Mexico

Social Sectors and Reproduction in Mexico

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PREFACE

The Demographic and Health Surveys (DHS) Program was initiated in September 1984 and designed as a follow-on to the World Fertility Survey (WFS) and Contraceptive Prevalence Surveys (CPS). The objectives of the program include the expansion of the international population and health data base in Africa, Asia, and Latin America to assist in policy formulation and implementation and the development of skills and resources in survey design and analysis among those working in the program.

With funding provided by the U.S. Agency for International Development, DHS is implemented by the Institute for Resource Development/Macro Systems, Inc. and the Population Council, a major subcontractor. The Population Council, an international nonprofit organization established in 1952, undertakes social and health science programs and research relevant to developing countries and conducts biomedical research to develop and improve contraceptive technology. The Council provides advice and technical assistance to governments, international agencies, and nongovernmental organizations, and it disseminates information on population issues through publications, conferences, seminars, and workshops.

The Population Council was responsible for the establishment, funding, and provision of technical assistance to as many as 25 further analysis studies, in countries where DHS surveys were conducted during the years 1986 and 1987. The studies focus on one or more of the topics covered in the DHS survey, such as fertility, contraception, maternal and child health, breastfeeding, marriage and fertility preferences; their interrelationships, for example, the effects of the proximate determinants of fertility and the determinants of contraceptive use or child survival; and their correlation with background variables. Although the principal source of data is the DHS survey, comparisons with previous WFS, CPS, or other surveys in order to examine trends over time are included in some of the studies.
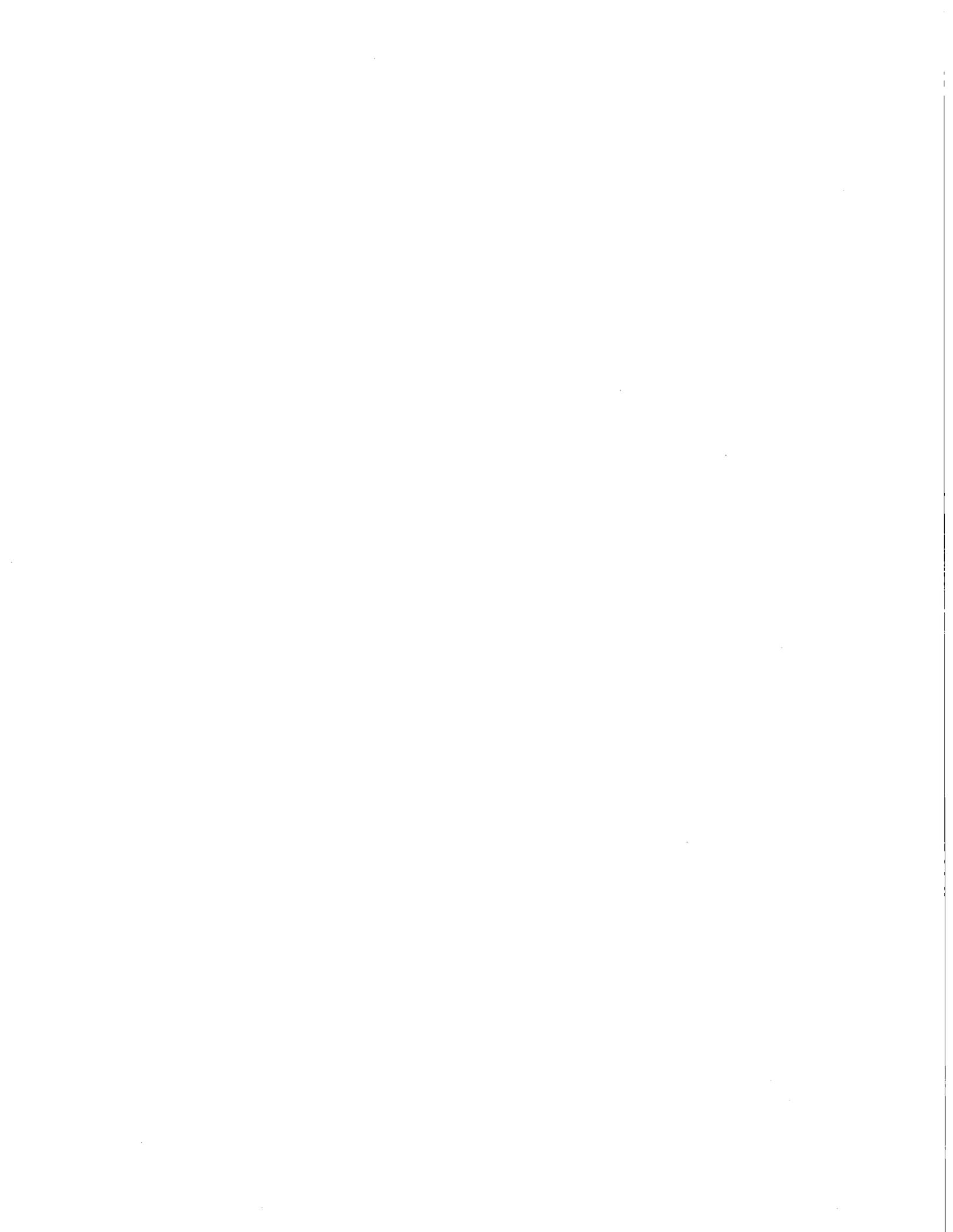
Information on the DHS Program can be obtained by writing to: DHS Program, IRD/Macro, 8850 Stanford Boulevard, Suite 4000, Columbia, Maryland 21045, USA (Telephone: 301-290-2800; Telex: 87775; Fax: 301-290-2999). For copies of the studies published in the DHS Further Analysis series, which are listed on the last page, write to the DHS Program, The Population Council, One Dag Hammarskjold Plaza, New York, New York 10017 USA.

ACKNOWLEDGMENTS

This document reports the main findings of the project on "Social Sectors and Reproduction in Mexico," which is based on the National Fertility and Health Survey for Mexico, ENFES, conducted in 1987. The report is actually subdivided into four independent research analyses concerning nuptiality, fertility, infant mortality, and female work, which share a central focus for understanding the socio-demographic behavior of different sectors of Mexican society. Beyond this point, each author uses the theoretical-methodological tools, which s/he considers most adequate to examine the different subject areas, and therefore the conclusions must be analyzed from each author's particular viewpoint.
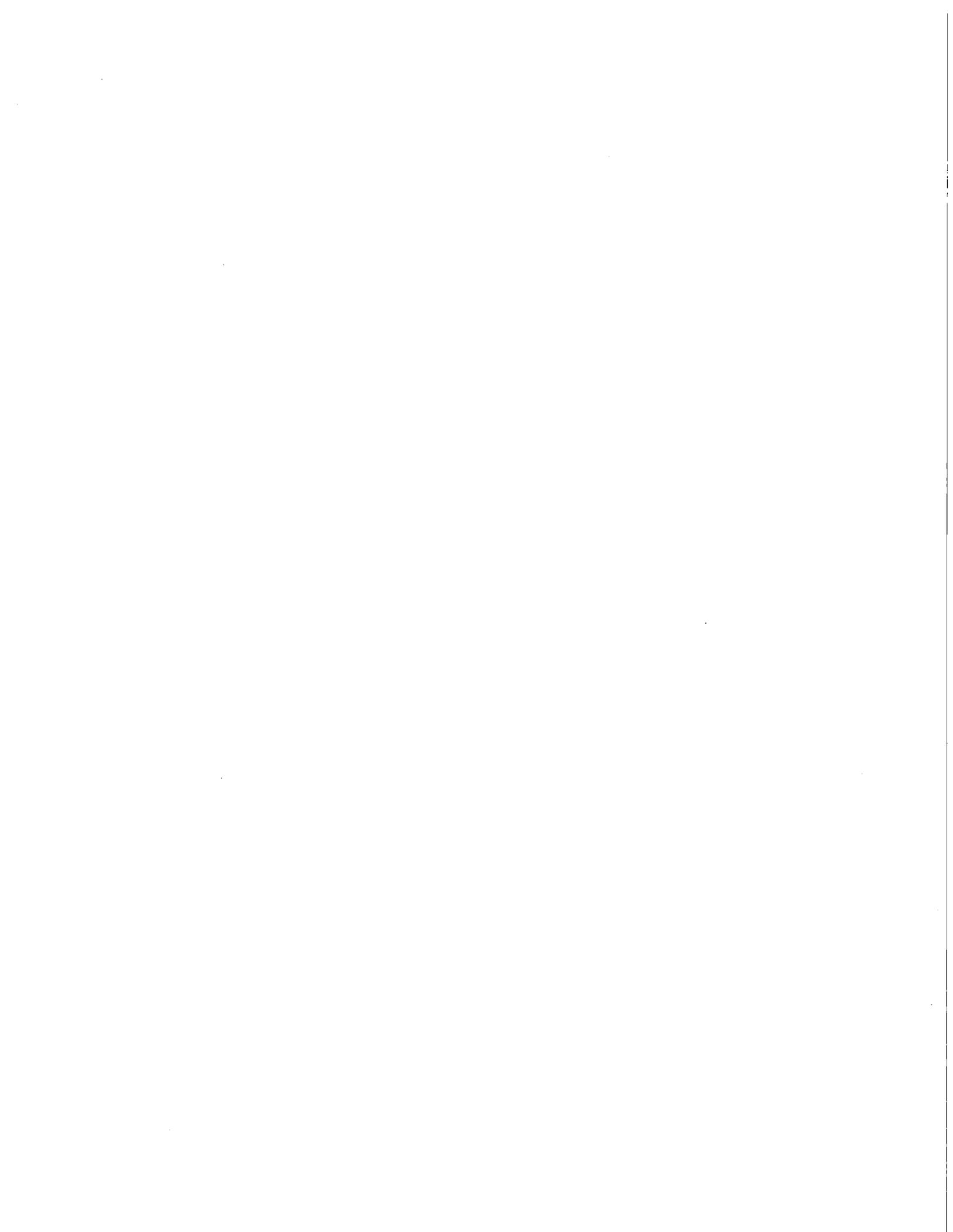
Data processing of the different analyses was conducted by Gustavo Argil, Marta Elva Gómez, and Virginia Levin. We thank them for their collaboration and support. We would also like to thank our research assistants, Teresa Jácome, Norma Navarro, and Verónica Montes de Oca Zavala for their help in calculation tasks and in the location of relevant bibliographical material.

