LABOR FORCE PARTICIPATION: A STIMULUS
TO FERTILITY IN PUERTO RICO?*

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RESUMEN

Una tabulación especial del censo de población de Puerto Rico de 1960 revela una marcada asociación positiva entre la actividad económica y el nivel de instrucción de las mujeres casadas en el área metropolitana de San Juan. Esta asociación, de la cual no hay rastro alguno en los Estados Unidos, sirve como base para la formulación de una hipótesis según la cual, en un ambiente de prejuicio contra el empleo de mujeres casadas, solamente aquellas mujeres cuya instrucción las califica para empleos de cierta calidad pueden superar la oposición de sus maridos a su empleo. Se demuestra que esta misma asociación es responsable de la fecundidad inferior entre las mujeres de 35 a 44 años con alguna instrucción universitaria, en comparación con las graduadas de la escuela superior. Si se elimina el efecto de la actividad económica diferencial, las mujeres universitarias casadas tienen más hijos nacidos que las graduadas de la escuela superior. Se sugieren algunas hipótesis para explicar este fenómeno que caracteriza no solamente a las mujeres inactivas sino también a las activas.

The importance of experimenting with detailed and untried cross tabulations of census data is being demonstrated once again as a result of a special arrangement which the Puerto Rico Planning Board made with the U.S. Bureau of the Census. The Planning Board purchased a set of 1960 census cards and contracted the services of Howard G. Brunsman, chief of the Census Bureau's Population Division, to consult with interested government officials in order to outline a program of special tabulations. Besides these additional tabulations from the regular population census cards, the Planning Board requested Mr. Brunsman to design a special family card with family characteristics from both the population and housing censuses. Both the additional tabulations from the regular card as well as the tabulations from the family card were run off in rapid succession on the conventional IBM 101 in 1962 and 1963. In this way, a huge volume of unprocessed 101 machine sheet tabulations was accumulated. Necessarily, the immense work of converting these raw data into tables ready for analysis has proceeded more slowly. As the task gradually nears completion, attention is beginning to center more on the problem of full utilization of the potentialities in these data. While tables of most obvious interest are being analyzed by the relevant government agency, there are clearly more data on hand than can be easily digested in a short space of time and in addition to their regular duties by busy government technicians. The International Population Program at Cornell University has undertaken at its own expense the analysis of certain aspects of these data, and the demographic public can expect to be informed of some of their results in the not too distant future.

Meanwhile, it is possible here, as a way of warming up appetites, to present a first taste of what the future may bring. Demographers at the Puerto Rico Department of Health recently sent to a Puerto Rican trainee[1] at the United Nations Latin American Demographic Training Center (in answer to his request for data to analyze for his end-of-the-year research project) one of these special tabulations—a table on children ever born to married women in the San Juan Standard Metropolitan Statistical Area[2] cross-tab-

[1] Severo Rivera, to whom acknowledgment is made for many of the calculations presented here.

[2] The total population of the San Juan SMSA in 1960 was 588,800, 25.1 per cent of the total population of Puerto Rico.

ulated simultaneously by age of women, years of school completed, economic activity, and marital status (legally or consensually married).

Several extremely interesting features (in addition to the straightforward analysis of the relative contribution to differential fertility of education, economic activity, and marital status) have emerged from these data. One of these features is a completely unexpected by-product of an attempt to make a thorough analysis of differential fertility. It so happens that this table contains within it an unusual sub-table which, although it does not deal directly with fertility, would not in the ordinary course of events have been made were it not for its relevance to fertility—a table on economic activity of married women by age and by years of school completed.[3] This sub-table sheds a great deal

[3] An exactly comparable tabulation was not published even in the special subjects reports of the United States 1960 Census of Population. The closest approximation is Table 5 of PC(2)—5B on *Educational Attainments*, which shows economic activity by years of school completed for two marital status groups only: (*a*) married women with spouse present and (*b*) all other women.

of light on an aspect of the social scene in Puerto Rico which has often struck the attention of observers—the presence of a surprising proportion of women in responsible jobs in view of the traditional restrictions on freedom which characterize the status of women in Puerto Rico as in many other countries of Latin America. These traditional restrictions are reflected in very low activity rates for women: only 33.7 per cent of urban women ages 35 to 44 in Puerto Rico in 1960 were economically active, as compared with 45.2 per cent for urban women of the same age in the United States.[4]

Table 1, showing economic activity by level of education for married women in the age group 35 to 44, offers the possibility of explaining this paradox. The distribution is just the opposite of what one might expect on the basis of economic need. Instead of finding a concentration of economically active women in the lower educational levels where income is also the lowest, the distribution is skewed at the

[4] U.S. Bureau of the Census, *1960 Census of the Population*, Table 96 of PC(1)-53D and Table 194 of PC(a)-1D.

