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Salud sexual y reproductiva en el Estado de México. Situación actual y escenarios futuros

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Sexual and reproductive health in the State of Mexico. Current situation and future scenarios

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Resumen

Este trabajo contiene un análisis general sobre la fecundidad en el Estado de México, sus diferencias municipales y sus asociaciones con otras variables socioeconómicas. Asimismo, se presenta la información recopilada en la fuente censal sobre las diferencias por sexo y municipio para el abandono de la soltería. Además, se emplean los registros institucionales sobre defunciones y casos registrados debidos a tumores asociados a la salud reproductiva y las defunciones ocurridas por VIH-SIDA. Finalmente, se abordan las posibilidades de utilizar el enfoque del individualismo y de las sociedades de riesgo para entender los posibles escenarios de la salud reproductiva en el Estado de México.

Palabras clave: fecundidad, nupcialidad, salud reproductiva, VIH-SIDA, Estado de México.

Sexual and reproductive health in the State of Mexico. Current situation and future scenarios

Abstract

This paper presents a global analysis of fertility in the State of Mexico, including the municipal difference and their correlations with other economic variables. Similarly, here it is presented the information gathered in the census on gender and municipality differences for the union. Besides, institutional records on deaths and registered cases regarding tumors associated to reproductive health and deaths by HIV-AIDS. In the past part, the possibilities of using the individualist and society approaches to understand the possible scenarios of reproductive health in the State of Mexico.

Key words: fertility, nuptiality, reproductive health, HIV-AIDS, State of Mexico.

Introduction

Sexual and reproductive health is one of the prioritized topics for demographical dynamics and also an important referent to generally locate a population's wellbeing level.

Sexual and reproductive health study provides field for several differences, as for the way their indicators are measured as well as their explanation. At a national level, the different dimensions included in reproductive health can be approached by means of national demographic surveys or the national health surveys.

However, at the States' level there are still a lot of limits in this respect, for instance, the quality of the institutional information is currently deficient, mainly due to the individual's decision, but also because of the heterogeneity in the register format of the institutions that shape up the national health services.

Likewise, information on reproductive health is even scarcer at municipal level. Because of this reasons, in this paper censual information as well as information from the last population counting is used. The information from these sources, since their character is universal, allows us to approach to both of the most representative topics in reproductive health: fertility and nuptiality. Apart from this, the institutional records on casualities and documented cases caused by tumors associated with health reproduction and the deaths result of HIV-AIDS.

Owing to the large number of topics that health reproduction includes and the lack of municipal information, this work has as an objective to perform a general analysis on fertility on the State of Mexico, its municipal differences and their associations with other socioeconomic variables. What is more, the information gathered in the censual source on the differences on gender and municipality presented to leave singleness.

Fertility and nuptiality, to key topics

One of the demography's basic components has always been mortality, which, evidently, can not be understood without considering morbidity, what has contributed to have broad connections between Demography and health. One of the most important topics for a population's growth and its economic and even military force has been biological reproduction, it is, fertility. However, for many years issues related to reproduction were limited to people's private life, in particular women in reproductive age, because of that its study was carried out only from purely biological approaches. In a simplified sense, it can be said that as a response to this, reproductive health appears as a theoretical approach, a perspective later adopted by public and private health institutions as a definition and action framework of the demographic and health policies.

The Program of Action agreed on the International Conference on Population and Development, held in El Cairo in 1994, conceives as reproductive health the physical, mental and social wellbeing in everything referring to human beings' reproductive system (Espinosa, 2000) (Langer and Lozano, 1998). According

to this definition, reproductive health includes having a safe pregnancy and childbirth; it also refers to the capacity to regulate fertility with no risks and to freely choose the most convenient method with all the necessary information, and the right to have a satisfying sexual life, free of diseases (Langer and Lozano, 1998).

Demographic transition before individualization

The fertility's situation as the most representative element of the reproductive health has been explained by means of the theory of the demographic transition. The criticisms to this theory can be considered as a common ground for the specialized reader, although few proposals have been approached in order to overcome its limitations. The most serious criticisms to the theory of demographic transition are: its linearity and universality for all the populations.[1] Similarly, it has been identified that linear modernization as an explanatory and subjacent variable in the theory of demographic transition is very limited for a context such as the Mexican.

Epidemiological frameworks based upon social interactions that allow feedback between individual decisions and aggregated properties of the system have also been used.

Separately, the same authors point out that the explanations based on the vital cycle stages, where the explanation of a phenomenon is not only based upon isolated facts or previously acquired characteristics, but also upon a chain of events with changing characteristics.

Another proposed explanation is that of the game theory and negotiation models. This explanation is based on the fact that individuals behave in a certain way with a certain series of previously defined resources. In these approximations, the key is to be found in the existence of some kind of dynamical process which needs the search and the agreement of different actors, all of which try to maximize some sort of benefit in cooperation or competence with others.

Finally, Palloni (2001) mentions a group of explanations very common in Mexico, where the exogenous economic, social and cultural changes involved in the transformation of the families and households are prioritized.

[1] For a revision of these criticisms see Palloni (2001) and Bulatao (2001).

In a similar manner, the explanations of the two frameworks are the very notorious opposition. The first «reduced the fertility's behavior to the result of a rational decision-making of the individuals who try to maximize some sort of benefit». This framework has been identified as innovationist. On the other side, the second explanatory framework was supported on the idea that decision-making on fertility responded to influences of cultural factors and the adherence to practices and beliefs of ethnical, idiomatical or any other practice. The ideological change was in a determined social context. One of the changes is the fertility's occidentalization. This framework previously described has been identified as diffusionist.

In Mexico we have this discussion and it has been tried to be solved using complex mathematical models. For instance, methods of logistical regression or other related to probability. Nonetheless, in several occasions these reach the conclusion that the only variable that allows showing significant differences to be considered to explain fertility is education. Whereas other variables have been reduced or lost their importance of association, for example, the place of residence, the size of the locality, age, religion, women's economical activity, etc. This does not show us that reality has been limited nor is it creator of homogeneity in the individuals, on the contrary, the theoretical approximations used are the ones that find increasingly evident limits in their explanatory capacity.

In this work the explanations and the future stages are established in the framework of the reflexive modernization and one of its effects, the individualization, the consciousness the individual has of itself as author of its biography. Obviously, whenever this individual has the advantages of the benefactor State. This last situation, which due to the way the national security system[2] was constructed, has been tremendously uneven in the country, favoring the laborers in the formal sector and those who reside in the largest cities.

Further in the text the State of Mexico indicators and their associated variables' situation will be approached. Later some indicators at municipal level will be presented.

[2] On this topic see Morelos, 2004 and Bustamente *et al.* 1982.

Situation of the general indicators at State level

In this section the available and most eloquent indicators on fertility and nuptiality at state level are presented. Likewise, the morbidity situation is presented in respect to cancer and HIV-AIDS.

Historically, information sources on demographic and health situation at State level have been very limited. Nevertheless, these obstacles have recently started to be notably reduced. Information sources used for this work are the most recent and comparable in time to States and municipalities.

Fertility in the State of Mexico, 1999-2010

The best fertility indicator is the Total Fertility Rate, it is, the number of children that a woman had during her reproductive life. In this section the TFR situation is presented from 1999 to 2010; with the different available sources (Table 1).

In table 1 it can be seen that the tendency of the total fertility rate is the expected, i.e., with a soft descend tendency, which is in conjunction with the rest of the States of the country, as well as with the national average. Currently the State of Mexico is one of the states with TFR levels below the replacement level, this is, 2.1 children per woman. This is important since replacement level is associated to a population's natural growth level that is considered as stable. Definitely, a descending TFR does not indicate that the population decreases in short term. Only the speed of its natural growth will cause changes in its demographic structure.

Nuptiality

Nuptiality is a poorly valued phenomenon. However, nuptiality research provides elements of vital importance to understand reproduction and make decisions on a population's reproductive health.