Finally, our appreciation to the General Directorate of Family Planning of the Secretariat of Health, which provided the information on the ENFES, and to the Population Council for its financial support to conduct this study.

CONTENTS

I. SOCIAL SECTORS AND REPRODUCTION IN MEXICO

Brígida García
Orlandina de Oliveira

The objective of this research project is to carry out an in-depth study of reproductive patterns among different sectors of Mexican society. We concentrate on nuptiality, fertility, and infant mortality, important components of generational replacement, and on female work, which is closely related to the daily up-keep of individuals and social groups. The study is based on the consideration that the determinants of socioeconomic behavior are to be sought not only at the individual level but also at different levels of social reality, which condition individual action. Today, this constitutes a widely accepted point of departure, which Latin American social demography has contributed to conceptualize in theoretical terms, especially during the decade of the seventies (see Consejo Latinoamericano de Ciencias Sociales, 1974, 1982).

The choice of the relevant levels of analysis is closely related to the different theoretical interpretations of social change. For example, in research conducted at the international level, it is often considered important to incorporate information concerning the individual's community of residence. It is assumed, for example, that the educational, health, and communications infrastructure, which characterizes communities, can noticeably influence fertility and mortality patterns (Casterline, 1985; Hermalin, 1986).

In the case of Latin America and of other less developed areas, unequal and polarized societies, it has always been considered of key importance to take into consideration the fact that individuals belong to different social sectors, as a dimension which promotes a better understanding of their socio-demographic behavior. Initially, theoretical developments along this line mechanically ascribed certain reproductive patterns to the needs arising from the individuals' economic position. For example, peasants and own-account workers were required to have large families as a source of labor for the family plot or business. Today, the influence of valorative and cultural aspects is more explicitly acknowledged to go beyond economic position in a specific moment in time (see McNicoll, 1980; Oliveira and Salles, 1988; Przeworski, 1982; Singer, 1982; Zúñiga, Hernández, Menkes, and Santos, 1986).

We consider that inequality in objective living conditions among different social sectors implies inequality in choices and opportunities, which most directly influences the behaviors under study. Within this perspective, the less privileged sectors of society would have higher fertility levels, not merely because they need children to contribute to the family budget, but due to the fact that, among other reasons, they have fewer opportunities of access to formal education, which is known to help influence uncontrolled fertility. There are different ways of methodologically approaching the above considerations. We would like to highlight those deemed most relevant, with reference to Mexican research in this field and to some international experiences.

Today in Mexico, there are some research efforts which analyze mortality, nuptiality, fertility, and female employment from the standpoint of social groups (see Bronfman and Tuirán, 1984; García, Muñoz, and Oliveira, 1982; López and Tuirán, 1983; Mier y Terán and Rabell, 1984; Ojeda de la Peña, 1987; Zúñiga et al., 1986). Many of these studies strongly emphasize the methodological configuration of sectors or groups, seeking to adapt information obtained from surveys to the relevant theoretical schemes. However, they have paid less attention to the relationships between economic variables, of key importance in the configuration of sectors, and aspects such as education and place of residence, which are traditionally relevant in explaining socio-demographic behavior (Sawyer, 1984).

A second methodological option, which denotes great importance to socioeconomic status in explaining socio-demographic behavior, but within a multivariate context, is exemplified by the study of Rodríguez and Cleland (1980). In their study on fertility determinants in 20 of the countries where the World Fertility Survey (WFS) was conducted, socioeconomic variables were introduced in a hierarchical manner. Such hierarchization begins with place of residence, followed by three characteristics of the husband intended to define socioeconomic status--education, occupation, and work status--and, finally, two characteristics of the wife--education and work status. Although this hierarchization could be questioned from a theoretical point of view, the study offers interesting conclusions. It confirms quite rigorously that the effect of education on fertility can be attributed in

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large part to the variables, place of residence and socioeconomic status, although the net effect of education is significant in almost all of the populations studied. This basic conclusion was confirmed in more recent work for 38 countries included in the WFS program, especially for the Latin American and Asian countries, but the methodological and statistical strategy was different (Cleland and Rodríguez, 1988). Finally, a third choice made by the authors of this study is to consider social groups as sub-populations, within which it is possible to expect different effects or interactions of variables, such as schooling, place of residence, and others. A similar strategy is that used in the United Nations study of fertility determinants in countries participating in the WFS program. This study defined sub-aggregates of countries, according to their development levels (United Nations, 1987).

Social sectors to which the respondents belong have been defined, according to the economic position of the person on which they depend economically.[1] Initially, we established differences between agricultural sectors (27 percent of the sample) and nonagricultural ones (72.8 percent). This is a basic division in Mexico with respect to the living standards of the population involved, examined through indicators such as education, monetary income, access to health services, and communications. According to the National Fertility and Health Survey (Encuesta Nacional sobre Fecundidad y Salud, ENFES), 80.8 percent of the agricultural family heads did not complete primary-school education.[2]

Among nonagricultural sectors, we have considered middle (26.5 percent) and working sub-populations (46.3 percent). These last sectors have been subsequently divided into wage earners (33.5 percent) and non-wage earners (12.8 percent). The middle sector, which is generally more privileged in terms of educational and income levels, has been defined based on the nonmanual work performed by the persons on which the respondents depend. This is a heterogeneous sector, because it includes professionals, technicians, teachers, and also administrative officers and office employees of different levels. However, it is also true that, on the whole, the household heads had reached secondary-school level and higher in 63.4 percent of the cases.

Family heads of wage earning working sectors perform manual work, as is the case of laborers, mechanics, sundry occupation workers, drivers, and service renderers. It is possible to expect that these sectors are the most affected by the Mexican economic crisis of the eighties, because they are comprised by workers, who depend, to a large extent, on wages which have undergone an impressive decline in purchasing power. Within this sector, 43.7 percent of the heads did not finish primary-school education, and only 23 percent completed secondary-school levels or higher.

Heads of non-wage earning sectors, despite performing the same type of work, hypothetically have no access to labor contracts or social benefits. However, it is also true that they have certain advantages under crisis conditions, as they are able to manipulate prices of the products they make and of the services they render, within the limits set by the market. Among them, 52.7 percent had not completed primary-school education, and only 19 percent reached intermediate or secondary education. As noted in Table I-1, women currently in union with agricultural family heads also have lower educational levels than those in the remaining sectors, and they display the lowest rate of participation in the labor force (27.7 percent). Women in the middle sector have the highest educational levels and the greatest participation in extradomestic economic activities (40.1 percent). Respondents belonging to the working sectors display low educational levels (in almost 70 percent of the cases they have, at most, completed primary education), but female economic participation is higher among the non-wage earning sector (35.2 percent) than among wage-earners (29.2 percent). In the other sections of this report, we analyze how the social and economic differences among sectors, which we have briefly outlined, account for meaningful distinctions in the following socio-demographic phenomena: entrance into marital union and into motherhood, fertility patterns, mortality, and the relationship between maternity and work.

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[1] This is a concept defined previously in the ENFES, which is not restricted to male household heads. We have used the information on occupation and work status of such persons for the definitions of the social sectors. The concept of "sector" was chosen, because we realize that the data refer to an aggregate of individuals, who do not necessarily have relationships among themselves.

