Chapter - VI

NEXUS BETWEEN POVERTY, UNEMPLOYMENT AND MIGRATION

6.1 Issues about poverty and its associates

Poverty is usually identified to be associated with unemployment. Skepticism about the reliability of the reported low levels of unemployment in developing countries gave rise to the controversy about the association between poverty and unemployment. In the rural areas of developing countries, while poverty is more widespread, estimates of unemployment yield low figures. This may be due to the low earnings of the employed. There are some who are idle but rich. Similarly it is common to have employment and remain poor also. There are also different types and degrees of employment and unemployment. It is possible to be employed, but not continuously as in the case of agricultural labourers. It is also possible to be employed but doing little work. Due to adverse location, job conditions and low wages, some may be poor but prefer to remain unemployed.

As per the Sixth Five Year Plan (1980-85) document[1] the latest estimate of the rate of unemployment (1977-78) is less than 9 per cent of the workforce while the proportion

below poverty line is 43 per cent of population. In other words, on a typical day in 1980, nearly 21 million persons in India were seeking and available for work but unable to find it. On the other hand, the number of people living below poverty line in 1980 can be placed at nearly 310 million. This shows that poverty in India is much more widespread than unemployment.

Dandekar and Rath[2] presumed a strong association between poverty and unemployment. They believed that poverty was mainly due to inadequate work. They did not consider the time-criterion to measure unemployment. They solely relied on income-measure of unemployment. As a result distinction was not made between poor and unemployed. The study made by Ranjit Sau[3] based on NSS data concluded that growth, employment and elimination of poverty, rather than falling in a straight line, are opposed to each other. He observed a positive and significant association between incidences of poverty and unemployment. Dantwala[4] also concurred with this view point. Pravin Visaria asserted in his recent study[5] that there is a clear inverse association between monthly per capita consumption expenditure levels and their respective incidence of unemployment by person-days. His study revealed that with some exceptions, the labourforce in the bottom deciles of households clearly suffer from higher incidence of unemployment.

There are others who feel that the relationship between poverty and unemployment is not that simple. They feel that there is a possibility of poverty and unemployment to be related positively. However unemployment is an urban phenomenon and also that of the middle class. The very poor cannot afford to be unemployed for long. They must obtain a source of livelihood even if their wages are meagre.

Raj Krishna observes that poor are more numerous than idle and idle are more numerous than willing and only a fraction of idle are willing to work more. Hence all poor persons suffering from a deficiency of consumption may not be unemployed either in the willing sense or the idle sense; these are the working poor. And all unemployed persons (willing or idle) may not be poor. These poverty and unemployment vectors are not directly comparable; for the poverty is the ratio of poor households and unemployment is the ratio of unemployed person-days. Hence factors like the cut-off points used for the definition, the productivity of work and the dependency ratio qualify the relationship between poverty and unemployment.[5]

Amartya Sen prefers to keep overty as a concept distinct from unemployment, without of course assuming them to be independent of each other. Employment is an important means of generating and distributing income, but a person can be rich,

yet unemployed, if he has other sources of income, and also a person can work very hard and shall be very poor. Poverty is a function of technology and productivity, of ownership of the means of production and of exploitation and social arrangements for production and distribution. To identify unemployment with poverty seems to impoverish both notions, since they relate to somewhat different categories of thought.[7]

NSS data based estimates[8] of unemployment present a low rate of overt unemployment, but a very high rate of labour-force participation in rural India. This indicates to the existence of severe underemployment in the rural areas when a large proportion of the population subsists around the poverty line.

Todaro[9] observes that it is wrong to assume that every one, who does not have a job is necessarily poor, because there may be many who are voluntarily unemployed because of high expectations. Similarly there are many like artisans who may work full time in terms of hours per day, but may, nevertheless have very little income. Such people are by Western definition fully employed, but often they are still very poor.

Yet another recent study[10] has shown that there is relatively little open unemployment in rural areas although in some localities seasonal unemployment can be severe. Growing poverty is not necessarily associated with growing unemployment.

