FEMALE EMPLOYMENT AND FERTILITY IN LIMA, PERU

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With rising levels of education, urbanization, and industrialization, modernizing areas can anticipate that increasing numbers of women will enter the labor force. A popular hypothesis among demographers suggests that the employment of females in nonagricultural occupations depresses fertility. Moreover, such a belief is frequently voiced by policy makers in modernizing areas, and helps to rationalize their failure to initiate direct measures of fertility control.

A recent ecological analysis based on Peruvian 1940 census data showed that among the 21 nonmetropolitan departments, completed fertility showed a fairly high negative correlation with female employment. The author concludes that ". . . female labor force participation in Peru reduces fertility by reducing the fertility of married women. . . . The use of some birth control method allows married women to work. On the other hand, the necessity to work encourages the conscious control of births."[1]

The data used in the above-mentioned study are subject to the usual limitations of ecological data. Moreover, even if a relation between fertility and employment exists, we may question the assumption that birth control practices are motivated by the desire to work. Certainly if such a direct relation exists, we would expect that it would be most apparent in urban areas. Various kinds of data

TABLE 1. MEAN BIRTH ORDER BY AGE AND OCCUPATION OF MOTHER (NONEMPLOYED MOTHERS = 100)

	Office Workers	*Professional and Technical*	*Artisans and Factory Workers*	*Service Workers*	*Nonemployed*
15–19	86	93	92	104	100
20–24	64	91	83	100	100
25–29	54	85	88	99	100
30–34	52	84	88	97	100
35–39	51	82	98	99	100
Age standardized mean birth order	2.00	3.01	3.13	3.47	3.51
Per cent in occupational category	2	13	4	43	36

from recent urban studies in Peru raise doubts concerning a direct and general causal relation between female employment and fertility.

For the city of Lima all 1959 birth registrations data were recently punched on IBM cards by Servicio Cooperativo Interamericano de Salud Publica (SCISP), and special tabulations were prepared for the writer. Since population base data were not available, our measure of fertility is live birth order, by age of mother.

While the fertility of office workers is markedly lower than that of other mothers, the fertility of service workers is virtually identical with the nonemployed. However, the former group constitutes less than 4 per cent of the employed mothers, the latter over two-thirds. Thus while certain female occupations show very low relative fertility, being in the labor force per se, especially where this means service occupations, does not necessarily imply lower fertility in Lima. Indeed, since most urban employment opportunities for women are in service occupations, there are no grounds for optimism concerning the effects of urban employment on fertility.

The foregoing data deal only with fertile women. There is, of course, the possibility that many working women never marry or never have children.[2] A recent sample survey of currently mated Lima women aged 20–44 conducted by the writer can provide further evidence on at least the marital fertility of employed and un-

employed women, although type of employment was not recorded in the inquiry. The data utilized in this study were gathered in 1960 and 1961 with the financial assistance of the Population Council and the collaboration of the Peruvian School of Social Work.

Since no census had been taken in Peru since 1940, it was not possible, with the resources available, to draw a refined probability sample. Consequently, a procedure was adopted which probably resulted in certain biases: 1. The city's 4,454 blocks were numbered and 90 blocks were chosen at random. Interviewers then proceeded in a systematic fashion to visit from house to house in the selected blocks until 20 eligible women were interviewed, yielding a total of about 1,800 interviews. This procedure probably caused an over-representation of upper-class subjects, who are more likely to live on blocks with small populations. 2. Since the slum areas (*barriadas*) were inadequately mapped, a special sample representing 10 per cent of the total sample was taken. This proportion was decided on by the Carlos A. Uriarte Market Research Associates in Lima, based on various estimates of the population of Lima and the *barriadas*. From 128 *barriadas* judged to be in the metropolitan area, 10 were chosen at random, rough maps were drawn, and 20 cases were located by house-to-house canvassing. Some local observers believe 10 per cent to be an underestimate of the *barriada* proportion.