[2] For a preliminary analysis of the basic characteristics of the ENFES and its preliminary findings, see Dirección General de Planificación Familiar, 1987; S.S.A., 1988.

Table I-1 Socio-demographic characteristics of women belonging to different social sectors (weighted sample)

| | Social sectors | | | |
| | | Working | | |
	Agricultural	Non-wage earners	Wage earners	Middle
Age	100.0 (2410)	100.0 (1131)	100.0 (2974)	100.0 (2348)
15-19	24.6	28.1	24.5	19.7
20-24	15.5	16.3	20.3	18.0
25-29	16.3	14.5	17.8	18.5
30-34	13.1	13.6	12.8	17.2
35-39	11.4	9.1	9.7	13.4
40-44	10.0	10.7	8.1	8.2
45+	9.0	7.6	6.8	4.9
Education	100.0 (2410)	100.0 (1131)	100.0 (2974)	100.0 (2348)
Incomplete primary	67.7	38.3	33.8	11.7
Complete primary	20.1	31.4	35.1	28.3
Complete secondary	10.6	22.1	25.7	39.3
Preparatory and more	1.6	8.2	5.4	20.6
Marital status	100.0 (2410)	100.0 (1131)	100.0 (2974)	100.0 (2348)
Married	66.5	54.9	63.8	61.3
Single	28.2	39.5	28.5	31.2
Widowed/separated/ divorced	5.3	5.6	7.6	7.5
No. of children	100.0 (2410)	100.0 (1131)	100.0 (2974)	100.0 (2348)
0	32.5	42.4	34.6	37.3
1-2	20.1	21.1	31.4	35.4
3+	47.4	36.6	34.1	27.3
Place of residence	100.0 (2410)	100.0 (1131)	100.0 (2974)	100.0 (2348)
Rural	89.4	32.4	29.0	17.0
Urban	9.4	32.3	33.0	37.6
Metropolitan	1.3	35.3	38.1	45.5
Activity condition	100.0 (2410)	100.0 (1131)	100.0 (2974)	100.0 (2348)
Work	27.7	35.2	29.2	40.1
Not work	72.3	64.8	70.8	59.9

Source: Encuesta Nacional sobre Fecundidad y Salud (ENFES), 1987.

II. ENTRANCE INTO MARITAL UNION AND INTO MOTHERHOOD BY SOCIAL SECTORS

Julieta Quilodrán

Background

Nuptiality data in different countries have served two fundamental purposes. First, the data have served to evaluate the impact of nuptiality on fertility, taking nuptiality as an intermediate variable. Second, nuptiality data have also contributed to an understanding of the dynamics of marital unions, especially their formation and stability (United Nations, 1988).

Mexico is among the countries that has reasonably complete information in this regard. The available marital histories have made possible the study of variables characterizing nuptiality, each one by itself or in an interrelated way, so as to define marriage patterns. The existing analyses account for the temporal changes experienced by this phenomenon, as well as for its spatial and social differentiation (Ojeda de la Peña, 1986, 1987; Pebley and Goldman, 1986; Quilodrán, 1980, 1983, 1987).

The survey that we analyze in this study also provides information on nuptiality, but in a much more limited way than previous surveys. It lacks data on the history of marital unions and, even more limiting is the absence of information on the timing of the dissolution of unions. If at least the date of termination of the first union had been collected, one would be able to follow up the voluntary dissolutions for this union order, which is the most important. The proportion of first unions interrupted by separation or divorce has been rising, and it is likely to become one of the elements that transforms most deeply the dominant pattern of unions.

In contrast, for the first time in a nationally representative survey, questions on female sexual behavior were formulated. Those questions broaden the perspectives for the study of the formation of unions and, in general, of the reproductive process.

In this section, the objective is to analyze the rate of entry of women into sexual relations, marital unions, and childbearing. The main hypothesis is that diverse social sectors behave differently vis-a-vis these events, which vary both in the sequence in which they occur and in the timing and intensity with which they appear. The unequal speed and sequential orders are expected to generate different dynamics in each sector, beginning in the early stages of the reproductive cycle.

The timing of first sexual relations, of the unions, and of the arrival of the first child were analyzed through the proportions of women, who experienced each of these events before age twenty and before age twenty-five. The average interval between first sexual relations and first union, and the proportions of women with children born before the union help, in turn, to characterize the sequence in which the three events under consideration occur. In what follows, we analyze the indicators relative to the formation of unions and the entrance into sexual relations and childbearing of the women interviewed in the ENFES (Table II-1).

Formation of Unions

Entrance into first union begins very early in the agricultural sector, with 63 percent of the women having their first union by age 20; in contrast, in the middle sector, only 36 percent had done so. At age 25, the gap between these two sectors remains but is somewhat narrower (85 and 71 percent, respectively). This fact indicates a slower pace of formation of unions in the middle sector than in the agricultural sector (Table II-1).

The working sectors, wage-earning and non-wage earning, are very homogeneous with regard to their age at first union. In both, one-half of the women had entered into a first union by age 20, and three-quarters had already done so by age 25. It could be considered that these sectors, more urban and with more education than women in the agricultural sector, stand at an intermediate point between the agricultural and the middle sector.

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However, the nuptiality pattern of the agricultural sector is likely to continue influencing the wage earning sector. This is understandable, if one takes into account that one-third of the members of this sector live in rural areas, and that the remainder, although residing in urban areas, have a fairly recent rural past. It warrants noting that the process of transformation of the norms acquired through a socialization process, frequently rural, would persist beyond the migrant generation.

Regarding the intensity of first unions, it is interesting to verify that in the agricultural sector, nearly all women enter into at least one union during their reproductive period. On the contrary, in the middle sector, the level of female celibacy is above the average for the country, which has hovered around 5 percent for several decades. The wage earning workers are situated at exactly this level.

Insofar as first consensual unions are concerned, the proportions indicating that consensual unions are present vary in intensity in all social sectors, but the most frequent type of union continues to be the legal one (about 70 percent).[3] The non-wage earning and middle sectors display the extreme levels, the former with 34 percent and the latter with 18 percent. Up to this moment, consensual unions would be the only characteristic differentiating non-wage earning from wage earning sectors. This last finding could be linked, among other things, to the advantages deriving from formalizing unions in order to receive more easily the social benefits accruing to wage earning employment.

To summarize, it can be concluded that the agricultural sector still has a traditional pattern with unions formed at early ages and of an almost universal character. The predominant type of union is legal, just as in the other social sectors under consideration, even though nearly 30 percent enter into a union, by starting their married life in a consensual union.

The nuptiality pattern of the middle sector is at the opposite extreme from that of the agricultural sector. This sector is characterized as being the most urban and with the highest level of education. In keeping with this situation, age at first union, even though it cannot be considered late, is older than for other sectors; and the proportion of women who begin their marital life through a consensual union is much lower. In addition, it is the sector with the highest proportion of never-married women by age 50.

The wage earning and non-wage earning sectors are very similar in the formation of their unions. In these sectors, unions begin at a fairly early age, celibacy is moderate, and consensual union is as much or even more predominant than in the agricultural sector.

First Sexual Relations

First sexual relations follow the same differentiation scheme by social sectors as that observed in the case of first unions, above all, before age 20. As in unions, sexual relations occur at a very early age in the agricultural sector in comparison to the middle sector. The wage earning and non-wage earning sectors are equidistant from the two previously mentioned sectors.

At age 25, both the agricultural and working sectors have similar proportions of women, who reported that they had experienced first sexual relations. At this age, between 82 and 85 percent of the women had entered into sexual relations in comparison to 75 percent in the middle sector.

It is interesting to contrast the moment of women's entry into sexual relations with that corresponding to the entry into marital life. The coincidence or distance between the two points in time informs us as to how socially linked these two aspects are. In the case with which we are concerned, in all social sectors, first sexual relations precede the first union, or else coincide with it, as in the case of the agricultural sector. However, the proportion of women who report having their first sexual relations before entering into a union does not exceed

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[3] It concerns the nature of the first union with one single union, inasmuch as the survey does not allow any other estimate.

6 percent.[4] For the same reason, the mean intervals between first sexual relations and first unions are brief: 0 months in the agricultural sector, 3.5 and 3.1 in the working sectors, and 5.2 in the middle sector.

The proximity between age at first sexual relations and age at first union reported by women, seems to indicate an adherence to the norm relative to the start of sex life jointly with marital life. This type of answer could have been induced by the options offered by the questionnaire concerning age at first sexual relations, which included among the options the following: "when I got married or began to live with my husband (companion)."

The concentration of the age at first sexual relations around the time of first union in all social sectors leads one to conclude that the actual age at first sexual relations is lower than that reported. At any rate, first sexual relations appear to precipitate the onset of the first union, above all within the agricultural sector.