Indeed it is noteworthy that in none of the empirical studies of Asia[11] was unemployment cited as a prominent cause of poverty.

Lakdawala[12] finds in many states in India that low standards of living of landless labourers are associated with fairly low unemployment rates. This is a rather unexpected phenomenon. That is to say, poverty and unemployment instead of being positively correlated, are negatively correlated, i.e., poor regions in terms of development showed low unemployment rates. One reason may be that in poorer conditions, the respondent's own perception of gainful unemployment might be very exaggerated. Besides unemployment, average earnings and dependency ratio also influence poverty incidence. Hence Bardhan[13] feels that the gap between the incidence of poverty and unemployment is bound to arise, as the unemployment is not the only cause of poverty. Mishra[14] is of the opinion that a probe into the institutional perspective of the rural economy may provide an answer to the question as to, why all the poor are not necessarily unemployed. Sarveswara Rao[15] observes that the proportion of labour time utilised increases with poverty with the implication that the equation between employment and poverty does not seem to hold good, because more members of the poor families work and they work for more days in the year and yet they remain poor. K.K. Sinha[16] regards that growing poverty is not necessarily associated with growing

unemployment. The people at the bottom of consumption scale have jobs although they are always on the alert for more rewarding opportunities. Report of the Block Level Plan for Chhotaudepur[17] points out that apparent unemployment is not high for poorer people. Possibility of unemployment is mitigated by migration to a large extent. Thus open unemployment and poverty are not always related. Dantwala[18] also feels that most of the involuntarily unemployed would be poor and all the employed are not necessarily non-poor. The poor cannot afford to remain idle. They take up whatever work comes their way, however short may be its duration and however meagre the remuneration. Nonetheless, by the definition used in employment statistics they are classified as employed. J.N. Sinha[19] argues that the relationship between employment and income (or in other words unemployment and poverty) may take any form depending on the assumption about the earnings per manday. Poverty and unemployment do not bear unique relationship. They measure different phenomena in diverse socio-economic contexts. Unemployment accounts for a small part of the incidence of poverty. This is true at the group specific, as well as all-India level.

From the foregoing discussion what is obvious is that one cannot neatly frame poverty, unemployment and allied issues like migration, into a linear relationship. However, in

order to identify the type and nature of relationship between them, a further probe into their causes and consequences of poverty, unemployment and migration is attempted here.

6.2 Poverty, unemployment and migration by socio-economic categories

The two villages of our study belong to the same agro-climatic region. Due to their inherent differences in their socio-economic profiles, the incidence of poverty, unemployment and migration do not appear to be of the same magnitude. Table 6.1 shows that the incidence of poverty in the first village is much higher than in the second village.

Table 6.1

Incidence of poverty, unemployment and migration

Village	% of persons below poverty line to population	% of unemployment by person-days to available persondays	% of migrants to persons in the labourforce
1	2	3	4
1. Silandagudi	63.42	32.31	15.83
2. Siriyur	33.06	46.63	22.91

Source: The household survey 1981-82.

In the case of the second village the incidence of unemployment is higher than in the first village. Similarly incidence

of migration is also higher in the second village than in the first village. This indicates that in the first village, though people work for more number of days, the consumption expenditure level has not increased sufficiently to lift most of them from their undernourishment. This results in higher proportion of people being reckoned as poor. However, the incidence of migration has its impact on the unemployment incidence. But for the migration the unemployment incidence would have been more. The lower incidence of unemployment in the first village can partly be attributed to the type of migration resorted to by the labourforce of this village. As most of the migrants are long distance urban migrants engaged in service sectors, the number of days unemployed will be considerably lower for them.

The caste-group wise incidences of poverty, unemployment and migration as presented in Table 6.2 does not reveal any significant association between poverty, unemployment and migration for different caste groups. In the first village the dominant caste group is reporting higher incidences of poverty, unemployment and migration. In the second village the secondary group shows higher poverty, unemployment and migration. In the first village the dominant group is mostly composed of small and marginal farmers and agricultural labourers. The secondary group of the second village go over to neighbouring Tanjore district for their primary

occupation of toddy tapping. This is a seasonal job. Further the dominant community in the second village is mainly constituted by a good proportion of medium farmers with land holdings exceeding 2 hectares. So they face less incidence of poverty and have less need for migration.

