

7-1990

# Development Gender and Fertility in Iran

Akbar Aghajanian

*Fayetteville State University*, [aaghajanian@uncfsu.edu](mailto:aaghajanian@uncfsu.edu)

Follow this and additional works at: <http://digitalcommons.uncfsu.edu/soci>

---

## Recommended Citation

Aghajanian, Akbar, "Development Gender and Fertility in Iran" (1990). *Sociology Department Working Papers*. Paper 5.  
<http://digitalcommons.uncfsu.edu/soci/5>

This Article is brought to you for free and open access by the College of Arts and Sciences at DigitalCommons@Fayetteville State University. It has been accepted for inclusion in Sociology Department Working Papers by an authorized administrator of DigitalCommons@Fayetteville State University. For more information, please contact [xpeng@uncfsu.edu](mailto:xpeng@uncfsu.edu).

# WORKING PAPERS



MICHIGAN STATE UNIVERSITY

DEVELOPMENT, GENDER INEQUALITY,  
AND FERTILITY IN IRAN

By  
Akbar Aghajanian  
University of Washington

Working Paper #210  
July 1990

Abstract: The purpose of this paper is to investigate the relations between development, women's relative access to valued resources, and fertility levels across communities in Iran. Theoretical considerations of the research are built on the women and development literature and the recent work on sex stratification. The empirical analysis is based on aggregate data from 162 districts (shahrestans) in Iran in 1976. The status of women, as measured by relative access to valued resources in the community, is analyzed and related to the level of development of the community. Furthermore, the impact of the relative status of women on fertility variation across communities is examined. It is hypothesized that to the extent that development and modernization decrease gender inequality and create a less rigid gender system in a society, the level of fertility declines. The results suggest that development improves the relative access of women to education and health resources. But there was no significant improvement in the relative access of women to income-generating activities. Fertility decline is associated with improvement in the relative status of women in accessing the valued resources, and improvement in the position of women is an important path through which development can reduce fertility. It is concluded that development policies that exclude women and benefit men do not have declining effect on fertility levels and ideals.

About the Author: Akbar Aghajanian received his Ph.D. from Duke University and postdoctoral training in Population and Development Program at Cornell University. He has taught at Shiraz University in Iran and was a visiting scientist at the Center for Studies in Demography and Ecology, Department of Sociology, University of Washington. He is currently Associate Professor of Sociology at Fayetteville State University. He has published widely about social demography, family, and the status of women in Iran.

## DEVELOPMENT, GENDER INEQUALITY, AND FERTILITY IN IRAN

### INTRODUCTION

In the available literature about fertility patterns in Middle Eastern countries, the status of women has been referred to as an important influential factor in high levels of fertility (Kirk 1968; Youssef 1978). Iran, as an example, has one of the fastest population growth rates in the region. The population of Iran, 19 million in 1956, had reached the level of 25.8 million in 1966 and 33 million by 1976 (Iran Statistical Center, 1980). Estimates show that the Iranian population was growing at about 2.9 percent per year in the mid-1970s (Iran Statistical Center, 1977). A total fertility rate of 6.4 births per woman was recorded in this period. The rate of population growth has been about 3.2 per year during the last decade and the population of Iran has increased from 33 million in 1976, to 50 million in 1986 (Iran Statistical Center, 1987). No estimate of fertility level is available, but the birth rate has increased significantly during the last decade (Aghajanian 1988).

Such a high rate of fertility is the result of early family formation and continued childbearing to the end of the reproductive period. The low status of women has been mentioned as a partial factor behind such a reproductive pattern (Allman 1978). However, few empirical studies of the status of women and its relation to fertility levels are carried out. Some authors have referred to the ideological and legal aspects of the situation of women and studied the status of women in the context of the Islamic ideology--law and rules about women in such areas as property, inheritance, and divorce (Mahdi 1981; Nashat 1980; Higgins 1985).

The objective of the present study is to investigate the determinants of gender inequality in access to valued resources, as one dimension of the status of women. Specifically, access to education, health, and economic resources (paid employment) of women at the community (district) level is conceptualized based on gender stratification theory. The paper continues with a review of this concept. Then the linkage between fertility and the relative status of women and development is analyzed with 1976 census data from 162 communities in Iran.

### CONCEPTUALIZATION

The "status of women" is a relative concept and should be considered in comparison to that of men in a society or community (Mason 1986). Therefore, the position of women relative to men can be conceptualized through a focus on gender inequality as a system maintained by certain rituals and institutions in the society. To the extent that this system is non-egalitarian, men are the beneficiaries of privileged access to resources, autonomy, and prestige and power in the society.

