

Chapter- V
A COMPARATIVE STUDY OF
FEMALE DOMESTIC AND BIDI WORKERS

An attempt has been made to study the comparative status of female domestic and bidi workers in Cooch Behar district. Particulars covering comparative earnings, weekly hours of work, hourly wage rates and range of hourly wage rates have been included for the study. Moreover, multiple regression analysis of the earnings of domestic and bidi workers has been undertaken. An economic model has also been developed for valuation of workingwomen as domestic help and bidi roller taking into account of present value of future earnings of the workers for decision-making purpose.

5.1 General Comparative Status of Domestic and Bidi Workers

A general comparison has been made between domestic and bidi workers as follows:

Table 5.1

Comparison of Domestic and Bidi Workers

Domestic Workers	Bidi Workers
a. They are time rate workers.	a. They are piece rate workers.
b. No special skills are necessary except cooking.	b. Special skills are required.
c. They work outside their house.	c. They work inside their house.
d. Wage is determined through the negotiation between employer and worker.	d. Wage is fixed through the bargaining between trade union and brand owner.

e.	They enjoy real wage apart from money wage.	e.	They enjoy only money wage.
f.	No enactment for the welfare of the workers exists.	f.	Appropriate enactment for the workers already exists.
g.	Trade union almost does not exist.	g.	Trade union exists.
h.	They can not concentrate fully on own household task and childcare activity.	h.	Full concentration on own household task and childcare activity can be given.

5.2 Specific Comparative Status of Domestic and Bidi Workers

So far as the specific comparative status of female domestic and bidi workers is concerned, the comparative earnings, weekly hours of work, hourly wage rate and range of hourly wage rates of domestic and bidi labourers have been studied.

The sample workers had been asked to provide for the information on wage rates, the hours of work and income in cash as well in kind that they received in concerned occupation. The domestic workers specified the average number of days they worked in a month as well as average hours of served in a week. Besides, the bidi workers stipulated average amount of work they had at each point of time and also their average speed at each task. These informations had been used for computing total monthly income of individual worker including a cash equivalent of payments in kind, the hourly rate of payment in cash and kind received by the worker in each point of time.

[A] Comparative Earnings

In table 5.2 the monthly earnings of female domestic and bidi workers are compared. Whether mean earnings or modal earnings are taken into consideration, the female bidi workers were definitely better off than domestic workers and the modal income of bidi workers was higher than their mean income.

Table 5.2

Monthly Earnings of Domestic and Bidi Workers

Occupation	Monthly Earnings (Rs.)									Total	Income (Rs.)		
	Below 150	151- 200	201- 250	251- 300	301- 350	351- 400	401- 450	451- 500	Above 500		Mean	Mode	Standard Deviation
Domestic Workers	38	110	12	09	13	10	05	03	0	200	201.42	170.83	75.41
Bidi Workers	0	0	0	14	15	07	12	09	143	200	467.34	472.72	78.87
Total	38	110	12	23	28	17	17	12	143	400	315.10	472.45	153.18
Cumulative Frequency	38	148	160	183	211	228	245	257	400				

[B] Comparative Weekly Hours of Work

In table 5.3 weekly hours of work of domestic and bidi workers are compared. The mean weekly hours of work for bidi workers were more than the domestic workers. The mean weekly hours of work for bidi workers was 50.54, while it was 46.81 hours for domestic workers.

Table 5.3

Weekly Hours of Work for Domestic and Bidi Workers

Occupation	Weekly Hours of Work					Total	Mean
	21-30	31-40	41-50	51-60	61-70		
Domestic Workers	34	47	19	56	44	200	46.81
Bidi Workers	06	25	20	41	108	200	50.54
Total	40	72	39	97	152	400	49.87

[C] Comparative Hourly Wage Rate

Table 5.4 shows the mean hourly wage rates and their standard deviation for female domestic and bidi workers. There was statistically significant difference between the mean hourly wage rates of female domestic and bidi workers. The mean hourly wages rates for the bidi workers were almost twice than the mean hourly wage rate for the domestic workers.