Table 6.2

Percentage incidence of poverty, unemployment and migration for different caste groups

Village / Caste groups	Incidences of poverty	Incidence of unemployment	Incidence of migration
1	2	3	4
1. Silandagudi			
a) Dominant	63.45	40.98	19.79
b) Secondary	15.38	23.39	15.79
c) Tertiary	31.48	28.53	8.33
d) Scheduled Castes	-	-	-
e) All	63.42	30.31	18.09
2. Siriyur			
a) Dominant	35.64	40.66	6.00
b) Secondary	44.44	44.41	52.17
c) Tertiary	41.37	29.30	0.00
d) Scheduled Castes	39.62	52.66	44.53
e) All	33.06	46.33	22.51

Source: The household survey 1981-82.

From these it appears that the incidence of poverty, unemployment and migration and their interaction is a matter of the size of the land holding and nature of occupation rather than the caste distinctions.

It is interesting to observe the incidence of educational attainment on poverty, unemployment and migration (Table 6.3).

Table 6.3

Percentage of poverty, unemployment and migration for different groups of educational attainment levels

Village / Level of educational attainment	Incidence of poverty by M.P.C.E.	Incidence of unemployment by persondays (usual status)	Incidence of migration among labourforce
1	2	3	4
1.Silandagudi			
a) Illiterate	64.50	44.47	15.44
b) Primary school level	64.29	31.62	17.64
c) Middle school level	58.46	25.89	36.36
d) Secondary & above	54.54	1.13	66.67
All	63.42	53.31	18.85
2.Siriyur			
a) Illiterate	37.72	49.24	26.39
b) Primary school level	29.90	32.76	17.02
c) Middle school level	2.50	31.07	25.00
d) Secondary & above	25.00	29.67	16.67
All	33.06	46.33	22.51

Source: The household survey 1981-82.

M.P.C.E. - Monthly per capita consumption expenditure on food.

While educational attainment has a very marginal, if at all, effect on poverty situation it has distinct relationship with unemployment and migration especially of the urban orientation. As the level of educational attainment rises the incidence of unemployment decreases. This is seen in the case of both the villages. The first village where migration is of more urban orientation shows that migration increases with the level of educational attainments. In the second village where migration is rural to rural and seasonal, educational attainment does not have that clear relationship.

Table 6.4 presents the incidence of poverty, unemployment and migrationby economic classes. In the first village, the highest incidence of poverty and unemployment is seen in the case of agricultural labourers. For the same group the incidence of migration was the lowest. Similarly the lowest incidence of poverty and unemployment is found in the case of medium farmers. Thus looking at the populations groups by these economic categories, and ignoring the category of artisans whose number is too small, it is seen in the case of the village that at group level, there is coincidence of poverty and unemployment. This however does not bear out in the case of the second village.

Table 6.4

Percentage incidence of poverty, unemployment and migration for different economic classes

Village / Economic classes	Incidence of poverty by K.P.C.E.	Incidence of unemployment by person-days (usual status)	Incidence of migration in labourforce
1	2	3	4
1.Silendarpudi			
i) Marginal farmers	60.13	30.40	17.31
ii) Small farmers	51.65	39.14	32.14
iii) Medium farmers	28.57	22.65	23.00
iv) Agricultural labourers	77.30	43.48	12.00
v) Artisans*	100.00	29.09	45.45
vi) Others	41.46	33.12	13.04
All	65.42	38.31	19.93
2.Siriyur			
i) Marginal farmers	19.05	46.03	15.36
ii) Small farmers	44.62	49.78	5.56
iii) Medium farmers	21.79	49.75	3.92
iv) Agricultural labourers	40.74	54.71	33.33
v) Artisans*	0.00	28.91	0.00
vi) Others	49.33	40.75	64.10
All	33.06	46.33	22.51

Source: The household survey 1981-82.

