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Education and female participation in the labour force

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Introduction

In recent years a growing proportion of the national income of many low-income industrialising countries has been devoted to education. The main reasons for this have been the exceptionally rapid growth of population and the widespread belief that " human investment " is one of the most effective means of stimulating economic growth. However, in this process the education of women has lagged considerably behind that of men.

This neglect of female education has typified most non-socialist societies in the early stages of industrialisation. Yet being deprived of education women have also been deprived of much of their potential ability to contribute to the development of their countries. Without education or the associated access to most forms of vocational training women have been unable to secure skilled or even many semi-skilled jobs. To that extent, whereas women have often played an important role in traditional agrarian and trading economies, with growing industrialisation they have tended to be relegated to a purely domestic role or have been expected to take non-domestic work on an irregular basis. This has placed them in an increasingly dependent position in so far as they have had to rely on the income-earning abilities of men. Yet the shortage of job opportunities as well as the low wages and incomes earned by women workers have deterred families from investing in girls' education, especially when there have been sons also needing education. In essence it is a vicious circle. Because women have not been expected to work in the labour force they have been deprived of education; because they have been deprived of education their employment opportunities have been restricted; and because those opportunities have been restricted their limited access to education has been rationalised and perpetuated.

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The evidence suggests that it took many years of industrial growth in the non-socialist industrialised countries before the relative educational opportunities of women really began to improve. Eventually, with the spread of mass education, women benefited to a certain extent from a " trickle-down " effect, in much the same way as the poorest groups in the population are supposed to benefit eventually from a policy of rapid economic growth based on gross income inequality. Unless a deliberate effort is made by educational and economic planners to break the vicious circle, a similar delay is likely to occur in the currently industrialising economies. To wait for the trickle-down effect to work may take generations.

Despite growing pressure to improve the socio-economic status and opportunities of women, which in recent years has encouraged a more equitable allocation of educational and training resources to girls and women, there remains a certain hesitancy among policy-makers, especially in countries where the government considers there are strictly limited resources available for education. It is still commonly argued that priority should continue to be given to boys because women do not or cannot make use of education and training to anything like the same extent as men. Although education has various private and social benefits, the argument largely hinges on whether or to what extent education increases the probability that women will enter or remain in the labour force, by that means contributing to economic growth.

This raises two questions, which are the direct concern of the present article. First, what is the relationship between female education and the probability of labour force participation, and second, what are the factors most conducive to a positive relationship?

Education and female economic activity: the theoretical dilemma

The " human capital " school of thought has depicted education as a process of investment from which returns accrue both to society and to the individuals concerned. While many studies have found an association between increased education and greater lifetime earnings, little attempt has been made to distinguish between the effects of education on earnings per unit of time spent working and on the amount of lifetime spent in economic activity.[1] As regards the impact of education on labour force participation, a positive correlation has usually been postulated. However, the theoretical basis for this assumption has remained unclear, for although a review of the literature reveals a plethora of hypotheses, little attempt has been made to draw the economic and sociological research together into a coherent body of theory.

[1] If more highly educated people do more work, strictly speaking the full amount of any observed increase in income should not be included in calculations of the private rate of return on educational investment, since work itself is conventionally assumed to entail a cost. In other words, the return should be deflated to take account of the additional work performed.

It is possible to discern at least three separate, albeit related, hypotheses underlying this assumed relationship. First, there is the opportunity cost argument of neo-classical economics; second, the association may merely reflect the effect of education on relative employment opportunities; and third, the association could be due to the effect of education on income aspirations. None of these hypotheses is entirely convincing and none justifies the confident prediction that for women education and the likelihood of labour force participation will be positively correlated.

The opportunity cost argument

Among economists perhaps the most popular hypothesis has been that, since education is an investment and since education and earnings potential are in general positively correlated, education raises the opportunity cost of economic inactivity and thus the incentive to seek employment. For this reason educational attainment has sometimes been included as a positive " taste " variable in econometric models developed to explain and predict changing levels of male and female labour force participation.[1] Thus Bowen and Finegan justified their inclusion of education as a factor contributing to the rise in female economic activity in the United States as follows: " In short, we view education as both a proxy for ' pure ' preferences for market work and as one factor which influences tastes for participation in the labour market." [2] However, there are a number of difficulties with this intuitive line of reasoning, of which we shall mention four.

First, in empirical tests of this hypothesis it is by no means clear that the " educational attainment " variable measures a supply decision rather than a demand effect, because it is almost certainly true that education—at least within a certain range—makes it easier for a person to obtain a job or gain access to training facilities.