Table 5.4

Hourly Wage Rates for Domestic and Bidi Workers

Occupation	Frequency	Hourly Wage Rates	
		Mean	Standard Deviation
Domestic Workers	200	1.66	0.62
Bidi Workers	200	3.28	1.24
Total	400	2.56	0.98

[D] Comparative Minimum and Maximum Value of Hourly Wage Rates

Table 5.5 reveals a very wide range of hourly rates. The difference between the highest and lowest hourly wage rates was largest in case of bidi workers. However, it was found that for each occupation, wage rates could differ according to age and relative level of experiences.

Table 5.5

Range of Hourly Wage Rates for Domestic and Bidi Workers

Occupation	Minimum Value (Rs.)	Maximum Value (Rs.)
Domestic Workers	0.76	2.08
Bidi Workers	1.07	3.19
Total	0.83	2.94

5.3 Regression Analysis of Earnings of Domestic and Bidi Workers

An attempt to identify the factors determining the earnings of female domestic and bidi workers in Cooch Behar district has been made by employing multiple regression analysis on a cross section data. The model offering the highest explanatory power is linear and of the form:

$$Y = a_0 + a_1 E + a_2 A + a_3 W + a_4 C + e$$

Where,

Y= annual earnings of female workers

E= educational level of workers

A= age of workers

W= a proxy for total work experience of workers, measured by age in years

C= a dummy variable equal to 1 if belonging to schedule caste or schedule tribe, 0 if otherwise

e= error term

The selected equation for a sample of 200 each of two groups, namely, female domestic help and bidi workers considered, R^2 was always less than 0.15 for both categories of workers. The equation explains 11 per cent

variation in earnings of domestic workers and 14 per cent variation in earnings of bidi workers. Fitting the relation between the dependent variable and each of the exogenous variables separately yielded unsatisfactory result in each case. It may be explained that for the difference in wage rates available to each worker, none of the standard explanations were applicable. Even, if the workers were better experienced, it had no definite impact on the wage rate they earned. The paying capacity of the employer as an explanatory variable also proved unsatisfactory. Besides, the age and caste factors in no way affected the earnings of the workers in the informal sector.

5.4 Economic Model for Valuation of Domestic and Bidi Workers

The value of human resource provides comprehensive information on human assets. It is most fundamental of all available resources and non-human resource can be made useful only through human resource (Kolay 1996). The human capital is regarded as an asset and duly recorded, but non-human capital being intangible is not recorded and also ignored. Though computation of non-human capital is still possible because its market price which reflects the present value and future earning. Since the human capital is not traded, its value can be measured based on average data of homogeneous group of human resource.

The several models have been initiated by the experts in the field of human resource valuation. They have developed appropriate methodology and procedure for finding out the cost and value of human resource to the organisation. Brummet, Flamholtz and Pyle (1968,1969), Mc Rae (1974), Gustafson (1974) and others have advocated that expenditure incurred by an organisation for the acquiring, training and development of the individuals may be used as the value of the human being using cost as the value surrogate on the assumption that an individual recruited today is likely to continue sometime in future and training imparted to them may be linked up with future benefits potentials to the organisation. Flamholtz (1969,1973), Likert and Bowers (1969), Friedman and Lev (1974), Gustafson (1974), Flamholtz and

Kaumeier (1980), Flamholtz and Geis (1984) found that current cost measures are not directly available to represent the value surrogate for the organisational human resource and they adopted replacement cost as a surrogate measure of market value. This approach comprises of estimating the costs of replacing organisational existing human resource and indicates the current value of organisational human resource. This approach may be regarded as a good surrogate for the economic value of the asset in the sense that market considerations are essential in reaching a final figure. Such a final figure is also generally intended to be conceptually equivalent to a notion of person's economic value (Flamholtz 1974).

Hekimian and Jones (1967) have advocated the concept of opportunity cost for the valuation of organisational human resource. According to them, human resource value can be measured through a competitive bidding process within the organisation based on the concept of opportunity cost. The major stress on this model has been on proper allocation of the human resource among different departments within an organisation. This model has been based on the marginal productivity of employee in different assignments of the organisation and it leads to optimal allocation of employee within the organisational framework.

Hermanson (1964) has proposed two approaches to value the organisational human resource. Both the approaches assume that human resource being the prime resource, governs all other physical and financial resources to manage the business effectively and as such the credit for organisational profitability performance goes to the human resource (Kolay 1996).