Another source of bias may stem from the large number of eligible women not interviewed. Over 5,000 canvass or pre-list visits were required in order to secure the 1,995 interviews contained in the final sample. In 8 per cent of the visits the house was found to be unoccupied or to be a business establishment; in just under one-third, there was no one eligible for interview; another 4 per cent refused to be canvassed, and we have no information on 6.5 per cent of the canvass visits. In the remaining 50 per cent of the canvass visits, an eligible woman was found to be living in the household. However, in 21 per cent of these 2,541 households known to contain a woman eligible for interview, interviews were not actually carried out, largely because of refusals (39 per cent) and failure to find respondent at home after two call-backs (38 per cent). An-

TABLE 2. RATES OF REFUSAL AND NONCONTACT, LIMA

	Upper-Class[1] *Districts* (%)	*Other Districts* (%)
Women known to be eligible for interviews who were not interviewed	34	17
Noninterviewed eligibles who refused interview	37	41
All eligibles who refused interview	13	7
All canvass contacts made who refused to be canvassed	7	2
All contacts made (canvass and interview) who refused interview or canvass	13	5

[1] San Isidro and Miraflores.

other 10 per cent of eligibles not interviewed were temporarily living elsewhere (e.g., on vacation); assorted reasons and no information comprise the remaining 12 per cent.

These are much higher rates than experienced in earlier studies by the author in the Caribbean[3] and call for some explanation. First, previous studies were restricted to lower-class women and it is clear from the data in Table 2 that upper-class districts in Lima showed far higher rates of refusal and failure to be contacted than did other areas of the city. Even the brief canvass interview to determine eligibility for interviews showed a refusal rate in the upper-class districts over three times as high as those in other districts.

Upper-class women were not only less likely to be at home than lower-class women, but even when at home they often used the servant to keep the interviewer away. One of the major and more satisfying roles of the servant in the upper-class home is that of gatekeeper. The following are typical comments written by interviewers:

"The servant always came out saying that the lady of the house was not in and that she (the servant) did not know how to answer the questions."

"The lady of the house did not appear, but sent her servant to close the door."

"I couldn't speak with the lady of the house personally. The servant transmitted the message and the answer was negative."

Even when the lady of the house herself appeared, her social class and sophistication made it much easier for her than for lower-class respondents to refuse to answer questions. Occasionally the sophistication reached unusual levels!

"The lady explained that she had read Dr. Stycos' book on Puerto Rico and discussed it with her husband. She had no desire to participate in such studies."

The interviewers were young, inexperienced, and rarely from upper-class families. They were often more terrified of the upper-class districts than of the fearsome slums of Lima.

Thus we emerge with the suspicion that the upper classes are not only overrepresented in the sample, but that those who are represented may not be entirely typical of their class because of the high nonresponse rate. In an attempt to assess the the nature of the latter bias, supervisors were sent back to do a subsample of 150 cases who, for one reason or another, had not been interviewed; but these data have not yet been analyzed. To adjust for the possible class bias, we have held social class constant throughout the paper.[4]

Twenty per cent of the sampled Lima women had worked throughout the previous year and an additional 7 per cent had worked for part of it.[5] In this paper these groups are merged and classified as "working." Working status shows some relation to social class, with 18 per cent of the top class, 29 per cent of the middle class, and 36 per cent of the lower-class women reporting that they had worked at some time during the past year.[6] Since fertility is strongly related to social class in our sample, and since class is to some extent related to level of occupation, we have held class constant through the analysis.

It is, first of all, of interest to note in Table 3 that age at first union is higher for working women only among those of the highest class. Second, there is a negative relation between employment and absolute number of children for the highest and lowest social classes, and a weak but similiar relation among the middle groups. If we

TABLE 3. VARIOUS DEMOGRAPHIC CHARACTERISTICS BY SOCIO-ECONOMIC[a] AND EMPLOYMENT STATUS

	Class A		*Class B*		*Class C*	
	Working	*Not Working*	*Working*	*Not Working*	*Working*	*Not Working*
Mean live births	2.4	3.0	3.6	3.8	4.0	4.6
Mean living children	2.3	2.9	3.3	3.5	3.5	4.1
Live births per 1,000 mated years[b]	264	271	305	340	336	420
Living children per 1,000 mated years	252	267	281	317	289	374
Mean age	32.1	32.7	32.2	31.4	31.0	30.0
Mean years education	7.5	7.0	4.0	4.4	2.5	2.5
Mean age 1st union	22.9	21.9	20.0	20.1	19.2	19.3
Mean mated years	9.0	11.0	11.9	11.2	12.0	10.9
Number of cases	(132)	(611)	(222)	(535)	(180)	(315)

[a] Socio-economic status was determined by the interviewers who rated the household as A, B, C, or D with the aid of a broad list of characteristics. Sharp distinctions of education, age, expenditures, and fertility occur among the three lowest classes but not between the two highest classes. Classes A and B have been merged and termed "A" for purposes of the present analysis.