Birth of the First Child

Before reaching 20 years of age, 56 percent of the women belonging to the agricultural sector and 45 percent of those belonging to the working sectors have had a first child. In the middle sectors, this figure is only 30 percent. At age 25, the gap between sectors is lessened, but the delay in the middle sector persists. The proportions displayed by women of the agricultural sector show that at this age almost all those who will eventually have at least one child have already had it (85 percent).

In contrast, the proportion of women with at least one union by age 25, who report the birth of children before a union increases in all sectors, except for the middle one. The greatest similarities in trends are displayed in the agricultural and the wage earning sectors.

The above findings should not lead one to conclude that the sectors with higher proportions of children born before the union also have more single mothers. The more plausible explanation could be that the sectors differ in the probability of single mothers entering a union.

Conclusions

In summary, with regard to the formation of unions and rate of entry into sex life and childbearing, there are three distinct types of behavior, each associated with different social sectors: agricultural, working, and middle.

The women of the agricultural sector enter sexual relations, marital life, and childbearing at an early age, with very brief intervals between these stages. There are almost no never-married women in this sector, consensual union is a frequent way of starting unions, and the great majority of women eventually have at least one live-born child during their childbearing period.

In the working sectors, the entrance of women into sex life and marriage occurs somewhat more slowly than in the agricultural sector. As a consequence, the arrival of a child occurs at a later age. However, at age 25 the proportion of women having experienced first sexual relations exceeds slightly the proportion of women in unions, as compared to other sectors. Within this large sector of the population of manual workers (46.3 percent), the non-wage earning subsector presents some peculiarities in relation to the wage earning subsector. In the former, the proportion of women having live-born children before age 25 is higher than in the latter, so too is the proportion of women with first consensual unions and children born before union. This leads us to conclude that in this sector, the proportion of never-married women with children is likely to be higher than in other sectors, and this very fact favors the entrance of women into consensual unions, that is, non-formalized unions.

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[4] The difference between women in union and women with first sexual relations by age 25, in the non-wage earning manual sector.

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The middle sector--which is more urban, better educated, and with a higher proportion of women economically active--is also the one in which women enter into a union at a later age. In this sector, four out of five women who enter into a union do so legally. The never-married status is more frequent, and the proportion of women with sexual unions at age 25 is almost 10 percent lower than in all other sectors, whereas the interval between sexual relations and first union is larger. This, coupled with the fact that the arrival of the first child occurs at a later time, suggests that the middle sector exercises some fertility regulation from the very beginning of their sexual activity.

Table II-1 Characteristics of women entering into marital unions and motherhood in different social sectors

| | | Social sector Working | | |
	Agricultural	Non-wage earning	Wage earning	Middle
First sexual relations (1)				
< 20 years	63	54	53	41
< 25 years	85	83	83	75
First union (1)				
< 20 years	63	50	50	36
< 25 years	85	77	78	71
Celibates (2)	1	6	5	8
Women with 1st marital consensual union (3)	29	34	27	18
Average interval between 1st sexual relations and 1st unions (months)	-0.20	-3.50	-3.10	-5.20
First born (4)				
< 20 years	56	45	44	30
< 25 years	85	80	77	67
Child born prior to first union (5)				
< 20 years	3	7	2	4
< 25 years	7	12	7	4

Source: Encuesta Nacional sobre Fecundidad y Salud (ENFES), 1987.

Note: Values adjusted on the basis of ANOVA to take into account varying age structure, with a 99 percent confidence level.

(1) Cumulative percentages based on all women of the sample aged more than 20 or 25 years.
(2) For women aged 45-49 in each heading.
(3) For women with one single union. Includes legalized consensual unions.
(4) Cumulative percentages based on ever-married women.
(5) Cumulative percentages for ever-married women, live-born children.

III. REPRODUCTIVE BEHAVIOR AND SOCIAL SECTORS IN MEXICO

Fátima Juárez

Introduction

The objective of this section is to demonstrate the relevance of some socio-demographic variables on the fertility behavior of the families and to analyze how they interact in different social groups, using the National Fertility and Health Survey (ENFES, 1987). Theoretically, we conceptualize that the mechanisms through which modification in family formation is operating, known as the proximate determinants, are socially determined. Thus, the family size of a couple is influenced by ideological elements shared by groups of individuals with similar life experiences (Mier y Terán and Rabell, 1984).

Fertility Background

The large variety of studies available for the country have allowed us to establish with precision fertility levels and trends and the family formation patterns in various contexts.[5] It has been shown that until 1970, fertility remained relatively constant at high levels, with a total fertility rate (TFR) of approximately 7 children per woman (Juárez, Quilodrán, and Zavala de Cosío, 1989a, 1989b). However, in the decade of the sixties, modifications in the family formation patterns were observed in the period prior to the adoption of an official policy of population control (Juárez, 1983). The highest fertility was reached around 1958-68, characterized by an average of 7 children per woman. Considering only women in union, the average increases to 9.3 children. From 1968 onwards, levels started to decline in a more accentuated way (Quilodrán, 1983), and by 1980 the TFR had decreased to 4.3 children (Juárez et al., 1989a, 1989b). During 1975-82, the period of sharpest fertility decline in Mexico, groups in the poorest socioeconomic conditions, i.e., the less educated and rural women, showed the greatest change (Pullum, Casterline, and Juárez, 1985).

Methodological Aspects

The population studied in this section includes women ever in a union age 15-49. Marital fertility is measured as the mean number of children ever-born. For the study of the socioeconomic determinants of fertility, the Multiple Classification Analysis (MCA) method was selected. This is a linear model, which finds the best fitting additive structure, particularly useful when the factors examined are correlated, as they are in this case.[6]

Previous studies on the socioeconomic determinants of fertility in Latin America and Mexico have emphasized the importance of certain variables in relationship to others (Juárez et al., 1989a; 1989b; Rodríguez and Cleland, 1980). Based on this knowledge, variables to be examined were selected for each social sector.

As a contextual factor that conditions the life of the individuals and the family, the rural, urban, or metropolitan place of residence of the woman was considered. From the woman's individual characteristics, her educational level and her participation or non-participation in the labor market at two points in time, before union or at present, were selected for analysis. In addition, demographic variables, such as the age of the woman and her age at first union, were included in the models, as variables which control for duration of exposure to the risk of conception.

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[5] Among them are the following: Bronfman, López, and Tuirán, 1986; Figueroa, 1980; García y Garma, 1979; Juárez, 1983; Juárez and Quilodrán, 1989; Mier y Terán and Rabell, 1984; Pullum et al., 1985; Ojeda de la Peña, 1987; Quilodrán, 1987; Seiver, 1975; Urbina, Palma, Figueroa, and Castro, 1984; Welti and Macías, 1989.

[6] For more detailed information on the model, refer to Andrews, Morgan, Sonquist, and Klein (1973); Kim and Kohout (1975); and Little (1980).

The analysis plan was the following. First, a series of general fertility indices for selected variables were examined. Then linear models were applied in two fashions: one exploring the relative weight and statistical significance of the determining factors of fertility, and the other, defining the final model.

Some Relevant Findings about the Fertility Determinants

The cumulative fertility of the families makes evident the various reproductive strategies of different social sectors, and their response or nonresponse to the health institutions through the family planning program, which encourages small families. The mean and median number of children couples have is negatively related to their social sector. Agricultural workers show the highest fertility 5.1 (median parity), while the middle sector is at the opposite extreme with the smallest family size (median = 2.8 children). Families of non-wage earning and wage earning workers, characterized by precarious living conditions, have a median of 4.1 and 3.3 children, that is, they show some difference in their fertility levels.

Summarizing the unadjusted fertility levels associated with the selected variables, the observed differentials follow the anticipated trend: Parity increases with age, so as with younger age at first union, lower fertility is prevalent among women who have participated in the labor force (worked before union or currently working).[7] Differentials in cumulative fertility for those women currently working or not, are extremely small: 0.26 of a child (3.6 and 3.8, respectively). Similarly, there is almost no difference between the observed (unadjusted) mean number of children for current users of contraception (3.71) and nonusers (3.77), and the trend over time shows slightly lower fertility for the former (unadjusted values).

When controlling by social sectors, the relative importance of each variable, as measured by beta, reveals that current contraceptive behavior or working conditions of the woman are the factors that least explain fertility variations, when each factor is considered one at a time.[8]

The multiple correlation coefficient, R^2, shows that the demographic variables, age of the woman and age at union, strongly influence total family size. Age of the woman and age at union account for 43 percent and 35 percent of the total variation in fertility (adjusted only by social sectors), values which are extremely high in comparison to those of the other socioeconomic factors or contraceptive use.

The determining factors (each of them statistically significant at the 1 percent level or below), in order of importance, are as follows: The educational characteristics of the woman account for 22 percent, "Worked Before Union" and "Place of Residence," 10 percent, and "Current Contraception" and "Currently Working," 9 percent. As can be noted, the explanatory power of educational attainment more than doubles that of the other factors.

