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THE INFLUENCE OF MARRIAGE AND CHILDBEARING ON OCCUPATIONAL MOBILITY IN THE PHILIPPINES: A REFORMULATION OF THE "SOCIAL-MOBILITY HYPOTHESIS"

MARY B. DEMING
1974

While the relationship between fertility and mobility has been studied by many researchers, the timing of fertility has been confused with the timing of occupational mobility. Women aged 25-34 in 1960 who are married by 1968, with complete pregnancy histories, and whose husbands have complete occupational histories, are taken from the urban portion of the 1968 National Demographic Survey of the Philippines. Several measures of the timing and quantity of childbearing prior to 1961 are compared for their influence on subsequent occupational mobility between 1960 and 1968 with the usual measure of fertility used in such research, the number of children born by 1968. The sample permits a comparison of the mobility experience of those who were married before 1961 with the experience of those who delayed marriage. Family background variables are added to the path model describing the process of family building and intragenerational mobility, and the role of geographic mobility is explored.

With data from the National Demographic Survey, taken in May 1968 in the Philippines, the "social-mobility hypothesis" with regard to fertility is examined. Reconsideration of the assumptions of previous research, and revision of the hypothesis itself is suggested by the inconclusive results of earlier studies. One of the more complete statements of the hypothesis is found in "Determinants and Consequences of Population Trends" (United Nations 1953: 79):

The desire to improve one's position in the social scale has been stressed as an important motive for family limitation. . . The effect of social mobility on fertility appears to be attributed in general to the fact that rearing children absorbs money, time, and effort which could otherwise be used to rise in the social scale. Social mobility is thus more feasible with one or two children than with a larger number.

Although some early studies documented the inverse relationship between fertility and mobility, more recent tests of the hypothesis with multiple classification analysis suggest that a model expressing the additive relationship of origin and destination statuses is adequate to

explain observed fertility behavior (Duncan 1966; Blau and Duncan 1967). The results of path analysis point to the small effect of fertility on achieved occupational status when other relevant factors are controlled (Duncan, Featherman, and Duncan 1972; Featherman 1970).

A number of assumptions have guided previous research on the "social-mobility hypothesis." First, as indicated in the United Nations statement of the problem, children are costly, and thus compete for resources that might otherwise be "invested" for future occupational advancement. Second, aspirations for mobility, or the disruptive process of mobility itself, induces the deferred gratification behavior characteristic of mobile couples with respect to fertility. Third, since fertility is inversely related to socioeconomic status, mobile couples are exposed to different norms and behavior at origin and destination. Fourth, implicit in most studies is the designation of occupational mobility as the independent variable, and fertility as the dependent variable.

The concern for career mobility in this study suggests a revision of most of these assump-

tions. Marriage and childbearing normally occur early in the husband's career, when family resources are most limited. Under these conditions, early and more rapid childbearing creates a need for immediate income and security, while delayed childbearing frees resources for other investments (see Tien 1961; Freedman and Coombs 1966; Perrucci 1967, 1968). The use of completed fertility in tests of the hypothesis obscures the effects of different patterns of family formation.

Since early childbearing is the focus of the revised hypothesis, it is no longer necessary to assume that completed fertility varies with socioeconomic status. Considerable variation in age at marriage and the timing and spacing of children is likely whether differential completed fertility exists or not. Some of this variation may be due to aspirations for mobility, although this cannot be directly tested with this data. As a result of these considerations, occupational mobility is considered the dependent variable with respect to family formation. While a number of researchers have developed measures to reflect the timing and spacing of children within marriage, they have considered mobility the independent variable in the relationship (Yellin 1955; Tien 1961; Perrucci 1967, 1968).

On the basis of these assumptions, it is hypothesized that delayed marriage and delayed childbearing facilitate (cause) upward mobility by freeing resources that could improve the chances for occupational achievement. A focus on the timing of marriage and on patterns of early family formation is essential in the Philippines, where completed fertility is uniformly high, and the use of voluntary fertility control is limited. Socioeconomic change in the Philippines has led to greater prevalence of delayed marriage while increasing marital fertility through improved levels of living, health, and nutrition (Smith 1971; Flieger 1972). Pullum (1971) notes that fertility differentials may indicate differentials in general health rather than differentials in norms or behavior. Differentials in age at

marriage are more pronounced than differentials in marital fertility (Smith 1971).

Although the Philippines is characterized by low rates of occupational mobility and mobility that is usually short-distance, migration and educational attainment do facilitate occupational achievement, modifying the influence of residential background and family socioeconomic status (Beltran 1962; Bacol 1971). Thus it is hypothesized that delayed marriage and delayed childbearing facilitate geographic mobility which, in turn, increases opportunities for occupational mobility.

Following a discussion of the Philippine data and the formulation of childbearing measures and socioeconomic status (SES) score for occupations, the effects of early childbearing on occupational achievement are explored. In the process of studying the "social-mobility hypothesis," estimates obtained for a model of occupational achievement in the Philippines can be compared with estimates derived by Blau and Duncan (1967) for the United States. The effects of delayed marriage are considered in the final section of the paper.

The Data

The sample for this study consists of wives with complete pregnancy histories, married only once to household heads with complete work histories, from the urban portion of the National Demographic Survey. Since the husband's work history indicates his occupation in 1960 and at the time of the survey in 1968, the stage of family formation by 1960 is of primary concern. Wives aged 25-34 in 1960 (33-42 in 1968), whose husbands are 25-64 in 1960, are the focus of analysis. By 1960 these women were half-way through the childbearing period, and of the total sample of 945, 6 percent of them had not yet married.

Both the timing of births within marriage and the numbers of births indicate the cost of childbearing. Two measures related to timing, two concerned with numbers of births, and one composite measure are considered relevant

indicators of the cost of family formation for occupational mobility. Four of these measure the childbearing status of women as of January 1961.

The measures of timing divide marital duration into two parts: years before first birth and years of childrearing. Considering only those women married by 1961, and excluding premarital births, years of delay to first birth is calculated as the difference between years of marital duration as of January 1961, and the age of the oldest child in years. Years of childrearing before 1961 is indicated by the age of the oldest child. It can be argued that once the first child is born, subsequent years will be devoted to his care, regardless of the number of additional children that are born. Unlike the measure of delay to first birth, years of childrearing is also "calculated" for women who were not married until after 1960. Their years of childrearing prior to 1961 is zero. In any cross-section of women, fertility levels will be determined by marital composition as well as marital fertility.