* Only 3 households are in this category.

The percentage distribution of population, unemployment and migration for different class intervals of monthly per capita consumption expenditure as presented in Table 6.5 does not show any significant trend for ~~for~~ either of the villages. It is generally believed that as we go up in the higher consumption scale, the incidence of unemployment decreases. This phenomenon has been observed by Pravin Visaria[20] in his study of NSS data for Gujarat and Maharashtra. Such a trend is not noticeable from the surveyed villages of this study.

In the first village there is very high incidence of poverty with relatively low incidence of unemployment, whereas in the second village lower poverty incidence was coupled with relatively high incidence of unemployment. Hence relation between poverty and unemployment cannot be specified in clear-cut terms.

The households in the two survey villages are further classified into eight categories i.e., i) poor, ii) unemployed, iii) migrant, iv) poor and unemployed, v) poor and migrant, vi) unemployed and migrant, (vii) poor, unemployed and migrant, and lastly viii) non-poor, fully employed and non-migrant. For the purpose of this classification, any household reporting 91 or more days of unemployment per labourer in the household were reckoned as households reporting unemployment.

Table 6.5

Percentage distribution of population, incidence of unemployment and migration for different monthly per capita consumption expenditure intervals.

Villages / Monthly per-capita consumption expenditure in Rs.	% of population	% of unemployment by person-days (usual status)	% of migration in labourforce
1	2	3	4
1.Silandaguli			
Less than Rs.16	00.00	00.00	00.00
17-32	8.25	54.19	15.33
33-48	25.73	46.71	13.46
49-64	30.34	36.63	22.39
65-80	20.39	29.26	28.57
81-96	8.01	45.95	10.53
97-112	4.61	21.81	23.08
More than Rs.112	2.67	52.99	11.11
All	100.00	65.89	19.35
2.Sirigur			
Less than Rs.16	00.00	00.00	00.00
17-32	00.00	00.00	00.00
33-48	13.17	41.25	9.52
49-64	25.49	43.76	25.21
65-80	19.33	51.27	12.12
81-96	19.61	54.61	20.00
97-112	8.40	46.77	21.35
More than Rs.112	14.01	43.99	56.25
All	100.00	47.57	25.54

Source: The household survey 1981-82.

It amounts to one-third of the total number of days in a standard person-year. In the rural areas employment for a period of 6 months is sufficiently large. Moreover this cut-off line gives a reasonable number of households to be above this arbitrary cut-off point. These prompted us to adhere to this norm to classify the households as unemployed and fully employed. To identify poor household the monthly per capita consumption expenditure of R.64 was used as out off point. Irrespective of the duration, and distance, if a household reports that the labourforce is employed outside village, such household is reckoned as migrant household. Table 6.6 shows that in both the villages, the proportion of "only unemployed" households is the highest. Next comes the "poor and unemployed". The number of households who are poor with all the other association (except unemployment) is larger than the number of households who are "poor and unemployed". Thus, to say that all the unemployed households are poor households, may not be valid.

Table 6.6

Classification of households by incidence of poverty, unemployment and migration.

Village / Category of households	No.of households	Percentage of household to total
1	2	3
1. Nilendoguddi		
a) Poor	8	10.39
b) Unemployed	21	27.27
c) Migrant	7	9.09
d) Poor and unemployed	20	25.97
e) Poor and migrant	6	7.80
f) Unemployed and migrant	4	5.19
g) Poor, unemployed and migrant	9	11.69
h) Non-poor, fully employed and non-migrant	2	2.60
All	77	100.00
2. Siriyur		
a) Poor	3	4.17
b) Unemployed	34	47.21
c) Migrant	1	1.39
d) Poor and unemployed	12	16.67
e) Poor and migrant	2	2.78
f) Unemployed and migrant	12	16.67
g) Poor, unemployed and migrant	4	5.56
h) Non-poor, fully employed and non-migrant	4	5.56
All	72	100.00

Source: The household survey 1981-82.

