

FEMALE WORK PARTICIPATION AND FERTILITY

Imelda Z. Feranil

Population Institute, CSSP

University of the Philippines

Diliman, Quezon City

ABSTRACT

Using data from the 1983 National Demographic Survey and multiple dummy regression, this paper looked at the influence of work participation on fertility among currently-married fecund women holding constant other demographic and socio-economic variables. Preliminary multivariate analyses were performed at the national and regional levels. Two measures of work experience were used: "ever-worked status," and "ever-worked in modern employment." Results suggest that female participation in modern employment negatively affects fertility. Regional-level results indicate, however, that the inhibiting net effect of modern employment holds true only for Central Visayas; that the net effect of traditional employment occurs only in two regions, negative for Western Visayas but positive for Northern Mindanao; that the work-fertility relationship becomes more varied and complex when specific areas are considered and as higher levels of development and urbanization emerge.

INTRODUCTION

The 1980 census showed that women comprised 51 per cent of the population aged 15 years and above. While females registered this slight edge over the males, the latter have always outnumbered females when it comes to actual participation in the labor force. Over the years, about two out of every three labor force members are males. There is evidence, however, that the nature of female employment has changed. Specifically, the proportions of women in

modern jobs or in wage employment have been increasing (Domingo and Feranil, 1985).

From a population-development perspective, a policy issue that needs to be examined is whether female economic activity leads to low fertility levels. Towards this end, this paper examines one of the dimensions of the work-fertility relationship, which is work experience affecting fertility. Analyses are performed at the national and regional levels to address regional population-planning needs more closely.

DATA AND METHODOLOGY

The data used in this paper were obtained from the 1983 National Demographic Survey (NDS). This survey gathered information that would permit a more detailed analysis of trends in fertility, mortality, migration, nuptiality, labor force participation, and family planning practice.

The 1983 NDS collected information from a nationally representative sample of 13,000 households. The present analysis, however, focuses only on the surveyed currently-married-fecund women totalling 4,852. A number of studies on the work-fertility relationship have restricted their analysis solely to fecund women as a safeguard against the self-selection of sterile or sub-fecund women who may have a greater propensity to join the labor force (see for example: Tien, 1967; Ware, 1977).

Thirty-eight per cent of the sample of currently-married fecund women resided in urban areas. Their ages at survey date are shown in Table 1. Younger women and those in their early twenties constituted approximately one-fifth of the total, while women in the peak childbearing ages of 25-29 (Cabigon, 1985) constituted a slightly larger percentage share of all currently-married fecund women.

Distributions of currently-married fecund women by age at marriage (see also Table 1) indicate that while around three out of five married when they

were between the ages 18-24, nearly two-sevenths married even earlier as against only a little over one-eighth marrying at 25 years or older. As expected, most women completed some years of elementary or high school education. Cash incomes of the households to which these women belonged appear to be relatively low; three out of five belonged to households where cash incomes were less than P750 per month.

This study hypothesizes that female labor force participation negatively affects fertility. Female economic participation can be said to effect changes in the woman and even in her family which in turn affect the number of children she has in her lifetime. Some of these changes may be socio-political, psychological or economic.

Labor force participation, especially participation in the modern sector, may expose a woman to modern family life-styles, including a more egalitarian relationship with her husband and even greater role of the wife in family decision-making. Such expanded roles may include a greater influence in decision-making in such matters as the total number of children the couple would have.

Like education, work may serve as a "socializer" or a "modernizing" factor. Hein (1982) elaborates on the socializing effect of work by pointing out that any work environment is characterized by a certain culture and that by

participating in this culture, a worker's values, motives and behavior may be modified. Inkeles (1969), on the other hand, conceived of the factory as a school for modernization. The rational behavior required of factory workers might carry over into other aspects of their lives. Thus, modern employment need not be current. Past employ-

ment could have modified motives and values which would continue to influence behavior even if the woman was no longer working. Women who have worked before in modern employment may have imbibed modern values that may influence the reduction of the number of children the woman wants or eventually produces.