As a system, gender stratification is separate from, and in addition to, the class, caste, or ethnic stratification systems in the society (Cain 1979). Given this system, the lives of women and female children in a society are not only influenced by the family position in a system of class and/or caste stratification but also by the system of gender stratification.

Various institutions and customs can operate to support and reinforce the gender stratification system in different societies. These include patriarchal organization and absence of bilateral kinship structure (Dyson and Moore 1983); inequality of inheritance right; laws and mores related to property and land holdings; significant economic transaction in the marriage contract; female limitation in social intercourse, segregation of women (Dixon 1976); political decisions made by male elders; the social customs maintaining inequality by prevalence of a high husband-wife age differential for keeping physical and psychological dominance; limiting choice in mate selection and arrangement of marriages by male elders of the family (Mason 1986). Hence, a rigid gender stratification is maintained by these social institutions to assure male superiority in the family and society.<sup>1</sup>

In operationalizing the concept of status of women, through a focus on gender inequality, it is appropriate to measure the position of women relative to men with respect to the three broad areas mentioned above. Therefore, the status of women can be measured in terms of: (1) relative access of women to wealth and valued resources in the community (Safilios-Rothschild 1982); (2) relative autonomy of women within and outside of the household (Dyson and Moore, 1983); (3) relative prestige and political power of women in the community (Blumberg 1984).

Objective measures could be constructed for each of these relative positions and compared across societies or communities within one society. While there is not always a correlation between access to resources and the other two dimensions of status of women, access to valued resources precedes autonomy and prestige. In fact, in many of the Third World societies access to the valued resources is the center point of the gender inequality. There is a variety of resources that one can consider in a particular society, but access to education and health resources, and paid employment seems to be among the most commonly shared issues in these countries. These are highly valued and scarce resources; hence, the gender stratification system operates to allocate them.

In most Third World countries health care is very expensive. Families have to travel to larger urban centers where they can visit crowded medical clinics. This adds an economic cost of transportation and the cost of losing one day of work to the usual health care costs. Hence, it is possible for investment of household in health services for the family to be allocated by the gender stratification system (Basu 1989).

Education services are also among the expensive and scarce resources in most Third World countries. Legally, in many of these countries elementary education is compulsory and should be provided free by the government. In reality, however, access to such education services is a cost to the household. Costs related to books and stationery, for example, are a heavy burden on the limited family income. For secondary education, the child often must be sent to a larger town where there is high school, but housing, transportation, and maintaining separate living quarters for a student are very costly. Under these circumstances, education would absorb a big portion of the resources of the household. Gender stratification operates to allocate resources for educational investment in children.



Access to paid employment, another scarce resource in developing countries, brings income and economic independence to women. However, it is regulated by gender stratification because the opportunities for such employment are very limited especially in less developed areas. The system operates to exclude women from paid employment and in turn puts men in a superior position for access to economic resources such as land.

In this study, the relative status of women (gender inequality) is operationalized in terms of access to these three resources: health, education, and paid employment.<sup>2</sup> These resources are selected not only because they are scarce in most Third World countries and central to the improvement of the status of women, but also because data related to them are available from the 1976 census of Iran for the present study.

#### DEVELOPMENT AND THE RELATIVE STATUS OF WOMEN

The literature on economic development and growth provides many examples of regional disparities and inequality in the process of economic development in Third World countries (Todaro 1982). Within a country some regions may reap a disproportionate share of benefits of development while other regions may become victims of this process (Looney 1982). It is clear that women are more vulnerable to losing ground relative to men in these less developed regions (Tinker and Bransen, 1976; Society for International Development, 1985).

Patterns of regional and gender inequality are interrelated, a relation which flows from regional inequality to gender inequality. In regions or communities which have gained a smaller share of the benefits and resources of development, gender stratification (in addition to class) will operate even further to allocate the limited resources (Safilios-Rothschild 1985). The more scarce the resources in a given region (the less developed), the greater will be the role of sex stratification in accessing and acquiring valued resources; therefore, the level of development could improve the situation of women by expanding resources. Cross-sectionally this means that a higher level of economic development should be associated with a lower level of gender inequality in access to the valued resources across societies or across communities in one society. Over time, as a society or community develops, there are more resources available, and consequently less need for a rigid gender stratification system to allocate resources. This means--comparing two levels of development, one community at two different times or two communities at one time--that gender stratification is less rigid in the higher development situation.<sup>3</sup>

#### FERTILITY AND THE RELATIVE STATUS OF WOMEN

A growing base of literature now refers to the significance of the status of women in relation to fertility decline (Dixon 1975; Griffith 1979; Youssef 1980). The basic argument is that variation in the fertility level across societies is partly the result of differences in the relative status of women (gender inequality). Specifically, in societies with low status of women, fertility levels are high.