Table 1.—ECONOMIC ACTIVITY OF MARRIED WOMEN,[a] AGE 35–44,
IN SAN JUAN SMSA, PUERTO RICO, BY YEARS
OF SCHOOL COMPLETED, 1960

Years of school completed	Married women age 35-44	Percentage economically active
Total	27,144	26.9
No years completed............	2,524	11.7
Elementary: 1 to 4 years......	7,316	16.3
5 and 6 years.....	3,716	21.6
7 and 8 years.....	4,128	23.5
High school: 1 to 3 years.....	2,488	31.8
4 years..........	3,160	38.6
College: 1 year or more.......	3,756	53.0
Years not reported............	56	50.0

a/ Including women in consensual unions.

Source: U.S. Bureau of the Census, 1960 Census of Population.
          Tables I-A and I-B of special tabulations made by
          Puerto Rico Planning Board.

other end. Proportionately very few women with little education are economically active.[5] With increasing education, economic activity reaches a level as high as if not higher than that of the United States.[6] The hypothesis suggests itself that married men are able to overcome their scruples and their hurt pride and will permit their wives to work providing their spouses have sufficient education to be able to find work of a certain quality with respect to interest, prestige, etc. In a dynamic economy of expanding opportunities and shortages of skills, it should be added, women with ability are more readily able to break down barriers of employer prejudice against the employment of women in important posts. Under these circumstances, husbands are less suscep-

[5] Although only data for the age group 35 to 44 are shown in the table, this pattern of positive association between economic activity and level of education characterizes married women in all age groups.

[6] The activity rates of 53 per cent for married college women and 39 per cent for high school graduates ages 35 to 44 in the San Juan SMSA can be considered roughly comparable with the rate of 39 per cent observed for all urban married women (without regard to education) ages 35 to 44 in the United States (*U.S. 1960 Census of Population—Employment Status and Work Experience*, PC(2)-6A, Table 4).

tible to the charge that they are incapable of supporting their families by their own efforts alone.

The hypothesis proposed here explains the much higher activity rates among married women with more education on the ground that educational qualifications are necessary in order to surmount the traditional barriers against the employment of women, especially married women. To the extent that the hypothesis is valid, the positive association between economic activity and level of education observed in Puerto Rico should not in general be expected to prevail in countries where female economic activity is high and the prejudices against female employment are relatively unimportant. Table 2, showing the activity rates for married women ages 35 to 44 with spouse present for the Central Cities of Urbanized Areas of the United States,[7] therefore, is offered as confirming evidence in support of the hypothesis. Except for women with graduate university training, there is no

[7] The most nearly comparable data for the United States (see n. 3). Married women ages 35 to 44 with spouse absent comprise only 6 percent of all urban married women in the United States, so that their inclusion could not greatly alter the relationship observed in Table 2.

Table 2.—ECONOMIC ACTIVITY OF MARRIED WOMEN WITH SPOUSE
PRESENT, AGE 35–44, IN CENTRAL CITIES OF URBANIZED
AREAS, UNITED STATES, BY YEARS OF
SCHOOL COMPLETED, 1960

Years of school completed	Married women, spouse present, age 35-44	Percentage economically active
Total............	3,098,477	39.2
No years completed..........	17,163	29.1
Elementary: 1 to 4 years....	71,630	37.2
5 to 7 years....	249,880	37.6
8 years........	364,183	38.7
High school: 1 to 3 years...	750,892	39.1
4 years.......	1,170,531	39.2
College: 1 to 3 years.......	291,860	39.1
4 years...........	129,163	38.5
5 years or more....	53,175	58.2

Source: U.S. Bureau of the Census, 1960 Census of Population, Educational Attainment, PC(2) - 5B, Table 5.

trace of the pattern manifested by Puerto Rican married women.

Another factor, in addition to the quality of the work that education permits women to obtain that may be operative to some extent, is the fact that women with more education have fewer children and, therefore, are more free from household responsibilities. However, as is explained in the appendix, there are special reasons for believing this factor to be of lesser importance.

Of course, it should not be thought that the husband's attitude alone is of importance. Those wives who can obtain interesting and/or important work should themselves be more willing to work than other wives. In this connection, one would like to see a tabulation of economic activity by age and level of education for single women. One is prepared to find that this same association between economic activity and level of education persists for single women at least within that narrow age range no longer affected by school attendance and yet where there still are a considerable number of women not yet married. However, because these women have no husbands, with the consequence that only their own attitudes (and some-

times that of their parents) are factors in the situation, the association should be much less pronounced.