Various models were tested for the explanatory variables, at least seven of them showing a substantial improvement in comparison to the previous models, each explaining more than 50 percent of the variation in reproductive behavior by social sector. Only relevant findings of some of the models are presented here, and referred to as Model 2, 3, and 4 of Table III-1. For the next phase, the final model of "Index" is an improvement of the previous models. Some of the interesting features are presented in Model 2 and 3 of Table III-2.[9]

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[7] Estimates not in tabular form.

[8] Refer to WFS publications and United Nations (1987).

[9] Beta represents the proportion of variation explained by the adjusted effect of the factor A, B, etc., similar to a standardized partial regression coefficient.

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Model 2--Table III-1

The observed fertility differentials show a range of 2.1 children from the highest to the lowest social sectors. Once the demographic variables are controlled, the range is narrowed to 1.6 children, and the position of the social sectors on the fertility scale remains the same, after controlling for exposure to risk or whatever other factor is controlled for. The effect of demographic controls is seen in the decline of beta from .27 to .21; this improved model (Model 2) explains 52 percent of the total variation in parity.

Model 3--Table III-1

For the various social sectors, the effect of place of residence in the fertility behavior of females follows the expected trend, the exception being the non-wage earning sector, which shows an increase in fertility. The distinctive fertility pattern of these families (when place of residence is adjusted for) is partly explained by the large proportion of women who marry at younger ages (65 percent) and those whose fertility is disproportionately higher, as compared to those who marry later (4.7 and 3.3, respectively). Among the other social sectors, parity by age at union does not show such extreme variation between women who marry early and those at an older age.

Model 4--Table III-1

The effect of current use of contraception reveals an increased value of beta. It is the sole factor where a reverse pattern is observed: Users have higher fertility than nonusers, but differentials tend to be small. In this exploratory phase, education stands out as a major determining factor. Historically speaking, the dominant classes have been the first to have access to systematized education. Thus, it is not surprising that various sectors are associated with different levels of education. For the agricultural families, wives present an average of 2.6 years of education, the non-wage earning, 4.5 years, and the wage earning, more than 5 years (5.1 years for workers in manufacturing and 5.4 years for workers in services). At the extreme are found the wives of the middle sector, who have a relatively high level of education, 8.3 years on average.

Due to the fact that placement in a social sector is the primary condition that determines the educational level an individual can achieve, this idea had to be incorporated into the model (Baudelet and Stablet, 1980; Martínez, 1983). A new variable denoted "Index" (social group--education) was thus created.[10] Various models were tested using this new concept, and the most relevant findings are presented next (see Table III-2).

On the whole, similar conclusions as those of the exploratory phase were found. Groups in the extreme social spectrum, poorly educated agricultural workers and educated middle sectors, show the largest fertility differential (4.07 children) among the 13 categories studied (unadjusted values). The extremely high fertility of poorly educated women of the agricultural sector, 6.11 children ever-born, as well as that of other categories, is evidence that low fertility levels for various subgroups of the population are still yet to be achieved.

Model 3--Table III-2

The model which controls for demographic variables, contraceptive use, and the Index-categories indicates that for all sectors of Mexican society, current contraceptive use is associated with higher fertility. This characteristic is not unique to Mexico. Other countries in an early stage of their fertility decline show higher fertility among contraceptors, a stage considered temporary.[11]

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[10] Classification of the categories is based on the educational level distributions of each social sector: agricultural 0 years or 1+ years; wage earning and non-wage earning 0-3 years, 4-6 years, and 7+ years; and middle 0-6 years or 7+ years.

[11] See WFS publication.

This implies that family planning is practiced by high-parity women, and methods are more frequently used for terminating than for spacing births. However, it is surprising that this trend is also observed for the middle sectors, where families are expected to be planning their fertility by means of modern contraception, as suggested by their fertility levels.

Model 4--Table III-2

The final model includes controls for all the selected variables, as they all prove to be statistically significant. It explains 53.3 percent of the total variation in fertility. Larger family size is shown in lower social groups than among the more privileged. However, examination across the 13 categories of the Index variables makes evident the heterogeneity within the social sectors. Two sectors that stand out from the rest because of their high fertility are families of agricultural workers and poorly educated working families, with mean parities above the grand mean (3.7 children).

Access to education, even for the less privileged group, shapes the fertility behavior of couples. This is true for each social strata, where the more educated have a smaller family size. For illustration, if one observes the fertility behavior of the non-wage earning sector, less educated women show a family size of 4.6 children, a mean parity which reduces to 3.6 for those with intermediate education, and declines to 3.2 for the more educated women of this social group. Similarly, within the agricultural sector, women with no education have higher fertility levels than those with some education, 4.9 and 4.0 children, respectively.

To summarize, it can be concluded that education is the key variable that correlates fertility behavior and social sectors: poverty, access to education, access to services and to new strategies of family formation.

Table III-1 Multiple classification analysis of parity by social sector, adjusting for selected variables, ENFES, 1987

Grand Mean = 3.735			Adjusting for		
Model Social Sectors	N	Soc. S. Demg. + unadjusted 1	Soc. S. Demg. 2	Soc. S. Demg. + Pl. Res. 3	Soc. S. Demg. + CCtr. 4
Agric.	1,712	1.13	.81	.41	.85
Non-wage	674	.48	.08	.17	.08
Wage manuf.	1,390	-.29	-.05	.07	-.06
Wage services	731	-.38	-.22	-.09	-.22
Middle	1,601	-.99	-.75	-.53	-.79
(eta/beta)			(.21)	(.13)	(.22)
R^2			.524	.538	.525
CEB Dif (Max-Min)			1.56	0.94	1.64
For Non-agric. CEB Dif(Max-Min)			0.83	0.70	0.87

Note: Soc. S. is social sector, Demg. refers to the demographic variables, age of women and duration of marriage, CCtr. is current contraceptive method used, Educ. is female education, and Pl. Res. is place of residence.

Table III-2 Multiple classification analysis by parity, adjusting for selected variables, ENFES, 1987

Grand Mean = 3.735	Adjusting for			
Model Index	Soc.S unadj. 1	Soc.S Demg. 2	Soc.S Demg. +CCtr 3	Soc.S Demg. +ALL 4
Agric./L	2.38	1.38	1.50	1.14
Agric./H	.51	.57	.62	.25
Non-wage/L Ed	1.94	.74	.78	.83
Non-wage/M Ed	-.11	-.18	-.20	-.12
Non-wage/H Ed	-1.50	-.67	-.72	-.56
Wage M/L Ed	1.17.	.67	.70	.68
Wage M/M Ed	-.46	-.30	-.32	-.24
Wage M/H Ed	-1.85	-.58	-.66	-.43
Wage S/L Ed	1.12	.60	.62	.61
Wage S/M Ed	-.53	-.50	-.52	-.45
Wage S/H Ed	-1.72	-.70	-.75	-.51
Middle/L Ed	-.04	-.42	-.46	-.33
Middle/H Ed	-1.69	-1.04	-1.11	-.80
(eta/beta)	(.46)	(.26)	(.28)	(.21)
R^2	.211	.545	.549	.566
CEB Dif(Max-Min)	4.07	2.42	2.61	1.94

Note: Soc. S. is social sector, Demg. refers to the demographic variables, age of women and duration of marriage, CCtr is current contraceptive method used, and ALL incorporates the previous variables, as well as female education, employment prior to first union, current work status (working or not working), and place of residence.

IV. MORTALITY AND SOCIAL SECTORS: RECENT TRENDS

Mario Bronfman

Introduction

In this section, we shall analyze some characteristics of infant mortality in Mexico. Towards this end, use was made of basic information contained in the ENFES, especially the pregnancy history. As an indicator of infant mortality, the probability of death between birth and the age of two (2q0) was utilized, since this measure allows us to eliminate the distorsion introduced by the use of the probability of death of infants less than one year of age, given the tendency to concentrate deaths at the exact age of one year. It was also decided to analyze the births occurring between 1976 and 1985. The upper limit is justified by the fact that the survey was conducted in 1987 and, consequently, all live-born children had the probability of dying up to the second year of age. The selection of the lower limit is due to the fact that as one goes back in time, the greater are the problems of precision in the adequate registration of phenomena. In the analyzed period, there were approximately 11,600 births, which constitute the universe of this analysis. Taking into account the period under consideration, the data should refer to June 1980.

The outline of this section is as follows: First, an updating of mortality levels, trends, and differentials in Mexico is presented. Next, an analysis is made of the main conclusions resulting from applying this research project's overall strategy to the case of mortality. Finally, an attempt is made to summarize what, in our view, appears to be the main conclusions of the study. It is worth noting that the available material is much richer, by far, than that presented here, and its full exploitation shall be the subject of a later publication.