The linkage between fertility and the relative status of women can be viewed in terms of the wealth flow between men and women in the context of household and community. Hence, valued resources (which include income, food, desirable entertainment, health and education facilities, or any other particular resource valued in a society) could flow from women to men (or be withheld from women) based on the relative status of women in the society. In a society with a low relative status of women to men, the wealth flows from women to men and the sex stratification system maintains this direction of wealth flow (Smith 1989). Over time the direction of wealth flow may be changed by legal changes and by the increased availability of resources (higher level of economic development) in the community.

In a society with a rigid gender system the only available channel for improving the status for women is through their reproductive ability, particularly in bearing sons who are considered to be more beneficial than daughters to the male elders of the family/household organization. In this context, women obtain a more secure status from their ability to have children, especially sons. There is no motivation to limit the number of children until the family has a certain number of sons who benefit the male elders of the family and eventually the women themselves as well. Only household roles are valued for women, and importance is given to reproductive roles.

Another aspect of the linkage between high fertility and a low status of women is the risk and security of women at different stages in the life cycle. As a society with rigid gender stratification constrains the choices of women, women are thereby compelled at a young age to marry men much older than themselves. They, therefore, usually outlive their husbands, and having had very limited economic opportunities available to them, they have to depend on familial support during widowhood. Hence, one of the best strategies is to build up the male membership of one's family by bearing as many sons and as early as possible in their marital life cycle (Cain 1980). This results in a pattern of reproduction: first birth, accomplished at an early age followed by a short interval between the first and second birth (especially if the first child is not male), and continued fertility often up to the end of reproductive period.

#### ANALYTICAL FRAMEWORK

The relative status of women or gender inequality is a characteristic of aggregates rather than individuals (Mason 1986). In fact, gender stratification can be called a system insofar as it is uniform for some aggregates. The appropriate aggregates in which gender inequality is homogenous, and across which it varies, could be administrative units, regions or provinces, or a race or ethnic community with delineated culture. In each of these culturally or geographically delineated communities, the relative status of women to men on any objective measure could be compared across the communities. Based on the theoretical discussion in the previous section, the causal linkages between development, gender inequality, and fertility across communities are shown in Figure 1. The underlying hypotheses in this model follow:

Hypothesis 1. The higher the level of development of a community (and the more available the resources in the community), the less rigid the gender stratification of the community and the more access women have to the resources in the community (and the higher the relative status of women).

Hypothesis 2. The higher the relative status of women in a community, the later the family formation and the lower the fertility level in that community. A significant part of the effect of development on fertility is transmitted by gender inequality variables.

Hypothesis 3. The higher the level of development in the community, the later the family formation of women and the lower the level of fertility. This causal linkage occurs through several paths, one of which is the relative status of women.

#### METHODOLOGY

In the case of Iran the most appropriate aggregate units are administrative districts (Sharestans) each containing at least one urban center of a population of 5,000 or more, and a set of villages with a population size averaging 320. These districts are small enough to have cultural, class, and gender stratification system homogeneity. According to the 1976 Census of Population of Iran there were 162 districts; for each district, a census report was published with a full set of tables. This study is based upon analysis of data extracted from these published reports of the 162 census districts. The measurement of the variables from census data is explained below.

#### Family Formation and Fertility

Age at first marriage and age at first birth are two important demographic mechanisms linking the relative status of women and fertility. Age at first birth, though occurring with some variation, is highly correlated with age at marriage in developing countries; both are related to a situation of early family formation and motherhood (Hirschman 1982). While such measures are available at the individual level in surveys, the census data at the aggregate level do not contain this measurement of family formation. However, we can use the proportion of ever-married women among women 15-19 years old in each district as a proxy measure for early family formation and motherhood.

Fertility, is measured at the aggregate level by calculating the child-woman ratio (number of children under age 5 relative to number of women 15 to 44 years old) for each district. This measure has some weaknesses. It is affected by underenumeration of young children and mortality of both children and women. However, this weakness does not influence our relative comparison of districts.<sup>4</sup>

#### Relative Status of Women

Focusing on relative status of women with access to valued resources in the community, a series of ratio variables are calculated which approximate



gender inequality in access and acquisition of resources in each district. Note that selection of these relative status measures has been guided by theory and constrained by the availability of data in the census reports.

