WOMEN'S WORK PARTICIPATION AND FERTILITY IN METROPOLITAN AREAS

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RESUMEN

Esta comunicación examina la hipótesis de que una alta tasa de participación de mujeres en la fuerza de trabajo tiende a reducir las tasas de natalidad en una comunidad. Alrededor de 1950, entre las áreas metropolitanas de ocho países, la proporción de mujeres que trabajaban fué correlacionada negativamente con la proporción niño-mujer. Esta relación se mantenía aún cuando se controlaba, por correlación parcial, el porcentaje de mujeres casadas. Entre las áreas metropolitanas de Estados Unidos en 1960, la participación de la mujer en el trabajo estaba asociada negativamente con varias medidas de fecundidad. Esto era válido para ocho categorías de mujeres agrupadas por color y edad. Más aún, las comunidades con altos niveles de empleo femenino tienden a tener bajas proporciones de mujeres casadas y baja fecundidad matrimonial. En general, las correlaciones para no blancos fueron menores que aquellas para blancos, y caían dentro de un patrón algo diferente. La evidencia examinada es consistente con la hipótesis, pero la naturaleza de la conexión causal entre la participación en el trabajo y la fecundidad no queda demostrada directamente.

SUMMARY

This report examines the hypothesis that a high rate of participation of women in the labor force tends to reduce birth rates in a community. Among metropolitan areas in eight countries about 1950 the proportion of women working was negatively correlated with the child-woman ratio. This relationship held even when the percentage of women married was controlled by partial correlation. Among metropolitan areas of the United States in 1960, women's work participation was negatively associated with various measures of fertility. This was true for eight categories of women grouped by color and age. Further, communities with high levels of female employment tended to have both low proportions of married women and low marital fertility. On the whole, the correlations for nonwhites were lower than those for whites and fell into a somewhat different pattern. The evidence examined is consistent with the hypothesis, but the nature of the causal connection between work participation and fertility is not directly demonstrated.

The question to be considered and tentatively answered in this report is, "Does a high rate of women's work participation tend to reduce birth rates in a community?" Surveys and censuses from many different countries have repeatedly demonstrated that working women have fewer children than nonworking women of the same age and marriage duration. However, this fact by itself does not tell whether a community with a high proportion of women in the labor force will have low birth rates. It is entirely possible for work participation to correlate with fertility at the individual level but make no difference at the community level. The difference at the individual level may occur simply because women with low fertility are selected into the labor force and because working women who become pregnant are compelled to stop working, at least temporarily. This selection process may operate independently of either the total birthrate or the total work-participation rate in a community.

INTERNATIONAL COMPARISONS

In a comparison of the metropolitan populations of several countries about 1950, Collver and Langlois found a negative association between women's work participation and fertility.[1] This in itself

[1] Andrew Collver and Eleanor Langlois, "The Female Labor Force in Metropolitan Areas: an International Comparison," *Economic Development and Cultural Change*, X (July, 1962), 367–85.

does not indicate that the employment of women depresses the fertility of a population. A high rate of work participation and a low birth rate could well be the results of a common antecedent variable, such as economic development. In this case, the high work-participation rate would not directly cause the birth rate to be low. Thus, the question of whether or not opening a large number of jobs to women in a community will tend to lower the local birth rate is yet to be resolved.

Some additional indirect evidence is available in the metropolitan area data utilized by Collver and Langlois. The staff of International Population and Urban Research compiled women's work-participation rates (defined as the ratio of the female labor force to the number of women aged 15–64 years) and child-woman ratios (defined as the ratio of children aged 0–4 to women aged 16–49 years) for twelve or more individual metropolitan areas in eight countries. With this information, it is possible to see whether the negative correlation between work participation and fertility appears among metropolitan areas within each country. The results are shown in Table 1. In every case the correlation is negative. Similar results were shown by Heer in a comparison of *departamentos* in Bolivia, Eduador, and Peru.[2]

If work participation depresses the child-woman ratio, it may do so in two ways. First, it may reduce the proportion of women married. Probably single women are attracted to areas where jobs are abundant. The heavy in-migration of women throws the sex ratio out of balance, so that women outnumber prospective husbands. Moreover, some kinds of work tend to segregate women from eligible men, both on and off the job. And, finally, work is, to some extent, an alternative to marriage, inasmuch as it

[2] David M. Heer, "Fertility Differences between Indian and Spanish-Speaking Parts of Andean Countries," *Population Studies*, LVI (July, 1964), 71–84.

