

MATERNAL EMPLOYMENT AT SIX MONTHS POSTPARTUM

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ABSTRACT

Although child care has been widely viewed as a deterrent to maternal employment, studies on the employment behavior of mothers who recently gave birth and thus have an infant under their care are rare. Using a multinomial logit analysis and survey data of 1,966 mothers in urban Metro Cebu, this paper examines a mother's propensity to a) work at home, b) work away from home, or c) not work at all at six months postpartum, given a set of personal, household, and community conditions. The study reveals that 1) a woman's level of education, 2) her work experience, 3) length of residence in Metro Cebu, 4) household income, 5) the availability of substitute infant caretakers in the household, 6) community labor market conditions, and 7) wage level of servants influence a mother's decision regarding her own work.

BACKGROUND OF THE STUDY

In contrast to men, women's participation in the labor force has at times been labeled as intermittent or unstable (Moen, 1985; Vanden Heuvel, 1989). This conclusion is based on the common perception that economic functions performed by women conflict with domestic ones; as a consequence, the latter may take precedence over the former during certain periods in the female reproductive cycle. More recently, however, in the wake of

changing norms and values, and an economic environment that permits the substitutability of a mother's time in the home, women are redefining the traditional boundaries that their multiple roles had erstwhile imposed.

The hypothesis addressing the negative relationship between women's work and childbearing has been much explored in the literature on fertility behavior. Summarizing Kupinsky's review (1977) of the various theoretical perspectives that have been brought to bear on the subject of

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women's employment and fertility, Herrin (1980) outlined a set of socio-psychological and economic hypotheses that collectively provide the rationale for the argument that women's maternal and economic functions are incongruous with one another. Empirical studies tend to substantiate this view at least insofar as the consequence of childbearing on mothers' work is considered (e.g., Da Vanzo and Lee, 1983; Vanden Heuvel, 1989). Utilizing a life cycle perspective, Domingo (1985) examined factors related to female economic participation in the Philippines by identifying what Sobol (1963) conceptualized as "enabling", "facilitating" and "precipitating" conditions for employment. Such factors are childbearing (individual characteristic), household income and human capital (household characteristics), and environmental factors (community characteristics).

But even as the constraining effect of childbearing upon maternal employment is admissible, researchers have likewise hinted that there are countervailing factors that tend to compensate for this negative influence. A United Nation's report (1985) presents data reflecting a high employment continuity rate among Filipino married women. Birdsall and McGreevey (1983) contend that, in developing countries, mothers are forced to work in order to augment meager family incomes. Herrin (1980) explains that in these societies, provisions for eco-

nomical support by women for their families are a mere extension of their domestic responsibilities.

The conflict between the mother and the worker roles becomes most pronounced at the time the woman is actually confronted with infant care responsibilities. Consequently, the ability to predict whether a woman will enter, remain, or withdraw from the labor force at this time can have significant bearing on the extent and regularity of female employment in a society as well as a host of other ensuing socioeconomic concerns. There seems to be a need, therefore, to identify the factors that serve to facilitate or impede gainful employment by mothers during this stage of the female reproductive cycle. While role-incompatibility has become a byword in most researches on female labor force participation, little emphasis has so far been placed on the fact that the demands of motherhood which inhibit a woman from working are not evenly distributed over the course of her reproductive years. By focusing only on mothers with six-month old infants, this study addresses such a concern.

To capture more adequately the concept of role-incompatibility at six months post-partum, the study examines employment decisions in terms of three alternatives: a) not to work, b) to work at home, and c) to work away from home. Although exceptions have been cited (Beneria and Roldan, 1987), it is still fairly reasonable to assume

that market work at home, in contrast to work outside, is less incongruous with child care responsibilities because it permits physical proximity between mother and child. Consequently, economic activity in the home could present an altogether different alternative to outside employment for mothers wishing to minimize role strain during this crucial period. A trichotomous classification of work choices is therefore considered more adequate and appropriate than the commonly used work-nonwork dichotomy.

From the standpoint of policy, the study also attempts to provide insights into possible effective means of increasing and regularizing women's participation in the labor market. Because of a multi-level categorization of determinants of employment on the basis of individual, household, and community characteristics, prioritization of programs that address women's welfare, their family conditions, or the social and economic structures prevailing in their localities can be more easily worked out.

MODEL AND ESTIMATION

The economic model of household decision-making embedded in Becker's theory (Becker, 1985) of the household consumption function provides the analytical framework for this study. The basic components of the framework are: a) personal and household factors that influence a woman's

preference for consumption goods, leisure, and the quality of health of her child, b) price and income factors that define the budget constraint, and c) environmental and community factors that influence a woman's work opportunities and constraints.

A household with a six-month old infant is assumed to derive satisfaction from a set of consumption goods, X_i ; the physical wellbeing of the child, H_i ; leisure of the mother, L_i ; and leisure of other household members, O_i . Accordingly, the utility function is defined as

$$U_i = U (X_i, H_i, L_i, O_i, Z_i),$$

where Z_i is a vector of exogenous taste determinants and X_i includes purchased inputs for child care. H_i is treated as given in this study.

The household faces a constraint with respect to the allocation of the mother's time:

$$1 = T_{Ci} + T_{Mi} + L_i,$$

where T_{Ci} is the mother's time for child care and T_{Mi} her market time. Total available time is normalized to unity. It should be noted that other household members old enough to work or assist in child care face a similar constraint on time.

The budget constraint for the household is defined as

$$W_{Mi} T_{Mi} + \sum W_{ji} T_{ji} + A_i = P_i X_i,$$

where W_{Mi} is the mother's wage rate and W_{ji} and T_{ji} are wage and market time of other members in the household, respectively. A_i is the total value of the household's nonwage income and P_i is a vector of prices for consumption goods.