A second problem is that it is hard to isolate educational attainment from considerations of ability, motivation or training, so that, as in much " human capital " analysis, it is difficult to assess the impact of education *per se* on the propensity to work. For example, does a woman enter the labour force because she has received a certain level of education, or does the desire for a career encourage her to pursue her education? Indeed, in the affluent industrialised countries the balance of motivation for secondary and higher education has changed from being predominantly economic to socially conventional. In the United States, for instance, getting a college education is little more than

[1] See, among others, W. G. Bowen and T. A. Finegan: " Educational attainment and labor force participation ", in *American Economic Review—Papers and Proceedings* (Menasha (Wisconsin)), May 1966, pp. 567-582; idem: *The economics of labor force participation* (Princeton, University Press, 1969); M. G. Sobol: " A dynamic analysis of labor force participation of married women of childbearing age ", in *Journal of Human Resources* (Madison (Wisconsin)), Fall 1973, pp. 497-505; and J. A. Sweet: *Women in the labor force* (New York, Seminar Press, 1973).

[2] Bowen and Finegan: *The economics of labor force participation*, op. cit., p. 22.

a middle-class imperative. As Epstein has noted, " motivation to go to college and motivation to use college training do not seem to be linked ".[1] If this is the case, the hypothesis that education increases women's participation in the labour force by stimulating their taste for economic activities becomes somewhat tenuous despite the findings of cross-sectional studies that show a positive correlation.

A third objection to the opportunity cost argument—at least as far as married women are concerned—is that while education may raise the probability of participation, it will also be associated with other factors tending to reduce it. Since educated women typically marry educated men, the fact that their husbands have potentially high earnings will tend to reduce the financial incentive for them to seek employment. So, even assuming that the economic inactivity of educated women has a high opportunity cost, there may be an inverse relationship between women's educational attainment and their labour force participation.[2] Thus there could be an inverse simple correlation between educational attainment and economic activity even though education itself may have a positive effect on the likelihood of women participating in the labour force. Indeed, the " permanent income " hypothesis underlying Mincer's 1962 model of married women's labour force participation in the United States is consistent with this suggestion.[3]

A fourth difficulty with the opportunity cost hypothesis is that while, compared with other women, an educated woman is probably better able to afford child care, either from her own or her husband's income, it is also probable that she is technically better equipped to play a part in the vitally important early education of her children than a less educated one. After all, while an investment in human capital is supposed to yield a return in terms of time spent in the labour market, it may also yield a return in terms of time spent in productive activities outside the labour market.[4] So, within the constraints of a nuclear family, the opportunity cost of non-participation in the labour force may even be lower for an educated woman with children than for a woman with little education and correspondingly less ability to

[1] C. F. Epstein: *Woman's place : options and limits in professional careers* (Berkeley, University of California Press, 1970), p. 65.

[2] Historically there is some evidence to support this tendency in Britain. See, for example, I. Pinchbeck: *Women workers and the Industrial Revolution* (London, Routledge, 1930); and L. Holcombe: *Victorian ladies at work : middle-class working women in England and Wales, 1850-1914* (Hamden (Connecticut), Archon Books, 1971). More recently a study in Bermondsey, London, found that " those wives whose husbands were professional men and in clerical jobs worked least, those whose men were skilled manual workers most ". See P. Jephcott, N. Seear and J. H. Smith: *Married women working* (London, Allen and Unwin, 1962).

[3] J. Mincer: " Labor force participation of married women: a study of labor supply ", in National Bureau of Economic Research: *Aspects of labor economics* (Princeton, University Press, 1962).

[4] See, for instance, R. T. Michael: " Education in nonmarket production ", in *Journal of Political Economy* (Chicago), Mar.-Apr. 1973, pp. 306-327; and W. J. Swift and B. A. Weisbrod: " On the monetary value of education's inter-generation effects ", ibid., Dec. 1965, pp. 643-649.

contribute to her children's education. This is particularly likely to be the case in low-income areas where institutional educational facilities are poor.

The relative employment opportunities argument

A second and possibly more promising basis for arguing the existence of a positive relationship between education and female participation in the labour force is to be found in the examination of relative employment opportunities. A look at the changing economic role of women in industrialised countries such as the United Kingdom and the United States shows that whereas in the past many less educated women worked, relatively few educated married women did so; during the twentieth century it is the growing participation of the latter group which has pushed the aggregate female labour force participation rate upwards.[1] One can clearly discern a gradual substitution of females for older male workers as the latter's educational qualifications have declined in comparison with those of younger persons, notably women.[2] In other words, it appears that in industrialised capitalist economies educated women may have responded to changing patterns of labour demand while employers have adapted to the available labour force.

Although the relative employment opportunities explanation is a compelling rationalisation of observed trends, it is not entirely satisfactory. The mere fact that education improves their employment opportunities does not mean that women will necessarily wish or be able to take advantage of them.