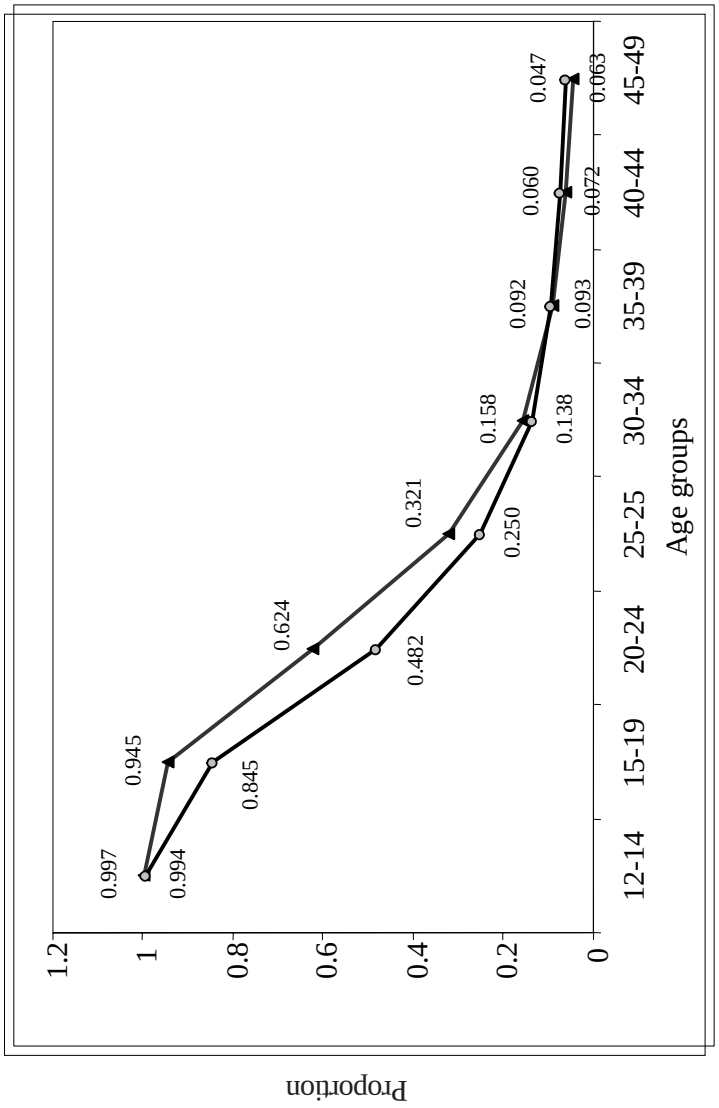
TABLE 1
STATE OF MEXICO, TOTAL FERTILITY RATE,
ACCORDING TO SOURCES 1990-2010

Years	Surveys	Censuses	Conapo[5]
1990			3.22
1991			3.11
1921	3.41		3.00
1993			2.88
1994			2.76
1952	3.03		2.62
1996			2.52
1973	2.80		2.42
1998			2.36
1999			2.31
2004		2.71	2.24
2001			2.19
2002			2.15
2003			2.11
2004			2.07
2005			2.03
2006			2.01
2007			1.99
2008			1.97
2009			1.95
2010			1.93

1 Corresponds to ENADID 1992.
2 Corresponds to ENAPLAF 1995.
3 Corresponds to ENADID 1997.
4 Corresponds to the 2000 Census of Population and Households.
5 Corresponds to Conapo estimations.

In graph 1, the proportion of single people at different age groups according to the 2000 Population and Households Census (*Censo de Población y Vivienda 2000*) is presented. This singles' proportion is eloquent in reference to calendar, i.e., its distribution in time.

GRAPH 1
STATE OF MEXICO, SINGLE PEOPLE PROPORTION, 2000



Single people's proportion is a transversal measurement and it allows us to observe in a certain moment the noticeable differences between men and women according to their kind of union. Probably, the most notable change takes place in the 20-24 and 25-29 years of age groups. The number of single men is always larger, except for the last years considered as reproductive, where the proportions are inverted.

Chronic and highly lethal diseases associated to reproductive health

The wide range of topics included in reproductive health involves several topics associated to mortality and morbidity, such as infant mortality, death at childbirth or abortion, among other. But in this research only the chronic-degenerative diseases are considered. Among these the following cancers have been considered: cervical and uterine, breast, prostate. Likewise, in this modality of chronic-degenerative diseases the infections of HIV-AIDS are included.

In table 2 the total of casualties by cause in the State of Mexico for the last years available are presented. The total of casualties presented for this quinquennium does not show any clear tendency. Hence, it is impossible to point or try to evaluate the causes of the evolution of casualties, both in its effects in reproductive health and public health actions.

TABLE 2
STATE OF MEXICO. CASUALTIES REPORT FOR PRIORITARY PROGRAMS, 1990-2003

Cause	1999	2000	2001	2002	2003
Cervical-uterine cancer	509	496	481	462	474
Breast cancer	394	374	457	484	468
Prostate cancer	319	303	360	367	401
AIDS	481	463	434	410	383

Source: INEGI/SSA database (Sistema Epidemiológico y Estadístico de las Defunciones, SEED).

Nevertheless, beyond the incidence of these diseases, what can be distinguished is that all of these causes of death can be detected in time or prevented, in the case of AIDS infection. This consideration is very important for the generation of stages where the individuals take the responsibility of their own autobiography.

It is important to point out that the number of deaths contributes with general elements on the situation of the reproductive health. Nonetheless, the best indicators are the mortality rates by cause, which really give an account of the dimension and impact of the specific cause of death in the population.

In the following sections some mortality rates by cause are presented, unfortunately the calculation of some specific rates is not possible, in particular because of the information availability.[3]

With the caualties presented table 2, it can be observed that on average there is more than one death due to these diseases a day. For the year 2003, the average of cervical-uterine or breast cancer deaths in the State was 1.3 a day.

Cervical-uterine cancer

Cervical-uterine cancer is considered as a chronic-degenerative illness, similarly to the rest of the previously mentioned diseases. These are characterized by the gradual degeneration of one or several organs; they are normally asymptomatic in the period they can be considered as curable.

These causes of death usually imply a lengthy process in order to develop the illness that causes the decease. So, normally despite the illness starts at an early age of the period considered as reproductive (15 to 49 years of age), the decease can take place in the last years of this period, or even later.

Casualties by age group for the State of Mexico are presented in table 3. Due to the aforementioned characteristics of the chronic-degenerative diseases, it is worth mentioning that casualties result of cervical-uterine cancer increase as age does. It is, casualties happen at an advanced age; but comparatively, in the presented quinquennium it is not possible to identify a clear tendency change. So possibly, this is the disagreeable result, the expected reduction, result of the preventive and control actions on this grave disease, has not taken place.

[3] Health institutions keep their records in different formats among regions; besides, there are not municipality and State criteria, as it is done with population. All of this frequently makes it difficult the registration and estimation of the specific mortality rates. However, in recent years there have been plenty of advantages in this topic and it is already possible to have comparable rates by State for 2004 and 2005.

In table 4, the observed and standardized rates are presented, for both cervical-uterine and breast cancers. Even if it is a brief period, these rates allow temporal comparison as well as the comparison to other populations at the same moment. It is remarkable that the mortality rates of these causes have been constant or have been slightly increased. Hence, their impact is larger in the State of Mexico's population, mainly in the case of breast cancer.

In the case of cervical-uterine cancer, the tendency is not so clear, yet its dimension is considerable.

TABLE 3
STATE OF MEXICO. CASUALTIES CAUSED BY CERVICAL-UTERINE CANCER, 1999-2003

Age Groups	1999	2000	2001	2002	2003
20-24	0	0	2	1	1
25-29	8	4	4	4	8
30-34	21	13	10	15	11
35-39	29	49	50	38	31
40-44	49	48	62	51	52
45-49	53	66	60	54	58
50-54	68	62	50	51	76
55-59	70	62	37	52	47
60--64	54	43	55	32	43

Source: ISEM 2006.

Breast cancer

Breast cancer is a disease linked to modern societies. As a matter of fact, its increasing importance in recent years can be very well described by the so-called theory of the epidemiological transition for the State of Mexico's case. In recent years, its tendency is notoriously increasing for the 35 to 39 and 45 to 49 years of age groups.