The standard optimization process will consequently yield a set of demand functions for: a) consumption goods, b) child's health, and c) mother's leisure time as determined by P_i , W_{Mi} , W_{ji} , T_{ji} , A_i , and Z_i . The mother's labor supply function is derived as the residual after accounting for her leisure time and time input for child care. Like health of the infant, the market, leisure, and child care time of other members in the household are treated as exogenous in this study.

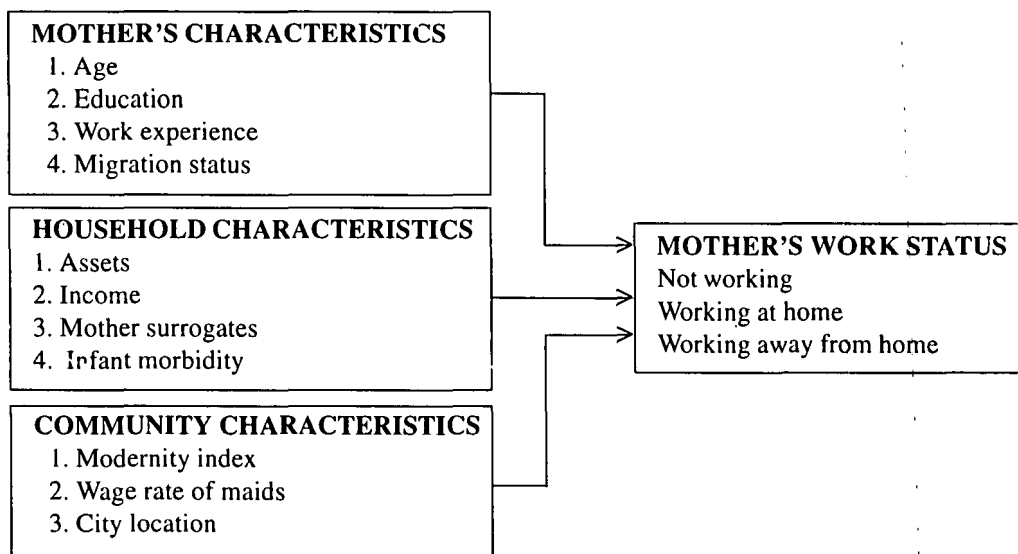
Operationalizing the conceptual model, the diagram below lists the factors hypothesized to influence a mother's work choice. The variables

used as indicators for mother's, household, and community characteristics are described in detail in the Data section.

Because the mother's labor-supply behavior in this study is modeled as consisting of three unsequenced alternatives, i.e., not working (C_1), working at home (C_2), or working away from home (C_3), the use of the ordinary least squares estimation procedure is unsuitable. A multinomial logit estimation procedure using the maximum likelihood method is more appropriate (Schmidt and Strauss, 1975). Assigning a value of 0 or 1 for each work choice, a system of three equations of the following form is derived:

$$(1) \log \frac{\Pr(C_2)}{\Pr(C_1)} = X \beta_2$$

$$(2) \log \frac{\Pr(C_3)}{\Pr(C_1)} = X \beta_3, \text{ and}$$



$$(3) \Pr(C_1) = 1 - \{\Pr(C_2) + \Pr(C_3)\},$$

considering that the outcomes are mutually exclusive. To carry out the estimation process, the MLOGIT procedure (Salford System, 1985) is used.

Because the coefficients obtained in this procedure represent the predicted change in the logarithm of the ratio of the probability of working at home (or away from home) to the probability of not working, given a one-unit change in the independent variable in question, these coefficients are cumbersome to interpret. It is therefore expedient to compute, on the basis of the coefficients, predicted probabilities for each work choice, that is, the probability that a work category will be chosen given the mean, median, or other user-specified values of the independent variables. The computation of predicted probabilities (Molyneaux and Stone, 1986) thus allows simulating the effect on the dependent variable of a change in the value(s) of one or more explanatory variables. The calculation of predicted probabilities is based on the following equations:

$$\Pr(C_1) = \frac{1}{A},$$

$$\Pr(C_j) = \frac{\exp(X' \hat{\beta}_j)}{A} \quad j = 2, 3$$

$$\text{where: } A = 1 + \sum_{i=2}^3 \exp(X' \hat{\beta}_i),$$

X' is a vector of user-specified values

of the explanatory variables, and

$\hat{\beta}$ are the calculated coefficients from the MLOGIT output.

DATA SOURCE AND VARIABLE SPECIFICATION

The study utilizes data from the Cebu Longitudinal Health and Nutrition Surveys (CLHNS) undertaken between 1983 and 1985. With the aim of analyzing maternal and child health practices and their outcomes in Metro Cebu and how these relate to socio-economic and environmental conditions, the project undertook surveys at three levels: the mothers and their infants, their households, and their communities. A baseline survey, a survey immediately after birth, and twelve bimonthly (longitudinal) surveys provide information on the mothers and their households starting from the woman's third trimester of pregnancy until the baby's second birthday. Two community surveys provide barangay level information.

The sample for the CLHNS was drawn from the three cities (Cebu, Mandaue, and Lapulapu) and six adjacent municipalities of Metro Cebu using a stratified cluster sampling design. Stratification was by urban-rural classification and the initial sampling unit was the barangay. The urban population was purposely oversampled on the assumption that health and infant care patterns are more varied in urban

compared to rural settings. Drawing separately from each stratum, 17 urban and 16 rural barangays were randomly selected. All pregnant women residing in these sample barangays who subsequently gave birth between 1 May 1983 and 30 April 1984 were recruited into the sample.