Inequality in access to education is measured by three ratio variables:

- a. Ratio of female primary school enrollment to male primary school enrollment
- b. Ratio of female middle school enrollment to male middle school enrollment
- c. Ratio of female high school enrollment to male high school enrollment

On these measures, a ratio of 1.0 means perfect equality. A ratio smaller than 1.0 signifies inequality and discrimination against women. Health care is among the valued resources whose distribution is influenced by the gender system. To the extent that health care is relatively inaccessible to the female population, this inequality is positively related to higher female mortality in general and female child mortality in particular (Basu 1989). Excess female child mortality is correlated with higher sex ratio of male to female children in age group 1 to 4 years old (Schultz 1982; Bose 1975; Jacobson 1975). Hence, in this study we use the ratio of number of males per 100 females in the age group 1 to 4 as a proxy for women's relative access to health care. The higher the ratio, the greater the neglect of female children regarding health care.

Access to employment is measured by the following ratio variables:

- a. Ratio of female activity rate to male activity rate
- b. Ratio of female unemployment rate to male unemployment rate
- c. Percent of females with paid employment in total paid labor force

#### Socioeconomic Development

Level of socioeconomic development of a district is measured by a composite index constructed by using conventional variables for measuring economic development. These include:

- a. Percent of male labor force in the non-agricultural sector
- b. Per capita electricity consumption
- c. Percent of population living within populations of 50,000 or more

Variable 1 represents the level of industrial development of the community. Variable 2 is used to measure the level of development and it is highly correlated with per capita income. Since per capita income data are not available at the district level, these variables serve as reasonable substitutes. Variable 3 measures the level of urbanization of the districts as one aspect of growth and modernization. These three variables were

selected from a list of highly correlated variables related to industrialization, urbanization, and overall development. Because of high correlation, the inclusion of other variables in the index caused no measurable difference.

## RESULTS

### 1. Gender Inequality in Access to Resources in Iran

Table 1 reports the mean for each of the ratio measures on the relative status of women in Iran. Gender inequality of access to education at all three levels of education examined here is significant. At that primary level, the enrollment rate of the female population is 74 percent of the enrollment rate for male children. At higher levels of education, with higher costs, this ratio declines.<sup>5</sup> At the middle school level, the rate of female enrollment is only 54 percent of the male enrollment rate. Gender inequality is most adverse at the high school level, where the rate of female enrollment is less than half of that for male enrollment (Table 1).

The available data from surveys show a significant difference between female and male mortality by age 1 in Iran. The rate of female infant mortality is 127 compared to that of 113 for males (Iran Statistical Center, 1977). A similar pattern prevails for childhood ages 1 to 4. On the average there are 110 surviving males for each 100 females in this age group, whereas at birth the male/female sex ratio is 104, reflecting the excess female mortality because of less favorable health care. To the extent that this measure reflects excess female mortality, it shows gender inequality in access to health resources.

With respect to access to employment, on the average the ratio of the labor force participation rate of women to that of men, ages 15 to 64 is .17. This low ratio suggests strong inequality with respect to this aspect of the status of women. The adverse situation is also evident in the ratio of unemployment rates. Whenever women succeed in entering the labor force, their unemployment is double that for men. The extreme inequality in access to income is also shown by the percent of women with paid employment among the total paid employed labor force: only 12 percent.

### 2. Development and Gender Inequality

Gender inequality as conceptualized and measured here varies across communities. One factor which is expected to change and loosen the gender stratification system is the expansion of resources at the community level. Economic development increases the availability of resources in the community and it should have a decreasing effect on gender inequality. Hence, development is expected to be positively related to measures of access to education, negatively to female excess mortality, and again positively related to measures of access to employment.

Table 2 shows the bivariate standardized regression coefficients of development for the gender inequality variables. It is clear that development has a decreasing effect on gender inequality with respect to education; in

communities with a higher level of development, women have increased access to educational resources. The coefficients for all three variables measuring educational inequality are more than .50, and development explains about 30 percent of variance in each of the education variables.

The impact of development on health inequality is less than its impact on educational inequality. Development explains only 5 percent of the variance in the health inequality variable and the regression coefficient is  $-.23$ , but its effect is statistically significant. A higher level of development results in lower rates of inequality of survival between male and female children.

Development is expected to increase women's employment opportunities and improve their situation with respect to access to paid employment. However, the coefficients of development for employment inequality variables do not support this hypothesis. In fact, as observed from these data, the level of development of the community has no effect on the relative access of women to employment. This suggests that not all aspects of the status of women may improve equally by the processes of economic change.

### 3. Fertility and Gender Inequality

The hypothesis is that in the districts where the relative status of women is lower, family formation occurs earlier and the fertility level is higher. The variable measuring early family formation at the community level is the proportion of ever-married women among women 15 to 19 years old. The higher this proportion, the earlier the age of family formation and motherhood in the community. On the average, 34.2 percent of women 15 to 19 were ever-married women in 1976 in Iran.

