Determinants of the Supply of
Women in the Labour Market:
A Micro Analysis

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I. INTRODUCTION

Neoclassical economists consider education to be one of the key determinants of women entering the labour market. The higher the level of education, the greater is women's participation in the labour market. [Becker (1980); Mincer (1980)]. However, the structuralist school does not look at it so simply. In their view there are many other factors besides education which compel women to sell their labour power. [Benham (1980); Strober (1980)]. The principal factor compelling women to sell their labour is income. Therefore, according to the structuralist school the lower is women's household income, the greater is their compulsion to enter the labour market. How does this square with neoclassical theory? The structuralist school states that household income is the primary determinant of women's sale of labour power. Therefore, in a society divided by income groups lower income class women will tend to sell their labour power more. However, within each income group an increase in education will increase the supply of women's labour and its returns.

Due to inadequate data, relatively little analytical work on this issue has been undertaken so the present study is an attempt to explore why some married women are engaged in earning activities, while some of them are not. Our sample consists of ever-married women, because normally they are considered independent, and their status is equal to their male partners. So they have relatively more choice in entering the labour market compared to unmarried women. A comparison of this kind will help us to identify the factors besides education in determining women's supply of labour in the market.

In the present study we are focusing our analysis on supply-side factors. Demand side macro-factors are not considered here. The supply of women's labour power depends on household structure which reflects the socio-economic characteristics of a household. Variation in the set of socio-economic conditions

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is one of the factors influencing women's participation in earning activity.

Before turning our attention to any analysis we will briefly describe the data set. This study is based on a data set consisting of 166 earning and 219 non-earning women, drawn from poor settlements of Rawalpindi City for detail see Bilquees and Hamid (1989). Earning women are defined in this survey as those who are engaged in any formal or informal activities, working inside or outside the home for exchange of value. On the other hand, non-earning women are those who were not working at the time of the survey.

This paper is divided into three sections. The following section outlines the hypotheses, regarding women's earning activities and Section III presents the empirical results as well as the conclusion.

II. THE HYPOTHESES

We now present the hypotheses concerning the relationship between the choice of earning activities of a women and factors that influence it. The factors that we emphasize are household income, widowed households, household size and composition and, finally, women's education.

Household Income

Our major hypothesis is that women's labour depends primarily upon the total income of the household. The lower the income the higher the probability of a woman entering the labour market. However, to estimate household income is difficult. This is not because of the difficulty in estimating a wide variety of wage rates, but because of estimating labour time. There is no record of labour time, and recall is not very good. These aggregate figures for household income do not give a reliable estimate. So we will disaggregate income into a number of composite variables such as: (1)   Nature of husband's job. (2) Wage rates. (3) Number of adult male earners.

Widowed Households

In a household the husband has greater potential to earn for the household. Widowed households will, therefore, tend to have a lower income as compared to households with husbands. Our hypotheses is that a higher proportion of widows enter the labour market.

Household Size and Composition

The extent of a woman's involvement in earning activity also depends on

her household size and composition. The size of the household and the ages of household members influence women's participation in earning activities. The presence of small children increases the amount of work to be done at home, so women spend a considerable proportion of their time for child care and this may keep them from entering the labour force. However, the presence of older children, or other adult members in the form of the extended family negates this impact by providing assistance in child care and domestic task. On the other hand, an increase in household size increases the household's need for income, and thus the involvement of women in earning activities.

Education

Our major hypothesis seen above is that household income is the primary determinant of women's supply of labour power in the market. Therefore, education on it's own cannot be a major determinant of women entering into the labour market. However, income divides households into groups. Then within each income group, women's education will increase entry into the labour market i.e. within each income group the higher the women's education, the greater their supply in the labour market.

III. EMPIRICAL RESULTS

Income

Our major hypothesis, is that household income is a primary determinant of women's entry in the labour market. Household income will be inversely related to women's supply in the labour market. However, household income is difficult to estimate, therefore, we will use a number of proxy variables for household income.

Husband's Occupational Status

The first proxy variable is the nature of husband's job. Occupational status will be inversely related to women's entry into the labour market. Table 1 shows this.