Because the study aims to focus on the economic role of women in the modern context, it limits itself to the analysis of data from the urban sample. It further confines itself to analysis of data from the baseline survey and one of the 12 periodic surveys undertaken by the CLHNS. Specifically, it utilizes data from the third longitudinal survey (L3) obtained at the time when the sample infant was six months old. The six-month period following birth is considered appropriate because it shall have allowed mothers sufficient time to adjust to infant care and return to erstwhile "normal" activities. Also, on the basis of the fertility experience of the Metro Cebu sample women, a six-month interval from childbirth is short enough to reduce the possibility of being pregnant again, a condition which may confound a woman's decision to work.

The CLHNS Baseline Survey obtained information from 2,555 women in the urban stratum. By the time the third longitudinal survey was conducted, only 1,966 of them were available for interview. Sample attrition was attributed to exclusion of mothers with non-live or twin births, mothers whose

infant had died, those who outmigrated or were temporarily absent at time of interview, and those who refused to be interviewed. For most of the analysis in this study, the sample is further reduced to 1,958 because of incomplete information for eight respondents.

The variables abstracted from the data files of the CLHNS for use in this study are labeled and defined as follows:

A. DEPENDENT VARIABLE

WORKSTAT - mother's work status at six months postpartum (at time of interview)

- i.e., 1 - mother is not working
2 - mother works at home
3 - mother works away from home.

Work is defined as any gainful economic activity for which remuneration in either cash or kind is received.

B. INDEPENDENT VARIABLES

B1. Mother's Characteristics:

- AGE - age of mother at time of Baseline Survey
EDUC - mother's years of formal education
WORKYRS - mother's total years of work experience
MIGRANT - 1 if mother is a recent (last 5 yrs) migrant to

urban Metro Cebu, 0 if otherwise

B2. Household/Child-Related Characteristics:

- ASSET - household asset-ownership score (land, house, vehicle, TV, refrigerator; range 0-5)
- INCOME - deflated weekly household income (excluding that of mother's) at L3
- FEMCHILD - number of daughters aged 13 and above in household at L3
- GRANDMA - presence of grandmother in household at L3
- FEMREL - number of other female relatives aged 13 and above in household at L3
- SERVANT - number of servants in household at L3
- ILLNESS - presence and severity of illness of infant during week prior to interview (range 0-3).

Household income is the sum of all earned and unearned income of all members of the household excluding the mother. It includes cash remittances, pensions and rental payments but excludes agricultural and livestock expenditures. Household income is

deflated to January 1983 price levels.

B3. Community Indicators:

- MODINDEX - barangay modernity index
- YAYAWAGE - wage rate of maids (*yayas*) in the barangay
- MANDAUE - barangay is located in Mandaue City
- LAPULAPU - barangay is located in Lapulapu City
- OUTCITY - barangay is located in Talisay or Consolacion (outside the 3 cities) (Cebu City is the omitted category).

The Modernity Index was constructed by the Carolina Population Center Cebu Study Team analyzing the data by means of a factor analysis on a number of community variables on the social and physical infrastructure of the barangay and the presence of specified types of commercial establishments in the area.

RESULTS

Mother's Characteristics

The mothers in the urban Metro Cebu sample are, on the average, 26 years of age. Close to one-half of them have completed elementary education, another 21 percent have a high school diploma, and a mere seven percent are college degree holders (Table 1). The

proportion of college graduates in the sample is somewhat low when compared with the proportion of degree holders reported in the 1980 Census for women 15 years old and above in Metro Cebu, which is 11 percent (National Census and Statistics Office, 1983). Because studies in the Philippines attest to the fact that women, especially in the urban areas, attain high levels of education (Domingo, 1985; Raymundo, 1987), it might be surmised that the sample is biased towards moderately educated women and against highly educated ones. This sup-

position is not unfounded when one takes into account that highly educated women, in general, tend to get employed, marry late, have fewer children and longer birth intervals (Domingo, 1982), and would thus not easily fall into a sample of pregnant women at any given point in time.

If education correlates positively with income, one might further suspect that the sample is likewise biased in favor of low income households. In terms of income quartiles, the data show that in 1983, the poorest 25 percent of the sample earned no more than

TABLE 1. SELECTED CHARACTERISTICS OF URBAN METRO CEBU MOTHERS

Number of women	1,966
1. Mean age	26.1
Std. dev.	5.9
Range	15-47
2. Mean number of years of schooling	7.5
Std. dev.	3.3
Range	0-18
3. Percent who completed	
Elementary education	47.6
High school education	20.7
Four years college	7.2
4. Percent of migrants to Metro Cebu in last 5 years	22.9
5. Percent working at 6 mos. postpartum	37.2
Working at home	15.2
Working away from home	21.8
6. Percent who ever worked	83.4
Worked before marriage	72.9
Worked after marriage	53.9
Worked during recent pregnancy	37.0
7. Mean no. of years of work experience	4.1
Std. dev.	4.6
Range	0-29