The two measures of numbers of live births are also calculated for all women, regardless of marital status by 1961: live births by 1961 and total live births by the time of the interview in 1968. It is hypothesized that the influence of number of live births before 1961 on subsequent occupational mobility is stronger than the influence of total live births by 1968. To complete the study of the influence of early childbearing, the number of live births between 1961 and 1968 is calculated as a separate variable.

The importance of childspacing within marriage in addition to numbers of births suggests a composite measure we will call "child-years." Calculated as the sum of live births before 1961, each child weighted by his age as of January 1961, this measure is hypothesized to have the greatest influence on subsequent occupational mobility. Couples experiencing early and more rapid childbearing are assigned a higher value on this variable than couples who delay family formation.

Table 1 presents the means and standard deviations for each of the six measures of childbearing. Among the women married before 1961, the average time between marriage and first birth was 1.9 years. All couples in the sample with complete geographic and occupational mobility data averaged 3.4 live births before 1961, 5.4 by the time of the interview, and had spent an average of 7.2 years raising children before 1961.

For each of the nine occupational groups by which husbands were classified, an SES score was developed. The median education of husbands in each occupational group was expressed as a proportion of the median education for the total sample; and the median income of husbands in each occupational group as a proportion of the median income for the total sample. The relative position of each occupation on education was averaged with its relative position in terms of income to obtain an SES score on a continuous scale, shown in the third column of Table 2. The occupational distribution of husbands and husbands' fathers is shown in Table 3. During the eight years that are of particular importance for this study, 9.6 percent of the husbands were upwardly mobile, 84.8 percent were stable, and 5.6 percent were downwardly mobile.

Effects of Family Formation on Occupational Achievement

The temporal relationships among the variables and the explicit hypothesis that delayed childbearing facilitates occupational mobility are described in the path diagram in Figure 1.

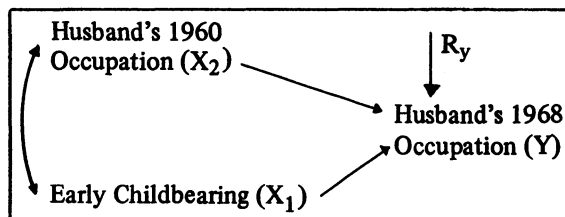


Figure 1
*The process of family formation
and occupational achievement*

Table 1
Means and standard deviations of measures of childbearing
(Philippines, National Demographic Survey, 1968)

Measure of childbearing	Mean	Standard deviation	Number of cases
Years to first birth	1.88	2.08	884
Years of childrearing, 1960	7.25	4.81	943
Live births, 1960	3.45	2.25	943
Child-years, 1960	20.19	19.08	943
Total live births, 1968	5.45	2.79	943
Live births, 1961-1968	2.01	1.48	943

Table 2
Occupational groups, 1968, by median education, median income,
and socioeconomic status score (Philippines, NDS, 1968)

Occupational group	Median years of school completed	Median income (pesos)	SES score
Professionals, managers, administrators	15.3	5583	1.902
Clerical workers	13.8	3923	1.508
Sales workers	8.1	2985	1.011
Skilled workers	8.8	2750	1.008
Transportation and communication workers	8.3	2736	.976
Service and unskilled (nonfarm) workers	9.1	2417	.961
Farm owners	5.8	1667	.637
Farm tenants and owner-tenants	4.9	1500	.555
Farm laborers, fishermen, loggers	4.4	1588	.545
All occupations	8.9	2675	

Table 3

*Percent occupational distribution of husband's father at age 40 and husbands in 1960 and 1968
(Philippines, NDS, 1968)*

Occupational group	Husband's father's occupation	Husband's 1960 occupation	Husband's 1968 occupation
Professionals, managers, administrators	5.9	13.1	14.6
Clerical workers	3.3	7.9	7.7
Sales workers	13.0	21.1	21.5
Skilled workers	9.3	8.8	9.7
Transportation and communications workers	4.2	13.3	14.3
Service and unskilled (nonfarm) workers	9.2	12.0	11.6
Farm owners	27.8	7.9	7.0
Farm tenants and owner-tenants	15.0	7.8	5.7
Farm laborers, fishermen, loggers	12.4	8.0	7.8
All occupations	100.0%	100.0%	100.0%
Number of cases	(861)	(945)	(945)

No assumptions are made about the temporal ordering of the two determinants of 1968 occupation, since the stage of family formation is measured in 1960, when initial occupation was reported.

The path coefficients in this case are standardized regression coefficients, estimated from the following linear equation:

$$Y = p_{Y1} X_1 + p_{Y2} X_2 = p_{YR_y} R_y$$

This basic model is appropriate for four of the measures of childbearing: years to first birth

(X_{1a}), years of childrearing in 1960 (X_{1b}), 1960 live births (X_{1c}), and the composite measure, child-years (X_{1d}). Only couples married by 1960 are considered when years to first birth is entered in the model. The remaining variables apply to the total sample. The model for total live births by 1968 corresponds to the models used by Duncan, Featherman, and Duncan (1972) and Featherman (1970). Since some of these births occur after 1960, total live births is considered an intervening variable in the path diagram in Figure 2.

Table 4

Zero-order correlation coefficients among occupation and childbearing variables for Model A (884 cases) and Models B-E (943 cases)^a (Philippines, NDS, 1968)

Variable	Model A		
	X _{1a}	X _{1f}	X ₂
Years to first birth (X _{1a})			
Live births 1961-1968 (X _{1f})	-.1018		
Occupation in 1960 (X ₂)	-.0878	-.1027	
Occupation in 1968 (Y)	-.0882	-.0877	.9020

Variable	Models B-E					
	X _{1b}	X _{1c}	X _{1d}	X _{1e}	X _{1f}	X ₂
Years of childrearing, 1960 (X _{1b})						
Live births, 1960 (X _{1c})	.8115					
Child-years, 1960 (X _{1d})	.9000	.8933				
Total live births, 1968 (X _{1e})	.5778	.8487	.6805			
Live births, 1961-1968 (X _{1f})	-.1478	.0755	-.0790	.5915		
Occupation in 1960 (X ₂)	-.1003	-.0963	-.0716	-.1300	-.0983	
Occupation in 1968 (Y)	-.1237	-.1272	-.1032	-.1496	-.0882	.9026

^aModel A refers to couples married by 1960. Models B-E include all couples in the sample.