6.3 Factors determining poverty, unemployment and migration.

Multiple regression analysis was attempted to identify the factors that affect the level of per capita consumption expenditure, number of days unemployed per labourer in a year and the number of migrants in the household. For the purpose of this analysis, all the households in the two villages were taken together. These 149 households were sub-grouped into three sets i.e., (a) poor households (62) (b) non-poor households (87) and all households (149). The following ten variables were considered:

x_1 - Annual per capita consumption expenditure on food.

x_2 - Number of days unemployed in the year per labourer in the household.

x_3 - Number of migrants in the household

x_4 - number of persons in the household.

x_5 - Number of female labourers in the household.

x_6 - Number of casual labourers in the household.

x_7 - Size of land holdings in hectare.

x_8 - Labourforce participation ratio

x_9 - Dependency ratio

x_{10} - Literacy ratio.

It is clear from the list of variables presented above that many of these factors are interdependent, are either being a strong associate or a derivative of the other. However,

since choice is also to be made about the form in which a variable should be expressed, the entire list was considered initially.

The matrices of correlation coefficients are shown in tables 6.7, 6.8 and 6.9 for poor, non-poor and all households respectively. These tables indicate that in the case of all the sets, i.e., poor, non-poor and all households, the incidence of migration is significantly associated with the number of persons in the family, the size of the land holding and literacy ratio. Similarly the size of the land holding is highly correlated with the literacy ratio. Hence in the rural areas land as an important form of asset, influences migration and education considerably. In the case of poor and non-poor households unemployment is associated with the size of the land holding. Better off households in terms of land holding report greater unemployment. Big families are more migration prone. There is significant association between land size and literacy ratio. As expected in the case of families with higher dependency ratio, the literacy ratio is higher. This shows that the possession of big holdings result in relative affluence which induce more children in the family to be sent to school. This enhances the literacy ratio of the household. Subsequently, the dependency ratio of the household is also increased.

Table 6.7

Correlation coefficient matrix for poor households

Variables	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}
x_1	-									
x_2	-0.1323	-								
x_3	0.0510	0.1976	-							
x_4	0.0410	0.1476	0.7308**	-						
x_5	-0.0659	0.0096	0.3599**	0.5131**	-					
x_6	-0.0857	0.1518	0.3348**	0.1676	0.2059	-				
x_7	-0.0573	0.2490*	-0.3591**	-0.2373*	-0.1319	0.0888	-			
x_8	-0.0454	0.0252	0.2034	0.1525	0.7897**	0.3825**	-0.0769	-		
x_9	-0.0069	0.0859	0.1067	0.0269	0.2041	0.6252**	0.3699**	0.3632**	-	
x_{10}	-0.1612	-0.1694	-0.3246**	-0.1969	0.1257	0.2117	0.8124**	0.1997	0.3333**	

** Significant at one per cent level

* Significant at five per cent level

Table 6.8

Correlation coefficient matrix for non-poor households

Variables	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}
x_1										
x_2	-0.2391**									
x_3	-0.2213*	0.2072*								
x_4	-0.2292*	0.2557*	0.6372**							
x_5	-0.1243	-0.1126	0.2077*	0.3721						
x_6	-0.0347	-0.1317	0.2194*	0.0526	0.3735**					
x_7	0.0230	0.2442*	-0.3276**	-0.635	0.0040	0.0405				
x_8	-0.0703	-0.1607	0.0610	0.0907	0.9107**	0.3486**	0.0104			
x_9	0.0331	-0.1655	0.2479*	-0.2158*	0.1483	0.6430**	0.1553	0.2283*		
x_{10}	0.0541	0.1665	-0.3597**	-0.1365	0.1284	0.2004	0.7216**	0.1451	0.2591*	