TABLE 4
STATE OF MEXICO: MORTALITY RATES BY CERVIAL-UTERINE CANCER AND BREAST CANCER, 2000-2003.
RATE PER 100 000 INHABITANTS

Years	Cervical-uterine cancer Observed rate	Cervical-uterine cancer Standardized rate	Breast cancer Observed rate	Breast cancer Standardized rate
2000	15.55	n.a.	11.95	n.a.
2001	12.83	17.19	13.26	17.26
2002	12.67	16.50	13.06	16.98
2003	12.60	19.90	14.00	21.10

Source: Salud México, 2004, 2003, 2002,2001.

TABLE 5
STATE OF MEXICO: CASUALTIES CAUSED BY BREAST CANCER, ACORDING TO AGE GROUPS, 1999-2003

Age Groups	1999	2000	2001	2002	2003
20-24	1	0	0	0	0
25-29	2	1	5	5	5
30-34	15	18	18	16	16
35-39	30	23	31	30	62
40-44	46	37	53	56	46
45-49	57	45	87	71	71
50-54	64	61	54	68	61
55-59	52	47	55	61	66
60-64	40	40	44	50	42

Source: ISEM 2006.

Prostate cancer

Prostate cancer provokes casualties mainly in advanced age men. It can be considered very important in the causes of death associated with reproductive health, since it appears in the reproductive age and its effects in masculine sexual health. In table 2 it was already shown its growing tendency in recent years for the State of Mexico.

However, beyond its dimensions and impact on reproductive age, its greater importance lies in the fact that it is detectable in early stages, hence, it is controllable, so the casualties attributable to this reason are avoidable. Nonetheless, in order to achieve an early detection, as it is in all of the cancers, the individual's action is of the utmost importance, besides the official programs directed to the early detection. This can be fundamental in the construction of demographic stages on this and the other detectable tumors and controllable in the early stages and that heavily influence, for instance, demographic dynamics, the resultant family arrangements due to one of the spouses' decease, the economic and institutional family impact and in general, population wellbeing.

AIDS

Acquired Immune Deficiency Syndrome, identified by the initials AIDS, is probably the most monitored infection in the world in the present times. In the State of Mexico the increasing rate of new cases has been reduced and consequently its impacts, however, the importance of this syndrome is, and will be, primordial; this cause of death presents a very important infectious inertia, which represents one of the greatest challenges in public health in the years to come.

It is important to notice that casualties caused by AIDS mainly take place in the 30 to 34 and 35 to 39 years of age groups. Nevertheless, these casualties largely correspond to people who got infected during adolescence or early adulthood, before 25 years of age. It is worthy remembering, as it is known, that one of the gravest problems of the infection is that numerous people are unaware they are infected. Similarly to the tumors' cases, previously mentioned, prevention and individual decisions are very important to identify the future stages of the infection development (see tables 6 and 7).

TABLE 6
STATE OF MEXICO: CASUALTIES CAUSED BY AIDS,
ACCORDING TO AGE GROUP, 1999-2003

Age Groups	1999	2000	2001	2002	2003
20-24	35	37	33	26	21
25-29	85	78	64	68	60
30-34	102	100	107	83	78
35-39	92	93	88	80	70
40-44	64	64	49	54	57
45-49	31	25	29	26	36
50-54	27	26	19	22	20
55-59	14	14	22	16	10
60-64	10	16	3	17	10

Source: ISEM 2006.

TABLE 7
STATE OF MEXICO: MORTALITY RATES BY AIDS, 1999-2003.
GENERAL POPULATION, RATES PER 100 000 INHABITANTS

Years	Casualties	Rate	Rank among all the causes
1999	481	3.75	17
2000	463	3.5	17
2001	434	3.24	17
2002	410	2.9	18
2003	383	2.7	18

Source: Salud México, 2004, 2003, 2002,2001.

TABLE 8
STATE OF MEXICO: MORTALITY RATE BY AIDS , 2000-2003.
RATE OBSERVED PER 100 000 INHABITANTS

Years	Men	Women
2000	12.2	2.2
2001	11.4	1.9
2002	11.1	1.8
2003	10.0	1.7

Source: Salud México, 2004, 2003, 2002,2001.

HIV-AIDS is also distinguished by the place it has among the causes of death in the State. It is surprising that a cause so recent has such an important place in the aggregated of causes of death; but it is also the fact it is an infection what contradicts the idea of a linear advancement in the epidemiological transition.

The differences by gender in mortality rates due to HIV-AIDS are outstanding. Even though in both genders, diminution on the impact is a constant.

In the tables presented it can be identified the importance of the main mortality rates of the chronic-degenerative diseases associated to reproductive health. As a matter of fact, casualties in the State of Mexico result of causes associated with reproductive health due to chronic-degenerative tend to preserve their level or even to increase it, with an exception in the case of HIV-AIDS, which seems to be decreasing in recent years. Thus, its importance will be primordial and the best expectations of diminution will be associated to changes in the individuals' attitude, who consider as indispensable the early detection and preventive actions. This evidently implies a different attitude towards risks and self-control of the autobiography; putting aside traditions, nature or destiny of totalitarian metaphysical beings.

Municipal differences in Fertility

Mexico has an important diversity and complexity in all of the social, political and economic dimensions. At the time, it represents a notorious demographic diversity, manifested as well in reproductive health. At municipal level, in the State of Mexico, this diversity is also manifested.

Inter Municipal comparison of the 2000 TFR

Total Fertility Rate (TFR) at municipal level has been available since it was estimated with the 2000 Population and Households Census (*Censo de Población y Vivienda 2000*). In table 9 the total fertility rates at municipal level for the State of Mexico are displayed. The presentation of different TFR is done in decreasing level and groups according to their dimensions. The places these rates have at national level are presented as well.

The level of the total fertility rate has been given much importance since its supposed association and identification with the theory of the demographic transition. It is also very important the structure of fertility and its generalized downward tendency. On the other side, it has been demonstrated in several populations that a descent in TFR does not automatically mean an improvement in the quality of life of the population.

In the State of Mexico we can locate municipalities where women continue giving birth to more than four children and in some other places up to five children on average. Conversely, it is also possible to observe municipalities with a TFR of slightly more than two children, it is, close to replacement, i.e. 2.1 children.

It is important to identify the association of the total fertility rate with the municipality's socio-demographic characteristics; for instance the state of urbanization or the wellbeing level, the indigenous population percentage, among other. In order to exemplify, this association is presented in graph 2.

There have been attempts to explain the level of the total fertility rate based on the theory of demographic transition and modernization, but it must be clarified that actually it is only possible to establish relations among variables. The explanatory character comes only from the used theories.

In graph 2, the close relation between the marginalization index and the total fertility rates by municipalities in the State of Mexico can be observed.

The close relation between specific rates of 20 to 24 years of age and TFR is observable in graph 3. This association can be very expressive, not only in the TFR total level, but also on its formation. It is very important to identify how the early fertility calendar is closely associated to its final level.

Hence, for the State of Mexico it is of the utmost importance to analyze the formation of the fertility's descent and apex. By apex it is understood the highest specific rate of fertility among the fertility structure of a population.