Table 1. SELECTED CHARACTERISTICS OF CURRENTLY- MARRIED FECUND WOMEN: PHILIPPINES, 1983

CHARACTERISTIC	NUMBER	PERCENTAGE
<u>Age at Survey Date</u>		
15-19	198	4.1
20-24	775	16.0
25-29	1,041	21.4
30-34	945	19.5
35-39	804	16.6
40-49	1,089	22.4
<u>Age at Marriage^a</u>		
10-17	1,319	27.2
18-24	2,378	59.4
25+	65	13.4
<u>Education^b</u>		
No schooling	116	2.4
Elementary	2,629	54.2
High School	1,309	27.0
College	783	16.1
Others (vocational, etc.)	15	0.3
<u>Household Cash Income^c</u>		
No cash income	10	0.2
< P249	858	17.7
250-499	1,203	24.8
500-749	852	17.6
750-999	555	11.4
1000-1249	571	11.8
>1250	803	16.5

^a Categories are based on Domingo (1982 and 1985)

^b Pre-coded categories

^c Aside from being available only in broad categories, income posed a problem in the analysis since the data appeared very understated. The question asked was: "Approximately what is the total cash income of the household per month? Total cash income includes salary or earning plus all other contributions of family members and also profit from lands, crops, investments, pensions, etc." The accompanying definition was supposed to have been clearly stated to the respondent. It is quite possible that accurate information on income is really difficult to obtain and one question does not suffice. Family income and expenditure surveys in the country use detailed questions including farm produce and family-based economic activities to determine income.

It is quite possible, for example, that desired family size may shift downwards in the context of educational expectations or social mobility aspirations for children.

This paper focuses on work experience and its possible implications for fertility. There are two operational definitions of work experience: (a) overall "ever-worked status" (EVERW) and "ever-worked in modern employment" (MOD). While these measures are far from ideal, since they do not indicate when work precisely occurred (e.g., relating to parity or a given birth interval), a look at fertility levels of women in these summary work experience categories provides important insights. EVERW pertains to the 63 per cent of the 4,852 currently-married fecund women under investigation and who have worked in the past. This proportion approximates the level for all ever-married women as noted by Domingo (1985) in an earlier analysis on the 1983 NDS.

EVERW was further categorized into MOD and traditional employment (TRAD) following the suggestion of Durant (1971) where the developmental (modern) industries consisted of metals and minerals processing, machinery production, finance and banking, and recreation services. The traditional industries referred to agriculture, trade, food processing and peddling, and personal services. Of the 63 percent belonging to EVERW 22 percent belonged to MOD and 41 percent

fell under TRAD.

The mean children ever born (CEB) was the fertility indicator and the dependent variable. Dummy regression method of multiple regression was the statistical tool utilized and estimated using the second edition version of the Statistical Package for the Social Sciences (Nie et al., 1985). Two multiple dummy regressions were estimated for the nation as a whole and each of the 13 regions. One regression considered EVERW as the work experience indicator and the independent variable of interest. The other regression focused on MOD and TRAD as work experience indicators with MOD as the main explanatory variable of concern. In both regressions, the demographic and socioeconomic variables that have been empirically proven as significant fertility determinants in the literature were controlled for. These are age of the woman (AGE), age at first marriage (AGEMAR), education of the woman (EDUCW), household monthly income (HHINC) and urban-rural residence (RES). CEB, AGE and AGEMAR were maintained as continuous and the categorical variables were defined as follows:

Main independent variables of interest

First regression: EVERW = coded 1 if ever worked, 0 if otherwise;

Second regression: MOD = coded

1 if ever worked in modern industries, 0 if otherwise;

TRAD = coded 1 if the woman has worked only in traditional industries, 0 if otherwise;

Controls other than AGE and AGEMAR

EDUCW = educational level of the woman, where the following values¹ are assigned :

0 = no schooling

1 = 1-4 years of grade school

2 = 5-7 years of grade school

3 = 1-3 years of high school

4 = high school graduate

5 = 1-3 years of college

6 = college graduate and above

HHINC = the household's cash income per month; 1 if > P750 per month, 0 if otherwise²

RES = urban-rural residence; 1 if urban, 0 if otherwise.

Note however that the multivariate analyses performed here are preliminary. As stated earlier the measures of work experience in this study are very crude.

RESULTS

Mean CEB by employment back-

¹Based on Encarnacion, 1978.