Table 1 presents husband's occupational status and the percentage of households containing earning women. The table shows that as husband's occupational status improves the percentages of households containing earning women decline.

In the table the lowest occupational status of the husband is zero for widows. Therefore, from the total number of widowed households, the percentage containing earning women is the highest at 65 percent.

Table 1

Percentage Distribution of Earning and Non-earning
Women by their Husbands' Occupation

Husband's Occupation	Earning Women %	Non-earning Women%	Total %
Labourer (Unskilled)	50.00	50.00	100.00
Labourer (Skilled)	44.00	56.00	100.00
Privately Employed	35.53	64.47	100.00
Self-employed	39.77	60.23	100.00
Govt. Servant	39.46	61.54	100.00
Unemployed	40.00	60.00	100.00
Retired or Old	33.33	66.00	100.00
Sick	60.00	40.00	100.00
Widowed	64.71	31.29	100.00

A step up in the occupational status of the husband is where the husband is an unskilled labourer, from the total number of unskilled labourer households, the percentage containing earning women drops to 50 percent.

A further step up in husband's occupational status is where the husband is a skilled labourer. From the total number of such households the percentage containing earning women drops further to 44 percent. A further increase in husband's occupational status is where the husband may have had a high income in the past, but is presently unemployed. From the total number of households where husbands are unemployed, the percentage containing earning women drops to about 40 percent.

Finally, the highest occupational status is where husbands are self-employed or public-employed, or retired (pensioned). From the total number of such households the percentage containing earning women drops to well below 40 percent.

Therefore, Table 1, supports the hypothesis that husband's occupational status is inversely related to the percentage of women entering the labour market.

Wage Rates

The second proxy variable we have used is the husband's wage rate. We expect that as the husband's wage rate increases, the percentage of women entering the labour market will decrease.

Table 2 presents husband's wage rates and the percentage of households containing earning women. The table clearly shows that as the husband's daily or monthly income increases, the percentage of households containing earning women declines. For example in the income group where the husband's daily wage rate is between Rs 15 – 29 the percentage of households containing earning women is the highest at 65 percent. As the wage rate increases the percentage of households containing earning women drops to 40 percent and below.

Table 2

Percentage Distribution of Earning and Non-earning Women by their Husbands' Income, and by Mode of Payments

Daily Income of Husbands	Earning Women %	Non-earning Women %	Total
Rs < 15	0.0	100.00	100.00
15 – 29	64.71	35.29	100.00
30 – 44	38.00	62.00	100.00
45 – 59	45.71	54.29	100.00
60 – 74	37.50	62.50	100.00
75 – 99	18.18	81.82	100.00
100 – 149	40.00	60.00	100.00
150 – 199	–	100.00	100.00
200 – 249	–	100.00	100.00
250 – 299	–	–	–
300 and Above	–	–	–
Total	41.67	58.33	100.00
Monthly Income			
Rs < 399	100.00	–	100.00
400 – 599	62.50	37.50	100.00
600 – 799	57.14	42.85	100.00
800 – 999	55.55	44.44	100.00
1000 – 1499	34.54	65.45	100.00
1500 – 1999	34.78	65.52	100.00
2000 – 2499	33.33	66.66	100.00
2500 – 2999	22.22	77.77	100.00
3000 and Above	37.50	62.50	100.00
Total	40.26	59.74	100.00

The same pattern can be seem from monthly income earners. In the income group where the households monthly income is below Rs 400, all households contain earning women. As this monthly income increases, the percentage of earning women finally drops to about 22 percent.

Adult Male Earners

Our third proxy variable for household income is the number of earning adult males. As the number of earning adult males per household increases, the percentage of women entering the labour market will decrease.

Table 3 shows as the number of earning adult males increases the percentage of households containing earning women decreases. For households having no earning adult male the percentage of household containing earning women is the highest at 71 percent.

Table 3

Percentage Distribution of Earning and Non-earning Women
by Number of Earning Adult Males in the Household

Earning Adult Male	Earning Women %	Non-earning Women %	Total %
0	70.83	29.17	100.00
1	41.00	58.80	100.00
2	44.12	55.88	100.00
3 or More	34.21	62.79	100.00

As the number of earning males increases to three or more, the percentage of households containing earning women drops to about 34 percent.