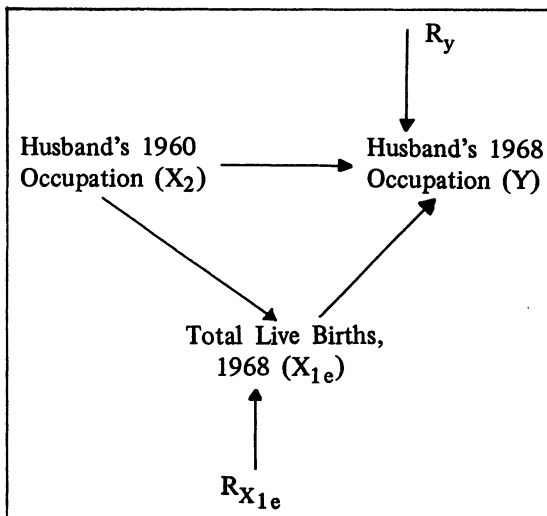


Figure 2
The influence of Total Live Births 1968, on occupational achievement

Two equations are necessary to describe the model:

$$X_{1e} = p_{1e,2}X_2 + p_{1e,R_{X1e}}R_{X1e}$$

$$Y = p_{Y,1e}X_{1e} + p_{Y2}X_2 + p_{Y,R_y}R_y$$

The zero-order correlations among the variables in the five models are shown in Table 4. Also included is the variable 1961-1968 live births (X_{1f}) which will be used in expanding the four models of early childbearing. The 1960 measures are all highly intercorrelated. The correlations of years of childrearing and child-years with total live births by 1968 are somewhat lower, suggesting the importance of distinguishing the early stages of childbearing

Table 5

Summary of regression analysis of husband's 1968 occupation on measures of childbearing and 1960 occupation (Philippines, NDS, 1968)

Model	P _{Y1}	P _{Y2}	r ₁₂	R ²	Number of cases
A Years to first birth	-.009	.901 ^c	-.088	.81	884
B Years of childrearing, 1960	-.033 ^b	.899 ^c	-.100	.82	943
C Live births, 1960	-.041 ^c	.899 ^c	-.096	.82	943
D Child-years, 1960	-.039 ^c	.900 ^c	-.072	.82	943
E Total live births, 1968	-.033 ^b	.898	-.130 ^{a,c}	.82	943

^aPartial regression coefficient in standard form relating total live births, 1968 to 1960 occupation.

^bRegression coefficient equal to, but not twice, its standard error, adjusted by $\sqrt{1.5}$.

^cRegression coefficient at least twice its standard error, adjusted by $\sqrt{1.5}$.

(1960) from completed fertility (1968) in establishing the consequences of family formation.

Although the correlations are low, five of the six childbearing measures are highly correlated with 1968 occupation than with occupation in 1960. Live births between 1961 and 1968 is the one exception. Although years to first birth has a negative relationship with occupation, in contrast to the expected positive relationship, the remaining correlations are in the expected direction.

The path coefficient between childbearing and occupational achievement in 1968 indicates the direct effect of family formation on 1968 occupation, net of 1960 occupation. Although the mobility hypothesis in its earlier forms, and as revised here, does not indicate how strong the relationship should be, the path coefficients in the first column of Table 5 provide little support for the hypothesized relationship. Except for delay to first birth, the direction of the relationship is consistent with the hypothesis, and the coefficients are statistically significant, but the magnitude of the coefficients suggests only a small substantive effect on occupational achievement. In estimating the

standard error of coefficients for tests of significance, a design effect of 1.5 was used to adjust for deviations from simple random sampling.

Years to first birth fails to follow the expected relationship with occupational achievement. Imprecise measurement of the variable may be partly responsible. Among the remaining childbearing variables, 1960 live births and child-years have slightly stronger relationships with occupational achievement than do years of childbearing and total live births by 1968. If these small differences reflect reality, there is some support for the hypothesis that early childbearing is more important than completed fertility for occupational achievement. Among the 1960 childbearing variables, the measure of quantity is more important than measures of timing, and the composite measure, child-years, does nearly as well as 1960 live births.

It is possible that 1961-1968 live births serve as an intervening variable, modifying the direct influence of 1960 childbearing on subsequent achievement. If early childbearing influences achievement through subsequent fertility, then the use of completed fertility in

Table 6

Partial regression coefficients in standard form and coefficient of determination relating Live Births, 1961-1968, and husband's 1968 occupation to childbearing measures and husband's 1960 occupation, Models A-D (Philippines, NDS, 1968)

Dependent variable model	Independent variables						R ²
	X _{1f}	X _{1a}	X _{1b}	X _{1c}	X _{1d}	X ₂	
Live births, 1961-1968 (X_{1f})							
A Years to first birth		-.112 ^b				-.112 ^b	.02
B Years of childrearing, 1960			-.159 ^b			-.114 ^b	.03
C Live births, 1960				.067 ^a		-.092 ^b	.01
D Child-years, 1960					-.086 ^b	-.104 ^b	.02
Occupation in 1968 (Y)							
A Years to first birth	.004	-.009				.902 ^b	.81
B Years of childrearing, 1960	-.005		-.034 ^a			.899 ^b	.82
C Live births, 1960	.003			-.041 ^b		.899 ^b	.82
D Child-years, 1960	-.003				-.039 ^b	.900 ^b	.82

^aRegression coefficient equal to, but not twice, its standard error, adjusted by $\sqrt{1.5}$.