²This categorization is based on the distribution obtained from precoded categories (Table 1). The present analysis used P750 as cut-off to allow a dichotomous grouping where about 60-40 per cent are found in each category.

ground and selected socio-economic characteristics are shown in Table 2. Overall, women with work experience tended to have, on the average, lower fertility than women who never worked. Those who have worked in modern employment have had fewer births than those who have worked only in traditional industries. The mean number of children born to the latter group even approaches the average fertility level of those who had never worked.

Differentials in fertility levels by selected characteristics were usually in the expected directions. Fertility increases with current age. Women who have ever worked consistently reported lower CEBs than those who have never worked. Within each current age category, the fertility of women with modern employment was exceeded by those engaged in traditional employment. While the pattern of successively higher fertility levels by age group was maintained, the tendency for those with modern employment to have fewer children became even more pronounced towards the older ages. Basing timing of marriage on Domingo's (1982 and 1985) classification, the data indicates negative association between age at marriage and fertility regardless of whatever work experience the woman may have had. However among early marriers, those who ever worked—especially those in

TABLE 2. MEAN CHILDREN EVER BORN TO CURRENTLY-MARRIED FECUND WOMEN BY EVER WORKED STATUS AND SELECTED DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS: PHILIPPINES, 1983

CHARACTERISTICS	All Women	EVER WORKED			Never Worked
		Total	Modern Industry	Traditional Industry	
TOTAL	4.0	3.8	3.3	4.1	4.2
<u>CURRENT AGE</u>					
15-19	.7	.7	.5	.7	.7
20-24	1.7	1.6	1.4	1.7	1.8
25-29	2.8	2.6	2.3	2.8	3.1
30-34	3.9	3.7	3.0	4.2	4.5
35-39	5.2	5.0	4.2	5.4	5.7
40-49	6.3	5.9	5.0	6.4	7.0
<u>AGE AT MARRIAGE</u>					
Early Pattern (ages 10-17)	4.7	4.9	4.0	5.1	4.6
Average Pattern (ages 18-24)	3.9	3.8	3.5	3.9	4.1
Late Pattern (ages 25+)	2.7	2.7	2.4	2.8	3.0
<u>EDUCATION</u>					
No Schooling	4.9	5.9	a/	5.7	4.1
Elementary	4.7	4.5	4.3	4.5	5.0
High School	3.2	3.2	3.2	3.2	3.1
College	2.6	2.6	2.7	2.3	2.6
<u>HOUSEHOLD CASH INCOME PER MONTH</u>					
<P 249	4.3	4.2	3.1	4.3	4.5
250-499	4.4	4.4	3.9	4.5	4.4
500-749	4.0	3.9	3.5	4.0	4.1
750-999	3.5	3.4	2.9	3.8	3.8
1000-1249	3.7	3.5	3.2	3.8	4.2
>1250	3.4	3.3	3.2	3.5	3.7
<u>URBAN-RURAL RESIDENCE</u>					
Urban	3.5	3.4	3.2	3.7	3.8
Rural	4.2	4.1	3.4	4.3	4.3
<u>REGION</u>					
Ilocos	4.0	4.0	3.6	4.1	4.0
Cagayan Valley	4.0	4.0	3.3	4.6	4.0
Central Luzon	3.8	3.7	3.3	3.9	3.9
Southern Tagalog	3.8	3.4	3.2	3.5	4.3
Bicol	4.5	4.5	4.4	4.5	4.6
Western Visayas	4.2	3.9	2.7	4.3	4.9
Central Visayas	4.5	4.1	2.9	4.4	5.0
Eastern Visayas	4.6	4.6	3.2	4.3	4.8
Western Mindanao	3.7	3.4	2.3	3.6	3.8
Northern Mindanao	4.2	4.4	3.4	4.8	4.0
Southern Mindanao	4.0	3.6	2.5	4.0	4.3
Central Mindanao	3.8	4.3	4.1	4.5	3.2
NCR	3.3	3.3	3.1	3.5	3.1

a/

Less than 10 cases involved.

traditional industries—had higher CEB than those who never worked. Women with modern employment showed the lowest fertility.