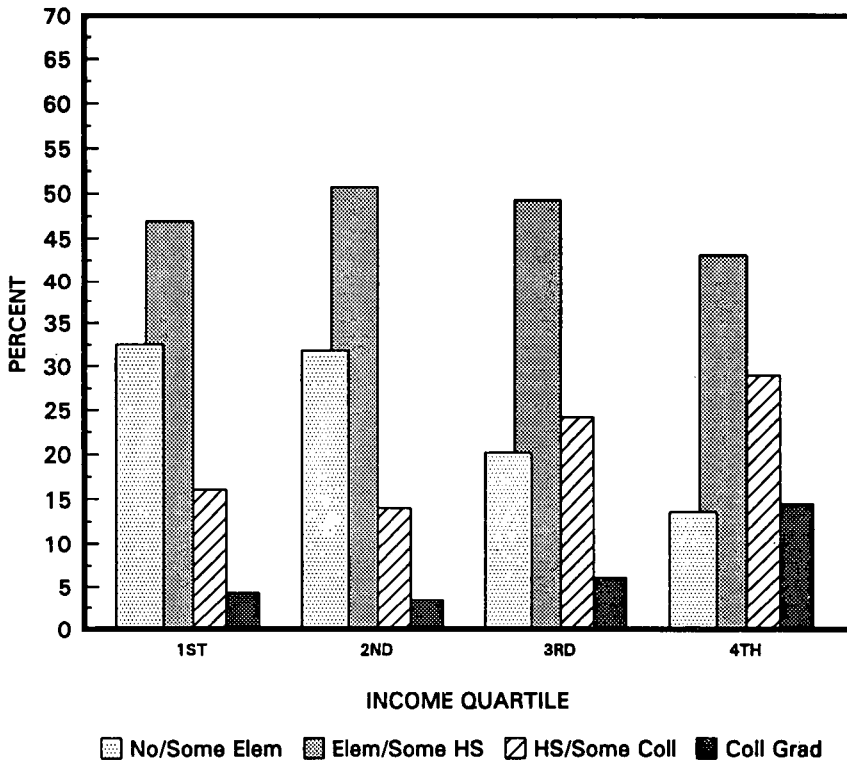
P212 a month (excluding the woman's earning if she works); the next 25 percent, less than P428; and the third quartile, less than P724. Cross-classifying women's educational level with income quartile (Figure 1) brings out the positive correlation between mother's education and household income. One finds that the largest concentration of high school and, more importantly, college graduates is in the highest income group. It can therefore be inferred that the paucity of highly educated women in this sample of mothers with infants implies a corresponding underrepresentation of more affluent households.

Information on previous place of residence of the sample women shows that a considerable fraction (23 percent) of the mothers had moved into urban Metro Cebu only during the preceding five years. No distinction is made here as to whether or not the woman comes from another urban area outside Metropolitan Cebu because such a distinction is not believed to make adjusting to new household and community conditions any easier or harder for the recent migrants.

Mother's Labor Force Participation

The data on the work status of

FIG 1. WOMEN'S EDUCATIONAL LEVEL, BY INCOME QUARTILE



mothers in urban Metro Cebu suggest that, for these women, motherhood does not seem to pose a serious hindrance to gainful employment. Over one-third (37 percent) of the 1,966 sample mothers were working at six months postpartum, and more than half of these working women were working outside their homes. The baseline data show that an equal proportion of mothers had worked during the late stages of their pregnancy. Using results from the 1983 National Demographic Survey--which found only 30 percent of all ever-married women in the country to be gainfully employed (Domingo, 1985)--as a basis of comparison, the Metro Cebu mothers can then be considered an economically active group.

However, if one takes a life cycle perspective, the employment level of the Metro Cebu sample women at six months postpartum becomes less impressive because a much larger proportion (83 percent) of these mothers had already held jobs in the past, averaging four years. Seventy three percent of the sample women were gainfully employed before their first marriage, 54 percent had worked after marriage, while only 37 percent had a job during their recent pregnancy. This decline in labor force participation from the onset of marriage through the childbearing years suggests a prioritizing of roles by women as the role-incompatibility theory has predicted.

The mean values of the explanatory variables used in the analysis (Table 2) aid in typifying the women who do not work, work at home, or work outside the home during six months postpartum. The group of non-working mothers appears to be the youngest among the comparison groups. In terms of schooling, women in this group are better educated than those who work at home, but less so compared to those with outside employment. They also have the least number of years of work experience and are more likely to be recent migrants to Metro Cebu. In contrast, mothers with jobs outside the home tend to be older, have more years of formal education and work experience, and a longer duration of residency in Metro Cebu.

Figure 2 further explores the education-employment relationship. It demonstrates that, of the three work categories, home employment has the largest proportion of women with incomplete elementary education, while outside employment claims the largest proportion of college graduates; the unemployed group consists largely of high school and college undergraduates. On a bivariate level, it would seem that a very limited amount of education motivates a woman to work informally at home, while more education operates in one of two ways: at moderately high levels, it provides a woman some reasons not to work, and at more advanced levels, it motivates

and enables her to seek productive employment outside her home.

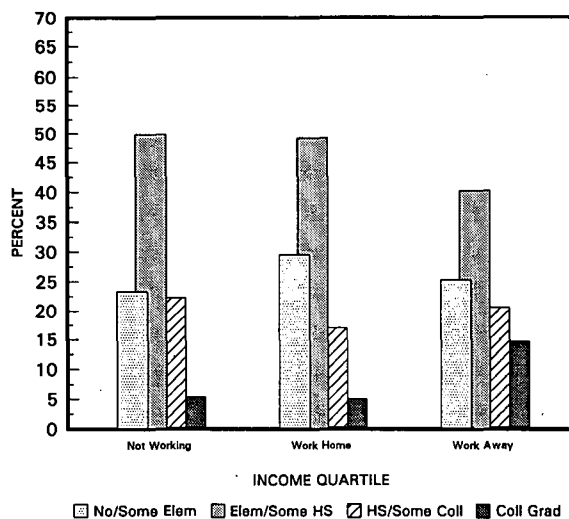
An important correlate of educa-

tion is income. An examination of household income levels of women in the three work categories, however,

