CHAPTER VI

DETERMINANTS OF LABOUR EARNINGS
6.1. INTRODUCTION

Empirical evidence of the existence of segmented labour markets is often presented in the form of structural differences in Mincer-Type earnings equations among various segments of the urban labour market. Though the theoretical basis for the human capital earnings function was provided by Mincer, the model has become very familiar in the labour economics literature in recent times. Following Mazumdar and Mohan, several writers have adopted human capital based earnings function to explore the heterogeneity which characterises the labour market in an urban economy. In view of this, an attempt is made in this chapter to examine the determinants of average labour earnings in the informal sector in comparison with the formal sector. Human capital based earnings function is adopted for the analysis of earnings in different sectors in the urban labour market.

6.2. DETERMINANTS OF EARNINGS

The most widely used framework for examining the determinants of earnings is the human capital model. The model generally emphasises the role of education, experience, and ability in determining the productivity of the worker vis-a-vis his earnings. The basic model is generally stated as

\[ Y = f(S, X, A) \]

Where the earnings \( Y \) are assumed to be function of schooling \( S \), years of education, length of experience \( X \), years of experience, and ability \( A \). However, it is argued that this simple model has at least five major shortcomings. First, it is difficult to correctly estimate the ability of different workers. However, it is argued that it may be possible to incorporate these by using shift variables controlling for certain background characteristics like origin or family background as proxies.
Second it may be difficult to measure the schooling variable. The years of education which is the conventionally used schooling variable undermines difference in the quality of schooling. Different students may respond quite differently in receiving education from different schools of varying quality. However, it may be possible to incorporate these considerations also by taking the background variables as proxies.

The third limitation from the supply side is with respect to the measurement of the experience variable. This model treats the experience variable as creating human wealth through the on-the-job training. The problems with the quality of training would be similar to those discussed in respect of education.

The fourth consideration from the supply side may be the skill level of the worker which is much more important than the years of schooling for these informal labour. The workers' skill level may determine his productivity more than his education level. There are also certain personal attributes of workers which may affect the productivity of worker more than the simple human capital variables like schooling and experience. The temporariness of migration is one such possible factor. Marital status and larger family size are the important factors influencing the workers to show greater commitment and reliability to the job and thereby they earn more than their counterparts viz. unmarried migrants. According to Mazumdar the higher earnings in the formal sector also reflect this aspect rather than any other institutional explanation.

Lastly besides these supply side considerations there may be certain demand side aspects which are ignored by the simple human capital earnings function. Evidence suggests that labour market has a high probability of segmentation. According to Mazumdar labour
market segmentation may be that "a difference in earnings can be attributed to 'institutional' factors after we have allowed for variations in measurable human capital to factors." This indicates that there is a shift in earnings function after controlling for the human capital variables, depending on the sectoral location of the workers. The interpretation of segmentation implies differential returns to the human capital variables which may change the slope of the earnings function for different sectors in the labour market. This may be the result of an inevitable valuation in different sectors of the differential requirements of different activities in different sectors.

Despite these limitations, 'human capital model is quite robust in explaining individual variations in earnings' ⁸

6.2.1 **MODEL SPECIFICATION**

The basic form of the human capital earnings function adopted by us is of the following nature:

\[ Y = f(\text{education, experience, ability, productivity, employment characteristics}) \]

We have attempted to incorporate the additional considerations discussed earlier in our analysis of the determinants of average earnings of workers. We have attempted to capture the ability aspect through certain background variables which may reflect both the quality of education as well as experience. As it is extremely difficult to measure the possible individual variations in ability for these informal labour, we have ignored these individual variations. Following Mazumdar (1979), the productivity aspect is captured through skill level and certain personal attributes of the workers. Finally, the employment characteristics are captured through the sectoral frame used in our study. The sectoral dummies are the shift variables which indicate a
possible segmentation on these lines. The earnings functions were developed incrementally for the entire sample of workers adding variable groups one after the other to test for the stability of elasticities of different variable groups and the possible additional variance due to the incremental addition to other variables. Further we have stratified the sample by sectors and type of jobs to investigate into the possibility of differential returns to human capital variables.