Table 3 shows the standardized regression coefficients for the models' regressing proportion of ever-married women in age group 15 to 19 on development and gender inequality variables. The level of development explains 4 percent of the variance in early family formation and the variable's  $-.20$  (model 1). This supports the hypothesis that a higher level of development is associated with a lower proportion of ever-married women in age group 15 to 19, and hence, a later age of family formation and motherhood at the community level.

The coefficient for development decreases to  $-.13$ , when the model includes the first education inequality variable (model 2). The standardized regression coefficient for relative access to education is  $-.58$  and the model explains 27 percent of the variance. Similar results are observed when we consider relative access to education at the middle and high school level along with the development variable in models 3 and 4. When we examine all the three educational inequality variables in regression (model 5), both the primary school and high school variables are significant and the model explains about 31 percent of the variance in early family formation.

The higher levels of relative access to employment are expected to influence negatively, early family formation. This is observed in model 6, which includes development, educational inequality variables, and relative access to paid employment. It explains 42 percent of the variance, in



addition to 11 percent due to the employment variable. The coefficient for employment is  $-.33$ , indicating that the higher the relative access of women to paid employment in a community, the lower the proportion of those starting marriage and family formation before age 20.

The inclusion of the health variable as another dimension of the gender inequality system in model 7 adds to the explained variance in the family formation variable. Hence, each of the three measures of gender inequality has an independent effect on early family formation, and these effects are in a direction expected. However, they do not statistically remove the effect of development on family formation, contrary to what was hypothesized.

The child-woman ratio is the dependent variable in the analysis of the relation between fertility and gender inequality. The mean value for this variable is 801 children under 5 per 1,000 women 15 to 44, and the variable varies across the districts. Table 4 shows the standardized multiple regression coefficients of gender inequality and development variables for the child-woman ratio as a dependent variable. The strategy is to enter independent variables at different steps based on the ordering shown in Figure 1. Hence, the first independent variable entered into the model is development. This variable has a strong negative effect on the fertility ratio. The standardized regression coefficient for this variable is  $-.52$  and development explains 27 percent of the variance in the fertility level. In equation 2 we enter relative access of women to primary education along with development. The second model explains 41 percent of variance in the fertility level across communities in comparison to the 27 percent in the model which included only development. It is also clear that a significant part of the effect of development is transmitted through the educational inequality variable. The regression coefficient of development was from  $-.52$  in the first model and  $-.27$  in the second model.

The same model was tested using the measures of gender inequality at middle school and high school level. The pattern of results is similar to what we found for the primary level variable. Comparison of the results from models with education inequality at primary school, middle school, and high school levles suggests that gender inequality with respect to education at the primary level is the best predictor of the three; it carries the effects of development much more than the other two variables (models 3 and 4). Model 5 includes all three measures of gender inequality for education. In this model educational inequality at the primary level is the strongest determinant of fertility level, and the effects of the other two measures of gender inequality in education are not statistically significant. The model explains 42 percent of the variance in fertility across the districts, and the direct effect of development is reduced to almost half.

Model 6 includes relative access to paid employment along with the previous variables. Inclusion of this variable adds a modest amount to the explained variance, but this addition is statistically significant. Relative access to employment has some independent effect on fertility level. The inclusion of this variable also reduces the effect of inequality in education, as part of the effect of education occurs through access to employment.

Model 7 includes the health inequality variable along with all other variables in determining fertility behavior. After other variables are controlled, this variable does not have a significant effect on fertility.



In the final model we include the variable measuring early family formation. Although this variable adds significantly to the total variance explained, part of the effects of relative access to education and all of the effect of relative access to employment are transmitted through early family formation (model 8). The model explains 52 percent of the variance in fertility level across the communities.

## DISCUSSION AND CONCLUSIONS

There is a longstanding literature referring to the importance of status of women in relation to fertility decline. Most of this literature consists of speculations based on legal and ideological issues. The limited number of empirical studies have used a diverse number of indexes of status and roles of women with different units of analysis, resulting in inconclusive findings. Hence, there have been conceptual and empirical problems in the studies of the status of women and fertility.

Recent theoretical work on the status of women through a focus on gender inequality has clarified this concept by pointing to its different dimensions and by considering it in the context of comparing women to men. An important dimension in gender stratification is relative access to valued resources. However, the questions are: How would this concept be measured at the appropriate unit of analysis? What are the valued resources? How should the relative access to these resources be measured?

In this study an attempt was made to operationalize the relative status of women (gender inequality) in terms of access to three groups of resources at the community level. These included access to education, employment, and health resources. The selection of these resources was based not only on availability of data from the census data, but also on the fact that they are usually the scarce resources in Third World countries. The basic assumption is that these resources are scarce and valued and that hence their allocation is determined by gender stratification as well as class.