TABLE 9
STATE OF MEXICO: TOTAL FERTILITY RATES BY MUNICIPALITY, STATE RANK AND TFR SIZE

TFR of 4 children or more			
State rank	Rank among four and more	Municipality	TFR
1	1	San Felipe del Progreso	5.6967
2	2	Villa Victoria	5.4321
3	3	Donato Guerra	5.0976
4	4	Ixtapan del Oro	5.0483
5	5	Villa de Allende	4.8974
6	6	Ecatzingo	4.7478
7	7	Morelos	4.7309
8	8	Temascaltepec	4.5790
9	9	Sultepec	4.5479
10	10	Tejupilco	4.4379
11	11	Texcaltitlán	4.3772
12	12	Amanalco	4.3705
13	13	Villa del Carbón	4.3311
14	14	Zumpahuacán	4.3161
15	15	Villa Guerrero	4.2921
16	16	San Simón de Guerrero	4.2598
17	17	Acambay	4.2394
18	18	Aculco	4.2387
19	19	Otzoloapan	4.2090
20	20	El Oro	4.1980
21	21	Jiquipilco	4.1703
22	22	Almoloya de Alquisiras	4.1583
23	23	Ocuilan	4.1333
24	24	Malinalco	4.1316
25	25	Zacualpan	4.1026
26	26	Coatepec Harinas	4.1024
27	27	Chapa de Mota	4.0700
28	28	Temascalcingo	4.0643
29	29	Tlatlaya	4.0390
30	30	Temoaya	4.0091

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TABLE 9
STATE OF MEXICO: TOTAL FERTILITY RATES BY MUNICIPALITY, STATE RANK AND TFR SIZE (CONTINUATION)

TFR of four children and more			
State rank	Rank among four and more	Municipality	TFR
31	31	Santo Tomás	4.0015
32	1	Amatepec	3.8245
33	2	Zacazonapan	3.7234
34	3	Almoloya de Juárez	3.7163
35	4	Otzolotepec	3.7064
36	5	Timilpan	3.6093
37	6	Ixtapan de la Sal	3.6071
38	7	Ixtlahuaca	3.5891
39	8	Atlacomulco	3.5309
40	9	Jilotepec	3.4031
41	10	Chapultepec	3.4004
42	11	Atizapán	3.3779
43	12	Polotitlán	3.3542
44	13	Valle de Bravo	3.2815
45	14	Almoloya del Río	3.2533
46	15	Tenancingo	3.2330
47	16	Joquicingo	3.2096
48	17	Zinacantepec	3.1997
49	18	Tianguistenco	3.1845
50	19	Nextlalpan	3.1817
51	20	Tenango del Valle	3.1634
52	21	Atlautla	3.1349
53	22	Temascalapa	3.1335
54	23	Xalatlaco	3.1156
55	24	Juchitepec	3.1018
56	25	Nopaltepec	3.0869
57	26	Axapusco	3.0623
58	27	Isidro Fabela	3.0396
59	28	San Antonio la Isla	3.0339

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TABLE 9
STATE OF MEXICO: TOTAL FERTILITY RATES BY MUNICIPALITY, STATE RANK AND TFR SIZE (CONTINUATION)

State rank	TFR of four children and more: Rank among four and more	Municipality	TFR
60	29	San Mateo Atenco	3.0315
61	30	Coyotepec	3.0279
62	31	Chimalhuacán	3.0274
63	32	Jocotitlán	3.0245
64	33	Teoloyucan	3.0184
65	34	Temamatla	3.0109
66	1	Tonatico	2.9925
67	2	Texcalyacac	2.9826
68	3	Ozumba	2.9617
69	4	Lerma	2.9589
70	5	Mexicaltzingo	2.9416
71	6	Calimaya	2.9408
72	7	Rayón	2.9385
73	8	Hueypoxtla	2.9344
74	9	Zumpango	2.9277
75	10	Huehuetoca	2.9191
76	11	Otumba	2.9051
77	12	Jilotzingo	2.8989
78	13	Chiautla	2.8898
79	14	Capulhuac	2.8731
80	15	Tepetlaoxtoc	2.8591
81	16	Valle de Chalco Solidaridad	2.8587
82	17	San Martín de las Pirámides	2.8585
83	18	Amecameca	2.8529
84	19	Chalco	2.8419
85	20	Xonacatlán	2.8169
86	21	Ayapango	2.7941
87	22	Ixtapaluca	2.7857
88	23	Ocoyoacac	2.7854

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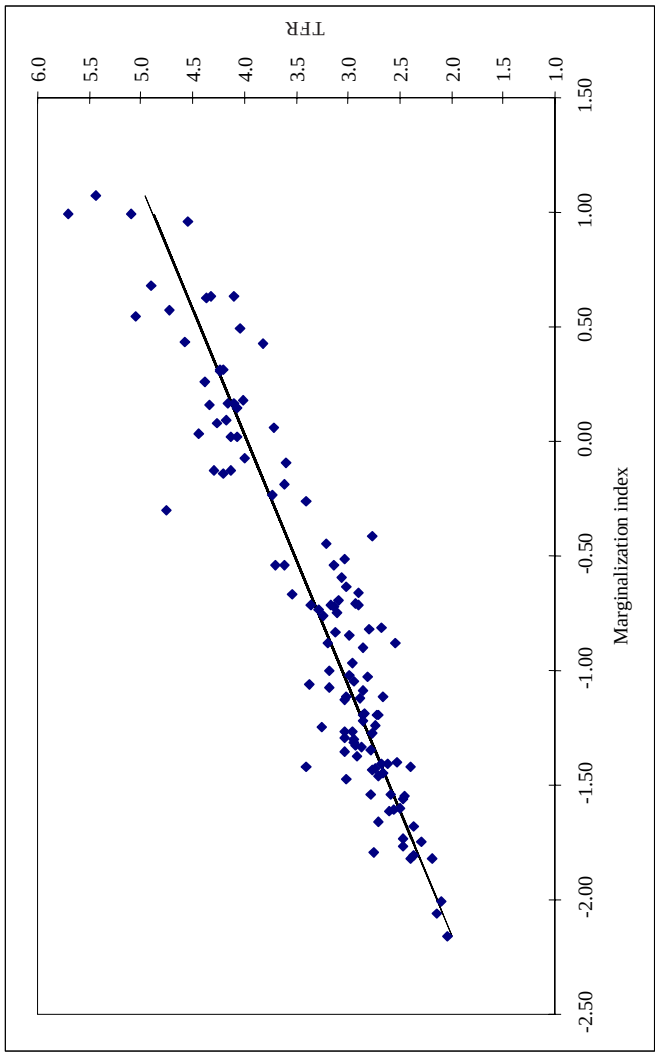
CUADRO9
STATE OF MEXICO: TOTAL FERTILITY RATES BY MUNICIPALITY, STATE RANK AND TFR SIZE (CONTINUATION)

State rank	TFR of four children and more: Rank among four and more	Municipality	TFR
89	24	Teotihuacan	2.7726
90	25	Soyaniquilpan de Juárez	2.7703
91	26	Paz, La	2.7686
92	27	Jaltenco	2.752
93	28	Tequixquiac	2.7423
94	29	Chicoloapan	2.7328
95	30	Atenco	2.7269
96	31	Melchor Ocampo	2.7039
97	32	Papalotla	2.7038
98	33	Tultepec	2.7031
99	34	Tepetlixpa	2.6832
100	35	Acolman	2.6717
101	36	Chiconcuac	2.6610
102	37	Apaxco	2.6592
103	38	Nicolás Romero	2.6156
104	39	Tecámac	2.6061
105	40	Tepotzotlán	2.5875
106	41	Toluca	2.5651
107	42	Tenango del Aire	2.5439
108	43	Tezoyuca	2.5317
109	44	Ecatepec de Morelos	2.4920
110	45	Tlalmanalco	2.4715
111	46	Tultitlán	2.4700
112	47	Naucalpan de Juárez	2.4663
113	48	Texcoco	2.4510
114	49	Cocotitlán	2.3961
115	50	Cuautitlán	2.3875
116	51	Atizapán de Zaragoza	2.3713
117	52	Huixquilucan	2.3702
118	53	Nezahualcóyotl	2.2888
119	54	Tlalnepantlad de Baz	2.1862
120	55	Metepec	2.1467
121	56	Cuautitlán Izcalli	2.1013
122	57	Coacalco de Berriozábal	2.0380