One particular problem with this explanation, perhaps most relevant in low-income industrialising economies, concerns the role education plays in the allocation of jobs. It is widely recognised that one of its principal functions is to provide employers with a convenient method of selecting workers by the process known as " educational screening ". Although in the case of many jobs there is little or no direct relationship between education and productivity, educated workers tend to be regarded as more stable, reliable and " committed " to their jobs and to labour force activity in general. Yet, while such screening normally favours the more educated jobseekers, it does not necessarily do so. In some situations it may even operate the other way. For example, an employer might not hire a woman with a high level of education to do some routine job on the grounds that she would probably not stay very long. Whether or not the assumption were valid, the employer

[1] See V. Oppenheimer: *The female labor force in the US : demographic and economic factors governing its growth and changing composition*, Population monograph series No. 5, Institute of International Studies (Berkeley, University of California Press, 1970), Ch. 5; J. Kreps: *Sex in the market place : American women at work* (Baltimore, Johns Hopkins University Press, 1971, Ch. 2; and Pinchbeck, op. cit., passim.

[2] C. D. Long: *The labor force under changing income and employment*, National Bureau of Economic Research (Princeton, University Press, 1958). On the other hand an expansion of education might reduce the number of young people willing to take menial jobs, thus enlarging employment opportunities for older workers. In this connection see R. Easterlin: *Long swings in American labor force growth, 1870-1950*, National Bureau of Economic Research (New York, Columbia University Press, 1968), p. 15.

would be faced by uncertainty and the prospect of further hiring costs. Thus educational screening could in practice lead to educated women being denied access to jobs that might be suitable for their particular needs (near to home, shift work, part-time work, etc.).

The aspirations effect argument

Whereas the second hypothesis for postulating that education increases female labour force participation is demand-determined, the third, like the first, relates essentially to the supply side. Stated briefly, education is a major determinant of income aspirations and expectations, and as such is likely to induce greater economic activity from more educated women, whether or not it also improves their employment opportunities. Consistent with this view, it has been argued that the expected living standards of a family are set by the wife, whose own expectations are likely to be positively related to her education and socio-economic background.[1] If that is the case, the husband's ability to achieve those standards from his own income will depend largely on the relationship between his own educational level and that of his wife. Provided the husband had an education and earning capacity somewhat greater than the wife's his income alone might be expected to satisfy the family consumption demands, but if the woman's education were similar to or higher than the husband's his income would be much less likely to meet these demands, in which case the wife could be expected to seek a supplementary income. This implies that an equalisation of educational opportunities between men and women would tend to lead to men working more intensively and/or wanting a higher income for their efforts, and to educated married women having a higher labour force participation rate.

Similarly, young women who acquire additional education and training enhance their pre-marriage and pre-childbearing income-earning opportunities. They are therefore more likely to experience a drop in income when they start raising a family, which in itself may be expected to encourage a relatively quick return to some form of employment.[2]

In short, by raising income *aspirations* and the degree of dissatisfaction with any given level of family income, education may increase the propensity of women to participate in the labour force. However, since education also raises income and occupational *expectations*, a positive relationship cannot be presumed because those expectations cannot always be realised.

The work available to educated women is often of a lower status and less well paid than that to which they feel entitled and for which their education qualifies them. In many cases they have to accept jobs inferior to those of

[1] J. Morgan, W. Cohen and H. Braze: *Income and welfare in the US* (New York, McGraw-Hill, 1962), pp. 107-139. See also G. Cain: *Married women in the labor force* (Chicago, University Press, 1966), p. 36.

[2] See Jephcott, Seear and Smith, op. cit.; and F. L. Mott: " Fertility, life cycle stage and female labor force participation in Rhode Island: a retrospective overview ", in *Demography* (Providence (Rhode Island)), Feb. 1972, pp. 173-185.

men with levels of education comparable or even inferior to their own. Whatever the causes, this may lead to a pronounced " status frustration " effect, whereby many women who feel entitled to a certain level of income (sometimes known as the " reservation " or " aspiration " level) withdraw from the labour force rather than accept some lower-paying, low-status job. In these circumstances the tendency to withdraw is probably strongest for educated women whose husbands have high-income, high-status jobs.

This status frustration effect may be particularly common in urban areas of low-income countries. It is frequently observed that in such areas the highest unemployment rate is among young people, who also tend to be the most educated group.[1] The experience of prolonged unemployment, or even the prospect of prolonged unemployment, may lead to discouragement and withdrawal from the labour force. For the educated it may even be rational to withdraw for a short time rather than take a low-paying, low-status job which may have an unfavourable effect on their subsequent earning potential.[2] Indeed, Myrdal went so far as to describe unemployment in south-east Asia as a " bourgeois problem ", i.e. one primarily concerning the educated middle class.[3] Kamarck characterised much the same phenomenon in Africa as " sociological unemployment ".[4] And Harbison, expressing similar sentiments, has described education as the generator of unemployment.[5] Yet while it may or may not be true that rather than accept a low-income livelihood some of the educated prefer to remain unemployed, either openly or outside the labour force, it does seem that the probability of participation in the labour force at any later stage of women's lives is determined in part by their participation after leaving school. Early withdrawal from the labour force through discouragement or status frustration will therefore tend to reduce any positive association between education and participation that might otherwise exist.