Table 1.—PRODUCT-MOMENT CORRELATIONS OF WOMEN'S WORK-PAR-
TICIPATION RATES WITH THE CHILD-WOMAN RATIO, AND PARTIAL
CORRELATIONS CONTROLLING THE PERCENTAGE OF
WOMEN MARRIED, FOR METROPOLITAN
AREAS[a] WITHIN COUNTRIES

Country and year	Number of metropolitan areas	Zero-order correlation	Partial correlation controlling percent married
Canada, 1951	12	−.639	−.641
United States, 1950	152	−.425	−.237
Brazil, 1950	14	−.619	(b)
India, 1951	39	−.122	(b)
Japan, 1955	77	−.328	−.165
France, 1954	33	−.206	−.151
Italy, 1951	33	−.633	−.621
England and Wales, 1951	52	−.420	−.308

[a] For definitions and identification of individual metropolitan areas, see International Urban Research, The World's Metropolitan Areas (Berkeley: University of California Press, 1959).

[b] Data on marital status were not available.

Source: Data were compiled by International Population and Urban Research from official census publications of the respective countries.

enables a woman to support herself instead of becoming dependent on a man.

The second way in which work participation may depress the child-woman ratio is by reducing the fertility of married women. Working women develop outside interests and contacts that compete with those of the family. They bring in earnings which would be cut off at least temporarily by the birth of a child. They develop high standards of consumption because of this additional income, and are reluctant to reduce their standard of living by having large families. Such influences as these would tend to reduce the fertility of working wives.

If work participation affected fertility only through its influence on the percentage of women married, the partial correlation of work participation and the child-woman ratio controlling the percentage married would be zero. A series of partial correlations in Table 1 shows that this is not the case. If the causal sequence is correctly interpreted here, work participation acts on fertility through both marriage and marital fertility.

Up to this point, the analysis still leaves a great deal to be desired. It is still conceivable that the correlations observed are caused by the dependence of both work participation and fertility on a prior variable such an income per capita or education. There are still too many unknowns.

THE UNITED STATES, 1960

Fortunately a much more complete set of data for study of the problem became available for the Standard Metropolitan Statistical Areas of the United States in 1960. From the census and vital statistics for 65 SMSA's in that year we obtained measures of women's work participation, fertility, the percentage married, and the percentage who completed high school for the four age groups, 20–24, 25–29, 30–34, and 35–39 years and for whites and nonwhites separately.

Some of the correlations among these variables for the eight groups are shown in Table 2. First are the correlations between work participation and three indicators of fertility for all women regardless of marital status. The number of children ever born indicates cumulative fertility up to the date of the census, the number of own children aged under five years who live at home indicates fertility during the five years preceding the census, and the birth rate represents current fertility for the calendar year 1960.

For whites, the associations are all strong and negative as expected; for nonwhites and nonwhites will be discussed separately. The important point here in the case of the whites is that current labor-force participation is negatively related to both past and current fertility. These figures agree well with the correlation of −0.43 between work participation and the child-woman ratio calculated for the United States in 1950. Evidently, the relationship remained the same over the decade.

WHITES

With the 1960 data we can easily separate the effects of work participation on marriage and on marital fertility. For whites the effect on marriage is highly concentrated in the younger age groups. By age 30 years, the percentage of women ever married becomes independent of the work-participation rate. Apparently, communities with high demands for young women workers attract numerous single women or induce the resident single women to postpone their marriages. This means that a large portion of the women in such communities get a late start in childbearing. This is why work participation has its strongest effect on fertility at age 20–24 years

Breaking the current birth rate for the age group 20–24 years into its components, we can see that work participation is negatively related to fertility at that age entirely by the delay of marriage, for it has no effect on marital fertility. In the next age group the effect on marriage is greatly diminished· although still larger

Table 2.—Product-Moment Correlations of Selected Variables, for Women Grouped by Color and Age, for 65 Standard Metropolitan Statistical Areas of the United States, 1960(a)

Variables	Whites by age (years)				Nonwhites by age (years)			
	20-24	25-29	30-34	35-39	20-24	25-29	30-34	35-39
Percentage of women in the labor force and:								
Children ever born per woman	-.85	-.57	-.37	-.36	-.32	-.01	-.03	-.08
Own children aged under 5 years who live at home per woman	-.85	-.67	-.52	-.42	-.32	-.23	-.20	-.21
Birthrate in 1960	-.71	-.38	-.42	-.33	-.31	-.26	-.21	-.20
Percentage of women ever married	-.80	-.33	-.01	-.07	-.21	-.28	-.30	-.18
Birth rate of ever-married women in 1960	.08	-.23	-.37	-.31	-.17	-.19	-.17	-.18
Children ever born per ever-married woman	-.76	-.60	-.43	-.42	-.30	.09	.05	-.05
Percentage of ever-married women in the labor force and:								
Children ever born per ever-married woman	-.54	-.30	-.26	-.33	-.11	.15	.10	-.02
Own children aged under 5 years per ever-married woman	-.61	-.68	-.63	-.54	-.17	-.10	-.10	-.16
Birth rate of ever-married women in 1960	-.44	-.56	-.58	-.45	-.19	-.17	-.16	-.17
Percentage of women who finished high school and:								
Percentage of women in the labor force	(b)	.13	.09	(b)	(b)	-.29	-.23	(b)
Percentage of women ever-married	(b)	-.22	-.03	(b)	(b)	.24	.11	(b)
Children ever born per ever-married woman	(b)	-.25	-.16	(b)	(b)	-.64	-.61	(b)
Own children aged 5 years who live at home per ever-married woman	(b)	.25	.17	(b)	(b)	-.13	-.27	(b)
Birth rate of ever-married women in 1960	(b)	.28	.08	(b)	(b)	.01	-.04	(b)