^bRegression coefficient at least twice its standard error, adjusted by $\sqrt{1.5}$.

mobility studies is justified. If subsequent fertility does not modify the effect of early childbearing, then the suggestion that early family formation is more important than cumulative fertility remains viable. The expansion of the four models that include early childbearing may be represented by the path diagram in Figure 3. Estimates of the coefficients are obtained from a set of recursive equations, illustrated for years to first birth:

$$X_{1f} = P_{1f,1a} X_{1a} + P_{1f,2} X_2 + P_{1f,R} R_{X1f} R_{X1f}$$

$$Y = P_{Y,1f} X_{1f} + P_{Y,1a} X_{1a} + P_{Y2} X_2 + P_{Y,R} R_Y$$

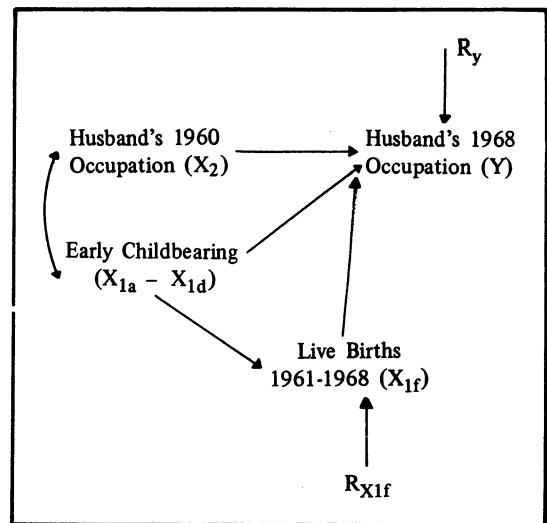


Figure 3
The role of 1961-1968 Live Births in the process of family formation and occupational achievement

Table 6 presents the coefficients that are of interest. Live births between 1961 and 1968 fail to explain any additional variance in occupational achievement, and does not change

the direct effect of early childbearing on 1968 status. Although the variability of 1961-1968 live births is limited to the eight-year time span during which mobility is measured, the results suggest that the effect of total live births may be due to the portion of births that occurs before career mobility takes place. While childbearing, however measured, has only a small effect on occupational status in 1968, the insignificant role of 1961-1968 live births supports the theoretical emphasis on early family formation.

Although the sample was carefully chosen to obtain women at a single point during the childbearing period, variation in the duration of their marriages may be a major factor influencing the pattern of family formation. Expanding the simple model of occupational achievement to include marital duration and other ascribed and early status characteristics will permit a test of the effects of differential marital fertility on subsequent achievement. A number of comparisons can then be made between estimates of this model of socio-economic achievement in the Philippines with that developed by Blau and Duncan (1967) for the United States, and expanded by Duncan, Featherman, and Duncan (1972) to include marital fertility.

The following background variables are included in the expanded model:

- X₃ husband's father's occupation at age 40: measured by the same SES score as husband's occupation;
- X₄ husband's education: years of school completed;
- X₅ husband's migration status, 1960: changed residence since birth (1) or not (0);
- X₆ husband's age: in years;
- X₇ wife's education: years of school completed;
- X₈ wife's migration status, 1960: changed residence since birth (1) or not (0);
- X₉ wife's age: in years; and
- X₁₀ duration of marriage, 1960: in years.

The means and standard deviations for these variables are presented in Table 7. Father's

occupation and ascribed and achieved statuses of the husband and wife may be considered predetermined variables with respect to 1960 occupational status, childbearing, and 1968 occupational status, as illustrated in Figure 4.

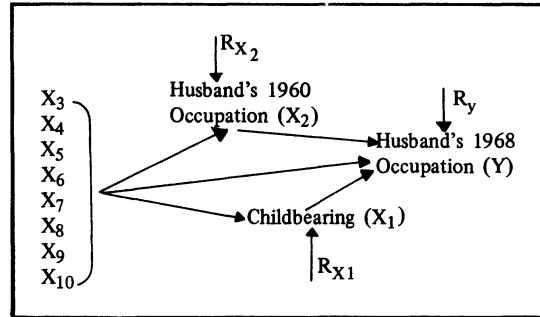


Figure 4

Background factors in the process of family formation and occupational achievement

In this model it is assumed that childbearing intervenes between 1960 and 1968 occupational status, although the causal order is inappropriate for delay to first birth.

The path coefficients for this expanded model are found in Table 8. Beginning with the determinants of 1960 occupation, husband's education is most important, followed by wife's education. Husband's father's occupation has a rather small effect, but larger than the remaining variables. Note that husband's migration status does have a positive effect on 1960 occupation, although it is small.

The effects of husband's education and father's occupation on 1960 occupational achievement can be compared in Table 9 with the effects Blau and Duncan (1967: 178-181) find for men 25-34 in 1962 in the United States. In this sample, 82 percent of the husbands are between 35 and 49 in 1968, 27-41 in 1960. Indirect effects in the Philippine model are through correlations with other antecedent variables. Father's education and husband's first job are included in the Blau and Duncan model. The Philippine model explains 47-48 percent of the variance in 1960 occupational status, close to the 50 percent explained in the model for the United States. Occupational inheritance is more pronounced

Table 7

Means and standard deviations of background variables for Model A (804 cases) and Models B-E (853 cases)^a (Philippines, NDS, 1968)

Background variable	Model A		Models B-E	
	Mean	Standard deviation	Mean	Standard deviation
Husband's father's occupation	0.839	0.348	0.841	0.350
Husband's education	8.211	4.475	8.342	4.487
Husband's migration status, 1960	0.387	0.487	0.388	0.488
Husband's age, 1968	41.194	5.447	40.931	5.560
Wife's education	7.228	4.339	7.353	4.405
Wife's migration status, 1960	0.357	0.479	0.358	0.480
Wife's age, 1968	37.388	2.734	37.306	2.765
Duration of marriage, 1960	9.610	4.584	9.057	4.981

^aModel A refers to couples married by 1960. Models B-E include all couples in the sample.

in the Philippines than in the United States, but the role of education is similar in the two countries.

The role of fertility is slightly smaller in this expanded model, the path coefficients no larger than those reported by Duncan, Featherman, and Duncan (1972: 260, Table 9.5.1). Years of childrearing appears to be a proxy for marital duration, because of the small variability in the delay to first birth. Its effect is considerably reduced from the simple model. Only the paths from 1960 live births and child-years, 1960, may be significant. Since their effects are slightly larger than those from the other childbearing measures, there is some support for the hypothesis that early childbearing has a greater effect than completed fertility on mobility.