TABLE 2. MEAN VALUES OF EXPLANATORY VARIABLES BY MOTHER'S WORK STATUS

VARIABLE	NOT WORKING	WORKING AT HOME	WORKING AWAY FROM HOME
MOTHER'S CHARACTERISTICS:			
AGE	25.31	26.82	27.74
EDUC	7.47	6.95	7.93
WORKYRS	2.82	5.60	6.68
MIGRANT	.26	.19	.16
HOUSEHOLD CHARACTERISTICS:			
ASSET	1.06	1.18	1.18
INCOME	173.85	134.11	125.58
FEMCHILD	.07	.17	.13
GRANDMA	.22	.17	.21
FEMREL	.47	.39	.54
SERVANT	.05	.05	.18
ILLNESS	1.16	1.19	1.13
COMMUNITY CHARACTERISTICS:			
MODINDEX	.76	.56	.78
YAYAWAGE	112.17	110.69	111.64
MANDAUE	.16	.24	.18
LAPULAPU	.11	.15	.11
OUTCITY	.14	.13	.21

FIG 2. WOMEN'S EDUCATIONAL LEVEL, BY WORK STATUS



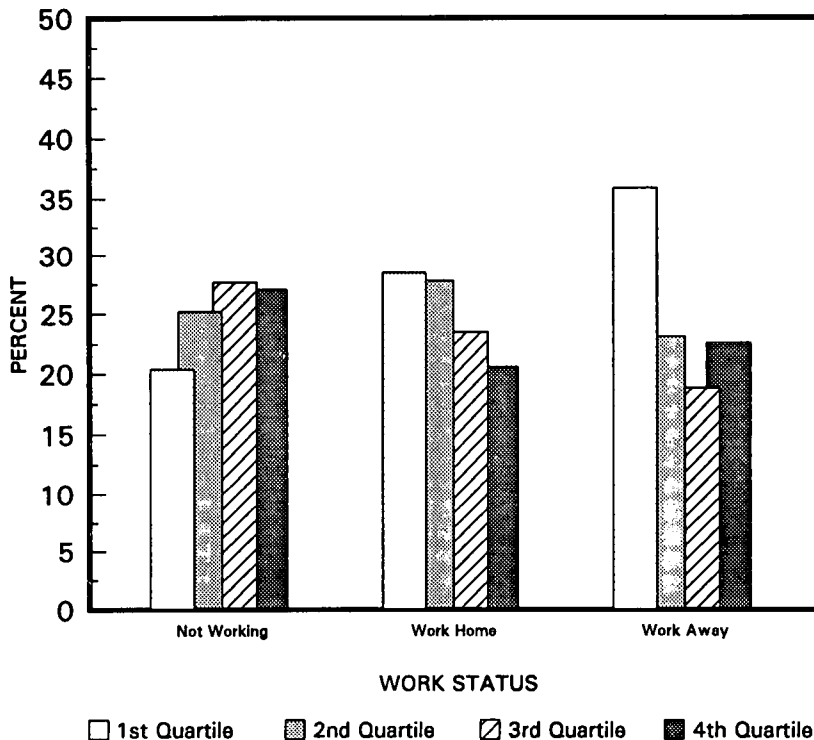
reveals a slightly different picture from that of mother's education (Figure 3). Outside employment draws conspicuously on women from the poorest families in the sample, while home employment is favored by mothers in the low-middle income group. Because working at home usually means investing in a small business (e.g., sari-sari store) or trade, the implication is that mothers with little or no financial resources resort to earning income by means of paid employment. Mothers whose households are economically better off tend not to work, but of the minority who do work, the more affluent tend to work outside the home. Presumably, it is the acquisition of a

college diploma that has a reinforcing effect on the latter trend.

Determinants of Mother's Work Choice

Table 3 presents the coefficients and t-values obtained by the multinomial logit estimation procedure. Because all variables in the model are theoretically relevant, the complete set of variables is presented regardless of the statistical significance of particular variables. The model could, however, be viewed as "semi-parsimonious" in the sense that squared and interaction terms theorized to be relevant but found to be statistically in-

FIG 3. INCOME QUARTILE, BY WOMEN'S WORK STATUS



significant were deleted from the final model.

The argument that the decision to work at home is different from the decision to work away from home appears to be correct based on the findings at hand. Indeed a different number and combination of determinants influence each given work choice. It is also evident that the employment decision of mothers at six months postpartum is a result of the combined effects of personal, family, and environmental predispositional factors. Eleven out of the 19 coefficients in column 2

are statistically significant, compared to only six for each of the other comparison groups. Given the full model, the only factors that fail to discriminate among the three work alternatives are: 1) the age of the mother as an individual characteristic, 2) presence of a grandmother in the household, 3) the infant's morbidity status during the week prior to the interview, both as household characteristics, and 4) residence location in Lapulapu City relative to residing in Cebu City, a community characteristic. With regards to infant morbidity it could be that, con-