(a) Included are all SMSA's of over 250,000 population in 1960 for which separate tabulations for nonwhites are given in the census reports, except for Hartford, Connecticut, and Boston, Massachussets. These were excluded because in these areas different geographic boundaries were used for the census and for birth tabulations, and this made the two sets of data incompatible.

(b) Years of school completed were not tabulated for this age group in the census report.

Source: United States Bureau of the Census, Census of Population, 1960. Series PC (1), "Detailed Characteristics, Tables 97, 103, 113, 114, and 116; and United States Department of Health, Education, and Welfare, Vital Statistics of the United States, 1960, Table 2-17.

than the effect on marital fertility, above age thirty, the correlation between work participation and fertility is accounted for entirely by the marital fertility component.

It is perhaps more meaningful to consider the relation between marital fertility and work participation of ever-married women. Here the confusing effects of percentage ever married are eliminated, and we find a clear and consistent negative relationship. Where there is a high percentage of ever-married women working, marital fertility tends to be low.

In any analysis of this kind, there is danger of misinterpretation because of failure to take important additional variables into account. One such variable is education, which usually has a negative effect on birth rates. One might well ask whether a higher level of education leads to both a high rate of work participation and a low birth rate, so that the relation between work participation and fertility is merely the result of their mutual dependence on education. However, we can see that, among white women aged 25–29 and 30–34 years, work participation is independent of education as measured by the percentage who completed high school. Hence, there is no need to control statistically for the effect of education.

NONWHITES

On the whole, the correlations for nonwhites are lower than those for whites. Work participation of nonwhites has only a slight negative association with the indicators of fertility. Furthermore, as a predictor of fertility, education proves to be better than work participation. For nonwhite women aged 25–29 years, the correlation between education and children per married woman is −0.64, but the correlation of this measure of fertility with work participation is only 0.09. This is in marked contrast with the association of −0.60 between children ever born per ever-married woman and work participation for whites of this age group. Evidently, there is a basic difference between

whites and nonwhites in the relation of women's work participation to fertility. Presumably, this difference has to be understood in terms of family structure and the peculiar employment opportunities available to nonwhites. Regrettably, the data assembled for this study do not offer any clues to the operation of these other factors among nonwhites.

CONCLUSIONS

The negative association of women's work participation and fertility previously noted at the international level is now seen to exist among metropolitan areas within countries. This lends support to the hypothesis that a high rate of women's work participation tends to reduce birth rates in a community. A more detailed examination of data for the United States in 1960 showed that the relationship observed is accounted for primarily by whites. Furthermore, it showed that both delayed marriage and low marital fertility are typical of communities with high women's work participation rates.

Admittedly, the statistical evidence shows only that work participation and fertility are associated, not that high work participation causes fertility to fall. The direction of causation cannot be established empirically with the evidence considered here, but can only be assumed. The assumption in this respect is that the volume of employment of women in a locality is determined more by the demands of employers than by women's willingness to work. In other words, it is the industrial structure much more than the population composition that determines the proportion of women working. Among the reasons for this are the following. (1) Women cannot be freely substituted for men in most occupations. If a woman wants to work she must find a "woman's job," and will meet strong resistance if she attempts to displace male workers. (2) If a woman is single and finds limited opportunities where she lives, she is relatively free to move to another locality in search of work, but, for the most

part, married women are tied to their husbands' places of employment. With their mobility thus restricted, married women's chances for employment are dependent on the demands of employers in the locality.

A word of caution is in order regarding the interpretation of the findings reported here. The correlations were observed among local areas at a given point in time, and give no indication of how work participation and fertility may be associated within a given community over an extended interval of time. They do not indicate whether an increase of women's work participation over time would tend to depress fertility. My own opinion is that this would be the tendency implied by the relation between the two vari-

ables. But in the actual historical development of communities, many other variables come into play and may well obscure the expected relationship. A depression or decline of an industry which depended heavily on female labor, for example, might well reduce the employment of women and, at the same time, induce a reduction of the birth rate in response to depressed family incomes. Conversely, a period of prosperity, such as that experienced in the United States after World War II, may produce both a rise in women's work participation and increasing birth rates. In this, as in all social science research, we are dealing with only a very few variables selected from extremely complex, open, and changing systems.