Lev and Schwartz (1971) have developed a model on the use of economic concept of human capital. They have suggested the use of an individual employee's future compensation as a surrogate of his value. According to them, the value of human capital embodied in a person of age x is the present value of his remaining earnings from employment.

Flamholtz (1971) has proposed normative economic model for valuation of human resource. His model aims at measuring an individual employee's

value to the organisation to which he belongs, based on economic principles. Human resource value is considered in tune with the roles they play that is dependent on the service state they occupy and likely movement of employees on different service states over the years on an individual basis is estimated probabilistically. According to him, present value of likely services from an individual relevant to different service states, the individual occupies, is considered as his value.

Giles and Robinson (1972) have hypothesised that the goodwill of a firm in terms of supernormal earnings is attributable to its human resource. Therefore, according to them, the total value of organisational human resource is nothing but the value of goodwill of the firm as assessed by the relative price-earning ratio of the organisation in comparison with the industry average.

Juggi and Lau (1974) have suggested the valuation of human resource on a group basis to have greater reliability of the estimates of career movement and the likely exit and consequently, the value of the human resource.

The model proposed by Sadan and Auerbach (1974) based on the present value of future wages payable is considered as human resource value. The future wages have been estimated based on stochastic model of employee movement on to different states, each state being characterised by a number of state variables like age, salary level etc.

Friedman and Lev (1974) have proposed a model, which is based on the premises that wage differentials between firm and industry average as the return on investment in welfare provisions and training and development of human resource, the present value of wage differentials has been considered as human resource value.

Myers and Flowers (1974) have developed a model based on the premises that employee attitude is the most important factor that governs the productive behaviour of employees on the job. It has been considered that the employee attitude index multiplied by the wages payable should reflect the likely benefits as against wages payable as the cost and the gap between the benefits and the cost should reflect an individual's value.

Morse (1975) has suggested that present value of likely future wages payable, based on the possible employee movement on to different service states, age category and wage classifications, has been considered as the value of human capital (rather than human asset) of the organisation.

So far as the behavioural models of human resource valuation are concerned, Likert's (1967) model aims at to establish through psychosocial test results how a set of causal variables reflecting the management system adopted by an organisation determine the appreciating or depreciating condition of the human organisation, as reflected by a set of intervening variables, which in turn likely to result in the achievement of end result variables overtime. Investment in human resource as the basis of human resource value has been proposed to be amortized over the years in tune with the condition of human organisation.

Other surrogate measures as proposed by Powell and Wilkens (1973), Gambling (1974), Mahoney (1974), Milkovich and Weiner (1977) and Lapointe (1983) reflect in general evaluation of subordinates attributes and performance through ranking, rating, scaling or scoring. Suitable information system on human resource including certain control ratios on a periodic basis as decision support system to management or for incorporation in annual reports.

The models advocated by the proponents in the field of human resource valuation, some of which are cost based, following historical, replacement or opportunity cost principles, some based on economic principles of value while some others are based on psychosocial measures of organisation a human resource. Taking lead from the analysis of existing human resource valuation models and the extent of their relevance to the human resource value measure, the attributes of a need based human resource valuation model for the workers in the informal sector have been evolved. The models already developed by the different experts are based on valuation of human resource in formal sector. Although there have been a good number of empirical studies in the informal sector carried out in selected regions in different parts of our country and abroad, but no process of value measurement of the workers in the sector

has been undertaken. The objective underlying valuation of human resource in the informal sector is to facilitate effective and efficient management of the workers. The sample for the study, which was randomly selected from 400 households in Cooch Behar district, has been considered for valuation purpose and the size of the sample of female domestic and bidi workers being 200 each.

The Valuation Model:

The proposed model is based on the following premises:

- (a) Wage is a function of average length of expected employment alone.
- (b) Wage is estimated at market average wage rate.
- (c) There is no provision for revision of wage.
- (d) Only money wage is considered for valuation purpose.
- (e) There is no possibility of a worker leaving the sector before death or voluntary retirement.
- (f) The average rate of interest on saving deposits or average cost of capital¹ rate is used for capitalizing the present value² of future earnings of worker.