The absence of a relationship between fertility and mobility in the United States has been attributed to a reduction of differential fertility in the nonfarm population. The classic inverse relationship between fertility and

socioeconomic status is confined to couples in which one spouse comes from a farm background (Goldberg 1959, 1960; Duncan 1965). As smaller and smaller proportions of the nonfarm population have farm backgrounds, support for the "social-mobility hypothesis" may continue to decline. In developing areas, the "social-mobility" theory of migration has been offered as an explanation of the low fertility of migrants relative to nonmigrants in urban areas (Hendershot 1970). Migration to the city seems to be selective of persons with aspirations and potential for upward mobility.

Thus, migration may serve as an intervening variable between previous occupational statuses and childbearing, and subsequent occupational attainment. Blau and Duncan (1967) have shown that migrants have better first jobs and experience greater occupational mobility than nonmigrants. Even migrants changing residence between places of equal degrees of urbanization are more likely to be mobile than nonmigrants.

Table 8

Partial regression coefficients in standard form and coefficient of determination relating husband's 1960 occupation, measures of childbearing, and husband's 1968 occupation to background variables (Philippines, NDS, 1968)

Dependent variable model	Independent variable ^a										R ²
	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	
Occupation in 1960 (X₂)											
A			.181 ^c	.415 ^c	.070 ^b	.094 ^c	.201 ^c	.033	.034	-.002	.48
B-E			.173 ^c	.419 ^c	.072 ^c	.089 ^c	.202 ^c	.038 ^b	.025	.019	.47
Measure of childbearing (X₁)											
A Years to first birth		-.066 ^b	-.020	-.021	-.022	.022	.064 ^b	.030	-.062 ^b	.257 ^c	.06
B Years of childrearing, 1960		.025 ^b	.008	.013	.009	-.009	-.031 ^b	-.014	.031 ^b	.894 ^c	.83
C Live births, 1960		.042 ^b	-.025	.012	-.024	.007	-.055 ^b	-.025	-.037 ^b	.719 ^c	.52
D Child-years, 1960		.057 ^b	-.017	.014	-.039 ^b	.021	-.041 ^b	-.007	.054	.770 ^c	.67
E Live births, 1968		-.002	-.044 ^b	.001	-.030	-.056 ^b	-.061 ^b	-.029	-.079 ^b	.523 ^c	.25
Occupation in 1968 (Y)											
A Years to first birth	.005	.830 ^c	-.001	.095 ^c	.011	.017	.010	.003	.011	-.034 ^b	.82
B Years of childrearing, 1960	-.013	.830 ^c	.008	.090 ^c	.011	.025 ^b	.006	-.002	.012	-.027	.82
C Live births, 1960	-.034 ^b	.831 ^c	.008	.090 ^c	.010	.026 ^b	.005	-.002	.010	-.014	.82
D Child-years, 1960	-.030 ^b	.832 ^c	.008	.090 ^c	.010	.026 ^b	.006	-.002	.013	-.016	.82
E Live births, 1968	-.021	.830 ^c	.007	.090 ^c	.010	.024 ^b	.006	-.002	.010	-.028 ^b	.82

^aX₃ Husband's father's occupation; X₄ Husband's education; X₅ Husband's migration status, 1960; X₆ Husband's age; X₇ Wife's education; X₈ Wife's migration status, 1960; X₉ Wife's age; X₁₀ Duration of marriage, 1960.

^bRegression coefficient equal to, but not twice, its standard error, adjusted by $\sqrt{1.5}$.

^cRegression coefficient at least twice its standard error, adjusted by $\sqrt{1.5}$.

Table 9

Comparison of the effects of father's occupation and husband's education on occupational attainment for husbands aged 25-34 in the United States (1962) and in the Philippines (1960)

Relationship with occupational status	Independent variable			
	Father's occupation		Husband's education	
	United States	Philippines	United States	Philippines
Correlation	.366	.394	.657	.635
Direct effect	.065	.173	.462	.419
Total indirect effect	.301	.221	.195	.216

Sources: U.S.: Blau and Duncan (1967: 178-181); Philippines: 1978 National Demographic Survey.

Husbands in the sample are classified as to their migration status between 1961 and 1968 (1 if migrant, 0 if nonmigrant), and this new variable (X_0) is assumed to intervene between the measures of early childbearing and 1968 occupational status. Total live births in 1968 is assumed to follow migration status, 1961-1968, and precede 1968 status.

Path coefficients between childbearing and subsequent migration, shown in the third panel of Table 10, are in the expected direction, but are neither sizeable nor significant. A longer delay to first birth, and fewer births early in the husband's career facilitate migration. Again the quantity of births appears to be more important than their timing. Migration, in turn, has a positive, and maybe significant, effect on 1968 occupational status, but it does not contribute to the explained variance of 1968 occupational status. Migration also fails to serve as an intervening variable for childbearing, since the direct effects of childbearing on occupational achievement are similar to those in Table 8.

The overwhelming number of nonmigrants in the sample may be obscuring relevant relationships within migrant status groups. Only 40 couples migrated during the eight-year period when mobility is measured. From Table 11 it is clear that migrants have occupations with higher status in 1960 and experience greater mobility during the next eight years. Migrants also have initial advantages (higher socioeconomic origins, more education, and smaller families) which may facilitate their mobility. By standardizing the comparisons of mean occupational achievement in 1968 for background variables, occupation in 1960, and degree of family formation, any effect of migration *per se* can be isolated. Blau and Duncan (1967) found that migrants still had slightly greater occupational achievement than nonmigrants. Lane (1972) found that the higher occupational achievement of migrants was entirely due to their initial advantages.

Substituting the mean values of independent variables for migrants into the regression equation for nonmigrants (Table 13) and

comparing the implied mean occupational score from this calculation with the actual mean for the migrant group provides an estimate of the net effect of migration status. The gross effect, the difference between migrant and nonmigrant mean occupational status scores in 1968, is considerably reduced when background factors are controlled, but the positive net effect suggests that migration does contribute to occupational achievement (Table 12).