Because of the well-known inverse association between economic activity and fertility, the heavy concentration of economic activity among married women with more education has very interesting implications for differential fertility with respect to education. The 1950 Census, in a not well-known special Census Bureau publication on children ever born to all women (irrespective of marital status) by age, urban and rural residence and years of school completed, had shown very sharp educational differentials for both urban and rural women. An especially noteworthy characteristic (shown in Table 3 for total Puerto Rico) is that a really important differential does not put in an appearance until at least eight years of schooling has been completed; furthermore, the differential is very small between high school graduates and women with at least some higher education. In most age groups about three-quarters of the differential occurs in the course of achieving between eight and twelve years of schooling.

The very small differential between

Table 3.—AVERAGE NUMBER OF CHILDREN EVER BORN TO WOMEN AGE 25[a] AND OVER, BY AGE AND YEARS OF SCHOOL COMPLETED, PUERTO RICO, 1950

Years of school completed	Average number of children ever born				
	25-29 years	30-34 years	35-39 years	40-44 years	45 years and over
Total.............	2.738	3.842	4.896	5.321	5.809
No years completed...........	3.457	4.682	5.751	6.227	6.463
Elementary: 1 to 3 years....	3.433	4.588	5.605	5.834	5.611
4 to 7 years....	2.894	3.938	4.892	5.293	4.978
8 years.........	1.982	2.519	3.104	3.419	3.566
High school: 1 to 3 years...	1.641	2.067	2.576	2.861	3.154
4 years........	1.002	1.461	1.684	1.951	2.319
College: 1 year or more.....	0.900	1.384	1.452	1.539	1.801

a/ Data for women under 25 years of age, with their small number of children ever born, are less stable and do not conform well to pattern mentioned in text.

Source: U.S. Bureau of the Census, 1950 Census of Population, Series PC-14, No. 21.

high school graduates and women with higher education is repeated in 1960 among our married women ages 35 to 44 in the San Juan SMSA, as can be seen in Table 4, column 1, where average number of children born is 2.34 for women with higher education and 2.36 for women with only 12 years of completed schooling. Here, however, we immediately suspect the influence of the association between economic activity and education already referred to. Table 1, it will be recalled, shows that 53 per cent of the college women were economically active as compared with only 39 per cent of the high school graduates. To what extent is the lower fertility of college women caused by their greater participation in the labor force (participants which usually have substantially lower fertility than do non-participants)? Table 4, column 2, presenting the educational differentials standardized by economic activity, reveals that the differential is reversed when the influence of economic activity is eliminated. College

women now have *more* children than do high school graduates, 2.53 vs. 2.44. Attention is called to the striking character of this finding. It is a question here of a reversal not merely of the educational fertility differential, but also—what is far more out of the ordinary—of the customary negative association between economic activity and fertility. As compared with high school graduates, women with a college education have both more children and higher rates of economic activity.

Before venturing to speculate on the explanation of this phenomenon, it should be pointed out that the pattern does not characterize all age groups. For the ages 20 to 24, as might be expected because of their later age at marriage, the fertility of married women with some college education (after standardization by economic activity) is definitely *less* than for high school graduates. The differential is in the same direction, only smaller, among women of 25 to 29, and is finally reversed among women of 30 to 34. Less easily un-

Table 4.—Average Number of Children Ever Born to Married[a] Women Age 35–44, in San Juan SMSA, Puerto Rico, by Years of School Completed, 1960

Years of school completed	Average number of children ever born	
	Unstandardized	Standardized by economic activity [b]
	(1)	(2)
Total...............	4.06	4.06
No years completed.............	5.83	5.61
Elementary: 1 to 4 years......	5.55	5.47
5 and 6 years.....	4.49	4.45
7 and 8 years.....	3.49	3.48
High school: 1 to 3 years.....	2.96	2.98
4 years..........	2.36	2.44
College: 1 year or more......	2.34	2.53

a/ Including women in consensual unions.
b/ Assuming 26.9% (the same as for all married women age 35-44 in Table 1) of women in each educational group to be economically active.

Source: U.S. Bureau of the Census, 1960 Census of Population, Tables I-A and I-B of special tabulations made by Puerto Rico Planning Board.

derstandable is the pattern for women age 45 and over (tabulated all together as one single age group) for whom fertility once again is found to be smaller for college women than for high school graduates.