Based on the above promises the proposed model has been built up as follows:

$$V = \left[\sum_{n=1}^L \frac{W_n}{(1+R)^n} \right]$$

Where,

V= human capital value of a worker

W_n = annual wage of a worker

R= discount rate applicable to the worker

L= length of expected employment

The proposed model has been implemented on female domestic and bidi workers picked up randomly from 400 households of Cooch Behar district through extensive questionnaire survey. It is observed from the survey that average annual wage of the female domestic workers was Rs 2,417, while

average annual wage of female bidi workers was Rs 5,608. It is further observed that average length of expected employment for domestic workers was 36 years, while it was 28 years for bidi workers. The average length of expected employment was found from a structured questionnaire survey of female domestic and bidi workers who had taken voluntary retirement from the informal sector. The discount rate was taken as 4.6 per cent for domestic workers as it is the average rate of interest on savings deposit. The rate of interest on savings deposit from 1970-71 to 2003-2004 has been considered for computation of average rate. While the discount rate was found to be 12 percent for bidi workers as it was the average cost of capital rate of the bidi industry from which the samples were selected. Applying the proposed formula, the present value of 200 female domestic workers was equal to Rs 84,27,044, whereas the present value of 200 female bidi workers was equal to Rs 89,54,854 being the value of human capital of two groups of workers respectively (Refer to present value of annuity of Re1 ³ table in annexure).

This model can also be applied to the workers engaged in different activities in the informal sector with a few modifications, if necessary. The discount rate for the workers engaged in service rendering activities like domestic help should be taken as interest rate of savings deposits as it is the opportunity cost ⁴ of the employer, while the discount rate for the workers engaged in manufacturing activities like bidi making should be taken as minimum rate of return on investment, often termed as cost of capital of the organisation where they have been employed. The proposed valuation model will obviously help in formulation of minimum wage for the workers in the informal sector based on their needs, which is an urgently required strategy for poverty removal.

The social benefit of the model is that it will serve social purpose by identifying human resource as a valuable asset which facilitate in prevention of misuse and under use of human capital and rising maltreatment by the employers, efficient allocation of resources in the economy, effecting economy and efficiency in the use of human capital and proper understanding of the evil effects of avoidable labour unrest on the quality of internal human resources in

the informal sector. This valuation will obviously influence the workers behaviour, attitude and thinking in the desired direction. Since the success of the economy very much depends on the build up of quality workforce at all levels, there ought to be a generally accepted measurement criteria for valuation of human capital in the informal sector, which would prove to be an impediment towards its wider adoption.

Our approach suggests the need for following extensions:

- (a) Present value estimates may be extended to all categories of workers in the informal sector.
- (b) Depreciation on human capital may be accounted for.
- (c) Effect on revision of wage may be incorporated.
- (d) Real wages may be taken into account for valuing human capital.

5.5 Summary

The comparative study of female domestic and bidi workers reveals that earnings of bidi workers are more than the domestic workers. The average weekly hours of work for bidi workers are also higher compared to the domestic worker. As far as the hourly wage rates are concerned, there is statistically significant variation between the mean hourly wage rates of female domestic and bidi workers. Moreover, the difference between the highest and lowest hourly wage rates is largest in case of bidi workers.

The multiple regression analysis of earnings of domestic and bidi workers in Cooch Behar district discloses that R^2 is always less than 0.15 in both cases. It is found that the educational level, age and caste factors do not affect the earnings of the workers in the informal sector.

An economic model for valuation of human resource in the informal sector has been developed taking into account of present value of future earnings of the workers. It is observed that the present value of domestic workers is Rs 84,27,044, while the present value of bidi workers is Rs 89,54,854. This model will facilitate in formulation of minimum wage for the workers in the sector. The benefit of the model is that it will serve purpose by

identifying human resources as valuable asset of the society, which helps in prevention of misuse and under use of human resource in the informal sector.

Notes

1. It is minimum acceptable rate or the required rate of return on funds committed to the project.
2. The price a buyer is willing to pay for or a series of future benefits, the term generally being associated with a formal computation of the estimated worth in the future of such benefits from which a discount or compensation for waiting is deducted.
3. The computation of present value of annuity of Re1 can be made from the following general form:

$$P = A \left[\frac{(1+i)^n - 1}{i} \right]$$

Where P is the present value of annuity, A is a constant payment or receipt each year and $(1+i)^n$ is the present value factor of an annuity for n period at i rate of interest.

4. It is the rate of return foregone on the next best alternative investment opportunity of comparable risk.