The specific variables used in the equation are:

where $\ln = \text{natural log of average monthly earnings}$

$X_1 = \text{Education variable}$

$X_2 = \text{Experience variable}$

$X_3 = \text{Productivity variable}$

$X_4 = \text{Background Variables}$

$X_3 = \text{Employment characteristics variable}$

$U = \text{Error term}$

In our analysis, the dependent variable is transformed to its natural logarithm to facilitate the computation of elasticities as well as to reproduce variations in it.

**EXPLANATORY VARIABLES:**

**EDUCATION [$X_1$]**

This was measured in the conventional way in terms of number of years of education completed.

$\text{EDUCY} = \text{Numbers of years of education}$
This was taken as 4 for those who had completed lower primary 7 for those who had completed upper primary 10 for those who had completed secondary education [i.e. 10th class] and 15 for those who had completed college education. For the illiterates it was taken as 0

EXPERIENCE [$X_2$]

This variable is also measured in the conventional way. For those without any education the age at the beginning of work was assumed to be 10. This may be justified, as the average age of worker at starting work was greater than 10 years.

\[
\text{Exp} = \text{age} - \text{EDCY} - 6
\]

When $\text{EDCY} = 0$

\[
\text{Exp} = \text{age} - 10
\]

\[
\text{Exp} \, S\text{Q} = (\text{Exp})^2 \quad \text{this is used to explain the quadratic relationship if any, between earnings and experience}
\]

PRODUCTIVITY [$X_3$]

We have tried two variables viz. skill dummy and marital status dummy to capture their probable impact on productivity.

SKILL DUMMY

\[
\text{Skilled} = 1 \text{ if the worker is skilled}
\]

\[
= 0 \text{ otherwise}
\]

MIGRANT - MARITAL STATUS DUMMY

\[
\text{MRMIGD} = 1 \text{ if the worker is a married migrant}
\]

\[
= 0 \text{ otherwise}
\]
BACKGROUND VARIABLES \(X_4\)

To capture the effect of workers' social background on the earnings, caste dummies were tried out.

CASTE DUMMIES

The backward castes (caste group II) who were numerically largest in the sample were taken as the base and the following four dummies are used to classify the five caste groups.

\[
D_1 = \begin{cases} 
1 & \text{if the worker belonged to the caste group 1} \\
& \text{namely Brahmins, Kshatriyas etc} \\
0 & \text{otherwise} 
\end{cases}
\]

\[
D_2 = \begin{cases} 
1 & \text{if the worker belonged to the caste group 3} \\
& \text{namely Goldsmiths, Weavers, Artisans, etc} \\
0 & \text{otherwise} 
\end{cases}
\]

\[
D_3 = \begin{cases} 
1 & \text{if the worker belonged to caste group 4} \\
& \text{namely Scheduled Castes and Scheduled Tribes} \\
0 & \text{otherwise} 
\end{cases}
\]

\[
D_4 = \begin{cases} 
1 & \text{if the worker belonged to caste group 5} \\
& \text{namely the Muslims, Christians and others} \\
0 & \text{otherwise} 
\end{cases}
\]

EMPLOYMENT CHARACTERISTICS \(X_5\)

To capture the employment characteristics, we have adopted the sectoral framework which was used throughout this study.