The background characteristics of migrants married by 1961 do not completely account for their higher occupational attainment in 1968. The models for the remaining childbearing measures include husbands who were married later, between 1961 and 1968. Since 15 percent of the migrants and only 5 percent of the nonmigrants were married between 1961 and 1968, delayed marriage among migrants is a major explanation for their lower level of childbearing, and thus the higher net effects of migration status on 1968 occupation.

Since migration status has an effect on mobility, it is likely that the relationships among variables in the model differ by migration status. Tables 13 and 14 summarize regression analyses for nonmigrants and migrants. The relationships for nonmigrants reflect those discussed for the total sample in earlier contexts. Husband's education, wife's education, and husband's father's occupation (in that order) are the most important determinants of 1960 occupational status. Most of these variables affect 1968 occupation through 1960 status, because of the stability of occupation between 1960 and 1968. The influence of childbearing on occupational achievement, though negative, is very small.

The relationships among migrants are quite different. The proportion of explained variance in 1968 occupation is substantial, although not so high as for nonmigrants. Among those married by 1960, husband's father's occupation is most important, followed by husband's education, wife's education, and duration of marriage. When all migrants are considered, husband's and wife's education are most important. Occupational stability between

Table 10
Partial regression coefficients in standard form and coefficient of determination relating
husband's 1960 occupation, measures of childbearing, migration status 1961-1968, and
husband's 1968 occupation to background variables
(Philippines, NDS, 1968)

Dependent variable model	Independent variable ^a											R ²
	X ₀	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	
Occupation in 1960 (X₂)												
A				.181	.415 ^c	.070 ^b	.094 ^c	.201 ^c	.033	.034	-.002	.48
B-E				.173 ^c	.419 ^c	.072 ^c	.089 ^c	.202 ^c	.038 ^b	.025	.019	.47
Measures of childbearing (X₁)												
A Years to first birth			.066 ^b	-.020	-.021	-.022	.022	.064	.030	-.062 ^b	.257 ^c	.06
B Years of childrearing, 1960			.025 ^b	.088	.013	.009	-.009	-.031 ^b	-.014	.031 ^b	.894 ^c	.83
C Live births, 1960			.042 ^b	-.025	.012	-.024	.007	-.005 ^b	-.025	-.037 ^b	.719 ^c	.52
D Child-years, 1960			.057 ^b	-.017	.014	-.039 ^b	.021	-.041 ^b	-.007	.054 ^b	.770 ^c	.67
E Live births, 1968	-.020		-.002	.044 ^b	-.001	-.030	-.057 ^b	-.058	-.027	-.081 ^b	.523 ^c	.25
Migration status, 1961-1968 (X₀)												
A Years to first birth		.025	-.010	.016	-.082 ^b	-.009	-.043	.137 ^c	.112 ^c	-.071 ^b	.028	.03
B Years of childrearing, 1960		-.036	.003	.001	-.082 ^b	-.017	-.042	.126 ^b	.088 ^b	-.088	.037	.03
C Live births, 1960		-.053	.005	-.001	-.082 ^b	-.018	-.041	.124 ^b	.088 ^b	-.091 ^b	.042	.03
D Child-years, 1960		-.011	.003	.001	-.082 ^b	-.018	-.041	.126 ^b	.089 ^b	-.089 ^b	.013	.03
E Live births, 1968			.002	.001	-.083 ^b	-.017	-.042	.127 ^b	.089 ^b	-.089 ^b	.005	.03
Occupation in 1968 (Y)												
A Years to first birth	.032 ^b	.004	.830 ^c	-.001	.098 ^c	.011	.018	.006	-.001	.014	-.035 ^b	.83
B Years of childrearing, 1960	.033 ^b	-.012	.830 ^c	.008	.093 ^c	.012	.027 ^b	.002	-.004	.015	-.029	.82
C Live births, 1960	.032 ^b	-.032 ^b	.831 ^c	.008	.093 ^c	.011	.027 ^b	.001	-.005	.013	-.016	.82
D Child-years, 1960	.033 ^b	-.029 ^b	.032 ^c	.008	.093 ^c	.010	.027 ^b	.001	-.005	.016	-.016	.82
E Live births, 1968	.032 ^b	-.020	.830 ^c	.008	.093 ^c	.011	.026 ^b	.001	-.005	.013	-.029 ^b	.82

^aX₃ Husband's father's occupation; X₄ Husband's education; X₅ Husband's migration status, 1960; X₆ Husband's age; X₇ Wife's education; X₈ Wife's migration status, 1960; X₉ Wife's age; X₁₀ Duration of marriage, 1960.

^bRegression coefficient equal to, but not twice, its standard error, adjusted by $\sqrt{1.5}$.

^cRegression coefficient at least twice its standard error, adjusted by $\sqrt{1.5}$.

Table 11

Means and standard deviations of occupational status in 1960 and 1968, childbearing measures, and background variables for migrants and nonmigrants, 1961-1968^a (Philippines, NDS, 1968)

Variable	Migrants		Nonmigrants	
	Mean	Standard deviation	Mean	Standard deviation
Occupation in 1968	1.179	0.388	1.067	0.407
Years to first birth	2.044	1.798	1.876	2.123
Years of childbearing	5.338	4.847	7.382	4.788
Live births, 1960	2.550	2.241	3.526	2.258
Child-years, 1960	13.175	16.702	20.732	19.302
Live births, 1968	4.725	2.783	5.518	2.778
Occupation in 1960	1.094	0.379	1.042	0.404
Husband's father's occupation	0.865	0.327	0.840	0.351
Husband's education	9.050	4.512	8.308	4.485
Husband's migration status, 1960	0.450	0.504	0.385	0.487
Husband's age	38.625	3.985	41.044	5.603
Wife's education	9.000	4.449	7.272	4.390
Wife's migration status, 1960	0.525	0.506	0.349	0.477
Wife's age	38.875	2.322	37.376	2.767
Duration of marriage, 1960	7.075	5.050	9.155	4.961

^aMeans and standard deviations for years to first birth based on data for couples married by 1960 (34 cases for migrants, 770 for nonmigrants). Data for the remaining variables from all couples with information on each variable (40 cases for migrants, 813 for nonmigrants).