** Significant at one per cent level

* Significant at five per cent level

Table 6.9

Correlation coefficient matrix for all households

Variables	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}
x_1										
x_2	-0.2275**									
x_3	-0.1698*	0.1953*								
x_4	-0.1239	0.2069*	0.6821**							
x_5	-0.0730	-0.0691	0.1764	0.4026**						
x_6	-0.0169	-0.0349	0.1533	0.0719	0.3365**					
x_7	0.1290	0.1428	-0.4931**	-0.1598*	0.0941	0.1806*				
x_8	-0.0817	-0.1611	0.0192	0.0552	0.8714**	0.4100**	0.1383			
x_9	0.0957	-0.0905	-0.2345**	-0.1557	0.1911*	0.6465**	0.3157**	0.2923**		
x_{10}	0.1230	0.0375	-0.4917**	-0.1751	0.1908*	0.2750**	0.8792**	0.2434**	0.3660**	

** Significant at one per cent level

* Significant at five per cent level

In the case of the set of "poor households" poverty, unemployment and migration are not significantly associated with each other. However, in the case of the sets of 'non-poor' and 'all households', the annual per capita consumption expenditure is highly associated with the incidence of unemployment and migration. Further in these two sets, level of unemployment is significantly determined by the number of migrants and the number of persons in the family.

For the multiple regression analysis, initially the annual per capita consumption expenditure on food was taken as the dependent variable (x_1). The other remaining nine variables were taken as independent variables. The interrelated variables among the independent variables were dropped to avoid multi-collinearity. Two or three combinations of independent variables were chosen for each set, each combination representing a group of uncorrelated (not significantly correlated) independent variables. These combinations for each group are shown in the following equations:

(a) <u>Poor households</u>

$$x_1 = a - b_2x_2 - b_4x_4 + b_5x_5 + b_6x_6 + b_{10}x_{10} \quad \ldots(1)$$

$$x_1 = a - b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 \quad \ldots(2)$$

$$x_1 = a - b_2x_2 - b_3x_3 + b_8x_8 + b_{10}x_{10} \quad \ldots(3)$$

(b) Non-poor households

$$x_1 = a + b_2x_2 + b_5x_5 + b_{10}x_{10} \quad \ldots(1)$$

$$x_1 = a - b_4x_4 + b_6x_6 + b_7x_7 \quad \ldots(2)$$

(c) All households

$$x_1 = a + b_2x_2 - b_5x_5 + b_7x_7 \quad \ldots(1)$$

$$x_1 = a - b_4x_4 - b_6x_6 \quad \ldots(2)$$

$$x_1 = a - b_4x_4 + b_6x_6 \quad \ldots(3)$$

Table 6.10 presents the results of multiple regression analysis for the poor set. Out of the three equations tried, the second equation gives relatively significant and higher value of R^2. This equation was considered with the following four independent variables: (i) the number of persons in the household (ii) the number of female workers in the household (iii) The number of casual labourers in the household and (iv) the size of land holding.

Out of thesefour independent variables, the number of persons in the household and the size of the land holding are statistically significant. The results of this second equation indicate that if the size of the household increases by one person, the annual per capita consumption expenditure on food will decrease by Rs.32. This significant negative relationship between per capita consumption expenditure and the number of persons in the family is understandable. If the size of the land holding increases by one hectare, the per capita

Table 6.10

Multiple regression results for poor households-dependent variable: Annual per capita consumption expenditure on food

Independent Variable		RC	Estimated values of regression coefficients in equations		
			I	II	III
1		2	3	4	5
Constant		a	749.562	726.343	657.179
Number of days unemployed in a year per labourer	x_2	b_2	-0.2742 (0.9552)	-	-0.3992 (1.3442)
Number of persons in household	x_4	b_4	-26.9533** (5.1780)	31.7260** (4.0672)	-21.7664** (2.3529)
Number of female workers in household	x_5	b_5	0.9231 (0.3777)	5.87756 (0.2786)	-
Number of casual labourers in household	x_6	b_6	34.4267 (1.7013)	32.8553 (1.7466)	-
Size of land holding	x_7	b_7	-	71.3480** (2.8134)	
Labour force participation ratio	x_9	b_9	-	-	149.768 (1.5664)
Literacy ratio	x_{10}	b_{10}	46.4662 (0.6650)	-	39.0264 (0.5769)
Coefficient of determination		R^2	0.1943*	0.2733**	0.1692*
Adjusted coefficient of determination		$\bar{R}^2$	0.1223*	0.2224**	0.1109*
F-Ratio (Degree of freedom)			2.7004 (5,56)	5.3604 (4,57)	2.9029 (4,57)
Durbin-Watson statistics			1.4464	1.6529	1.3096