A related status frustration effect which may be of considerable significance in low-income urbanising economies is that, by raising expectations, education tends to make people unwilling to participate in the informal sector of the economy.[6] In many countries this ubiquitous sector, which comprises a wide range of occupations and irregular or even illegitimate income-earning activities, provides a high proportion of total employment. Typically, par-

[1] M. Blaug: *Education and the employment problem in developing countries* (Geneva, ILO, 1974), p. 10.

[2] M. Blaug, R. Layard and M. Woodhall: *The causes of graduate unemployment in India* (London, Allen Lane, 1969).

[3] G. Myrdal: *Asian drama* (Harmondsworth, Penguin Books, 1968), Vol. II, p. 1123.

[4] A. M. Kamarck: *The economics of African development* (London, Oxford University Press, 1967).

[5] Transcript of paper presented to the 12th International Manpower Seminar, Washington DC, 9 July 1969, pp. 9-10.

[6] See, for instance, K. J. King: " Skill acquisition in the informal sector of an African economy: the Kenya case ", in *Journal of Development Studies* (London), Jan. 1975, p. 117. For a taxonomy of informal sector activities see K. Hart: " Informal income opportunities and urban employment in Ghana ", in *Journal of Modern African Studies* (London), Mar. 1973, pp. 61-89.

ticipation in the informal sector implies low-status activity, which may be considered degrading by persons with secondary or higher education. It is one of the great dilemmas of modern capitalist development that, whereas education seems necessary to secure a stable and committed labour force, it also tends to produce unwilling or ineffectual workers for the informal sector, where most of the non-agricultural income-earning opportunities are to be found. Thus increased female education may reduce female labour force participation by making women reluctant to work in the informal sector. And since the latter has traditionally provided employment for large numbers of women the effect could be considerable. Moreover, to the extent that the spread of education reduces the number of men and women prepared or even able to work in informal activities, it could be seen as undermining the sector's viability and tending to increase the number of unemployed seeking wage employment. That in itself is likely to discourage active participation in the labour force by some of the disappointed jobseekers.

It might be thought that in the case of young educated men intent on securing a career-oriented job this status frustration effect will be stronger than for young women, who on average can be expected to have somewhat shorter job horizons. Yet since educated women are likely to be under less pressure to work on a regular and continuous basis, their labour force participation is likely to be more discretionary, and to that extent the status frustration effect will be more significant for women than for men.

In sum, although the association may indeed be positive, if education is depicted as influencing female labour supply through its effect on aspirations and expectations, a negative association is certainly also conceivable.

Empirical studies in low-income economies

In industrialising economies the relationships between education and women's economic activity are particularly complex. Certainly one feels uncomfortable with Elizaga's assertion that " it is well known that women's labour force participation rates are positively correlated with their level of education ".[1] In industrialising economies, as in industrialised countries, education is generally a facilitating condition for female economic activity in so far as it improves women's competitive position in the labour market. It also implies fuller information about labour market opportunities, and to the extent that it broadens horizons and encourages migration in search of employment it can be expected to encourage participation. However, the various status frustration effects identified in the previous discussion are likely to be especially marked in such economies. In particular, educated women may be reluctant to accept low-status jobs or to participate in the informal sector.

[1] J. C. Elizaga: " The participation of women in the labour force of Latin America: fertility and other factors ", in *International Labour Review*, May-June 1974, p. 526.

In any case, the relationship between education and participation rates is liable to be strongly influenced by the level and structure of aggregate demand for labour. The association may be positive at both high and low levels of demand but negative at some intermediate level. In conditions of low aggregate demand for labour and high levels of unemployment, employers are most likely to indulge in rigid screening practices, largely restricting selection to the more educated jobseekers.[1] In a relatively tight labour market, educated women are more likely to secure jobs for which their education and training have prepared them, and the persistence of a tight labour market will tend to weaken the barriers preventing them from acquiring such jobs, thus ensuring a positive association between education and female labour force participation. Yet at some intermediate level of demand such barriers may be considerable, and in these circumstances the job and income opportunities available to educated women may fall short of their " reservation " or " aspiration " levels, thereby neutralising any positive association. This points to the need for detailed multivariate analyses, a need which many empirical studies have neglected.