Various possible explanations of this apparent positive association between economic activity and fertility come to mind. One possibility is that the distribution of children born for college women is more spread out than that for high school graduates, with more women having none or only one child and more women also having a large number of children. This could mean that all the greater fertility of college women is concentrated among the economically inactive with the consequence that the fertility of active college women is still lower than that of active high school graduates.

Another possibility is that economic activity is in fact a determinant of higher fertility at this level of education. In this eventuality, one would expect to find that all or most of the higher fertility of college women is concentrated among the economically active. In actual fact, neither of these possibilities is supported by the data

of Table 5 which show the higher fertility of college women as compared with high school graduates to be found almost equally among the economically active (2.00 vs. 1.93 children) and inactive (2.72 vs. 2.62).

Still another hypothesis is that college women are now having all their children at a younger age, so that they can most easily go to work after a certain age and after having had as many or even more children than high school graduates. A situation of this kind, however, is difficult to reconcile with the lesser fertility observed under age 30 among college women as compared with high school graduates. Nonetheless, data permitting a comparison of active college women and active high school graduates with respect to presence of own children under 5 years of age might prove instructive.

Additional hypothetical factors bearing on the situation can be multiplied almost at will as, for example, (a) although domestic servants are on their way out in Puerto Rico, their availability for taking care of the children of working mothers would be greater for the more well-to-do

Table 5.—AVERAGE NUMBER OF CHILDREN EVER BORN TO MARRIED
WOMEN,[a] AGE 35–44, IN SAN JUAN SMSA, PUERTO RICO, BY
YEARS OF SCHOOL COMPLETED AND
ECONOMIC ACTIVITY, 1960

Years of school completed	Average number of children ever born to women	
	Economically active	Economically inactive
Total............	3.01	4.45
No years completed.........	4.57	6.00
Elementary: 1 to 4 years...	4.88	5.68
5 and 6 years..	4.00	4.62
7 and 8 years..	3.19	3.59
High school: 1 to 3 years..	2.59	3.13
4 years.......	1.93	2.62
College: 1 year or more....	2.00	2.72

a/ Including women in consensual unions.

Source: U.S. Bureau of the Census, 1960 Census of Population.
        Tables I-A and I-B of special tabulations made by Puerto
        Rico Planning Board.

college women; (*b*) although the extended family functions at all socio-economic levels in Puerto Rico, the higher incidence of automobile ownership in the upper strata represented by college education would more readily permit married college women to deposit their children with some relative before proceeding to their place of work; and (*c*) as a result of economic progress, the social stratum represented by people with college education has become sufficiently affluent so that mothers are no longer obliged to choose between a working career and having as many children as they want. They are beginning to be able to eat their cake and have it too.

Considering the smallness of the differential involved and the fact that these various hypotheses are not mutually exclusive and could all conceivably have some influence, it would seem that even the present tabulation, which crosses age with children ever born, economic activity, and marital status, is inadequate for the type of microscopic analysis required. It is regrettable that the problem cannot be put into historical perspective, using a comparable tabulation from an earlier census. It would be very helpful to be able to determine whether it is a question here of a new trend that is emerging or merely of an old pattern that is disappearing.

APPENDIX

THE EFFECT OF FERTILITY ON ECONOMIC ACTIVITY

The standardization in Table 3 shows that the fertility differential is reversed in the top educational group when the effect of economic activity is eliminated. For the study of differential fertility, this is the relevant standardization; and the finding reported here is thought to be important. However, from the point of view of the hypothesis advanced above to explain differential economic activity by level of education, a different standardization would have been preferable. It will be recalled that the hypothesis holds that the attitudes of husband and wife toward the kind of work for which a woman's education qualifies her are responsible for the positive association between economic activity and level of education. The possibility that the fewer number of children which more educated women have might be more responsible than the kind of work they can get was admitted, although for reasons not specified at the moment this factor was deemed to be of lesser importance.

The unspecified reservation, it can be stated here, referred precisely to the reversal of the fertility differential as shown in Table 3. The fact that married women with college education, when the effect of economic activity is eliminated, have more children than do high school graduates suggests that the number of children ever born does not play a decisive role in determining economic activity. A more appropriate test, however, would have been an (indirect) standardization of the economic activity rates of Table 1 by number of children born. The extent to which the standardized economic activity rates (holding constant at each educational level the relative distribution of economic activity rates for the different numbers of children born, i.e., 0, 1, 2, 3, etc.) are positively associated with level of education would indicate the influence of education on economic activity independent of number of children born. Unfortunately, because the tabulation available gives only the *average* number of children (instead of the distribution), this test cannot be made.