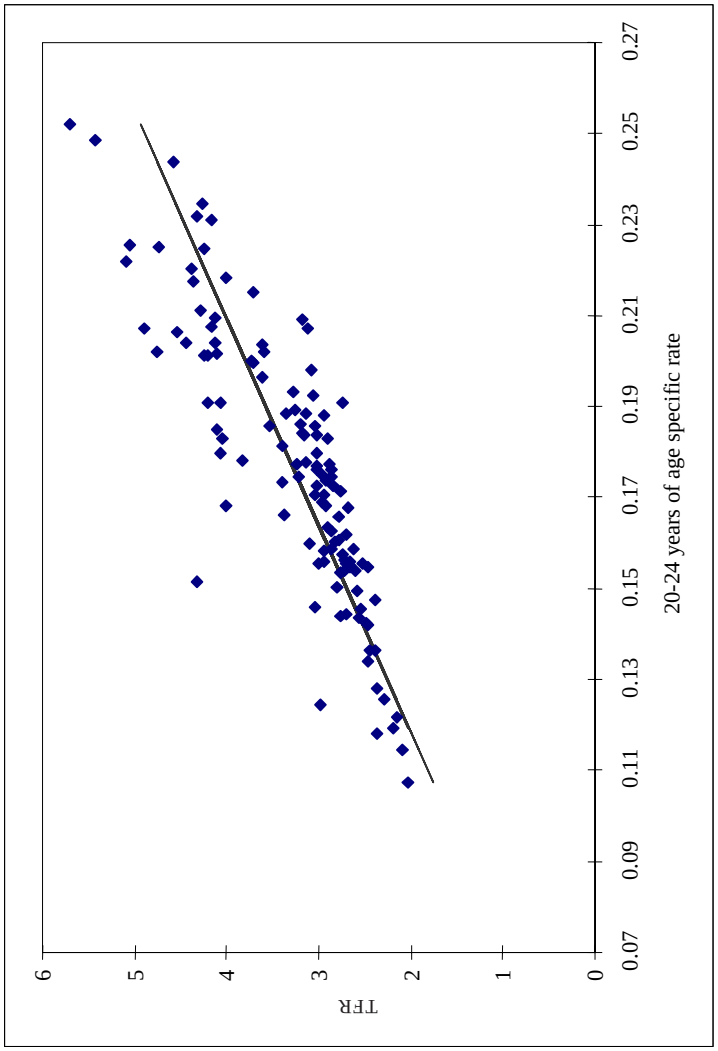
Source: INEGI 2006.

GRAPH 2
STATE OF MEXICO. MARGINALIZATION INDEX AND MUNICIPAL TOTAL FERTILITY RATE, 2000



Correlation coefficient R^2_ 0.86205625
Source: Own calculations based on the TFR from the year 2000 census, marginalization index from Conapo.

GRAPH 3
RELATION AMONG 20-24 YEARS OF AGE SPECIFIC RATE AND TFR, 2000



Correlation coefficient R^2 _ 0.72501824.
Source: Own calculations based on the TFR from the year 2000 census, marginalization index from Conapo.

In respect to fertility at municipal level, the most recent data available are the corresponding to the average number of children born alive per woman in the different age groups for the year 2005.

In table 10 the average number of children for the 20 to 24 and 25 to 29 years of age groups by municipality are presented, sorted from top to bottom according to the average of children of women of 25 to 29 years of age.[4] The municipal contrasts are outstanding and, once more, their association with the municipal socio-demographic characteristics.

Hence, while the in less developed municipalities the children averages are extremely high before the 30 years of age, in more developed municipalities the averages are quite low and very close to what their total maximum level could be.

Indexes of development and reproductive health

From the demographic transition theory, TFR is associated in an inversely proportional manner to modernization; the greater the modernization, the lower the fertility. This relation proved already for the State of Mexico is also associated to the fertility apex. It is noteworthy that the existent relation is shown, but not an integral explanation of the levels of the fertility definition, for the different populations.

Specific rates of fertility and the marginalization index

Specific rates of fertility, apex of the municipalities sorted by their respective marginalization index can be observed in table 11. This table shows a very interesting alternative relation, since it states the future changes in municipal fertility of the State.

Some municipalities, the ones with the lesser marginalization, are cutting down their fertility, and besides they are postponing their apex from the 25 to 29 years of age group, for instance Metepec and Cuautitlán Izacalli. However, there are also low-marginalization municipalities where this process has not taken place yet, such as the municipalities of Tlanepantla de Baz and

[4] The average of children born alive at specific rates is used, since they are comparable averages, whereas the total average distorts the population structure.

TABLE 10
STATE OF MEXICO: AVERAGE OF CHILDREN BORN ALIVE AT 20-24 AND 25-29 YEARS OF AGE, BY MUNICIPALITY, 2005

State rank	Municipality	Average of children born alive at 20-24 years of age	Average of children born alive at 25-29 years of age
1	124 San José del Rincón	1.16	2.60
2	032 Donato Guerra	1.31	2.48
3	123 Luvianos	0.95	2.47
4	114 Villa Victoria	1.14	2.29
5	097 Texcaltitlán	1.05	2.26
6	007 Amanalco	1.09	2.23
7	021 Coatepec Harinas	1.14	2.23
8	074 San Felipe del Progreso	1.05	2.21
9	105 Tlatlaya	1.02	2.17
10	111 Villa de Allende	1.05	2.17
11	066 Otzoloapan	0.89	2.16
12	086 Temascaltepec	1.07	2.16
13	080 Sultepec	0.94	2.14
14	087 Temoaya	1.06	2.14
15	041 Ixtapan del Oro	1.29	2.13
16	056 Morelos	1.20	2.13
17	113 Villa Guerrero	1.13	2.13
18	004 Almoloya de Alquisiras	1.06	2.12
19	082 Tejupilco	1.00	2.12
20	078 Santo Tomás	1.12	2.09
21	034 Ecatzingo	1.12	2.07
22	008 Amatepec	0.84	2.06
23	063 Ocuilan	1.05	2.06
24	067 Otzolotepec	1.08	2.06
25	077 San Simón de Guerrero	1.10	2.04
26	112 Villa del Carbón	1.10	2.03
27	001 Acambay	0.88	1.99
28	003 Aculco	1.08	1.99
29	043 Xalatlaco	1.10	1.98

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TABLE 10
STATE OF MEXICO: AVERAGE OF CHILDREN BORN ALIVE AT 20-24 AND 25-29 YEARS OF AGE, BY MUNICIPALITY, 2005 (CONTINUATION)

State rank	Municipality	Average of children born alive at 20 - 24 years of age	Average of children born alive at 25 - 29 years of age
30	047 Jiquipilco	1.00	1.97
31	119 Zumpahuacán	0.81	1.97
32	085 Temascalcingo	0.85	1.94
33	026 Chapa de Mota	1.00	1.93
34	064 El Oro	0.89	1.92
35	040 Ixtapan de la Sal	0.94	1.92
36	116 Zacazonapan	0.89	1.92
37	117 Zacualpan	0.95	1.88
38	102 Timilpan	0.85	1.86
39	005 Almoloya de Juárez	0.95	1.85
40	023 Coyotepec	1.06	1.85
41	052 Malinalco	1.02	1.85
42	083 Temamatla	1.12	1.85
43	059 Nextlalpan	1.04	1.83
44	061 Nopaltepec	0.96	1.83
45	016 Axapusco	0.94	1.80
46	084 Temascalapa	1.01	1.79
47	090 Tenango del Valle	0.98	1.79
48	014 Atlacomulco	0.84	1.78
49	019 Capulhuac	0.98	1.78
50	110 Valle de Bravo	0.90	1.78
51	035 Huehuetoca	1.02	1.77
52	089 Tenango del Aire	0.99	1.77
53	091 Teoloyucan	1.00	1.76
54	042 Ixtlahuaca	0.81	1.75
55	011 Atenco	1.01	1.74
56	015 Atlautla	0.82	1.74
57	031 Chimalhuacán	0.94	1.74
58	076 San Mateo Atenco	0.96	1.74

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TABLE 10
STATE OF MEXICO: AVERAGE OF CHILDREN BORN ALIVE AT 20-24 AND 25-29 YEARS OF AGE, BY MUNICIPALITY, 2005 (CONTINUATION)