In view of the preceding discussion and the last point in particular, it is perhaps not surprising to find that despite the common presumption of a positive relationship the empirical evidence is mixed. Few of the hypotheses mentioned above have been tested, and in most statistical studies the researchers have simply postulated some straightforward positive association.

The simple positive relationship has been found in data from a number of different countries from various parts of the world. Thus in a regression analysis a positive correlation was found between the female activity rate and female education in Pakistan, using as alternative independent variables either the literacy rate or the proportion of persons over 15 with an eighth grade or higher education and no longer at school.[2] In Egypt, where recorded rates of female participation are especially low, Nagi citing 1960 census data claimed: " It is relevant to note that the ability to read and write seems to greatly increase the chances of women to find work outside the household. In contrast to the illiterate population, where only about 5 per cent of the women were actively employed, nearly 10 per cent of the literate females were employed." [3] But analyses based on simple literacy-illiteracy dichotomies are not particularly useful, since they do not allow an assessment of the significance of increments of education.

A study based on a labour force survey in Singapore found that education was positively related to the labour force participation of women aged 15 to 24, controlling for marital status, family income and various other personal

[1] In such circumstances, moreover, many women will be driven into the labour force by the need to supplement the family income.

[2] G. M. Farooq: " An aggregate model of labour force participation in Pakistan ", in *Developing Economies* (Tokyo), Sep. 1972.

[3] M. Nagi: *Labor force and employment in Egypt* (New York, Praeger Publishers, 1971).

and household characteristics, but that there was no apparent relationship between the two factors among women aged 25 to 44 or 45 to 64.[1]

Elizaga, in his analysis of census data from Argentina and Chile, observed a marked positive association between years of education and labour force participation for women, controlling for age.[2] However, the under-recording of rural, uneducated women's unpaid family work was not mentioned. More interesting, perhaps, were the results reported by Youssef, who found that in the urban areas of Chile only women with higher and university education had a labour force participation rate higher than that of illiterate women (61.6 per cent compared with 33.8 per cent); those with some primary education had a lower rate (31.8 per cent) and lowest of all was the rate of those with secondary education (26.0 per cent).[3] In a subsequent study using data from a 1965 labour force survey, the number of school years completed by Chilean women was positively related both to the number of hours worked and to the probability of participation in the labour force, controlling for age of the woman, number and age of children, and other family income.[4]

In several other recent studies positive relationships have been observed. Pecht noted the positive patterns for married women in urban areas of Venezuela, Ecuador and Costa Rica, though observing that in each case the positive relationship only existed beyond a certain " threshold " level of schooling.[5] Standing found that the probability of a woman being in the labour force in Jamaica was a positive function of education; this study used a measure of " human capital " that attempted to incorporate measures of quality and quantity of education, " vintage effects " and training.[6]

However, not all studies have either hypothesised or found straightforward positive relationships. Some have merely found mixed evidence of any positive association. This was the case in a study of Philippine data.[7] Similarly Anker, in an international comparative analysis, found the expected positive relationship between female literacy and female participation in modern sector employment, but he made no *a priori* assumption of any relationship

[1] Pang Eng Fong: *Labour force growth, utilisation and determinants in Singapore* (Geneva, ILO, 1975; mimeographed World Employment Programme research working paper; restricted), p. 30.

[2] Elizaga, op. cit., p. 527.

[3] N. H. Youssef: *Women and work in developing societies*, Population monograph series No. 15, Institute of International Studies (Berkeley, University of California Press, 1973), p. 58.

[4] P. Peek: *Family composition and married female employment : the case of Chile* (Geneva, ILO, 1975; mimeographed World Employment Programme research working paper; restricted). The relationships were non-linear (see p. 16).

[5] W. Pecht: *Participation of married women in the urban labour market in selected Latin American countries : Chile, Costa Rica, Ecuador, and Venezuela* (Santiago, CELADE; Geneva, ILO, 1976).

[6] Guy Standing: *A model of female labour force participation in Kingston, Jamaica* (Geneva, ILO, 1976; mimeographed).

[7] R. Wéry, G. B. Rodgers and M. Hopkins: *BACHUE-2 : Version I—a population and employment model for the Philippines* (Geneva, ILO, 1974; mimeographed World Employment Programme research working paper; restricted), pp. 61-67.

between literacy rates and over-all female labour force participation rates and found none.[1] Perhaps that was not surprising given the crudeness of the literacy rate variable.