[b] Mated years are derived by subtracting age at first cohabiting union from current age.

examine percentages working by number of live births, however, we find that the relationship is by no means a continuous one. Figure 1 shows that in each class a sharp drop in percentages working occurs after the birth of one or two children, but that from this point on the number of children bears no relation to employment status. Thus, women with eight or more children are just as likely (or more likely) to be working as those with three or four.

A study of Jamaican fertility found a close relation between fertility, marital status, and employment, the evidence supporting the hypothesis that legal marriage (as opposed to common-law arrangements) depresses the level of female employment and also raises fertility.[6] Table 4 shows that consensually married women are much more likely to be employed than legally married women within each fertility and socio-economic category. It is still the case that

TABLE 4. EMPLOYMENT STATUS, BY NUMBER OF LIVING CHILDREN, SOCIO-ECONOMIC AND MARITAL STATUS[a]

	Per cent Working		*Number*	
	Married	*Consensual Union*	*Married*	*Consensual Union*
Middle class				
0 – 1	35	50	104	40
2 – 3	24	39	237	54
4 +	25	35	257	65
Total	26	40	598	159
Lower class				
0 – 1	51	59	39	44
2 – 3	27	51	109	53
4 +	27	43	185	65
Total	30	50	333	162

[a] The incidence of common-law unions among the upper class was too low for inclusion in this table.

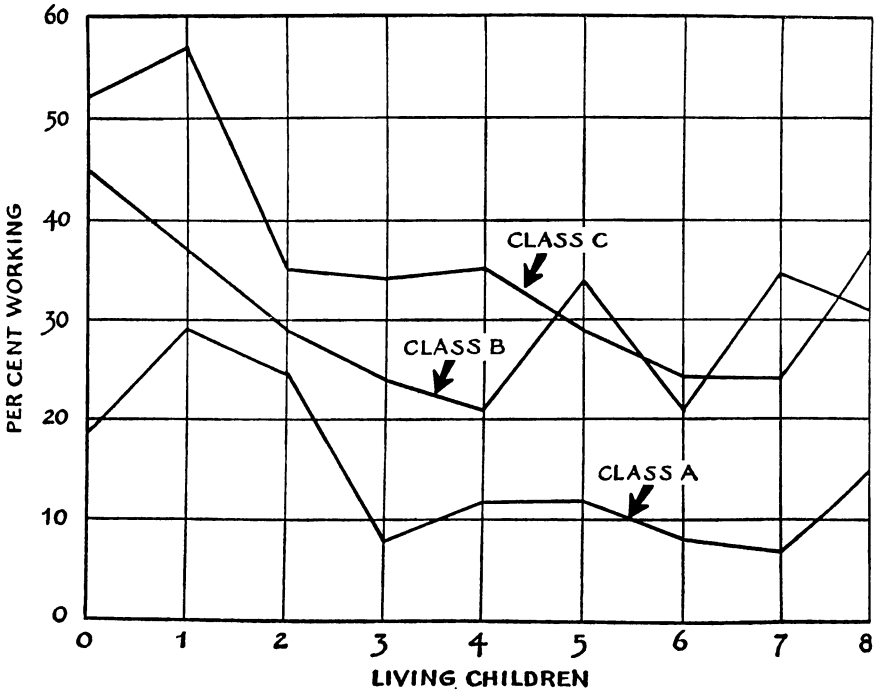

Figure 1. Per cent of females who worked in past year, by living children and socio-economic status, Lima.

women of higher fertility are less likely to be working, but we see again that the sharpest break occurs after the birth of one child.

