.

SOURCE:

http://www.iatrikionline.gr/8emata_M3/03_Anaskopiseis/02_Ypogenitikotita.htm