The formal sector was taken as base.

\[
SED = \begin{cases} 
1 & \text{if the worker was self-employed} \\
0 & \text{otherwise} 
\end{cases}
\]
\[ \text{CASD} = \begin{cases} 1, & \text{if the worker was a casual unattached worker} \\ 0, & \text{otherwise} \end{cases} \]

\[ \text{INFD} = \begin{cases} 1, & \text{if the worker was working in the informal establishments} \\ 0, & \text{otherwise} \end{cases} \]

6.2.2 RESULTS

The results of the estimated earnings function of the informal sector are presented in Table 6.1. The explanatory variables considered together explain about 61 percent of the variation in the earnings of the sample households in the informal sector. The coefficient of education is positive, as education increases earnings also increase. However, the coefficient of this variable is not statistically significant. The experience variable has a negative coefficient, while the square of the experience variable has a positive coefficient. Both the coefficients are statistically significant. This is contrary to expectations, this may partly be due to the difficulties in the measurement of the experience variable. The skill of the workers appears to positively influence the earnings, as can be seen from the positive sign of the coefficient. To capture the employment characteristics, the sectoral dummies have been used. The coefficient of self-employed dummy is positive, while that of the casual unattached worker dummy is negative and statistically significant. The informal establishment dummy coefficient is positive and statistically significant at 10 percent level. The earnings in the informal establishments and the self-employed sectors appear to be higher. From these results, it can be concluded that education, skills, and employment characteristics greatly influence the earnings when the informal sector is considered as a whole. The intra-sectoral variations in the earnings appear to be considerable.
Table 6.1

DETERMINANTS OF EARNINGS

<table>
<thead>
<tr>
<th>Informal Sector</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSTANT</td>
<td>940 4464</td>
</tr>
<tr>
<td>EDUCY</td>
<td>0.7500</td>
</tr>
<tr>
<td></td>
<td>[0.3124]</td>
</tr>
<tr>
<td>EXP</td>
<td>-2.1934*</td>
</tr>
<tr>
<td></td>
<td>[12.6294]</td>
</tr>
<tr>
<td>(EXP)^2</td>
<td>0.00117*</td>
</tr>
<tr>
<td></td>
<td>[7.80226]</td>
</tr>
<tr>
<td>SKILLED</td>
<td>50.2292</td>
</tr>
<tr>
<td></td>
<td>[1.406]</td>
</tr>
<tr>
<td>SED</td>
<td>9.4424</td>
</tr>
<tr>
<td></td>
<td>[0.1905]</td>
</tr>
<tr>
<td>CASD</td>
<td>-101.2324**</td>
</tr>
<tr>
<td></td>
<td>[2.4621]</td>
</tr>
<tr>
<td>INFD</td>
<td>86.7923***</td>
</tr>
<tr>
<td></td>
<td>[1.8573]</td>
</tr>
<tr>
<td>R^2</td>
<td>0.6144</td>
</tr>
<tr>
<td>F</td>
<td>106.2975</td>
</tr>
<tr>
<td>D W</td>
<td>1.9078</td>
</tr>
</tbody>
</table>

Significant at 1% level
Significant at 5% level
Significant at 10% level
INTRA-SECTORAL VARIATIONS:

The estimated earnings functions for the three subsectors of the informal sector are presented in Table 6.2. Only in the casual sector, the explanatory variables considered together explain about 65 percent of the variation in the earnings. In the case of the informal establishments, the explanatory variables explain about 13 percent of the variation. The coefficient is not statistically significant. In the case of self-employed sector the explanatory power is still poorer.

The coefficient associated with education is positive and statistically significant in the case of casual labour, and negative and statistically significant in the case of informal establishments. The coefficient of experience is positive in these two sub-sectors but statistically significant in the case of informal establishments (at 10 percent level). The earnings of the skilled labour are considerably higher in the case of casual labour. The coefficient of the skill variable is positive and statistically significant. The influence of skill on the earnings appears to be negative in the case of the other two sub-sectors.

The coefficient associated with the migration dummy variable is positive only in the case of casual labour. The caste dummies are all negative for all the three sub-sectors, only in the case of Scheduled Caste dummy in casual labour, its coefficient is statistically significant. In view of this, nothing can be said of the influence of social communities on the earnings.