State rank	Municipality	Average of children born alive at 20-24 years of age	Average of children born alive at 25-29 years of age
59	101 Tianguistenco	0.95	1.74
60	018 Calimaya	0.91	1.72
61	045 Jilotepec	0.87	1.72
62	088 Tenancingo	0.92	1.72
63	118 Zinacantepec	0.91	1.72
64	038 Isidro Fabela	0.98	1.69
65	046 Jilotzingo	1.01	1.69
66	050 Juchitepec	0.94	1.69
67	071 Polotitlán	0.84	1.69
68	096 Tequixquiac	0.84	1.69
69	025 Chalco	0.93	1.68
70	065 Otumba	0.95	1.68
71	122 Valle de Chalco Solidaridad	0.93	1.67
72	115 Xonacatlán	0.95	1.67
73	072 Rayón	0.76	1.66
74	036 Hueypoxtla	0.89	1.65
75	048 Jocotitlán	0.78	1.65
76	100 Tezoyuca	0.95	1.65
77	010 Apaxco	0.86	1.64
78	039 Ixtapaluca	0.87	1.64
79	093 Tepetlaoxtoc	0.90	1.64
80	125 Tonanitla	0.92	1.64
81	028 Chiautla	0.80	1.63
82	049 Joquicingo	0.85	1.63
83	098 Texcalyacac	0.80	1.63
84	017 Ayapango	0.97	1.62
85	029 Chicoloapan	0.93	1.62
86	068 Ozumba	0.82	1.62
87	079 Soyaniquilpan de Juárez	0.87	1.62

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TABLE 10
STATE OF MEXICO: AVERAGE OF CHILDREN BORN ALIVE AT 20-24 AND 25-29 YEARS OF AGE, BY MUNICIPALITY, 2005 (CONTINUATION)

State rank	Municipality	Average of children born alive at 20-24 years of age	Average of children born alive at 25-29 years of age
88	094 Tepetlixpa	0.88	1.62
89	051 Lerma	0.82	1.61
90	053 Melchor Ocampo	0.94	1.60
91	075 San Martín de las Pirámides	0.85	1.59
92	070 La Paz	0.88	1.58
93	120 Zumpango	0.87	1.58
94	027 Chapultepec	0.83	1.56
95	092 Teotihuacan	0.83	1.56
96	103 Tlalmanalco	0.87	1.55
97	009 Amecameca	0.87	1.54
98	012 Atizapán	1.02	1.54
99	062 Ocoyoacac	0.82	1.54
100	069 Papalotla	0.83	1.54
101	107 Tonatico	0.82	1.54
102	108 Tultepec	0.84	1.54
103	002 Acolman	0.84	1.53
104	030 Chiconcuac	0.81	1.53
105	055 Mexicaltzingo	0.93	1.53
106	073 San Antonio la Isla	0.81	1.53
107	060 Nicolás Romero	0.84	1.52
108	081 Tecámac	0.86	1.50
109	095 Tepotzotlán	0.76	1.48
110	006 Almoloya del Río	0.82	1.45
111	044 Jaltenco	0.71	1.44
112	022 Cocotitlán	0.84	1.43
113	099 Texcoco	0.71	1.40
114	106 Toluca	0.72	1.40
115	024 Cuautitlán	0.72	1.39

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TABLE 10
STATE OF MEXICO: AVERAGE OF CHILDREN BORN ALIVE AT 20-24 AND 25-29 YEARS OF AGE, BY MUNICIPALITY, 2005
(CONTINUATION)

State rank	Municipality	Average of children born alive at 20-24 years of age	Average of children born alive at 25-29 years of age
116	109 Tultitlán	0.73	1.38
117	033 Ecatepec de Morelos	0.72	1.35
118	037 Huixquilucan	0.64	1.28
119	057 Naucalpan de Juárez	0.71	1.28
120	020 Coacalco de Berriozábal	0.66	1.27
121	054 Metepec	0.61	1.21
122	058 Nezahualcóyotl	0.64	1.21
123	013 Atizapán de Zaragoza	0.62	1.20
124	104 Tlalnepantla de Baz	0.62	1.15
125	121 Cuautitlán Izcalli	0.58	1.13

Source: INEGI 2006b.

Naucalpan de Juárez. This transformation in the fertility structure is caused by its reduction in the extreme age groups and the low levels this phenomenon has in this municipalities.

On the contrary, there are municipalities with high marginalization, where the fertility apex is located in the 25 to 29 years of age group. For instance, Villa Victoria and Villa de Allende, which can be explained because these municipalities have a high fertility rate, since a lot of women start their reproduction at a very early age and finish it late.

TABLE 11
STATE OF MEXICO: FERTILITY ALTERNATIVE APEX, MARGINALIZATION INDEX AND DIFFERENCE

Municipal rank	Municipalities	Specific rates of fertility by group 20-24	25-29	Marginalization index	Difference between 20-24 and 25-29
1	020 Coacalco	0.1075	0.1238	-2.1633	-0.0163
2	054 Metepec	0.1216	0.1253	-2.0631	-0.0037
3	121 Cuautitlán Izcalli	0.1145	0.1194	-2.0098	-0.0049
4	104 Tlalnepantla	0.1193	0.1161	-1.8233	0.0032
5	024 Cuautitlán	0.1363	0.1343	-1.8178	0.002
6	013 Atizapán de Zaragoza	0.1281	0.1307	-1.8038	-0.0026
7	044 Jaltenco	0.1575	0.1584	-1.7934	-0.0009
8	109 Tultitlán	0.1418	0.1411	-1.7693	0.0007
9	058 Nezahualcóyotl	0.1255	0.1258	-1.7496	-0.0003
10	057 Naucalpan	0.1342	0.1307	-1.7301	0.0035
11	037 Huixquilucan	0.1181	0.1311	-1.6814	-0.013
12	108 Tultepec	0.1556	0.1431	-1.6592	0.0125
13	081 Tecámac	0.1537	0.1422	-1.6139	0.0115
14	106 Toluca	0.1435	0.1489	-1.6066	-0.0054
15	033 Ecatepec	0.1424	0.1359	-1.5981	0.0065
16	103 Tlalmanalco	0.1545	0.1234	-1.5580	0.0311
17	099 Texcoco	0.1366	0.133	-1.5500	0.0036
18	095 Tepotzotlán	0.1494	0.1403	-1.5422	0.0091
19	039 Ixtapaluca	0.166	0.1462	-1.5403	0.0198
20	091 Teoloyucan	0.177	0.1666	-1.4758	0.0104
21	053 Melchor Ocampo	0.1617	0.1464	-1.4567	0.0153
22	030 Chiconcuac	0.1549	0.1481	-1.4465	0.0068
23	070 La Paz	0.1536	0.1429	-1.4367	0.0107
24	029 Chicoloapan	0.1537	0.1478	-1.4298	0.0059
25	027 Chapultepec	0.1812	0.1627	-1.4221	0.0185
26	022 Cocotitlán	0.1475	0.1653	-1.4185	-0.0178
27	060 Nicolás Romero	0.1586	0.1367	-1.4082	0.0219

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TABLE 11
STATE OF MEXICO: FERTILITY ALTERNATIVE APEX, MARGINALIZATION INDEX AND DIFFERENCE
(CONTINUATION)

Municipal rank	Municipalities	Specific rates of fertility by group 20-24	25-29	Marginalization index	Difference between 20-24 and 25-29 years of age
28	002 Acolman	0.1547	0.1469	-1.4080	0.0078
29	100 Tezoyuca	0.1555	0.1349	-1.3982	0.0206
30	035 Huehuetoca	0.1739	0.1541	-1.3719	0.0198
31	076 San Mateo Atenco	0.1856	0.1704	-1.3564	0.0152
32	062 Ocoyoacac	0.1607	0.1574	-1.3443	0.0033
33	019 Capulhuac	0.174	0.1483	-1.3328	0.0257
34	120 Zumpango	0.1683	0.161	-1.3238	0.0073
35	055 Mexicaltzingo	0.1584	0.1308	-1.3123	0.0276
36	072 Rayón	0.1881	0.1679	-1.2975	0.0202
37	073 San Antonio la Isla	0.1704	0.1723	-1.2950	-0.0019
38	092 Teotihuacan	0.1715	0.1398	-1.2752	0.0317
39	051 Lerma	0.1748	0.1668	-1.2658	0.0080
40	023 Coyotepec	0.1836	0.1596	-1.2638	0.0240
41	006 Almoloya del Río	0.1891	0.1774	-1.2435	0.0117
42	096 Tequixquiac	0.1910	0.1403	-1.2412	0.0507
43	122 Valle de Chalco S.	0.1762	0.1493	-1.2228	0.0269
44	009 Amecameca	0.1625	0.1563	-1.1965	0.0062
45	011 Atenco	0.1563	0.1475	-1.1955	0.0088
46	069 Papalotla	0.1445	0.1189	-1.1953	0.0256
47	025 Chalco	0.1726	0.1449	-1.1866	0.0277
48	031 Chimalhuacán	0.1799	0.1588	-1.1239	0.0211
49	028 Chiautla	0.1775	0.1557	-1.1178	0.0218
50	010 Apaxco	0.1560	0.1356	-1.1135	0.0204
51	083 Temamatla	0.1763	0.1586	-1.1118	0.0177
52	075 San Martín de las P.	0.1747	0.1535	-1.0898	0.0212
53	059 Nextlalpan	0.2090	0.1667	-1.0743	0.0423
54	012 Atizapán	0.1662	0.1787	-1.0591	-0.0125