Levels, Trends, and Differentials

Infant mortality in Mexico has been declining steadily in the past few decades. All measures deriving from national-level surveys (EMF, 1979; END, 1982) invariably report this decline. The ENFES data confirm the continuation of this trend. This fact is not trivial, inasmuch as one of the primary concerns of this study is to evaluate if the impact of the crisis that has characterized the 1980s is reflected in a break in the downward trend of infant mortality. However, the rate of decline is not similar for all categories of variables, on the basis of which the differentials are calculated. The consequence of this evolution is a widening of the gap between groups, which would seem to indicate that, beyond this overall tendency, there is an increase in inequality reflected in infant mortality.

Taking births registered by the ENFES between 1976 and 1985, the 2q0 is 64.3 deaths per 1,000 live births, whereas that reported by the 1982 National Demographic Survey (END) was 72.6 per 1,000 for the year 1972. This implies a decline of 11.4 percent in eight years. Analyzing 2q0 for some socio-demographic categories of some variables (Table IV-1), the distribution responds to what is usually found, which can be summarized as follows:

a) There is a positive relationship between the size of the place of residence and 2q0;

b) 2q0 in the low level category of housing services is almost double that for the middle- and higher-level categories grouped together;[11]

c) Mortality in the agricultural sector is higher than that recorded by any nonagricultural sector. Among these, the middle sectors have the lowest rates, whereas the working sectors in any subdivision have similar rates;

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[11] Housing services is an index constructed on the basis of three indicators: piped water, sewage disposal, and electricity. Each of these indicators is dichotomized. Under the category "good" of the index are those linked with at least two indicators with a positive value, while the category "bad" grouped those with two or three negative value indicators.

d) 2q0 is appreciably higher in the lowest category of educational attainment (without education and incomplete primary school) in comparison to that of the intermediate and higher levels of the educational category (completed primary school and beyond);

e) There is a curvilinear relationship between the age of the mother at the time of birth and 2q0;

f) There is a direct relationship between birth order and the 2q0 value; and

g) There is an inverse relationship between intergenesic birth interval and the 2q0 value.

If these data are compared to those produced by the END (Bronfman and Tuirán, 1984), we see that the higher category of housing services decreased from 59.9 deaths per 1,000 in 1972 to 44.4 in 1980, whereas the lower category declined from 92.8 to 88.3 per 1,000. In the first case, there is a decline of 26 percent, whereas in the second case, the decline is 5 percent. As a result of this unequal decline, the difference of 32.9 per 1,000 that existed in 1972 became 43.9 per 1,000 in 1980. Something similar occurs if we analyze 2q0, according to place of residence. In rural areas the decline was only 1 percent from 83.4 to 82.6 per 1,000, whereas in urban areas, the percentage decline was 21 percent, declining from 58.0 to 45.9 per 1,000. These data appear to confirm what we previously stated, in the sense that the overall decline in mortality conceals an increase in some differences.

Infant Mortality and Social Sectors

In Mexico, a topic of particular interest has been the attempt to examine in-depth the impact that social conditions have on mortality. In this sense, special attention has been paid to the social sector that the individual belongs to--as indicated by different names such as strata, social class, etc. (Mier y Terán and Rabell, 1982; Minujin et al., 1984).

Various studies based on different sources of information invariably show that social sectors with better life conditions have lower levels of infant mortality. These studies treat the social sector as an explanatory variable on the same level as others that are used for the analysis of differentials, notwithstanding the greater analytical and explanatory power. Some critical presentations question this assertion and maintain that producing more significant differentials is due more to the methodological decision on how to empirically construct categories and the level of detail considered in the definition of the variables (Sawyer, 1985).

The strategy selected in this study, as noted previously in the first section, consists of treating social sectors as sub-populations. The central hypothesis underlying this treatment holds that the characteristics of the distribution of mortality at the aggregate level will find significant specificities in the different social sectors. To test this hypothesis, we present below three different approaches to the study.

In the first, one seeks to specify the magnitude and the direction of mortality differentials in the different sub-populations; in the second, through cross-tabulations one attempts to show the typical trends that certain relationships assume between significant variables in each social sector; finally, the third line of analysis attempts to show through multivariate analysis, which models account for mortality in each sub-population.

The Specification of Differentials

To exemplify this line of analysis, three variables have been examined, which are placed at different levels of complexity: age of the mother at the time of birth, mother's level of education, and an index of housing services (Table IV-2). The age of the mother at the time of birth was subdivided into three categories: 15-19, 20-34, and 35-49. In the total population, the differences in 2q0 between the first and second category and the first and third are, respectively, 21 and -2 per 1,000. These differences are more pronounced in the agricultural sector (25 and 13 per 1,000); they lessen slightly among the wage earning sectors (18 and 9 per 1,000); they change order among non-wage earning sectors (18 and -15 per 1,000); and they modify the form of their distribution among the middle sectors (7 and 17 per 1,000).

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According to the mother's level of education, respondents can be divided into those with low educational attainment (without education and incomplete primary school), and those who are better educated (completed primary school and above). Within the total population, the difference between both categories is 40 per 1,000, but analyzing it by sectors, the weight of this variable is substantially modified. In the three nonagricultural sectors, the magnitude of the differentials decreases (12, 14, and 23 per 1,000) and among the agricultural sectors, it increases (45 per 1,000), thus clearly indicating the role of education in the different social sectors.

The housing services were classified according to an index which was further dichotomized, separating those having bad availability of services, in terms of piped water, sewage disposal, and electricity, and those having regular and good services. In the total population, the difference in mortality between both groups is 44 per 1,000. This difference is reduced among the agricultural sector (30 per 1,000), the wage earning sector (31 per 1,000), and the middle sector (36 per 1,000); it rose slightly among the non-wage earning sector (43 per 1,000).

This data set allows one to assert that the differentials that are noted for the entire population do not reflect the variability resulting from analyzing the behavior of these differentials in significant subgroups of that population.

The Analysis of Relationships

In presenting the differentials, we note that mortality analyzed by the age of the mother at the time of birth in the entire population followed the traditionally observed U-shaped pattern of distribution. We were then able to see that this did not occur in all social sectors. Table IV-3 permits one to see that by analyzing mortality according to the above-mentioned variable but specifying the availability of housing services for different social sectors, that distribution is modified in four of the eight groups thus formed.

It is interesting to observe the fact that, except for non-wage earning sectors, when good housing services are available, the age-mortality relationship is inverse, the latter decreasing as age increases. Within the agricultural sector, the mortality of the 15-19 year age group with good services is ten times higher than that of the 35-49 age group with good services. For the same categories, among the middle sectors, the ratio is three-to-one, and among the wage earning sectors, the ratio is almost two-to-one.

It is obvious from looking at Table IV-3 that while certain subgroups present mortality levels typical of countries with low rates, other subgroups have the level of the highest mortality countries. This characteristic is confirmed in other tables, which are not included in this presentation.

The Multivariate Models

The third line of analysis consisted in modelling the relationship between a set of selected relevant variables and the 2q0 value. Towards this end, multiple regression models were used. The results that are displayed in Table IV-4 confirm and further clarify the hypothesis presented in this section, in the sense that infant mortality is a heterogeneous phenomenon that does not recognize the same explanatory factors in all of the social sectors. This particular finding operates through two mechanisms: On the one hand, there are variables that are significant that account for mortality in some sectors and not in others; on the other hand, the categories which show significant differences are not always the same in all social sectors. In our case, it can be seen how the models of the different sectors change with regard to their level of complexity.

Among the most interesting findings that are reflected in the models are that neither the mother's level of education nor her place of residence have significant weight in all models; that the availability of housing services appears to be a variable with high explanatory power; and that the interaction between the age of the mother at the time of birth and birth order is the only one that is significant in the four models.

Conclusions

The data presented indicate that the downward trend of infant mortality has continued during the 1980s. However, the different rates of these declines appear to point to a more pronounced inequity. Mexico continues to show the simultaneous presence of very unequal levels of infant mortality, the ratio reaching ten-to-one between some subgroups. Differentials at the level of the entire population preserve the traditionally observed trends. However, by analyzing them within subgroups of the population, it is evident that these differentials "average" very different realities.

Two conclusions can be drawn from this evidence. The first is that traditional biological constants do not appear to be too constant nor too biological; in other words, even the biological constants recognize a level of social determination. The second conclusion is that this differential reality by sectors should result in the formulation of different policies permitting a lowering of mortality in groups in which it is appreciably higher, thus favoring a more just domestic order.

In terms of future lines of research, it appears that the strategy that we follow here of analyzing what occurs within different social sectors, although not novel, has not been greatly used and seems to be an adequate approach to account for phenomena, such as mortality, in societies characterized by profound social inequity.