Whereas some studies have found little or no relationship, others have found a distinct non-linear relationship which they have rationalised in one way or another. Among these, several have found no relationship at low levels of education, others that the probability of participation seems to decline with education. A number of studies in India and Pakistan have suggested some such non-linear relationship, though the evidence is mixed. Sinha argued that the labour force participation of women " declines with literacy, but female education above the matriculation level favours higher rates of employment ".[2] Nath, too, claimed in several studies based on 1961 Indian census data that the participation rate of literate women was lower than that of the illiterate.[3] Farooq accepted Sinha's argument in his thesis, but neither he nor Sinha explained the theoretical justification for it.[4] Moreover, in a survey conducted in Greater Bombay, Ramachandran found that a high proportion of women who were not seeking employment were college-educated and came from families where the head was fairly young and held a good job bringing in a relatively high income.[5]

However, some further empirical evidence supporting the type of non-linear hypothesis suggested for India by Sinha was provided by Durand and Miller who reported the case of Colombia where, in 1951, the lowest female activity rate for all age groups was that of women with some primary education, followed by those with no education, then those with some secondary education, some university education, and—most active of all—those with " other training ".[6] Unfortunately, they made no attempt to take account of other factors and admitted that the observed patterns could have been spurious. In particular, the completely uneducated may have been mainly country-dwellers, whereas in urban areas, where participation rates might have been lower for the least educated groups, there could have been a relatively large proportion of women with some primary education but few with none at all.

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[1] R. Anker: *An analysis of international variations in birth rates : preliminary results* (Geneva, ILO, 1974; mimeographed World Employment Programme research working paper; restricted), pp. 6 and 16.

[2] J. N. Sinha: " Dynamics of female participation in economic activity in a developing economy ", in *Proceedings of the World Population Conference, Belgrade, 30 August-10 September 1965*, Vol. IV (New York, United Nations, 1967), p. 337.

[3] See, for example, K. Nath: Female work participation and economic development: a regional analysis ", in *Economic and Political Weekly* (Bombay), 23 May 1970, pp. 846-849.

[4] G. Farooq: *Dimensions and structure of the labour force and their change in the process of economic development : a case study of Pakistan*, unpublished Ph.D. thesis, University of Pennsylvania, 1970.

[5] P. Ramachandran: *Attitudes of women to part-time employment*, Part I: *Report* (Bombay, Tata Institute of Social Sciences, 1964; mimeographed).

[6] United Nations: *Methods of analysing census data on economic activities of the population* (New York, 1968; ST/SOA/Series A/43).

Lima, Peru: female participation rates by education and age, 1967 (%)

Education	Age group						
	12-14	15-19	20-34	35-49	50-64	65+	12+
None	—	80.0	41.9	60.0	54.4	—	**50.5**
Incomplete primary	19.8	68.8	49.6	44.5	18.2	33.3	**43.1**
Complete primary	8.0	53.6	46.8	34.7	21.5	5.9	**35.6**
Incomplete secondary	6.3	17.1	50.0	30.4	23.5	—	**27.9**
Complete secondary and above	—	24.4	51.1	45.2	10.4	14.2	**41.6**

Source: Rivera, op. cit., p. 18.

Other studies, such as Rivera's findings for Lima shown in the accompanying table, have also revealed a less marked positive relationship than was expected.[1] But in addition a number of studies have actually hypothesised and found a negative association. This was so in a cross-sectional analysis of census data from Thailand, conducted by Maurer and his associates, who found a negative relationship between women's education and their participation in the non-agricultural labour force.[2] And according to one study conducted for the ILO, educational attainment reportedly had a significant negative impact on the number of hours worked by Colombian women, controlling for such factors as the influence of age, relationship to the head of the household, and the presence of a child under the age of 5 in the household.[3]

Finally, one study which adopted a somewhat original approach has suggested a particular form of non-linearity. In a study of women's economic activity in the Philippines, Encarnación succeeded in finding statistical support for the hypothesis that education had a positive effect on the labour force participation of urban wives if the family income was above a specified threshold level. For wives in all rural families and in urban ones with incomes below the threshold, there appeared to be a negative association, indicating an income effect dominating the substitution effect.[4] He argued that below the

[1] A. Rivera: *Perú : estudio de la mano de obra femenina en dos centros urbanos, en diferentes etapas de desarrollo : Lima metropolitana e Iquitos (1966 y 1967)*, Serie C, No. 134 (Santiago, CELADE, 1971).

[2] K. Maurer, R. Ratajczak and T. P. Schultz: *Marriage, fertility and labor force participation of Thai women : an economic study*, Report R-829-AID/RF (Santa Monica, Rand Corporation, 1973).

[3] A. Angulo and C. L. de Rodríguez: *Female participation in economic activity in Colombia* (Geneva, ILO, 1975; mimeographed World Employment Programme research working paper; restricted), p. 9. One of the difficulties in comparing these results is that different definitions of the dependent and independent variables have been adopted; the methodologies used have also varied.