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TABLE 11
STATE OF MEXICO: FERTILITY ALTERNATIVE APEX, MARGINALIZATION INDEX AND DIFFERENCE
(CONTINUATION)

Municipal rank	Municipalities	Specific rates of fertility by group 20-24	25-29	Marginalization index	Difference between 20-24 and 25-29
55	018 Calimaya	0.1705	0.1428	-1.0489	0.0277
56	115 Xonacatlán	0.1602	0.1594	-1.0287	0.0008
57	098 Texcalyacac	0.1243	0.1772	-1.0187	-0.0529
58	101 Tianguistenco	0.1842	0.1567	-1.0030	0.0275
59	068 Ozumba	0.1691	0.1474	-0.9686	0.0217
60	093 Tepetlaoxtoc	0.1585	0.1607	-0.8968	-0.0022
61	118 Zinacantepec	0.1861	0.1749	-0.8830	0.0112
62	089 Tenango del Aire	0.1455	0.1253	-0.8768	0.0202
63	107 Tonatico	0.1555	0.1600	-0.8436	-0.0045
64	043 Xalatlaco	0.2070	0.1658	-0.8358	0.0412
65	017 Ayapango	0.1504	0.1509	-0.8202	-0.0005
66	094 Tepetlixpa	0.1677	0.1372	-0.8143	0.0305
67	088 Tenancingo	0.1775	0.1626	-0.7597	0.0149
68	050 Juchitepec	0.1597	0.1601	-0.7442	-0.0004
69	110 Valle de Bravo	0.1931	0.1630	-0.7331	0.0301
70	084 Temascalapa	0.1779	0.1682	-0.7168	0.0097
71	090 Tenango del Valle	0.1839	0.1504	-0.7133	0.0335
72	046 Jilotzingo	0.1829	0.1977	-0.7128	-0.0148
73	071 Polotitlán	0.1884	0.1812	-0.7115	0.0072
74	036 Hueypoxtla	0.1559	0.1468	-0.7056	0.0091
75	061 Nopaltepec	0.1982	0.1562	-0.6935	0.0420
76	014 Atlacomulco	0.1859	0.2043	-0.6676	-0.0184
77	065 Otumba	0.1636	0.1575	-0.6588	0.0061
78	048 Jocotitlán	0.1726	0.1704	-0.6306	0.0022
79	016 Axapusco	0.1923	0.1290	-0.5925	0.0633
80	040 Ixtapan de la Sal	0.1965	0.1842	-0.5430	0.0123
81	015 Atlautla	0.1885	0.1453	-0.5402	0.0432

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TABLE 11
STATE OF MEXICO: FERTILITY ALTERNATIVE APEX, MARGINALIZATION INDEX AND DIFFERENCE
(CONTINUATION)

Municipal rank	Municipalities	Specific rates of fertility by group 20-24	25-29	Marginalization index	Difference between 20-24 and 25-29
82	067 Otzolotepec	0.2153	0.2091	-0.5372	0.0062
83	038 Isidro Fabela	0.1458	0.1632	-0.5121	-0.0174
84	049 Joquicingo	0.1747	0.1910	-0.4489	-0.0163
85	079 Soyaniquilpan de Juárez	0.1441	0.1679	-0.4115	-0.0238
86	034 Ecatzingo	0.2021	0.2435	-0.3014	-0.0414
87	045 Jilotepec	0.1735	0.1867	-0.2581	-0.0132
88	116 Zacazonapan	0.2000	0.2308	-0.2323	-0.0308
89	102 Timilpan	0.2035	0.1856	-0.1895	0.0179
90	064 El Oro	0.1910	0.2119	-0.1407	-0.0209
91	052 Malinalco	0.2041	0.2045	-0.1275	-0.0004
92	113 Villa Guerrero	0.2110	0.2186	-0.1249	-0.0076
93	042 Ixtlahuaca	0.2020	0.1941	-0.0941	0.0079
94	078 Santo Tomás	0.1683	0.1966	-0.0712	-0.0283
95	063 Ocuilan	0.2097	0.1780	0.0191	0.0317
96	085 Temascalcingo	0.1907	0.2115	0.0220	-0.0208
97	082 Tejupilco	0.2039	0.2244	0.0344	-0.0205
98	005 Almoloya de Juárez	0.1997	0.1982	0.0608	0.0015
99	077 San Simón de Guerrero	0.2347	0.2143	0.0774	0.0204
100	047 Jiquipilco	0.2310	0.2139	0.0919	0.0171
101	026 Chapa de Mota	0.1799	0.2186	0.1475	-0.0387
102	112 Villa del Carbón	0.2318	0.2147	0.1592	0.0171
103	004 Almoloya de Alquisiras	0.2076	0.2229	0.1648	-0.0153
104	021 Coatepec Harinas	0.2016	0.1984	0.1679	0.0032
105	087 Temoaya	0.2185	0.2144	0.1822	0.0041
106	097 Texcaltitlán	0.2201	0.2085	0.2593	0.0116
107	001 Acambay	0.2011	0.2235	0.3077	-0.0224
108	003 Aculco	0.2246	0.2246	0.3116	0.0000
109	066 Otzoloapan	0.2011	0.2420	0.3145	-0.0409

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TABLE 11
STATE OF MEXICO: FERTILITY ALTERNATIVE APEX, MARGINALIZATION INDEX AND DIFFERENCE
(CONTINUATION)

Municipal rank	Municipalities	Specific rates of fertility by group 20-24	25-29	Marginalization index	Difference between 20-24 and 25-29
110	008 Amatepec	0.1780	0.2008	0.4276	-0.0228
111	086 Temascaltepec	0.2437	0.2200	0.4308	0.0237
112	105 Tlatlaya	0.1829	0.2077	0.4956	-0.0248
113	041 Ixtapan del Oro	0.2254	0.1895	0.5497	0.0359
114	056 Morelos	0.2252	0.2380	0.5712	-0.0128
115	007 Amanalco	0.2175	0.1840	0.6267	0.0335
116	117 Zacualpan	0.1849	0.1765	0.6304	0.0084
117	119 Zumpahuacán	0.1514	0.2218	0.6340	-0.0704
118	111 Villa de Allende	0.2070	0.2561	0.6792	-0.0491
119	080 Sultepec	0.2062	0.2200	0.9610	-0.0138
120	074 San Felipe del Progreso	0.2520	0.2749	0.9929	-0.0229
121	032 Donato Guerra	0.2219	0.2368	0.9941	-0.0149
122	114 Villa Victoria	0.2487	0.2548	1.0765	-0.0061

Source; Own elaboration and data from INEGI and Conapo, 2006.