TABLE 3. MULTINOMIAL LOGIT COEFFICIENTS AND t-VALUES

chi-square: 468.7

cases: 1,958

working at home = 299

df: 38

working away from home = 427

log likelihood: -1548.6

not working = 1,232

EXPLANATORY VARIABLES	WORKING AT HOME VS NOT WORKING		WORKING AWAY FR. HOME VS NOT WORKING		WORKING AWAY FR. HOME VS WORKING AT HOME	
AGE	-.013	(-.921)	.011	(.842)	.024	(1.456)
EDUC	-.058	(-.615)	-.305	(-3.880)**	-.247	(-2.417)*
EDUC*EDUC	-.001	(-.228)	.018	(4.009)**	.020	(3.254)**
WORKYRS	.034	(.968)	.068	(2.261)*	.034	(1.046)
EDUC*WORKYRS	.018	(3.560)**	.018	(4.219)**	.000	(.026)
MIGRANT	-.241	(-1.417)	-.426	(-2.633)**	-.185	(-.884)
ASSET	.155	(1.931)	-.106	(-1.453)	-.261	(-2.832)**
INCOME	-.001	(-2.014)*	-.002	(-3.795)**	-.001	(-1.290)
INCOME*INCOME	.000	(1.467)	.000	(2.455)*	.000	(.549)
FEMCHILD	.511	(2.856)**	.213	(1.158)	-.298	(-1.563)
GRANDMA	-.105	(-.515)	.272	(1.550)	.377	(1.615)
FEMREL	.018	(.192)	.187	(2.491)*	.169	(1.641)
SERVANT	.197	(.708)	.822	(4.276)**	.625	(2.308)*
ILLNES	.092	(1.050)	.029	(.356)	-.064	(-.626)
MODINDEX	-.885	(-4.387)**	.285	(1.898)	1.170	(5.250)**
YAYAWAGE	-.012	(-2.949)**	-.004	(-1.010)	.008	(1.650)
MANDAUE	.145	(.754)	.437	(2.402)*	.292	(1.303)
LAPULAPU	-.200	(-5.39)	.513	(1.708)	.713	(1.704)
OUTCITY	-.490	(-2.153)*	.521	(2.898)**	1.011	(4.062)**
Intercept	.675	(.885)	-.990	(-1.427)	-1.665	(-1.909)

trolling for personal, household, and labor market conditions, a mother with a sick child will neither stop working nor change work location but may just alter her work schedule or reduce the number of hours that she works, if circumstances permit her to do so. A mother's decision to work outside her home relative to the decision not to work is influenced more by her individual and household characteristics

than by the community variables in question; the reverse holds true with working at home compared to not working.

Because the log odds ratios from the multinomial logit analysis are somewhat difficult to interpret in concrete terms, predicted probabilities were computed (Table 4) to assist interpretation. The probability that a woman will choose any of the three

TABLE 4. PREDICTED PROBABILITIES

EXPLANATORY VARIABLES	WORKING AT HOME	WORKING AWAY FROM HOME	NOT WORKING
MEDIAN *	.183	.112	.705
Change based on the median: **			
AGE = 26	-.002	+.001	+.001
EDUC = 8 [EDUC*EDUC=64]	-.004	+.003	+.001
[EDUC*WORKYRS=24]			
WORKYRS = 4 [EDUC*WORKYRS=28]	+.020	+.017	-.037
MIGRANT = 1	-.027	-.033	+.060
ASSET = 2	+.026	-.013	-.013
INCOME = 207 [INCOME*INCOME = 42,849]	-.010	-.014	+.024
FEMCHILD = 1	+.083	+.008	-.091
GRANDMA = 1	-.021	+.032	-.011
FEMREL = 1	-.001	+.019	-.018
SERVANT = 1	+.005	+.103	-.108
ILLNESS = 2	+.013	+.001	-.014
MODINDEX = 1.2	-.059	+.023	+.036
YAYAWAGE = 110	-.017	-.002	+.019
MANDAUE = 1	+.011	+.047	-.058
LAPULAPU = 1	-.039	+.067	-.028
OUTCITY = 1	-.071	+.075	-.004

* If computed at the mean instead of the median values, the predicted probabilities are:
 working at home = .147
 working away from home = .199
 not working = .654

The mean and the median values of the explanatory variables are given in Table 5.

** Represents marginal increase based on the median value except for INCOME (+100), YAYAWAGE (+10), and MODINDEX (+1 std. dev.).

work alternatives if she assumes the median values (given in Table 5) on all the explanatory variables is given in the first row of the table. As depicted, an average woman residing in urban Metro Cebu with a six-month old infant has an 18 percent probability of working at home, an 11 percent probability of working away from home, and a 71 percent probability of not working at all. While a computation of the probabilities using the mean instead of the median values of the independent variables might have been more illustrative of the actual distribution of the sample mothers by work category (cf. first footnote in Table 4), it was bypassed in order to come up with a meaningful interpretation of a "one-unit change" for dichotomous and discrete explanatory variables in the model. The rest of the figures in

Table 4 represent the change in the predicted probability of each work choice given a marginal (1- unit) increase (cf. 2nd footnote in Table 4 for exceptions) for the explanatory variable in question while keeping the other variables at their median values. This simulation procedure is particularly useful when assessing the substantive contribution of each variable to labor supply decision-making.

DISCUSSION

Mother's Characteristics. Holding household and community factors constant, the logit analysis reveals that mother's education, work experience, and migration status have the largest influence on the decision to work away from home relative to not working. Contrary to common expectations