The ratio scales which are used to measure gender inequality in accessing these resources seem to be valid. Relatively speaking, the best variables were those measuring gender inequality with respect to education. Relative access to paid employment seems to be a good measure of economic inequality, though data on relative income and relative wages would improve the measurement. A good indirect measure of gender inequality with respect to health is the ratio of male child survival to female child survival (ages 1-4). Definitely, more direct measures of access to health resources would have improved the analysis.

The system of gender stratification in a society is maintained by ideology and various rituals, social customs, and institutions. The manifestation of this system is observable in such measures as relative access of women to different valued resources in the society. Two mechanisms can be considered in the changing and flexibility of gender stratification: (1) legal reforms to change the institutions and rituals maintaining gender inequality (mainly legal reforms or symbolic changes not discussed here); (2) expansion in the availability of resources (economic development). The results from this study show that not all aspects of the gender inequality system are influenced by

expansion of the resources in the communities. In particular, while education and health inequality declined with a higher level of development, relative access to employment did not increase. So it is possible to argue that the impact of development on the status of women varies for different dimensions of the status of women.

One of the longstanding explanations of fertility decline is the impact of development on fertility. Development reduces fertility through several paths:

1. Income effect and taste for non-child services and goods
2. Reduction of child mortality and hence a need for a number of births for a certain level of family size
3. Reduction of the value of children and increase in their costs
4. Improvement in the status of women

The income effect of development on fertility decline depends on how it has influenced different classes and groups (Repetto 1979; Murdoch 1980). The more evenly distributed the benefits of development, the more the effect of development on fertility. While distribution across classes has been noticed in the literature about development and fertility decline, less attention has been paid to the distribution effect of development across gender. In this paper, the analysis of data from Iran showed that the impact of development on fertility level is strong. But a significant portion of this effect occurs through reduction in gender inequality. This suggests that development programs and policies will have much more influence on fertility decline, with even distribution across men and women. In general, the success of development policies in reducing fertility depends on how such policies are cut across class and gender stratification systems.

Figure 1  
Analytical Model of Development, Gender  
Inequality and Fertility Across Communities in Iran

Factors Affecting Gender Inequality	Gender Stratification Variables	Fertility Variables
	Relative Access to Education	Family Formation
Development	Relative Access to Income and Paid Employment	Fertility
	Relative Access to Health Resources	

Development and legal changes are two factors that loosen the gender stratification system.

Table 1

Means of the Variables Measuring Gender Inequality in Iran

---

Variables	Mean or Percent
Female/Male Primary School Enrollment (Educ1)	0.74
Female/Male Middle School Enrollment (Educ2)	0.54
Female/Male High School Enrollment (Educ3)	0.48
Female/Male Activity Ratio (Labor Force)	0.16
Female/Male Unemployment Ratio (Unemployment)	2.04
Number of Males Per 100 Females 1-4 years. (Survival Ratio)	109.6
% Share of Women in Paid (Employment)	12.0

---



Table 2

Regression of Gender Inequality Variables on Development

---

Dependent Variable	Regression Coefficient	Explained Variance	F-ratio
Educ1	.55**	.30	69.9**
Educ2	.61**	.37	96.8**
Educ3	.54**	.28	64.7**
Sex Ratio	.23*	.05	8.6*
Labor Force Ratio	-.03	.01	1.0
Unemployment	-.02	.01	1.0
Paid Employment	-.06	.03	1.0

---

\*Statistically significant at .05

\*\*Statistically significant at .01

Table 3

Standard Regression Coefficients of Development and of Gender  
Inequality Variables for Proportion Ever-Married Women 15-19

Variables	Regression Models						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Development	-.20*	-.13*	-.16*	-.06	-.19*	-.15*	-.15*
Educ1		-.58**	--	--	-.50**	-.39**	-.39**
Educ2			-.57**	--	-.10	-.03	-.03
Educ3				-.49**	-.32**	-.31**	-.31**
Paid Employment						-.33**	-.33**
Sex Ratio							.20**
R-Squared	.04	.27	.27	.20	.31	.42	.45
F-Ratio	6.1*	25.4**	25.2**	20.6**	17.7**	20.3**	22.3**

\*Statistically significant at .05

\*\*Statistically significant at .01

Table 4

Standardized Regression Coefficients of Development  
and Gender Inequality Variables for Fertility Ratio