[4] J. Encarnación: *Fertility and labour force participation : Philippines 1968* (Geneva, ILO, 1974; mimeographed World Employment Programme research working paper; restricted), p. 16.

threshold " more hours of work would be supplied on the market by a woman if her earning power (proxied by [her education]) is lower, since the family as the decision-making unit would attempt to reach the subsistence level of income. . . . At income levels above the threshold, the marginal effect could well be positive because of a more dominant substitution effect." [1] The problem with this analysis is that the level of target income is itself positively related to the educational attainment of the wife, since education raises income aspirations and expectations.

The study by Encarnación highlights the fact that it is hard to make adequate comparisons of the research findings, or indeed draw any satisfactory conclusions from them, because the methodologies used and the quality of the data available have varied so enormously. Furthermore, the evidence is somewhat ambiguous, which must raise doubts about the validity of the common assumption that education will have a clearly positive effect on women's participation and their economic role in low-income countries.

For individual women education is almost certainly a facilitating condition for labour force participation in both industrialised and industrialising countries, in so far as it generally improves work and income opportunities. But it is not necessarily a precipitating condition in so far as it does not necessarily lead to a desire or willingness to seek or take available work. The question is, under what conditions is education a precipitating as well as a facilitating condition for female participation in labour force activity? No doubt the actual relationship will depend on the specific historical and economic circumstances of particular countries, but arguably the strength of any positive relationship will depend crucially on the relative levels of male and female education.

An alternative hypothesis: sexual dualism

In the course of industrialisation and urbanisation in a market economy, the labour market takes on certain features which could be described as " dualistic ". Increasingly, for instance, primary jobs can be distinguished from secondary jobs, and primary from secondary employers.[2] At the same time a dualistic labour force tends to develop in which primary workers become distinguished from secondary or peripheral ones. One of the most conspicuous features of this process is what might be described as " sexual dualism ".

This state of affairs evolves from a situation in which education, training and career prospects are reserved predominantly for males. Usually but not

[1] Encarnación, op. cit., p. 4. In other words, whereas women with relatively little education and earning capacity would not be forced to work, an educated woman would still be attracted by the high prospective income.

[2] Of course, there is a continuum in both cases, but essentially primary jobs and employers are those offering high rates of pay, high socio-economic status and a career structure; while secondary jobs and employers offer lower incomes, lower status and less job security. Continuity of employment is rewarded by the former, but rarely or to a smaller extent by the latter.

always education and training go together, those with the first having access to the second. However, a modified form of this dualism can occur where vocational training is reserved almost exclusively for men even though there is little or no discrimination in schooling. In either case women tend to become or remain peripheral, intermittent members of the labour force, while men's participation in the labour force is strengthened.

To the extent that there is a dualistic development of human potential based on sex, women are likely to be increasingly channelled into secondary jobs (when they are not discouraged from participation in the labour force altogether), largely because of their limited access to education and training. Because lack of training and on-the-job experience keeps their productivity low, moreover, the initial discrimination against them is reinforced by " statistical " discrimination. In this way employers come to regard women workers in general as having low productivity and a lower degree of labour force commitment than men, so that they discriminate against women in general and screen workers on the basis of sex, preferring to hire men even when an individual woman seeking employment may have a high level of education, training and labour force commitment. A cumulative pattern of discrimination is thereby gradually built up which forces large numbers of women into low-status, secondary jobs and induces a status frustration effect among the educated.

This pattern of sexual dualism may have an even more pervasive effect, which is hard to assess empirically. Faced with the prospect of discrimination in the labour market as well as in schools and training institutions, many women capable of pursuing education or training for a career may be discouraged from doing so.[1] Similarly, since sexual dualism implies a large differential in the earnings potential of men and women, its existence encourages men to devote their energies almost wholly to economic activities and women to domestic tasks, according to the dictates of comparative advantage. More than that, since husbands will probably have access to jobs of much higher status than those available to their wives, even women with higher-than-average education will be discouraged from economic activity by the prospect of having to take lower-status employment than that of their husbands.

It therefore seems likely that the relationship between education and the propensity to participate in the labour force will depend crucially on the respective education and training available to women and men. Nevertheless, although sexual dualism may explain the observed relationship between education and the extent of female labour force participation, it must remain a tentative hypothesis calling for further research.[2] It implies that, with the

[1] Such women could be called " structurally discouraged " workers.

[2] It is in fact a topic being studied within the framework of the ILO World Employment Programme. For one analysis that focuses on this relationship see Guy Standing: *Education, training and female employment in Jamaica*, paper delivered to an Overseas Development Ministry conference entitled " Investment in Women: a Planning Perspective ", Cambridge, April 1975.

equalisation of educational and training opportunities, female participation in the labour force can be expected to increase, and that a positive association between educational attainment and female labour force participation will be much more likely. This is at least consistent with recent developments in industrialised countries.