TABLE 5. MEAN AND MEDIAN VALUES OF EXPLANATORY VARIABLES

VARIABLE	MEAN	(S.D.)	MEDIAN
AGE	26.1	(5.9)	25
EDUC	7.5	(3.3)	7
WORKYRS	4.1	(4.6)	3
MIGRANT	.2	(.4)	0
ASSET	1.1	(1.0)	1
INCOME	157.2	(286.0)	107
FEMCHILD	.1	(.4)	0
GRANDMA	.2	(.4)	0
FEMREL	.5	(.9)	0
SERVANT	.1	(.3)	0
ILLNESS	1.2	(.8)	1
MODINDEX	.7	(.5)	.7
YAYAWAGE	111.8	(20.9)	100
MANDAUE	.2	(.4)	0
LAPULAPU	.1	(.3)	0
OUTCITY	.2	(.4)	0

based on the opportunity cost theory, education is observed to reduce the likelihood of a mother working, especially at a job outside the home. A similar finding was reflected in a study by Doan and Popkim (1989) of the same sample women but at 12 months postpartum. Three possible explanations are in order. First is that, on the basis of another economic interpretation, a negative coefficient for education could mean that the better-educated mothers have a relatively high valuation of their time and should existing wage levels fall below this assessed value, these women will opt for nonemployment. A second and more plausible explanation is that the existing labor market structure in Metro Cebu provides very scarce employment opportunities for women with moderately high levels of education (e.g., college undergraduates), the kind of women most predominant in the sample. The third equally compelling argument is that highly educated mothers are likely to put a high premium on their infant's health and welfare. They would likewise be reluctant to seek child care assistance from their older children, preferring that the latter spend adequate time on their studies. Considering the high cost of paid help in the cities, these mothers, especially if lacking suitable outside job opportunities, will easily choose not to work. This last scenario illustrates education to be more of a "taste" determinant rather than a "potential wage" in-

dicator.

It might be illuminating at this point to recall the possible selectivity bias of the Metro Cebu sample. During the bivariate analysis, it was shown that college education is in fact associated with outside employment. In the same descriptive analysis, the highest income level, although clearly associated with non-work, did indicate some positive association with outside employment. Speculatively speaking, therefore, had the sample contained an adequate number of professionals and more affluent mothers, the negative effect of education on the decision to work outside the home would have been reversed. That education at the highest level could have a positive effect on outside employment, implying a threshold level at which the effect of education could be reversed (Encarnacion, 1974), is in fact borne out by the significant coefficient of the squared education term in the model.

With the reference made earlier to women's valuation of time, it becomes conspicuous that what the model lacks is a more direct measure of mother's potential wage. An "instrumental variable" approach to measuring mother's predicted income was in fact attempted using mother's education, work experience, and socioeconomic status as predictors. However, the resultant measure yielded insignificant, negative logit coefficients. It is possible that the imputed wage may have been distorted as a result of the sample's bias toward

the relatively poor, less-educated mothers who are likely to be working in low-paying jobs. It is noted, for instance, that on the basis of income data for individuals obtained during the baseline survey, the median monthly income of working mothers was P145. Wage income, being the more appropriate basis for computing potential wage, was likewise explored but yielded meaningless results. The latter outcome may be attributed to the fact that only 14 percent of the sample women had wage data—data that are also likely to be influenced by the selectivity bias.

In contrast to the effect of education, the interaction of mother's level of education and her years of work experience has a positive and significant effect on both the decisions to work at home and away from home, relative to not working. A possible proxy measure for accumulated human capital, the interaction variable displays the expected direction of influence in favor of maternal labor force participation. This variable, however, does not discriminate between choosing to work at home or away from home.

When taken independently of education, years of work experience alone has influence only on the probability of outside employment over nonemployment: the longer a woman has worked in the past, the more likely will she be found working outside the home at six months postpartum.

The effect of migration status on mothers' work choice appears consistent with expectations. Because of constraints brought about by residential dislocation and the coming of a new baby, a recent migrant to urban Metro Cebu has a smaller probability, than a nonmigrant, of working outside the home. Recent immigration, in fact, increases the chances of a mother not working at all. In substantive terms, migration status, compared with the other characteristics of the mother, appears to have the strongest impact on a mother's decision not to work away from home. A migrant mother has a six-percent larger probability of not working, and a three-percent smaller probability of working outside the home than her nonmigrant counterpart (Table 4). Effects of a mother's other attributes, although statistically significant, are substantively much weaker.

Household Characteristics. Variables pertaining to household characteristics in the model are of two types: a) household assets, and b) variables related to infant care. Examined simultaneously with individual and community factors, these characteristics manifest varying effects on mother's employment behavior. Household asset, which is a measure of accumulated wealth and thus of the socioeconomic status of the household, is shown to be positively associated with a woman's propensity to work at home as opposed to her not working and

negatively related to the likelihood of working away from home compared to not working or working at home. The capital requirements of home-based economic activities may help explain these results.

Household income, on the other hand, has a negative effect on mother's labor force participation regardless of whether work takes place in or outside the domicile. For a majority of the sample women, leisure does appear to be a normal good. The significance of the income-squared coefficient, however, indicates that a nonlinear relationship exists between household income and the likelihood that a mother will work outside the home rather than not work. Even if substantively negligible, this may be symptomatic of a tendency on the part of women in more affluent households to engage in outside employment.

Because the study deals with the period when a mother has an infant to care for, her decision to work hinges heavily on the availability of an alternative caretaker in the household. The results suggest that when a mother engages in economic activity within the home, child care assistance is generally solicited from the infant's older female sibling(s). Having a daughter aged 13 or older, as opposed to none, increases by eight percent the likelihood that a mother will work at home. In contrast, the decision to work outside the home appears to be largely facilitated by the presence of a servant

in the household. A servant increases the probability that a mother will work away from home by 10 percent, and reduces the probability that she will not work by the same magnitude. This, by far, is the strongest effect any explanatory variable has demonstrated on maternal employment behavior. Controlling for the other variables, the findings suggest that mothers who work away from home at six months postpartum rely heavily on paid surrogates and not on immediate relatives to look after their infants. This is probably because older children and other relatives may themselves be preoccupied with school or work which then poses a constraint on the timing and amount of infant care they can deliver. Furthermore, because an earning mother is in a better position to afford a servant, she will likely hire one to ensure that her child is cared for while she is at work.