The pattern of decreasing CEB with increasing education and household cash income was more evident; however, among those with no schooling, the ever-worked group showed higher fertility than the never-worked group. The reverse held true among those with elementary schooling while among those with some high school or college education, no differences in CEB were observed by work experience. Fertility levels in each household cash income category indicated that women with modern employment tended to have the lowest number of children. Fertility levels among women with modern employment, however, were not clearly defined except that similarly low fertility levels were noted among those in the lowest and in the highest cash income categories while slightly higher income categories exhibited sizeably larger families on the average.

Regardless of residence, women with modern employment background had fewer children than other corresponding groups. The mean CEB of rural women with prior modern employment even approximated the fertility level of urban women in the same employment category. It can also be noted that the average number of children of urban and rural females with traditional employment approximated

or even exceeded the fertility levels of those who never worked.

Regional-level data indicated that the average number of children among women with modern employment was generally lower than the fertility levels of women in other work history categories. The lack of an evident pattern when only ever-worked status is considered became obvious when distinctions between modern and traditional employment are introduced. For women in the Southern Tagalog, Western Visayas, Central Visayas, Western Mindanao and Southern Mindanao, fertility levels followed a descending pattern where the highest mean CEBs were observed for women who never worked and middle-level mean CEBs among those who were involved in traditional employment only.

Women in the Ilocos, Central Luzon, Bicol and Eastern Visayas displayed slightly similar patterns. While those with modern employment registered lower mean CEBs, those with traditional employment practically matched the fertility levels of those who never worked. The pattern for women in the Cagayan Valley and Northern Mindanao varied slightly as the average number of children of those with traditional employment even exceeded the levels of those who never worked. In another vein, the mean CEBs of Central Mindanao women who have ever worked, regardless of work experience, surpassed those of women who have never

worked.

Posing an exception to all these were women in Metro Manila. Women in modern employment have the same average number of children as those who never worked while higher fertility characterized those with traditional employment. This may suggest that Metro Manila women may be in a different "class" regarding the work-fertility relationship. Those who never worked in this particular region may be composed primarily of the privileged, more educated class and likely to have fertility levels as low as those who have worked in modern employment.

The above differential analyses all point to the need of controlling the confounding effects of AGE, AGEMAR, EDUCW, HHINC and RES in examining the work-fertility relationship and to perform the analyses down to the regional levels.

The results of the two sets of regression analysis at the country and the regional levels are presented in Tables 3 and 4. It is apparent that overall ever-worked status did not significantly affect the fertility levels of women in the entire country; however, modern employment emerged as significantly and negatively affecting fertility holding constant all other important variables.

Interesting patterns emerged when the country's regions were considered. Western Visayas stood out in terms of overall work status variable (EVERW)

significantly affecting fertility net of the confounding effects of other variables; however it is not modern employment but traditional employment that exerted a significant influence on fertility. Overall work experience did not appear to have any significant effect on CEB in all of the remaining regions. While most regions exhibited the expected negative relationship between modern employment and fertility, it was only in Central Visayas that a significant coefficient emerged. Modern employment was noted to affect fertility positively for regions like the Ilocos, Cagayan Valley, Bicol, Eastern Visayas, and Central Mindanao. While the coefficients are not significant, it should be noted that these regions belong to the less developed regions using gross regional domestic product (GRDP) per capita as the indicator of economic development (Table 5).

The results on traditional employment were rather varied. For regions where the coefficients of modern employment emerged to be negative and rather high (i.e. Central Visayas, Western Visayas and Southern Tagalog though significant only for the first), traditional employment was also found to be negatively related to fertility. The apparent suggestion here is that in certain regions, work participation, whether modern or traditional, affects fertility negatively. However, in most regions such as the most developed region (Metro Manila) and regions of

Table 3: REGRESSION OF CHILDREN EVER BORN TO CURRENTLY-MARRIED FECUND WOMEN WITH EVER-WORKED STATUS AS ONE INDEPENDENT VARIABLE: PHILIPPINES, 1983
(Regression Coefficient With Partial F Values in Parentheses)