Widowed Households

Our next hypothesis stems from the income hypothesis, that household income is inversely related to women's entering the labour market. As expected earlier, widows will have the lowest household income, therefore, widowed households will contain the highest percentage of women entering the labour market. Table 4 confirms this.

Table 4 shows clearly, that from the total widowed households the percentage of earnings is high at 65 percent. From among the total number of currently married women the percentage of earning women is much lower at 41 percent.

Table 4

Percentage Distribution of Earning and Non-earning Women by their Marital Status

Marital Status	Earning Women %	Non-earning Women %	Total %
Married	41.02	58.97	100.00
Widowed	64.70	35.29	100.00

Household Size

Our hypothesis about household size is that this will have a positive relationship with the percentage of women entering the labour market. The argument is that the larger the household size the greater the need for household income and, therefore, the higher the probability of women entering the labour market. This hypothesis is clearly verified by Tables 5 and 6.

Table 5

Percentage Distribution of Earning and Non-earning Women by Household Type

Household Type	Earning Women %	Non-earning Women %	Total %
Nuclear	41.79	58.21	100.00
Joint (Extended)	46.23	53.33	100.00

Table 6

Percentage Distribution of Earning and Non-earning Women by Size of Household

Size of Household	Earning Women %	Non-earning Women %	Total %
< 4	35.80	72.84	100.00
> 4 and < 7	45.10	54.87	100.00
7 and More	45.50	54.49	100.00

Table 5 divides households into nuclear households which are smaller in size and extended households which are larger in size. This table shows that from the total number of nuclear households the percentage of households containing earning women is low at 42 percent, and from the total number of extended households the percentage containing earning women is higher at 46 percent.

Table 6 divides households into three sizes, < 4, between 4 and 7 and above 7 household members. The table shows that the total number of households where the household size is < 4, the percentage containing earning women is low at 36 percent.

For household's with the household size above four, the percentage containing earning women rises significantly to 45 percent. Therefore, both tables verify the positive relationship between household size and percentage of women entering the labour market.

Household Composition

We have two hypotheses about the relationship between the composition of the household and the percentage of women entering the labour market.

First: the greater the number of adult females in the household, the greater the supply of labour. Table 7 show this.

Table 7

Percentage Distribution Earning and Non-earning Women by Number of Adult Females in the Households

Number of Adult Female in Household	Earning Women %	Non-earning Women %	Total %
1	34.87	65.13	100.00
2	53.06	46.93	100.00
3	53.40	46.58	100.00
4	44.00	56.00	100.00
5	40.00	66.66	100.00
6	66.00	33.00	100.00

Table 7 gives the number of adult females per household and the percentage of households containing earning women. Table 7 clearly shows that as the number of adult females increases, the percentage of households containing earning women

also increases. In the table, in households containing only one adult female the percentage of households containing earning women is the lowest at 3.5 percent. At the number of adult females per household rises to six, the percentage of households containing earning women also increases significantly to 66 percent.

The second hypothesis about household composition is that younger children inhibit the entry of women to the labour market. The rearing of younger children requires greater labour time which, therefore, cannot be hired out in the labour market. Table 8 supports this hypothesis.

Table 8
Percentage Distribution of Earning and Non-earning Women by Age of their Children

Children Ages	Earning Women %	Non-earning Women %	Total %
< 6 Years	41.96	58.04	100.00
> 7 Years	45.38	54.61	100.00

Table 8 shows that with children below the age of six there is a low percentage of households containing earning women i.e., 41 percent. Households containing children above the age of six have a higher percentage of households containing earning women, 45 percent.

Women's Education

The simple neoclassical hypothesis is that women's education is positively correlated to their entering the labour market. This simplistic notion is rejected by Table 9.

In the table, from the total numbers of illiterate women's households, the percentage containing earning women is high at 44 percent. As the educational level increases to primary and middle school the percentage of households containing earning women drops to above 30 percent.