From the foregoing, it is obviously a valid argument that mother surrogates could be made available once a mother has decided to work. In effect, availability of mother substitutes is a consequence, not a cause, of a mother's decision to work. In an effort to address this issue, lagged values (from the second longitudinal survey) for the household composition variables were tried out in place of "current" values to ensure proper temporal sequencing of events and to roughly detect endogeneity in the model. However, no appreciable differences in the coeffi-

cients between the two model specifications were evident (data not shown). Without discounting endogeneity, the retention of the original model specification appears valid.

Community Characteristics. The results pertaining to the impact of community factors on maternal labor force participation are not as easy to decipher as those of individual and household factors. It could be that the community variables capture other residential characteristics in addition to measuring labor market conditions in the area. Nonetheless, what can be inferred from the figures in Tables 3 and 4 are as follows: In highly urbanized settings, where employment opportunities are relatively abundant, mothers are inclined to work not at home but elsewhere. If the choice is between not working and working at home, she is most likely not to work. A possible explanation for this is that the market structure in the modern economic context favors institutional forms of services and skilled and white-collar jobs but offers limited opportunities for informal employment at home. If a woman's skills do not match the qualifications required for such jobs, or if the market is not sufficiently large to absorb most of the qualified females, then a good number of them may not find employment at all.

To demonstrate the effect of modernization on mother's work choice, we simulate an increase by one standard deviation on the modernity index

score (Table 4). This results in an increase of 3.6 percent on the probability of non-employment and 2.3 percent on the probability of outside employment. The probability of working at home is correspondingly reduced by almost six percent.

The wage level of maids (*yayas*) in the barangay is expected to negatively influence a mother's decision to work. This hypothesis holds only if the choice is between working at home and not working. In places where servants are costly, the benefits to be derived from gainful employment in the home is not perceived to be commensurate to such cost.

The city in which a barangay is located constitutes another measure of differential work opportunities. Cebu City, for instance, is different from the other two cities in that it is the commercial and service center for the province. Mandaue City is the industrial and manufacturing hub of Metro Cebu, and Lapulapu City is the site of a number of multinational corporations engaged in production at the Mactan Export Processing Zone. It had already been mentioned that Lapulapu City, for reasons not immediately apparent, is no different from Cebu City with respect to the work experience of the sample mothers. On the other hand, mothers residing in Mandaue City appear to have a stronger propensity for working away from home instead of not working, compared to mothers in Cebu City. The same holds true for

mothers residing outside the city, except that for these women, nonwork is preferable to working at home. The latter could be explained in terms of fewer opportunities for home employment found in the outskirts of urban Metro Cebu in comparison with the situation in Cebu City. It is likely too that, due to population pressure, women with jobs in the cities have chosen to locate their families in nearby municipalities where cost of housing is relatively cheaper.

CONCLUSION AND IMPLICATIONS

An examination of the determinants of mothers' employment behavior at six months postpartum has revealed that a set of personal, household, and community factors collectively influence a mother's decision to either work at home, work outside the home, or not work at all. An individual's level of educational attainment, work experience, and length of residence in urban Metro Cebu have a significant impact on her choice to work away from home. Mothers with low educational attainment are prone to take jobs outside the home, as is also the case for women who hold a college degree. In contrast, moderately educated women do not have much of an inclination to work, especially away from home. A similar disinclination toward work is likewise observed among mothers who have recently

migrated to urban Metro Cebu as well as those who have had little or no previous work experience.

Another factor which motivates a mother with infant to work is the inadequacy of her household income. Women belonging to poor families usually seek jobs outside their homes while those owning some household assets are the ones likely to engage in some form of home enterprise. Despite some evidence pointing to the likelihood of financially well-off mothers engaging in outside work, the dominant impression imparted is that affluence, in general, discourages a woman from working. It is conjectured nonetheless that, as in the case of education, there exists a threshold level of income below which income exerts negative influence on maternal employment and above which its effect may be positive.

The observation that labor force participation is highest among low-income and less-educated mothers substantiates the contention that, in underdeveloped countries, female employment is largely a consequence of poverty. However, some optimism can be gleaned for this country from some indications that highly educated mothers may have a propensity to work, especially in the formal sector. This latter observation is not amply borne out in this study probably on account of underrepresentation of women professionals in the sample. That sample selectivity was inevitable is not, how-

ever, a shortcoming of the study; it in fact renders the research more relevant in that it focuses precisely on those women who would benefit the most from employment-promoting programs and strategies.

The remaining conclusions that can be drawn from the study concern child care arrangements and community conditions confronting urban mothers. If a woman is to be prodded to seek gainful employment, notwithstanding infant care obligations, mother surrogates must be made available to her. The most important substitute child-care taker revealed in this study is the servant. Because paid help can be expensive and therefore affordable only to affluent mothers, cost-saving strategies should be looked into to provide mothers in the lower income stratum with child care assistance, thereby lifting a major impediment to gainful employment. Low-cost institutional or communal child care facilities would be an attractive option for these urban mothers.

In reference to the community's physical and social infrastructure as well as labor market conditions, efforts should be geared toward increasing accessibility to jobs and the job site. Opening new venues for home entrepreneurship is also a worthwhile alternative. More urgent perhaps is the need to explore means of creating or increasing the demand for the services of female high-school graduates and college undergraduates. Sales and factory

work such as in export processing zones are, by far, the most known types of employment that respond to this need. There ought to be a corresponding insurance, however, that this kind of work be open to married women and that provisions for maternity leaves and benefits be adequately instituted.

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