REGION	Constant	EVERW	AGEMAR	AGE	EDUCW	HHINC	RES	F	R ²
PHILIPPINES	1.835	<u>-0.050</u> (0.838)	<u>-0.295</u> (2018.579)	<u>0.260</u> (6401.196)	<u>-0.006</u> 1.826	<u>-0.317</u> (31.558)	<u>-0.297</u> (27.482)	1233.673	.605
Ilocos	2.187	0.008 (0.001)	-0.287 (119.096)	0.240 (305.840)	-0.086 (1.324)	0.435 (3.389)	-0.242 (0.859)	62.750	.542
Cagayan Valley	2.090	0.129 (0.137)	-0.230 (30.199)	0.218 (199.777)	-0.285 (7.298)	0.189 (0.323)	0.063 (0.032)	43.360	.545
Central Luzon	2.366	0.037 (0.052)	-0.304 (186.735)	0.244 (581.076)	-0.007 (0.372)	-0.422 (7.433)	-0.349 (0.975)	114.92	.585
Southern Tagalog	2.036	-0.184 (1.427)	-0.288 (260.344)	0.253 (726.167)	-0.063 (1.346)	-0.111 (0.492)	-0.608 (15.839)	162.360	.612
Bicol	1.518	0.103 (0.361)	-0.336 (215.499)	0.299 (738.073)	-0.012 (1.111)	-0.285 (1.601)	0.100 (0.205)	133.704	.701
Western Visayas	2.035	-0.502 (9.192)	-0.334 (318.052)	0.299 (735.454)	-0.023 (2.900)	-0.012 (0.008)	-0.478 (6.606)	161.779	.706
Central Visayas	2.512	-0.384 (0.200)	-0.346 (190.024)	0.282 (530.012)	-0.027 (0.083)	-0.404 (0.296)	-0.195 (0.206)	112.201	.646
Eastern Visayas	2.395	0.128 (0.274)	-0.356 (121.335)	0.283 (381.936)	-0.082 (0.722)	0.256 (0.569)	0.015 (0.003)	81.001	.643
Western Mindanao	1.774	-0.148 (0.334)	-0.298 (70.832)	0.247 (295.525)	0.004 (0.024)	-0.269 (0.974)	0.199 (0.357)	54.164	.564
Northern Mindanao	1.554	0.357 (2.413)	-0.323 (104.710)	0.283 (460.467)	-0.016 (0.777)	-0.312 (1.726)	-0.315 (1.477)	91.264	.673
Southern Mindanao	1.702	-0.080 (0.150)	-0.309 (160.021)	0.270 (448.209)	-0.006 (0.070)	-0.332 (2.391)	0.139 (0.410)	88.155	.609
Central Mindanao	1.286	0.157 (0.422)	0.302 (81.360)	0.285 (368.174)	-0.008 (0.302)	-0.709 (8.932)	-0.037 (0.014)	70.937	.656
Metro Manila	1.458	-0.0726 (0.157)	-0.213 (184.321)	0.201 (510.808)	0.006 (0.674)	-0.130 (0.622)	-	139.197	.519

TABLE 4. REGRESSION OF CHILDREN EVER BORN TO CURRENTLY-MARRIED FECUND WOMEN WITH EXPERIENCE IN MODERN EMPLOYMENT AS ONE INDEPENDENT VARIABLE: PHILIPPINES, 1983
(Regression Coefficients With Partial F Values in Brackets)