Table 12

Gross and net effects of migration status on 1968 occupational status (Philippines, NDS, 1968)

Model	Gross effect	Net effect
A Years to first birth	.121	.062
B Years of childrearing, 1960	.112	.044
C Live births, 1960	.112	.047
D Child-years, 1960	.112	.035
E Live births, 1968	.112	.041

1960 and 1968 is less pronounced than among nonmigrants. The direct effects of husband's education and age on 1968 status are much stronger. Path coefficients for childbearing among migrants are substantially larger than those estimated for the total population. Early measures of family formation are clearly more important than cumulative fertility by 1968, and child-years seems to be most important.

Effects of Marital Status on Occupational Achievement

It has been noted that delayed marriage may be an important explanation for the lower levels of childbearing among migrants. Except for years to first birth, a variable pertaining to wives married before 1961, all other variables are influenced by the fact that unmarried women are contributing no births. Duration of

Table 13
 Summary of regression analysis relating husband's occupational status in 1960 and 1968 to background variables and childbearing measures for nonmigrants, 1961-1968 (Philippines, NDS, 1968)

Dependent variable model	Independent variable ^a										R ²	
	Intercept	X1	X2	X3	X4	X5	X6	X7	X8	X9		X10
Regression coefficients in raw score form												
Occupation in 1960 (X ₂)												
A	-.095			.204 ^c	.038 ^c	.054 ^b	.007 ^c	.019 ^c	.034 ^b	.005	-.001	.48
B-E	-.040			.198 ^c	.038 ^c	.057 ^b	.007 ^c	.018 ^c	.040 ^b	.004	.001	.47
Occupation in 1968 (Y)												
A	.019	.000	.850 ^c	.003	.007 ^c	.012	.001	.001	-.001	.002	-.003 ^b	.84
B	-.011	-.000	.849 ^c	.013	.007 ^c	.013	.001	.000	-.005	.002	-.003	.83
C	-.004	-.004	.850 ^c	.012	.007 ^c	.013	.001	.000	-.005	.000	-.002	.83
D	-.022	-.000	.850 ^c	.012	.007 ^c	.012	.001	.000	-.005	-.002	-.002	.83
E	.003	-.002	.849 ^c	.012	.007 ^c	.013	.001	.000	-.005	.002	-.002 ^b	.83
Regression coefficients in standard form												
Occupation in 1960 (X ₂)												
A			.176 ^c	.415 ^c	.064 ^b	.096 ^c	.200		.041 ^b	.037	-.006	
B-E			.171	.419 ^c	.069 ^b	.091 ^c	.198 ^c		.048 ^b	.028	.017	
Occupation in 1968 (Y)												
A	.001	.846 ^c	.002	.081 ^c	.015	.010	.009		-.001	.015	-.030 ^b	
B	-.004	.845 ^c	.011	.078 ^c	.016	.019	.005		-.006	.016	-.032	
C	-.022	.845 ^c	.010	.078 ^c	.015	.020	.004		-.006	.015	-.020	
D	-.022	.845 ^c	.011	.078 ^c	.015	.020	.005		-.006	.017	-.019	
E	-.012	.845 ^c	.010	.078 ^c	.015	.019	.005		-.006	.015	-.029 ^b	

^aX1 Childbearing measure; X3 Husband's father's occupation; X4 Husband's education; X5 Husband's migration status, 1960; X6 Husband's age; X7 Wife's education; X8 Wife's migration status, 1960; X9 Wife's age; X10 Duration of marriage, 1960.

^bRegression coefficient equal to, but not twice, its standard error, adjusted by $\sqrt{1.5}$.

^cRegression coefficient at least twice its standard error, adjusted by $\sqrt{1.5}$.

Table 14
 Summary of regression analysis relating husband's occupational status in 1960 and 1968 to background variables and childbearing measures for migrants, 1961-1968 (Philippines, NDS, 1968)

Dependent variable model	Independent variable ^a										R ²	
	Intercept	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉		X ₁₀
Regression coefficients in raw score form												
Occupation in 1960 (X ₂)												
A	.822			.414 ^c	.027 ^b	.126	-.004	.022 ^b	-.090	-.015	.018	.64
B-E	1.003			.321 ^b	.032 ^b	.073	-.011	.027	-.082	-.012	.021 ^b	.59
Occupation in 1968 (Y)												
A	-1.399	.018	.525 ^c	-.065	.045 ^c	-.004	.043 ^b	-.022	-.081	.012	-.033 ^b	.73
B	-1.336	-.020	.582 ^c	-.082	.039 ^c	-.012	.038 ^b	-.018	-.060	.014	-.008	.73
C	-.882	-.060 ^b	.600 ^c	-.128	.035 ^b	-.028	.037 ^b	-.015	-.022	.003	-.003	.76
D	-1.283	-.008 ^b	.587 ^c	-.103	.035 ^b	-.067	.037 ^b	-.017	-.028	.014	-.004	.75
E	-.866	-.031 ^b	.539 ^c	-.114	.037 ^c	-.010	.034 ^b	-.013	-.039	.008	-.013	.75
Independent variable ^a												
Regression coefficients in standard form												
Occupation in 1960 (X ₂)												
A				.375 ^c	.334 ^b	.170	-.037	.272 ^b	-.119	-.090	.214	
B-E				.277 ^b	.386 ^b	.097	-.111	.313 ^b	-.109	-.076	.275 ^b	
Occupation in 1968 (Y)												
A		.080	.500 ^c	-.056	.529 ^c	-.005	.406 ^b	-.256	-.102	.068	-.370 ^b	
B		-.253	.569 ^c	-.069	.455 ^c	-.015	.390 ^b	-.202	-.079	.082	-.105	
C		-.347 ^b	.586 ^c	-.108	.413 ^b	-.037	.380 ^b	-.174	-.029	.017	-.041	
D		-.362 ^b	.574 ^c	-.087	.410 ^c	-.086	.382 ^b	-.191	-.036	.082	-.054	
E		-.220 ^b	.527 ^c	-.096	.431 ^c	-.013	.351 ^b	-.152	-.050	.047	-.174	

^aX₁ Childbearing measure; X₃ Husband's father's occupation; X₄ Husband's education; X₅ Husband's migration status, 1960; X₆ Husband's age; X₇ Wife's education; X₈ Wife's migration status, 1960; X₉ Wife's age; X₁₀ Duration of marriage, 1960.