6.4 CONCLUSIONS

In this chapter, an attempt is made to explain the factors influencing the labour earnings. Some of the major conclusions from an analysis of these are
Table 6.2

SECTOR-WISE DETERMINANTS OF EARNINGS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Casual &amp; Domestic</th>
<th>Self Employed</th>
<th>Informal Establishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSTANT</td>
<td>681 8938</td>
<td>1070 22</td>
<td>18 0625</td>
</tr>
<tr>
<td>EDUCY</td>
<td>55 9223*</td>
<td>-0.4978</td>
<td>-0.3809*</td>
</tr>
<tr>
<td></td>
<td>[5.3407]</td>
<td>[0.4496]</td>
<td>[3.5466]</td>
</tr>
<tr>
<td>EXP</td>
<td>3 1189</td>
<td>-0.2922</td>
<td>0.007017**</td>
</tr>
<tr>
<td></td>
<td>[1.2834]</td>
<td>[0.1102]</td>
<td>[1.7874]</td>
</tr>
<tr>
<td>SKILLED</td>
<td>378 6104*</td>
<td>-84 6262</td>
<td>-4.9498</td>
</tr>
<tr>
<td></td>
<td>[4.6027]</td>
<td>[0.8501]</td>
<td>[1.1900]</td>
</tr>
<tr>
<td>MMGD</td>
<td>111 7091</td>
<td>-43 9661</td>
<td>-0.1142</td>
</tr>
<tr>
<td></td>
<td>[1.1472]</td>
<td>[0.5892]</td>
<td>[0.01911]</td>
</tr>
<tr>
<td>D1</td>
<td>-125 3536</td>
<td>-84 1346</td>
<td>-3.4481</td>
</tr>
<tr>
<td></td>
<td>[1.4304]</td>
<td>[0.5195]</td>
<td>[0.0221]</td>
</tr>
<tr>
<td>D2</td>
<td>-41 6334</td>
<td>-191 0573</td>
<td>-1.4654</td>
</tr>
<tr>
<td></td>
<td>[0.4933]</td>
<td>[1.1242]</td>
<td>[0.3296]</td>
</tr>
<tr>
<td>D3</td>
<td>-254 5005</td>
<td>-61 6479</td>
<td>-0.6024</td>
</tr>
<tr>
<td></td>
<td>[3.7129]</td>
<td>[0.4695]</td>
<td>[0.1370]</td>
</tr>
<tr>
<td>D4</td>
<td>-84 5683</td>
<td>-17 2632</td>
<td>-2.5250</td>
</tr>
<tr>
<td></td>
<td>[1.2253]</td>
<td>[0.1444]</td>
<td>[0.0870]</td>
</tr>
<tr>
<td>R²</td>
<td>0.6532</td>
<td>0.08692</td>
<td>0.1262</td>
</tr>
<tr>
<td>F</td>
<td>13 1866</td>
<td>0.28607</td>
<td>2.3650</td>
</tr>
<tr>
<td>D W</td>
<td>0.69</td>
<td>2.06</td>
<td>2.05</td>
</tr>
</tbody>
</table>

Significant at 1% level
Significant at 10% level
Education is found to be an important variable, positively influencing the earnings in the case of informal sector as a whole. The influence of experience appears to be negative, probably due to the difficulties in the measurement of the experience variable. But skilled labour get more earnings.

The coefficient associated with the sectoral dummies are positive in the case of self-employed and informal establishments, though statistically significant in the case of the former. This means that the earnings in the self-employed are higher than in the other sectors.

As for the different sub-sectors, the results are not uniform. Only the results are significant in the case of casual and domestic sector. Education is found to have a positive effect only in the casual sector similarly experience is found to be having a positive influence on earnings only in this sector.

Again, the earnings of the skilled workers and married migrants are found to be higher in the case of casual sector only.

With respect to the influence of caste on earnings, the coefficients of the caste dummies are all negative in all the three sub-sectors and not statistically significant. This points out that other variables like education and experience rather than social background influence earnings more.
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