REGION	Constant	MOD	TRAD	AGEMAR	AGE	EDUC	HHINC	RES	F	R ²
PHILIPPINES	1.763	-0.216 (8.342)	0.020 (0.120)	-0.293 (1953.976)	.260 (6401.598)	-0.005 (1.052)	-0.278 (23.264)	-0.273 (22.792)	1059.102	0.606
Ilocos	2.358	0.192 (0.336)	-0.095 (0.114)	-0.291 (119.897)	.240 (305.034)	-0.118 (2.095)	.418 (3.113)	-0.229 (0.767)	53.925	0.544
Cagayan Valley	2.039	0.044 (0.010)	0.176 (0.227)	-0.229 (29.492)	0.218 (199.334)	-0.273 (5.819)	0.182 (0.296)	0.045 (0.015)	36.936	0.545
Central Luzon	2.308	-0.081 (0.141)	0.123 (0.431)	-0.306 (179.271)	0.247 (580.545)	-0.005 (0.134)	-0.428 (7.481)	-0.316 (4.041)	97.982	0.586
Southern Tagalog	1.999	-0.294 (2.246)	-0.124 (0.543)	-0.288 (261.013)	0.253 (725.624)	-0.054 (1.326)	-0.089 (0.306)	-0.598 (15.139)	139.243	0.612
Bicol	1.576	0.203 (0.735)	0.048 (0.061)	-0.338 (211.210)	0.299 (733.487)	-0.012 (1.133)	-0.317 (1.870)	0.102 (0.213)	114.108	0.701
Western Visayas	2.042	-0.467 (3.193)	-0.508 (8.793)	-0.334 (307.686)	0.299 (769.037)	-0.023 (2.883)	-0.006 (0.001)	-0.481 (6.444)	137.294	0.705
Central Visayas	2.422	-0.662 (4.173)	-0.302 (2.058)	-0.343 (194.423)	0.282 (548.709)	-0.011 (0.016)	-0.321 (1.133)	-0.192 (0.863)	96.882	0.649
Eastern Visayas	2.410	0.160 (0.136)	0.122 (0.231)	-0.358 (119.205)	0.283 (380.370)	-0.085 (0.692)	0.255 (0.561)	0.012 (0.001)	69.176	0.643
Western Mindanao	1.677	-0.441 (0.597)	-0.112 (0.182)	-0.294 (66.564)	0.248 (295.060)	0.009 (0.092)	-0.242 (0.760)	0.230 (0.464)	46.350	0.565
Northern Mindanao	1.395	-0.153 (0.134)	0.514 (4.448)	-0.318 (101.309)	0.283 (462.321)	-0.007 (0.166)	-0.201 (0.676)	-0.277 (1.134)	78.637	0.676
Southern Mindanao	1.634	-0.319 (0.343)	-0.029 (0.018)	-0.305 (151.238)	0.269 (442.517)	-0.002 (0.009)	-0.307 (2.014)	0.165 (0.565)	75.609	0.610
Central Mindanao	1.279	0.128 (0.150)	0.171 (0.402)	-0.302 (81.459)	0.285 (369.193)	-0.008 (0.233)	-0.701 (3.210)	-0.031 (0.010)	60.926	0.657
NCR	1.302	-0.260 (1.773)	0.129 (0.434)	-0.201 (175.9)	0.201 (615.754)	0.007 (0.819)	-0.062 (0.141)	-	117.401	0.524

different levels of development like Cagayan Valley, Central Luzon, Bicol, Eastern Visayas, Northern Mindanao and Central Mindanao, traditional employment is positively related to fertility, although the coefficients are not significant except for Northern Mindanao.

CONCLUSION AND IMPLICATION

Country-level results of the preliminary multivariate analyses suggest that female participation in modern

employment negatively affects fertility. While the negative relationship between modern employment and number of children also holds true for some regions, the relationship is unclear for most of the other regions of the country. Only Central Visayas shows the same negative effect of modern employment on fertility observed for the nation as a whole and only Western Visayas reveals the net inhibiting effect of traditional employment. Northern Mindanao indicates the opposite influence of traditional employment on fertility.