Conclusion

Empirical research has so far not adequately demonstrated any consistent association between education and female labour force participation. At the level of the individual there is no *a priori* justification for expecting the more educated to have a higher probability of participation than the less educated, though if participation levels are seen as basically demand-determined it seems probable that in general the more highly educated will be relatively more likely to enter the labour force. Ultimately, however, this is a matter to be determined empirically. At the level of society the spread of education tends to create a social climate favouring female economic activity, and as women gain greater access to education and training, barriers to their employment in primary, high-income occupations tend to break down.

The importance of education as a factor influencing labour force participation has to be evaluated in the context of the generally rapid growth of commercialisation, urbanisation and industrialisation in low-income countries in recent years. In many of these countries, where there are relatively few educated and skilled workers, there can be no doubt that a low level of participation by educated women has a high social cost. For this reason some observers have argued that in many low-income countries the provision of equal educational opportunities for males and females, whatever its merits in terms of equity, would involve an inefficient allocation of resources.[1] This opinion is misconceived, since if educated women do remain outside the labour force there is clearly a need to identify the obstacles and disincentives and to create the conditions enabling them to make use of their skills. Moreover, benefits other than those associated with labour force participation may outweigh the social cost of their remaining economically inactive. For instance, other things being equal, educated women are almost certainly more capable of educating their children and of providing their families with balanced diets and adequate health care.

The direct positive influence of education on the propensity to participate in the labour force exists partly because education enhances employment opportunities.[2] It also raises income aspirations, generally increases the oppor-

[1] See, for example, R. C. Blitz: " Some observations concerning the Chilean educational system and its relation to economic growth ", in C. A. Anderson and M. J. Bowman (eds.): *Education and economic development* (London, Frank Cass, 1966), p. 313.

[2] Thus, referring to women's income-earning opportunities in Kenya, the report of the inter-agency mission organised by the ILO concluded: " In the industrial sector, their employment prospects are severely limited, but this may change with the spread of education for girls and more favourable attitudes towards women's employment in various parts of this

tunity cost of inactivity, and weakens the restrictive power of cultural traditions limiting women's non-domestic activities.[1] Education also has several indirect positive effects. For example, it tends to have a strong negative effect on the number of children women want and have, and may lead not only to later marriage but to postponement of the period of childbearing.[2] These changes in themselves tend to increase female participation in the labour force. To the extent that participation is encouraged in the period following school women become oriented to labour force activity, and research in several industrialised countries has shown that economic activity during this period is a major determinant of participation at any subsequent time of life.

The negative effects of education are less easy to demonstrate, yet in certain circumstances they may well neutralise the positive association. Education probably increases the opportunity cost of women's economic activity by raising the value of their services outside the labour market; it may also raise " reservation " wages and job expectations to unrealistically high levels. And the increased aspirations to which it gives rise may lead to an aversion to employment in the informal sector. Perhaps most important of all, if the educational and training opportunities afforded to women in general are greatly inferior to those enjoyed by men, the expected positive relationship may well be neutralised or even reversed.

Finally, if education and training are to be judged at least in part by whether the recipients make use of the acquired skills in the labour force, it is worth considering the potential merits of adult or recurrent education, much in vogue at present.[3] One of the many unanswered questions associated with this form of education is whether it would provide an effective means by which those who have been out of the labour force for some considerable time (such as women who left their jobs to have children) could successfully return to it, or by which those who have never previously considered entering the labour force could be assisted to do so. For women in those categories the barriers are often substantial, and the process of readjusting to the routines of non-domestic work may be psychologically traumatic. As a result, many may be deterred from entering employment or, having taken a job, may fail to settle into an organised routine and subsequently withdraw from the labour force. Other workers, having invested in the acquisition of certain skills, may

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sector. In the service sector, new opportunities are opening up fairly rapidly in the health and education fields, and girls will need to be encouraged and educationally and vocationally prepared to take advantage of them " (ILO: *Employment, incomes and equality : a strategy for increasing productive employment in Kenya* (Geneva, 1972), p. 298). This unfortunately suggests a bias that women should be prepared to do so-called women's jobs.

[1] Thus Little has written of the effect of literacy on West African women who, increasingly dissatisfied with the restrictions placed on them, left the security of the traditional family system in search of employment. See K. Little: *African women in towns* (Cambridge, University Press, 1973), p. 184.

[2] See inter alia the various studies cited in R. Freedman: *The sociology of human fertility : an annotated bibliography* (New York, John Wiley, 1975).

[3] For a review of the principal issues see V. Stoikov: *The economics of recurrent education and training* (Geneva, ILO, 1975).

find after a break of five or ten years that the skills are either obsolescent or under-rewarded; these women are particularly likely to experience a status frustration effect and to respond by remaining economically inactive. If opportunities existed for either reactivating or recreating marketable skills through adult education and training, these deterrents to re-entering the labour force would be largely overcome.