^bRegression coefficient equal to, but not twice, its standard error, adjusted by $\sqrt{1.5}$.

^cRegression coefficient at least twice its standard error, adjusted by $\sqrt{1.5}$.

Table 15

Means and standard deviations of selected background variables and occupational status variables for respondents married by 1960 and married between 1961 and 1968^a (Philippines, NDS, 1968)

Variable	Married, 1960		Married, 1961-1968	
	Mean	Standard deviation	Mean	Standard deviation
Occupation in 1968	1.070	0.409	1.135	0.382
Occupation in 1960	1.044	0.406	1.090	0.388
Husband's migration status, 1968	0.042	0.201	0.122	0.331
Husband's migration status, 1960	0.388	0.488	0.408	0.497
Husband's father's occupation	0.840	0.350	0.877	0.376
Husband's education	8.217	4.476	10.490	4.159
Husband's age	41.198	5.442	36.612	5.664

^a806 cases are married by 1960, 49 between 1961 and 1968.

Table 16

Summary of regression analysis relating husband's occupational status in 1960, migration status 1961-1968, and occupational status in 1968 to selected background variables (Philippines, NDS, 1968)

Dependent variable	Intercept	Independent variable ^a						R ²
		X ₀	X ₂	X ₃	X ₄	X ₅	X ₆	
Married, 1960								
Regression coefficients in raw score form								
Occupation in 1960 (X ₂)	.118		.225 ^c	.051 ^c	.081 ^c	.007 ^c		.46
Migration status, 1961-1968 (X ₀)	.124		.004	.011	.000	.019 ^b	-.003 ^b	.01
Occupation in 1968 (Y)	.084	.066 ^c	.840 ^c	-.003	.010 ^c	.010	.001	.83
Regression coefficients in standard form								
Occupation in 1960 (X ₂)			.193 ^c	.559 ^c	.097 ^c	.094 ^c		
Migration status, 1961-1968 (X ₀)			.007	.019	.008	.047 ^b	-.069 ^b	
Occupation in 1968 (Y)		.032 ^c	.834 ^c	-.002	.106 ^c	.012	.008	
Married, 1961-1968								
Regression coefficients in raw score form								
Occupation in 1960 (X ₂)	.587		.109	.048 ^c	.101	-.004		.34
Migration status, 1961-1968 (X ₀)	.649		.087	-.187 ^b	-.006	-.150 ^b	-.009	.11
Occupation in 1968 (Y)	-.241	.077	.848 ^c	.138 ^b	-.001	.020	.009 ^b	.78
Regression coefficients in standard form								
Occupation in 1960 (X ₂)			.106	.516 ^c	.129	-.055		
Migration status, 1961-1968 (X ₀)			.101	-.213 ^b	-.079	-.225 ^b	-.154	
Occupation in 1968 (Y)		.066	.862 ^c	.136 ^b	-.007	.027	.129 ^b	

^aX₃ Husband's father's occupation; X₄ Husband's education; X₅ Husband's migration status, 1960; X₆ Husband's age.

^bRegression coefficient equal to, but not twice, its standard error, adjusted by $\sqrt{1.5}$

^cRegression coefficient at least twice its standard error, adjusted by $\sqrt{1.5}$

marriage in Tables 8, 10, 13, and 14 does have a small negative, and sometimes significant effect on occupational achievement in 1968. Following procedures used in analyzing the effects of migration status, the effects of marital status in 1960 on occupational achievement can be tested. As with migrants, the number of husbands married after 1960 is very small (49) compared with the number married by 1960 (806).

The means and standard deviations of the background and occupational status variables that refer to husbands are presented in Table 15. Those husbands who marry after 1960 have occupations in 1960 with higher status and experience greater upward mobility than do those who married earlier. They are considerably younger, their fathers had slightly higher occupational status, and they went on to attain higher levels of education and experience more mobility. Again, the selection hypothesis must be ruled out before higher achievement can be attributed to marital status.

Standardizing for these background and status variables, the gross effect of marital status, .065, is reduced to .001. Marital status appears to have no effect of its own on subsequent achievement. The form of the relationship among the variables may depend on marital status, however. In standardizing, it was assumed that the relationship among variables for those married by 1960 was the same as the relationship for those who delayed marriage. Table 16 summarizes the regression analysis within marital status groups.

Occupational stability is high for both marital status groups. Education is more important for those married by 1960, father's occupation more important for those married later. While the effect of 1961-1968 migration is significant for those married early, it is more important for the achievement of those who delayed marriage. The explanation of 1961-1968 migration status is more complete for those who delayed marriage. In general, the differences between relationships for marital status groups in 1960 are small, apart from the explanation of 1961-1968 migration status.

Conclusions

While the effects of delayed marriage and delayed childbearing have not been directly compared in this analysis, marital status in 1960, chosen as the marriage variable most likely to affect subsequent achievement, appears to have no direct effect of its own. Delayed childbearing, controlling for variables likely to affect the relationship, does facilitate mobility in the total population, but has a substantial effect only for migrants. Most of the analysis has supported the contention that early family formation is more important for subsequent mobility than completed fertility. The timing of childbearing within marriage appears to be less important than the number of live births, since 1960 live births consistently has the largest effect on 1968 status in comparison with other childbearing measures. Only among migrants does the composite measure, child-years, have greater influence than live births.

There are a number of shortcomings in the Philippine data which limit our confidence in the most significant results. First, the number of cases in the most interesting social groups, such as migrants and men who delayed marriage, are too small for complete analysis. Second, the socioeconomic scores for occupations in the Philippines are not easily compared with the Blau and Duncan (1967) SES scores for occupations in the United States. Third, the broad groupings of occupations in the Philippines limit the amount of actual mobility that can be measured.

The tentative comparison of the process of status attainment in the two countries, however, supports two propositions set forth by Treiman (1970) in his study of industrialization and social stratification: the more industrialized a society, the smaller the direct influence of father's occupational status on son's occupational status; and the more industrialized a society, the greater the direct influence of educational attainment on occupational status. Continued conceptual clarification of hypotheses concerning the relationships between family and career life cycles, and

the collection of comparable data, should make possible more extensive cross-cultural comparisons in the future.

Note

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