Table 5. PER CAPITA GRDP AND MEAN CEB TO CURRENTLY-MARRIED FECUND WOMEN, BY REGION: PHILIPPINES, 1983

REGION	a/ GRDP Per Capita						b/ Mean CEB 1983		
	1973-1977		1978-1982		1983		Ever Worked	Never Worked	Total
	(Level)	(Rank)	(Level)	(Rank)	(Level)	(Rank)			
PHILIPPINES	<u>1,636</u>	-	<u>1,898</u>	-	<u>1,927</u>	-	3.8	4.2	4.0
I. Ilocos Region	833	11	962	11	1,017	11	4.0	4.0	4.0
II. Cagayan Valley	1,039	8	1,158	10	1,080	10	4.0	4.0	4.0
III. Central Luzon	1,391	6	1,632	5	1,684	6	3.7	3.9	3.8
IV. Southern Tagalog	1,786	2	2,074	2	2,066	2	3.4	4.3	3.8
V. Bicol Region	752	13	866	12	835	12	4.5	4.6	4.5
VI. Western Visayas	1,559	4	1,693	6	1,715	5	3.9	4.9	4.2
VII. Central Visayas	1,462	5	1,727	4	1,755	4	4.1	5.0	4.5
VIII. Eastern Visayas	745	12	809	13	783	13	4.6	4.8	4.6
IX. Western Mindanao	875	10	1,199	9	1,225	9	3.4	3.8	3.7
X. Northern Mindanao	1,336	7	1,569	7	1,483	7	4.4	4.0	4.2
XI. Southern Mindanao	1,750	3	1,849	3	1,774	3	3.6	4.3	4.0
XII. Central Mindanao	1,008	9	1,325	8	1,476	8	4.3	3.2	3.8
XIII. NCR	4,325	1	4,853	1	4,963	1	3.3	3.1	3.3

a/

GRDP per capita data were obtained from NEDA - National Accounts Staff, Economic and Social Indicators 1982.

b/

Estimates are for fecund, currently married women only.

It is highly possible that development-related changes like modern employment are still taking place. Modernization and industrialization will probably need to be more pronounced and provide more opportunities for female employment before economic development variables can have significant contributions on fertility reduction in specific regions of the country. Results also suggest that the work-fertility relationship becomes even more complex when specific areas are considered and as higher levels of development and urbanization emerge. There is then the need for extending such analyses using more refined operationalization of female work participation.

REFERENCES

- Bulatao, Rodolfo and Ronald D. Lee (eds.). 1983. *Determinants of Fertility in Developing Countries: A Summary of Knowledge* (Part A). National Academy Press.
- Cabigon, Josefina. 1982. Fertility Levels, Trends and Differentials In The Philippines and its Thirteen Regions: An Assessment. University of the Philippines Population Institute, POPCOM Work Agreement Paper No. 9 (mimeographed).
- Domingo, Lita. 1982. Pre-adult Independent: A Life Stage Analysis on Women of the Philippines. Unpublished doctoral dissertation, Harvard School of Public Health.
- Domingo, Lita. 1985. Women and Work, Some Life Cycle Issues. 1983 National Demographic Survey Paper No. 5, University of the Philippines (mimeographed).
- Domingo, Lita and Imelda Zosa-Feranil. 1985. The Changing Labor Force of the Philippines. Council on Asian Manpower Studies (mimeographed).
- Darwinite, John. 1971. Manpower Demography of Countries in Asia and the Far East. In *Interrelations between Population and Manpower Problems*. Asian Populations Studies Series No. 7.
- Encarnacion, Jose. 1978. Fertility and Labor Force Participation in the Philippines, 1968. In *Labor Force Participation in Low-Income Countries*. G. Standing and G. Shaehon, eds. International Labor Force, Geneva.
- Harman A. 1970. *Fertility and Economic Behavior of Families in the Philippines*. Report RM-6385-AID, Rand Corporation.
- Heir, Catherin. *Factory Employment, Marriage and Fertility: The Case of Mauritian Women*. Population and Labor Policies Programme, Working Paper No. 118. ILO World Employment Program Research, Geneva.
- Inkeles, A. 1969. Making Man Modern. *American Journal of Sociology*, 75:208-225.
- Perez, Aurora. Trends and Patterns in Spatial Mobility. In *Population of the Philippines: Current Perspectives and Future Prospects*. M.B. Concepcion, ed. Pasig: PDPR-National Economic and Development Authority.
- Rodgers, G., M. J., D. Hopkins and R. Wery. 1978. *Population, Employment and Inequality in the Philippines*. ILO Geneva.
- Standing, Guy. 1983. Women, Work Activity and Fertility. In *Determinants of Fertility in Developing Countries: A Summary of Knowledge*, Part A. R. Bulatao and R. Lee, eds. National Academy Press.
- Tien, H. Y. 1967. Morbidity, Non-familial Activity and Fertility. *Demography*, 4: 218-227.
- University of the Philippines Population Institute. 1984. 1983 National Demographic Survey: First Report (mimeographed).
- Ware, Helen. 1977. Women's Work and Fertility in Africa. In *The Fertility of Working Women: A Synthesis of International Research*. Praeger Press.