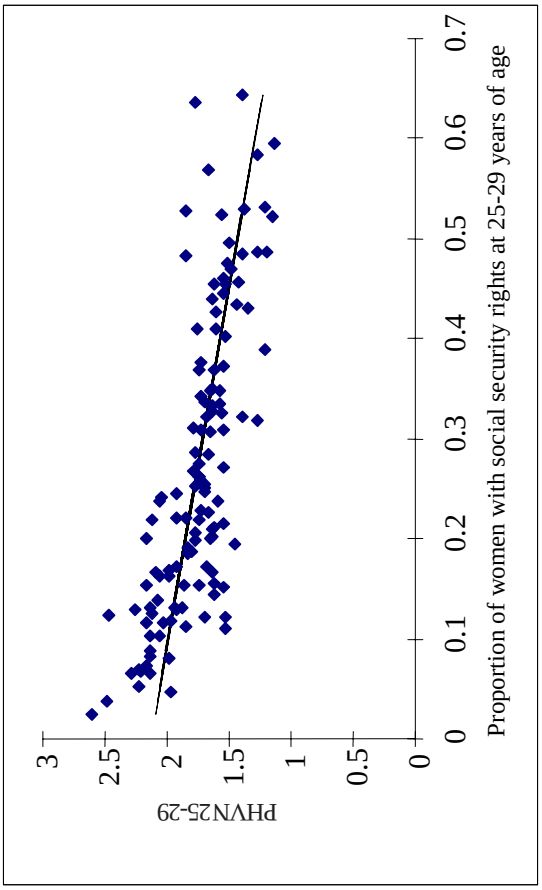
Legal rights to health services and fertility

Within the demographic transition and modernization the legal rights to health systems (*derechohabiencia*) can also be considered as a variable that determines fertility. Nowadays, however, the legal right to health systems can mean much more than the simple access to health services.

It is worth mentioning that this work only presents the social *derechohabiencia*, it is, the coverage of health and social services provided by the institutions of public health, such as the services of the Mexican Institute of Social Security (*Instituto Mexicano del Seguro Social, IMSS*), the Institute of Security and Social Services for the Laborers of the State (*Instituto de Seguridad y Servicios Sociales para los Trabajadores del Estado, ISSSTE*), the Institute of Social Security of the State of Mexico and Municipalities (*Instituto de Seguridad Social del Estado de México y Municipios, ISSEMyM*) as well as other services provided by the State.

The relation between the proportion of women with *derechohabiencia* in the 25 to 29 years of age groups and the average children of theirs is clearly observed in graph 4. It is worth mentioning that single direct association can be very limited. In Mexico, *derechohabiencia* is associated to the advantages of the Wellbeing State, with a formal job and access to a variety of credits and corporate advantages. This is normally associated to people with a relatively high schooling level, stable residence, most of the times urban, who keep an traditional project of life; even if their incomes can be medium or relatively low.

GRAPH 4
STATE OF MEXICO: PROPORTION OF WOMEN OF 25-29 YEARS OF AGE WITH SOCIAL SECURITY RIGHTS AND PHNV AT 25-29 YEARS OF AGE



Source: INEGI, 2006.

Future reproductive health scenarios in the State of Mexico

Commonly, demographic scenarios are worked with mid-high and low level hypotheses. But in a context where reproductive health tends to «improve» in its principal variables, the hypotheses for future scenarios can be stated is this way, they have to be stated with a broader theoretical support though, and later the possible numeric estimations will be established, located in a moment and specific time.

In the next parts two possible scenarios on the most important changes in reproductive health in the State of Mexico are presented.

The constant scenario

A first scenario will be the maintenance of the general advances and the possible convergence of municipal level indexes; the linear growth and the repetition of experiences in populations with different characteristics and historical processes. In this scenario, it would be expected, for instance, that the total fertility rate, nuptiality calendar and the descent of the main causes of death due to chronic reasons associated to reproductive health will maintain the tendencies of the country's average. This scenario is possible, however, not sustainable.

In this perspective, the changes could be explained from the economic situations, in the modernization of the regions and municipalities of the State of Mexico, it is, the explanation pointed out in this works' first part.

Individualization scenario

In the individuality scenario, the subject regains control of its autobiography. This is evidently a very significant perspective change. In the last years, in general, the individual has been forgotten in favor of explaining fertility and reproductive health as a whole. Even if reproductive health takes place at the individuals'

level, it is seen in a collective and group manner. It is related to incise, from the international and obviously, from the national public policies. Even so, it is important to reconsider the individual, more precisely the individualization.

As a matter of fact, individualization does not mean atomization, isolation, solitude, disconnection or the end of every kind of society. Individualization firstly means the process of detachment…

> ...and secondly, the rejoining process in favor of new ways of life of the industrial society substituting the old ones, where the individuals must produce, represent and combine on their own their new autobiographies (Beck, 1997: 28).

Nevertheless, detachment and rejoining do not happen casually nor voluntarily, neither due to certain historical conditions but at once, because of the general conditions of the Wellbeing State[5] (Beck, 1997).

Beck concludes:

> Individualization is a compulsion, but a compulsion to fabricate, self-design and self-stage not only the own biography, but also their commitments and relationships' networks at the extent the preferences and life phases change; a compulsion that, obviously, is fulfilled under the conditions and general models of the Wellbeing State, such as education system (degrees' accomplishment), labor market, laboring and social laws and rights, real estate market, etc. Even marriage and family traditions are becoming dependent from decision-making, and all its contradictions must be experimented as personal risks (Beck, 1997: 29-30).

Individualization occurred in a generalized manner in occidental countries is only perceptible in small social groups of countries such as Mexico; however, those are every day increasing their number. What is more, it seems to be explained by stages in people's lives. The said growing groups are the ones linked to the social security that a formal job provides and they have acceded to the material benefits of the Wellbeing State, what is largely related to cities and particularly to the major ones.

This individualization supported by the benefits of the Wellbeing State allows us to explain at a great extent the actions related to reproductive health of some individuals belonging to certain social groups. Nonetheless, for that

[5] In the economic sense, the Wellbeing State means the extension of security to the income and employment, as citizens' rights. In the moral sense it promises a greater universal justice and people's solidarity (Contreras, 2000).

individualization to exist there would have to be also a perception of a society of risk.

Therefore, individualization in a context of society of risk can explain the differential changes in reproductive health and the demographic dynamics in general. These cannot be automatically explained as a result of a socioeconomic characteristic shared by the population, as schooling or the residence in a community of a given size. These socioeconomic characteristics can be associated but are not causal. As it has been tried to point out, this would be the constant scenario.

On its own, the theory of society of risk interprets the forms of how the end of nature and traditions occur. Hence, the greater a risk or threat is, the strongest the obligation and power to change the current events. This is clearly linked to an attitude we the individuals must preserve on prevention and early diagnostic of the chronic-degenerative mentioned in this work. This individual attitude, but socially shared, would create the conditions for a definitely different scenario. The individualization scenario, where the impact of morbidity and mortality result of these causes would be much lesser.

Thereby, considering the risk in all of the spheres of life is a change of considerable size. This is the break with centuries of tradition and alleged knowledge. The notion of risk alludes the dethroning of the illustrated premise that to a greater knowledge of the social and nature, the greater the control of the historical becoming (Sabido, 2003).

The society of risk starts with two fundamental transformations: first, the end of the nature; second, the end of tradition. During the XX Century humanity stopped worrying about the threats of earthquakes, inundations, epidemics and poor harvests, etc and started to worry about what we humans have done. The end of tradition essentially implies being in a world where life is no longer lived as a destiny. This is the process Beck calls individualization (Giddens, 1998).

Hence, the individualization scenario, that of the self-control of life and the entrance to the society of risk implies breaking with the nature and tradition's dominions. These elements combine for the understanding of, for instance, the coitus and pregnancy as something not imposed by nature, as a condition that can be unfulfilled. But it also can remit us to a notion where the proto-genesic interval can be prolonged until the couple decides, clearly against tradition.

However, for all this to happen at a general level it must be considered as necessary the participation of the benefits of the Wellbeing State; for instance the social *derechohabiencia*. Medical coverage allows coping with the diseases that in most of the occasions affect people with the least resources. In the coming years and according to its actual effectiveness, the Seguro Popular (State's social security specially directed to people with no social security of any kind) will be able to importantly help most of the people either self employed or in the informal sector, in the rural or urban sectors.

These individual decisions and ruptures with natural laws, with traditions as metaphysical beings, among other, and with the prospect of a predetermined destiny, will allow the construction of scenarios different to the ones associated with the tradition of demographic transition.

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