Table IV-1 Death probabilities between birth and age two (2q0) by selected
variables, Mexico 1976-1985 (in thousands)

	2q0		2q0
Total population	64.3		
Place of residence		**Age of the mother at birth**	
< 20,000	82.6	15-19	78.8
> 20,000	52.7	20-34	57.2
Metropolitan areas	35.3	34-49	81.1
Housing services index		**Birth order**	
Good	88.3	1	47.1
Bad	44.4	2-3	61.1
		4-5	67.1
Social sector		6+	83.5
Agricultural	86.2		
Non-wage earning	58.3	**Birth interval**	
Wage earning	65.0		
Middle sector	37.6	1-12 months	123.0
		13-23 months	80.9
		24-47 months	55.1
Mother's education		48+ months	41.8
Low	82.6		
Middle and high	42.3		

Source: ENFES, 1987.

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Table IV-2 Mortality differentials in the total population and in four social sectors, by selected variables (in thousands)

| | Total population | Agricultural | Working sector | | |
			Non-wage earning	Wage earning	Middle sector
Age of the mother at birth	21-(-2)*	25-13*	18-(-15)*	18-9*	7.17*
Mother's education	40	45	14	23	12
Housing services index	44	30	43	31	36

*The first figure represents the difference between the 2q0 values for ages 15-19 and 34 and the second the difference between the ages 15-19 and 35-49.

Source: ENFES, 1987.

Table IV-3 Death probabilities between birth and age two (2q0) by age of mother at birth, housing services index and social sector (in thousands)

	Social sector							
			Working sector					
	Agricultural HSI*		Non-wage earning HSI*		Wage earning HSI*		Middle sector HSI*	
Age	Good	Bad	Good	Bad	Good	Bad	Good	Bad
15-19	133	89	50	83	62	81	37	44
20-34	48	79	32	69	40	71	26	67
35-49	12	98	50	122	35	122	12	87

* HSI = Housing services index

Source: ENFES, 1987

Table IV-4 Multiple regression models of infant mortality (2q0) for the total population and social sectors

Variable	Total B	Beta	Agricultural B	Beta	Working sector Non-wage earning B	Beta	Wage earning B	Beta	Middle sector B	Beta
Incomplete primary	-0.020	-0.041**	-0.016	-0.030	0.015	0.034	-0.028	-0.058*	-0.063	-0.116**
Primary complete and incomplete secondary	-0.029	-0.057**	-0.043	-0.058	0.012	0.025	-0.034	-0.071*	-0.044	-0.117*
Complete secondary and beyond	-0.032	-0.056**	-0.047	-0.032	0.009	0.014	-0.042	-0.068**	-0.044	-0.123*
> 20,000	-0.003	-0.006	-0.015	-0.015	0.002	0.005	-0.003	-0.006	-0.004	-0.012
Metropolitan areas	-0.013	-0.022	-0.050	-0.019	0.006	0.012	-0.000	-0.001	-0.028	-0.075**
HSI	-0.023	-0.050	-0.010	-0.014	-0.044	-0.096**	-0.024	-0.049**	-0.022	-0.041*
AgeMB20-34*Birod 1	-0.027	-0.037**	-0.037	-0.032	-0.004	-0.005	-0.035	-0.047**	-0.020	-0.045*
AgeMB20-34*Birod 2-3	-0.019	-0.036**	-0.026	-0.038	-0.034	-0.066*	-0.006	-0.011	-0.021	-0.056*
AgeMB20-34*Birod 4-5	-0.011	-0.018	-0.006	-0.010	-0.043	-0.078**	-0.011	-0.019	-0.000	-0.000
AgeMB35-49*Birod 1	-0.051	-0.008	-0.092	-0.006	-0.055	-0.010	-0.053	-0.007	-0.033	-0.009
AgeMB35-49*Birod 2-3	0.002	0.008	-0.078	-0.017	0.072	0.023	-0.076	0.029	-0.041	-0.025
AgeMB35-49*Birod 4-5	-0.037	-0.019*	-0.007	-0.003	-0.065	-0.030	-0.043	-0.022	-0.040	-0.030

	Total	Agricultural	Working sector	Middle sector
F	12.44	3.02	2.00 / 3.25	3.77
Signif F	.00	.00	.02 / .00	.00
R^2	.01	.01	.02 / .01	.02

* coefficient significant at $p < .05$
** coefficient significant at $p < .01$

AgeMB = age of mother at birth
Birod = birth order
HSI = housing services index

V. MATERNITY AND WORK IN MEXICO IN THE LATE EIGHTIES

Brígida García
Orlandina de Oliveira

Introduction

We are interested in examining the conditioning variables of extradomestic female work in different social sectors of the country in 1987. The study refers to a period marked by a strong economic recession, which was preceded by a decade of fertility decline. Under these conditions, it is our hypothesis that it is possible to expect changes in the role of certain conditioning variables, especially in the traditionally inhibiting effect of maternity upon employment.

We have had the opportunity of demonstrating previously in a multivariate analysis, the existence of a negative relationship between the number of children and female work, for the total female population aged 15-49 years in 1981 (Christenson, García, and Oliveira, 1989). We are now interested in analyzing the relationship between maternity and work in different sectors of society.

In the majority of research projects, the socioeconomic status of the household heads is considered as a variable, in addition to others such as education, when searching for an explanation for socio-demographic behaviors. As a large part of the differences among social groups is expressed through unequal access to educational opportunities, in controlling the effect of education, the importance of socioeconomic status is minimized. In this study, we use a different methodological strategy: Social sectors are considered as sub-populations, within which it is possible to expect differential influences of education and of other conditioning variables of female work.[12]

Our information from the National Fertility and Health Survey (ENFES) is analyzed using logistic regression models. The same regression model is applied for sub-populations of women belonging to different social sectors. These models formalize the relationship between female work and the number of children living in the household (maternity condition), taking into account the variables of age, marital status, education, and the place of residence of the women interviewed. Logistic regression is the appropriate statistical tool when the dependent variable is conceptualized in dichotomous terms (working--not working), especially when its mean probability differs substantively from 0.5 (Christenson et al., 1989; Hanushek and Jackson, 1977).

In the next section, we summarize some background information for the study, and subsequently we present the findings of the analysis for the conditioning variables of female work, which receive more attention in this case (the number of children living in the household and marital status, which constitute the variables more closely related to the interests of the overall document). In a broader study, we also take into consideration the interesting findings with respect to education, age, and place of residence (see Table V-1 and García and Oliveira, 1989a, 1989b).

Principal Findings of the Study

The interrelationship between fertility and work has received special attention in social demography. It constitutes a central aspect of this field of study to establish the direction and sense of the relationship. That is to say, to determine whether fertility conditions work or vice versa, by means of the proper sources of information and statistical methods. In a recent article, where we summarized the studies which intend to specify the impact of female work on fertility, we reported that there seems to exist only a negative relationship when

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[12] As mentioned in the introduction, a similar strategy for the study of fertility is used by the United Nations (1987), defining sub-populations in countries, according to their development levels. It is also possible to try hierarchical models, which contemplate the effect of socioeconomic status on education and of both factors on different socio-demographic behaviors (see Rodríguez and Cleland, 1980).

women do not perform family occupations, in the more developed countries of Asia, Latin America, and the Caribbean. This means that the relationship depends on the degree of development of the countries under consideration, apart from other aspects. Also, in the interpretation of such findings, the possible influence of fertility on work gains growing support, that is to say, those studies which incorporate the recent experience of a larger number of countries by means of multivariate analyses, consider the limiting effect of the number of children upon the type of occupation, instead of expecting to prove a decline in fertility, resulting from female economic participation (García and Oliveira, 1989a; United Nations, 1987).

In projects which, as ours, attempt as a point of departure to determine the impact of fertility on work, the situation is equally complex. In the existing syntheses, it is common to arrive at the conclusion that the results do not always point in the same direction. In some cases, the expected negative relationship is detected, as was the case for 1981, but in others it is not possible to determine any relationship at all, or else it is positive in the case of certain social sectors (Standing, 1978; Wainerman and Recchini de Lattes, 1981).

Aside from what happens with fertility, it is well documented in different types of studies that, for the population as a whole, married women show less participation in extradomestic activities, in comparison to single women, widows, divorcees, and separated women. This is partly due to the heavier domestic workloads and to the obstacles that exist in hiring women with family responsibilities.[13] Nonetheless, recent studies show an increase in the participation of married women in the economies of Mexico and other Latin American countries (Pedrero and Rendón, 1982; Recchini de Lattes, 1983; Wainerman and Recchini de Lattes, 1981). Also, the figures for the 1987 ENFES, in comparison to those derived from the National Demographic Survey of 1982 (END) show larger increases in the economic participation of married rather than single women. The results of statistical models (Table V-1) enable us to point out that, despite the increase registered across time with respect to the economic participation of married women, they still show less participation in extradomestic activities than single women in three of the four sectors analyzed. Widows, divorcees, and separated women, on the other hand, display considerably higher participation than married women in all cases.