We believe, however, that women with 0–2 births in Peru, especially in the lower economic classes, are unlikely to be practicing birth control. Should this be the case it might suggest that low fertility encourages or permits a woman to work. Since we did not ask about contraceptive practices in the sample, we must look to less direct data. If employment were antecedent to fertility we would expect that the relation would be strongest in the upper classes, where birth control is more likely to be practiced, and that working and nonworking women would show very different attitudes with respect to desired number of children.

We have already seen that, in terms of absolute number of children, the upper-class working women have 20 per cent fewer living children than nonworking women, the lower-class working women have 15 per cent fewer, and middle-class women have 5 per cent fewer. However, the different categories have somewhat different average lengths of marriage. When we relate the number of live births to years mated, we find that the fertility of working and nonworking women in the upper class is virtually identical; that the middle-class working women have only 10 per cent lower

TABLE 5. MEDIAN IDEAL NUMBER OF LIVING CHILDREN, BY EMPLOYMENT STATUS, SOCIAL CLASS, AND NUMBER OF LIVING CHILDREN

	Working	*Not Working*
Upper class		
0 – 1	3.3	3.2
2 – 3	3.4	3.2
4 +	4.0	4.2
Middle class		
0 – 1	3.2	2.8
2 – 3	3.2	3.3
4 +	3.4	3.7
Lower class		
0 – 1	2.3	2.6
2 – 3	3.0	3.5
4 +	3.7	3.2

fertility rates, and that lower-class working women have 20 per cent lower rates than nonworking women. Thus, the class in which we would expect a "career orientation" to lead to direct measures for voluntary control shows no evidence of differential fertility by employment status, whereas the lowest class shows a substantial differential.

Now let us see whether employment is related to attitudes toward family size, on the assumption that if working status motivates lower fertility in a direct way it must operate through the medium of attitudes.

Table 5 shows no consistent relation between working status and ideal number of children when class and number of children are controlled. On the other hand, a more consistent positive relation emerges between ideal size of family and living children, and between ideal size and social class.

Table 6 presents responses to the question: "Do you want any more children than you now have?" Among women with four or more children, the working women in each class are more likely to desire no additional children. However, with two to three children there is no relation, and for women of very low fertility, precisely those most likely to be working, there is the suggestion of a positive relation between employment and desire for more children among the two extreme classes.

We might further expect working women to be more sensitive to the economic implications of an additional child, but from Table 7 we see that only among the upper classes are working women more sensitive, the class in which fertility rates were virtually identical.

Finally, in terms of degree of concern about family size, we asked whether the women had ever thought about how many children they wanted to have, and, if they had thought about it, whether they had ever discussed it with their husbands. From Table 8 we see that social class and fertility, but not employment, relate to the degree of preoccupation about size of the family.

Lima is considered to be an old conservative city, with traditional occupations and traditional ideas. We therefore repeated the survey in Chimbote, a city which has experienced extremely high rates of

TABLE 6. PER CENT DESIRING NO MORE CHILDREN, BY SOCIAL CLASS, NUMBER OF LIVING CHILDREN, AND EMPLOYMENT STATUS

	Working	*Not Working*
Upper class		
0 – 1	4	10
2 – 3	36	33
4 +	68	51
Middle class		
0 – 1	18	16
2 – 3	31	35
4 +	69	62
Lower class		
0 – 1	15	24
2 – 3	45	41
4 +	71	60

TABLE 7. MEAN ECONOMIC SENSITIVITY SCORE BY SOCIAL CLASS, EMPLOYMENT STATUS, AND NUMBER OF LIVING CHILDREN[a]

	Working	*Not Working*
Upper class		
0 – 1	1.9	2.3
2 – 3	1.5	1.7
4 +	1.1	1.7
Middle class		
0 – 1	1.6	1.6
2 – 3	1.3	1.3
4 +	1.2	1.1
Lower class		
0 – 1	1.5	1.3
2 – 3	1.2	1.2
4 +	1.0	1.0

[a] The score ranges from 0 to 3; the higher the score the less the sensitivity to the economic impact of an additional child.
0 = One more child would affect respondent's economic condition a lot.
1 = Three more children would affect respondent's economic condition a lot.
2 = Three more children would affect respondent's economic condition a little.
3 = Three more children would not affect respondent's economic condition.