As the educational level further increases to matric the percentage of households containing earning women suddenly shoots upto 60 percent. And finally, as the educational level rises to F. A. and B. A. the percentage of household containing earning women drops down again to 50 percent.

This negates the simple neoclassical hypothesis. As an alternative, we

would like to modify this hypothesis by combining it with the income hypothesis. Income is the primary determinant for women to enter the labour market. Education is positively correlated to women supply to the labour market within each income group. The higher the women's education, the greater their supply in the labour market.

Table 9

Percentage Distribution of Earning and Non-earning Women by their Educational Level

Educational Level	Earning Women %	Non-earning Women %	Total %
Illiterate	44.19	55.81	100.00
Primary	32.35	67.64	100.00
Middle	30.00	70.00	100.00
Matric	60.00	40.00	100.00
F. A.	50.00	50.00	100.00
B. A.	50.00	50.00	100.00

The first part of the hypothesis is verified in this paper, the second modified education hypothesis needs further research and data to test it with.

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Comments on
"Determinants of the Supply of Women in the
Labour Market: A Micro Analysis"

The paper makes an important contribution in the field of information about women which is based on primary data. It is commendable effort in view of the existing data gaps, where it is difficult to find data disaggregated sex-wise for the labour force.

The overall analysis and reporting of the data do reveal the characteristics of the population researched and confirm / reject the hypothesis formulated. The variables considered also seem to be comprehensive.

However I do have some reservations about the title of the paper and the analysis. The title could have been more specific by indicating the "poor settlements" of Rawalpindi city which precisely is their sample. It is from this sample that generalizations have been drawn for the entire female labour force is not a homogeneous group. Moreover how do you define the term poor? Does it have certain socio-economic characteristics of its own e.g. when concepts such as low, middle or high income groups are used the reference is to the position of the target group relative to the country's average income level or poverty line or some such criteria. It would have been more appropriate to use the concepts of income level instead of just "poor".

Mention should also have been made about the "Urban" characteristics of the "sample population" as that has implications for the female labour force participation rates. For example, in the agriculture sector female participation is high all over the country (for specific activities) varying from 73 percent in Sindh to 50 percent in Balochistan, irrespective of the other variables that normally influence the supply of female labour force.

The "Urban" nature of this particular stratum of women is also important as their socio-economic characteristics and supply pressures more importantly compulsions are different from the women of a different income level, socio-economic strata and sector, which needs to be brought out.

It would have been more convenient and revealing if the specific types of jobs undertaken by the women of the surveyed area were provided. This would have brought out their employment prospects and helped justify the rejection of the relationship between education and women labour force participation. In

fact, for certain employment categories education levels may be irrelevant like the informal sector (house maids, petty, supplier of good like, eggs, milk, etc.).

Besides using education as a variable would seem irrelevant in this report, keeping in mind the abysmally low female literacy rate in Pakistan. The "poor settlement" itself points to the education level to be expected from this sample.

Under the heading "Education" the statement that "within each income group women's education will increase their entry into the labour market" is suspect. This statement needs to be qualified with the demand structure that will make jobs available to these women with education. Supply factor by itself will be insufficient. In the present employment structure, unless there is a demand and available opportunities to absorb the educated women, the positive relationship between education and their entry into the labour force cannot be predicted.

While reporting Table 6, instead of concentrating on the mere size of the household it would have been better if variables like earning women, age and income levels, were used as household size alone is insufficient to explain the positive relationship with women entering the labour force unless it is assumed that there is an increase in the number of women in these households as against males and that every able-bodied female enters the labour force with no other consideration.

Similarly, the reporting of Table 7 also follows the same line of thinking where "the greater the number of adult females in the households the greater the supply of surplus labour which can enter the market" needs to go into more depth to reveal which particular labour market they go to, i.e. agriculture, informal or formal labour market, since each market has its own constraints and ability to absorb this surplus labour looking for employment (if they are all looking for employment keeping in mind the households status and other variables already discussed in the paper).

However despite these observations the paper does bring to light many of the relationships that exist and can help by concentrating on some of the factors that influence the supply of women entering the labour market.

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