It stands out in the analysis of marital status among non-wage earning working sectors that the difference between single and married women in economic participation is not statistically significant.[14] In this sector married women probably work as much as single women, because they collaborate in their husbands' "businesses." Data of the ENFES indicate this direction, as 52.8 percent of married working women in non-wage earning sectors are also occupied in non-wage earning activities, in comparison to 22 percent of married women in wage earning sectors.

We also find important differences among social sectors, with respect to the effect of the number of children living with the woman upon her extradomestic work (Table V-1). Among middle and non-wage earning working sectors, sub-populations with a high female economic participation in general, the relationship follows the expected negative pattern. This means that women with children have a lower probability of working than childless women.[15]

Among wage earning working sectors as in agricultural ones--sub-populations characterized by lower female participation levels--women with children show the same probability of working as childless ones. In the case of women of agricultural origin, this result is not surprising, as it is known that in rural environments the division between home and working place is frequently nonexistent and that women simultaneously work and take care of their children. As a matter of fact, within this social sector, women with three or more children perform agricultural activities or work on their own in 41.8 percent and 34 percent of the cases, respectively (Data of the ENFES, 1987).

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[13] For Mexico, see Covarrubias and Muñoz, 1978; Elú de Leñero, 1975; 1986; Rendón and Pedrero, 1976; de Riz, 1986; Wainerman and Recchini de Lattes, 1981.

[14] The .224 coefficient is not different from zero for statistical purposes (Table V-1).

[15] For women in non-wage earning sectors, the coefficient for 1-2 children (-.813) is significant for p < .05, and the coefficient for 3 or more children (-1.266) is significant for p < .01 (Table V-1).

On the contrary, the findings for wage earning working sectors attract attention. A previous study conducted during the years of economic growth in Mexico City indicated that the women married to wage earning manual workers with small children displayed one of the lowest economic participation rates (García et al., 1982). Today, in the late eighties, we find that women from working wage sectors with children have the same probability of entering the labor force in different situations than childless ones. According to the ENFES data, in order to work in extradomestic activities, these women use different strategies: a) Almost 25 percent work in non-wage earning occupations. This activity is performed on a part-time basis, which enables women to care for their children while they work, in a significant number of cases. b) Others, the same as the household heads, are wage earning workers (around 35 percent). These women perform their activities largely on a full-time basis, and they rely heavily on the help of relatives or institutions for taking care of their children. c) Finally, others (nearly 35 percent) work in nonmanual occupations and, in many cases, also count on family or institutional help, or else their children are already older or do not require special care.

Our findings suggest that maternity has lost its impact in inhibiting female work in the most impoverished sectors of society. This may be partly due to the strong decline in real wages and, consequently, to the greater need for women to work, in order to obtain the necessary income to compensate for the low wages received by other family members. However, we are aware that we need to conduct studies in the same analytical perspective for previous historical periods, in order to fully demonstrate that a change has occurred in the relationship between maternity and work in the different social sectors (see García and Oliveira, 1988).

Table V-1 Logistic regression coefficients of female economic participation in different social sectors (weighted sample)

		Social sectors Working		
	Agricultural	Non-wage earners	Wage earners	Middle
Marital Status				
Married[a]	---	---	---	---
Single	.938 **	.224	1.799 **	.528 **
Widowed/separated/ divorced	1.319 **	1.431 **	2.056 **	1.966 **
Number of Children				
0[a]	---	---	---	---
1-2	.255	- .813 *	-.176	-.596 **
3+	-.223	-1.266 **	-.385	-.723 **
Age				
15-19	-.599 **	-1.799 **	-2.259 **	-2.567 **
20-24	-.214	-1.130 **	-1.017 **	-1.072 **
25-29	-.343	-.215	-.424 *	-.461 **
30-34	-.072	-.352	.378 *	-.071
35-39[a]	---	---	---	---
40-44	-.030	-.084	-.254	-.295
45+	-.582 *	-1.121 **	-.784 **	-.336
Education				
Incomplete primary	.848 **	.356	-.183	-.259
Complete primary	-.021	-.414	-.161	-.543 **
Complete secondary[a]	---	---	---	---
Preparatory and more	.741	-.100	-.019	.586 **
Place of residence				
Rural[a]	---	---	---	---
Urban	.410 *	.374 *	.544 **	-.080
Metropolitan	1.079 *	.398 *	.298 *	-.064
Constant	-1.635	.405	-.839	.592
Log likelihood	-1164.89	-675.32	-1519.58	-1509.91

[a] Reference category omitted in the models.
** Significance at p< .01
* Significance at p< .05

Source: Encuesta Nacional sobre Fecundidad y Salud (ENFES), 1987.

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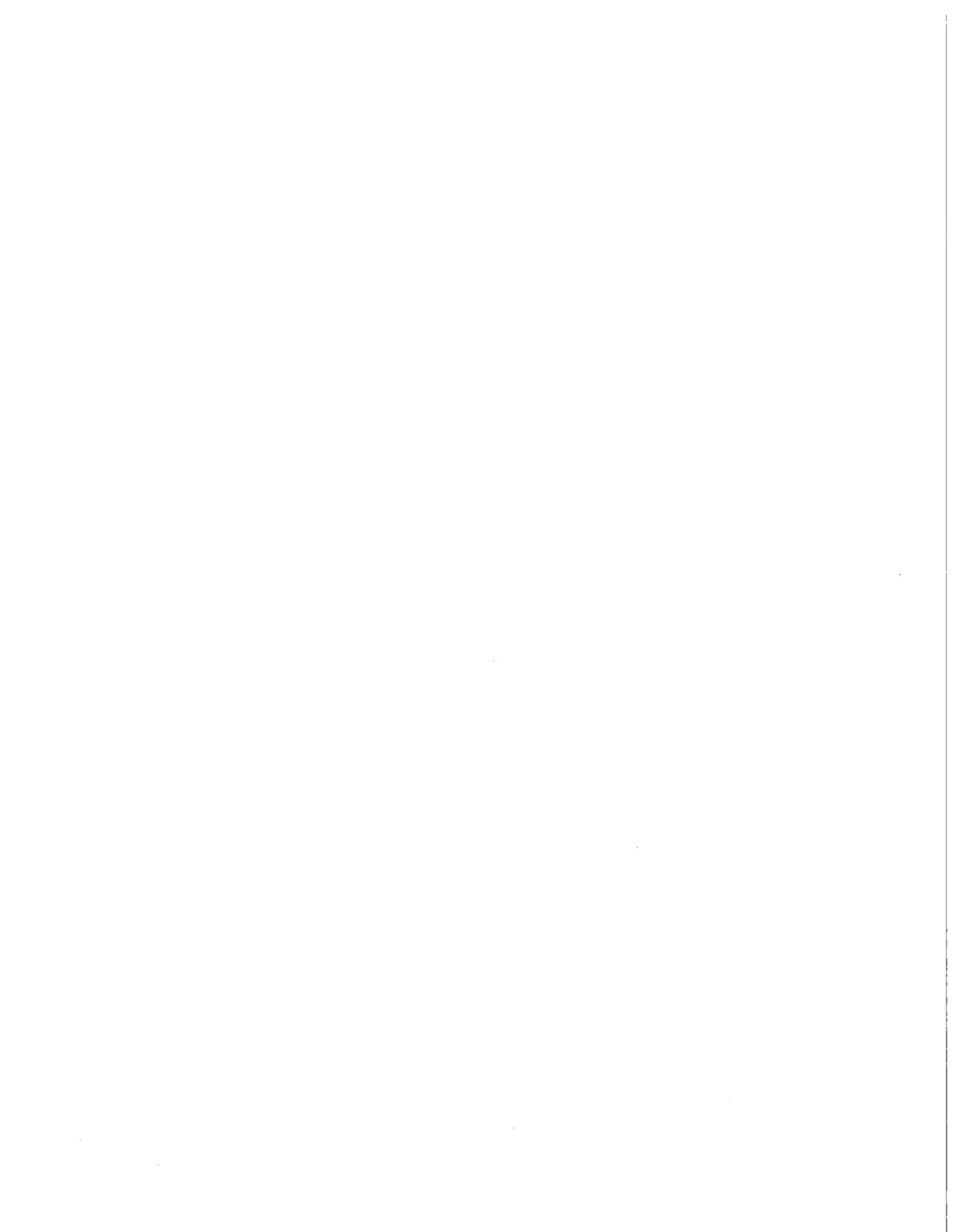
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The research project reported on in this issue is "Social Sectors and Reproduction in Mexico." For further information on this work, write to the principal investigators, Mario Bronfman, Brígida García, Fátima Juárez, Orlandina de Oliveira, and Julieta Quilodrán, Centro de Estudios Demográficos y de Desarrollo Urbano, El Colegio de México, Camino al Ajusco No. 20, México, D.F., México.

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