Variables	Regression Models							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Development	-.52**	-.27**	-.29**	-.38**	-.28**	-.28**	-.33**	-.33**
Educ1		-.42**	--	--	-.51**	-.47**	-.32**	-.32**
Educ2			-.37**	--	-.16	-.13	-.12	-.12
Educ3					-.13	-.10	-.02	-.02
Paid Employment						-.12*	-.03	-.03
Sex Ratio						--	-.12*	.06
Proportion Married								-.38**
R-Squared	.27	.41	.32	.31	.42	.43	.44	.52
F-Ratio	59.0**	55.8**	43.**	37.0**	28.2*	23.**	24.0**	27.0**

\*Statistically significant at .05

\*\*Statistically significant at .01

Notes

Acknowledgment

An earlier version of this paper was presented at the 1989 Annual Meeting of the Population Association, Baltimore, March 30-April 1. I am thankful for comments by Professors Charles Hirschman, John Casterline, and Herbert Smith, and the reviewer for the Working Papers series. This research was made possible by a grant from the Rockefeller Foundation (Research Program on Women's Status and Fertility).

1. Not all these institutions may exist in all societies with rigid sex stratification. Hence, it is not appropriate to measure the status of women across societies in terms of existence or lack of any or a combination of these institutions. Rather, it is important to compare the outcome--relative status of women on objective measures such as access to health--across societies.
2. Other resources can be added to this list for a particular society depending on the scarcity and importance of these resources in that society.
3. This does not override the fact that in general men have been the major beneficiaries of development process in developing countries.
4. Note that under-remuneration is greatest for underdeveloped districts; it means that the rates we are getting for these areas are less than the actual prevailing rates. Hence, this underestimation does not bias our measurement of the relationship between fertility, status of women, and development.
5. This does not override the fact that cultural and social factors also count toward school enrollment.



## References

- Aghajanian, Akbar  
1988 Post-Revolutionary Demographic Trends in Iran. In: Post-Revolutionary Iran, ed. by Hoosang Amir Ahmadid and Manoucher Parvin. Boulder, CO: Westview Press.
- Agricultural Development Council  
1977 The Changing Role of Women in Rural Societies: A Summary of Trends and Issues. Seminar Report. No. 12.
- Allman, James (ed.)  
1978 Women's Status and Fertility in The Muslim World. New York: Praeger Publishers.
- Basu, Alaka Malwade  
1989 Is Discrimination in Food Really Necessary for Explaining Sex Differentials in Childhood Mortality? Population Studies 43(2):193-210.
- Blumberg, Rae Lesser  
1984 A General Theory of Gender Stratification. In: Sociological Theory, ed. by Randall Collins. Pp. 23-101. London: Jossey-Bass.
- Bose, Aki  
1975 A Demographic Profile. In: Indian Women, ed. by Devaki Jain. Pp. 127-184. New Delhi: Patiala House.
- Boserup, Ester  
1977 Introduction. In: Women and National Development: The Complexities and Change, ed. by Wellesley Editorial Committee. Chicago: The University of Chicago Press.
- Buvinic, Mayra  
1976 Women and World Development: An Annotated Bibliography. Washington, DC: Overseas Development Council.
- Buvinic, M., M.A. Lycette, and W.P. McGreevey (eds.)  
1983 Women and Poverty in the Third World. Baltimore: The Johns Hopkins University Press.
- Caldwell, John C.  
1982 Theory of Fertility Decline. New York: Academic Press.
- Cain, Mead  
1979 Class, Patriarchy,, and Women's Work in Bangladesh. Population and Development Review 5(3):405-438.
- Chen, L.C., E. Hug, and S. D'Souza  
1981 Sex Bias in the Family Allocation of Food and Health Care in Rural Bangladesh. Population and Development Review 7(1):55-70.
- Dixon, Ruth B.  
1975 Women's Rights and Fertility. Reports on Population/Family Planning, No. 17 (January).