TABLE 8. MEAN SCORE OF PREOCCUPATION ABOUT FAMILY SIZE, BY SOCIO-ECONOMIC STATUS, NUMBER OF LIVING CHILDREN, AND EMPLOYMENT STATUS

	Working	*Not Working*
Upper class		
0 – 1	1.4	1.5
2 – 3	1.3	1.3
4 +	1.0	1.0
Middle class		
0 – 1	1.0	1.0
2 – 3	0.8	0.8
4 +	0.5	0.8
Lower class		
0 – 1	0.7	0.7
2 – 3	0.7	0.6
4 +	0.6	0.4

0 = Have not thought; 1 = Thought but not talked; 2 = Talked to husband

population growth because of opportunities for employment in the steel and fish-canning industries. Most employed women are working in small factories. The "untraditional" character of the city and its unique female labor force should provide an interesting contrast to Lima.

The patterns described in Lima are even more clear-cut in Chimbote. Although working women have a smaller average number of children, on all the attitude questions there are no differences between working and nonemployed women, except in the case of preferred family size. In this instance working women consistently express preferences for somewhat larger families. It is the case, however, that working women in each economic class started their first marital union later than nonworking women.

SUMMARY

Using 1959 Lima birth registration data it was found that mean birth order by age of mother is virtually identical for housewives and service workers, the latter constituting two-thirds of the female labor force. Mothers classified in professional and technical categories showed about 14 per cent fewer births and office workers 43 per cent fewer. Office workers, however, represent less than 4 per cent of the female labor force. A recent survey of currently mated women in Lima shows no clear-cut relation between fertility and employment status. In each social class, women with 0–2 children are more likely to be working than women with more children, but the proportions working do not diminish after about three children. Further, in terms of fertility rates, the strongest relation is characteristic of the lowest economic class, where birth control is least likely to be practiced. In the upper class, no differences in fertility rate by employment status were found.

This suggested that whatever relation exists between number of children and employment is not due to conscious controls on fertility. To test this hypothesis attitudes of working and nonworking women toward family size were compared.

Few consistent differences emerged, other than the fact that in the upper class working women have somewhat higher sensitivity than nonworking women to the economic effects of additional children, and that working women with four or more living children are less likely than others to want additional children. They are, however, no more likely to have thought about the matter before or to have discussed it with their husbands. When the foregoing analysis was repeated for the rapidly growing industrial city of Chimbote, attitudes were even more homogeneous; however, age at first union was somewhat higher for working women in each class. It seems likely, therefore, that employment status is more often a consequence of marital fertility than a cause. It is also likely that

legal marriage reduces female employment and at the same time increases fertility by stabilizing sexual relationships. The present analysis gives little comfort to Peruvians who are hoping for increased entry of females into the labor force as a solution to high birth rates.

REFERENCES

[1] Heer, David M., Fertility Differences between Indian and Spanish-Speaking Parts of Andean Countries, *Population Studies,* 18, 79–80, July, 1964.

[2] According to the 1940 census of Peru, Lima women do have much higher rates of childlessness than women in the remainder of the country. *See* Stycos, J. Mayone, Culture and Differential Fertility in Peru, *Population Studies,* 16, 257–270, March, 1963.

[3] Stycos, J. Mayone, The Sample Survey for Social Science in Underdeveloped Areas, in Adams, Richard, and Preiss, Jack (editors), HUMAN ORGANIZATION RESEARCH, Homewood, Ill., The Dorsey Press, Inc., 1960.

[4] Interviewers were requested to categorize the respondent's social class level in one of four groups, depending on a list of criteria provided by the Carlos Uriarte commercial research firm in Lima. These classes are highly correlated with education, occupation, and expenditure measures. Twelve per cent of the sample women were classified in the top class, 25 per cent in the second, 38 per cent in the third, and 25 per cent in the lowest class.

[5] The question asked was: "Did you work for pay at all during the past year?"

[6] Education shows a similar negative relation to employment, up to the university level. Those with some university training (about 5 per cent of the sample) have as high an incidence of employment as those with less than three years education (38 per cent).

[7] Stycos, J. Mayone, and Back, Kurt W., THE CONTROL OF HUMAN FERTILITY IN JAMAICA, Ithaca, N.Y., Cornell University Press, 1964.