- 1976 The Roles of Rural Women: Female Seclusion, Economic Production and Reproductive Choice. In: Population and Development, ed. by Ronald G. Ridker. Baltimore: The Johns Hopkins University Press.
- Dyson, Tim and Mick Moore  
1983 On Kinship Structure, Female Autonomy, and Demographic Behavior in India. Population and Development Review 9(1):35-60.
- Griffin, Janet D.  
1979 Rural Development, Women's Role, and Demographic Change. Paper presented at the 1979 Meeting of the Population Association of American, Philadelphia, PA, April 26-30, 1979.
- Higgins, Patricia J.  
1985 Women in the Islamic Republic of Iran: Legal, Social, and Ideological Changes. Journal of Women in Culture and Society 10(3):477-494.
- Hirschman, Charles  
1982 Social, Cultural, and Economic Determinants of Age at First Birth in Pennisular Malaysia. Population Studies 34(3):507-519.
- Iran Statistical Center  
1977 Population Growth of Iran, 1974-1975. Tehran: Iran Statistical Center.  
1979 Statistical Yearbook, 1978. Tehran: Iran Statistical Center.  
1980 Results of the 1976 Census of Population and Housing of Iran. Tehran: Iran Statistical Center.  
1987 Statistical Selections 2(13).
- Kirk, Dudley  
1968 Factors Affecting Moslem Natality. In: Population and Society, ed. by Charles Nam. Pp. 230-244. Boston: Houghton Mifflin Company.
- Looney, Robert E.  
1982 Economic Origins of the Iranian Revolution. New York: Pergamon Press.
- Mahdi, Ali Akbar  
1981 Women of Iran: A Bibliography of Sources in the English Language. Review of Iranian Political Economy and History 4(2):59-86.
- Mason, Karen Oppenheim  
1986 Status of Women and Fertility. Sociological Forum 1(2):284-300.
- Murdoch, William W.  
1980 The Poverty of Nations. Baltimore: The Johns Hopkins University Press.
- Nashat, Guity  
1983 Women and Revolution in Iran. Boulder, CO: Westview Press.
- Repetto, R.  
1979 Economic Equality and Fertility in Developing Countries. Baltimore: The Johns Hopkins University Press.



OFFICE OF WOMEN IN INTERNATIONAL DEVELOPMENT  
MICHIGAN STATE UNIVERSITY  
ISSN# 0888-5354

The Office of WID at Michigan State University began its WOMEN IN INTERNATIONAL DEVELOPMENT PUBLICATION SERIES in late 1981 in response to the need to disseminate the rapidly growing body of work that addressed the lives of women in Third World countries undergoing change. The series cross-cuts disciplines and brings together research, critical analyses and proposals for change. Its goals are: (1) to highlight women in development (WID) as an important area of research; (2) to contribute to the development of the field as a scholarly endeavor; and (3) to encourage new approaches to development policy and programming.

The WORKING PAPERS ON WOMEN IN INTERNATIONAL DEVELOPMENT series features journal-length articles based on original research or analytical summaries of relevant research, theoretical analyses, and evaluations of development programming and policy.

The WID FORUM series features short reports that describe research projects and development programs, and review current policy issues.

EDITOR: Rita S. Gallin  
MANAGING EDITOR: Teresa Swezey  
EDITORIAL ASSISTANT: Mary Sullivan  
PRODUCTION MANAGER: Laura Carantza  
DISTRIBUTIONS MANAGER: Tracey Wolf

EDITORIAL BOARD: Margaret Aguwa, Family Medicine; Marilyn Aronoff, Sociology; James Bingen, Agricultural Economics; Warren Cohen, Asian Studies Center; Maureen Eke-Stigler, African Studies Center; Anne Ferguson, Anthropology; Ada Finifter, Political Science; Peter Gladhart, Family & Child Ecology; John Hinnant, Anthropology; Linda Cooke Johnson, History; Subbiah Kannappan, Economics; Akbar Mahdi, Sociology; Assefa Mehretu, Geography; Anne Meyering, History; Ann Millard, Anthropology; Julia R. Miller, College of Human Ecology; Lynn Paine, Teacher Education; Nalini Malhotra Quraeshi, Sociology; Barbara Rylko-Bauer, Anthropology; Paul Strassmann, Economics; David Wiley, African Studies Center; Jack Williams, Geography; Kim A. Wilson, Institute of International Agriculture; Khalida Zaki, Department of Sociology.

NOTICE TO CONTRIBUTORS: To provide an opportunity for the work of those concerned with development issues affecting women to be critiqued and refined, all manuscripts submitted to the series are peer-reviewed. The review process averages three months and accepted manuscripts are published within ten to twelve weeks. Authors receive ten free copies, retain copyrights to their works, and are encouraged to submit them to the journal of their choice.

Manuscripts submitted should be double-spaced, sent in duplicate, and include the following: (1) title page bearing the name, address and institutional affiliation of the author; (2) one-paragraph abstract; (3) text; (4) notes; (5) references cited; and (6) tables and figures. The format of the article may follow any journal of the author's choice. Submit manuscripts to Rita Gallin, Editor, WID Publication Series, Office of WID, 202 International Center, Michigan State University, East Lansing, MI 48824-1035, USA.

TO ORDER PUBLICATIONS: Publications are available at a nominal cost and cost-equivalent exchange relationships are encouraged. To order publications or receive a listing of them, write to Office of WID, 202 International Center, Michigan State University, East Lansing, MI 48824-1035, USA.

ACKNOWLEDGMENT: The Women in International Development Publication Series is partially funded by a Title XII Program Support Grant.

MSU in an Affirmative Action/Equal Opportunity Institution