Note: Figures in parentheses are t-values

** Significant at one per cent level
* Significant at five per cent level

RC: Regression Coefficients

consumption expenditure of the household will increase by Rs.71. In other words, land as productive asset in the rural areas will improve income and levels of living.

The results of the multiple regression analysis for the non-poor households are presented in table 6.11. Between the two equations attempted for this set, the second equation is statistically significant at one per cent level. The R^2 is 0.2062. The number of persons in the household, the number of casual labourers in the household and the size of the land holding are the three independent variables regressed with the annual per capita consumption expenditure on food as the dependent variable. Among the three independent variables the size of the family and the size of the land holding are statistically significant at one per cent and five per cent levels. Further it implies that increase in the size of the family by one person will decrease the annual per capita consumption expenditure by Rs.60. If the size of the land holding increases by one hectare, it will improve the annual per capita consumption expenditure by Rs.106. Hence in the case of non-poor households also, the size of the household and the size of the land holding are important determinants of consumption levels.

For the third set, i.e., all households (poor and non-poor combined) three multiple regression equations were tried. The results of the same are presented in table 6.12.

Table 6.11

Multiple regression results for non-poor households-dependent variable: Annual per capita consumption expenditure on food

Independent Variables		RC	Estimated values of regression coefficients in equations	
			I	II
1	2		3	4
Constant		a	369.080	1259.58
Number of days unemployed in a year per labourer	X_2	b_2	0.2682 (0.4297)	-
Number of persons in household	x_4	b_4	-	-60.0405** (4.1539)
Number of female workers in household	x_5	b_5	18.3607 (0.3912)	-
Number of casual labourers	x_6	b_6	-	37.1071 (1.0939)
Size of land holding	x_7	b_7	-	105.048* (2.3301)
Literacy ratio	x_{10}	b_{10}	155.697 (1.3596)	-
Coefficient of determination.		R^2	0.0234	0.2052**
Adjusted coefficient of determinations		$\bar{R}^2$	-0.0119	0.1775**
F-ratio			0.6615	7.1882
Degree of freedom			(3,83)	(3,83)
Durbin-Watson statistics			1,7156	1,8225

Note: Figures in parentheses are t-values.

** Significant at one per cent level.
* Significant at five per cent level.

RC: Regression Coefficient.

Table 6.12

Multiple regression results for all households-dependent variable: Annual per capita consumption expenditure on food

Independent Variables		RC	Estimated values of regression coefficients in equations		
			I	II	III
1	2		3	4	5
Constant		a	705.182	861.602	1260.80
Number of days unemployed in a year per labourer	x_2	b_2	0.9067 (1.6525)	-	-
Size of household	x_4	b_4	-	-52.7915** (4.2568)	-37.5726* (2.2410)
Number of female labourers in household	x_5	b_5	-23.7099 (0.5978)	-	-
Number of casual labourers	x_6	b_6	-	-	114.7155* (2.1544)
Size of land holding	x_7	b_7	150.702** (3.4960)	-	-
Labour force participation ratio	x_3	b_8	-	536.600** (4.4762)	-
Coefficient of determination		R^2	0.0946**	0.3333**	0.3210**
Adjusted coefficient of determination		$\bar{R}^2$	0.0759**	0.3242**	0.3127**
F-ratio			5.0499	36.4930	34.6615
(Degree of freedom)			(3,145)	(2,146)	(2,146)
Durbin-Watson Statistics			0.9476	1.0388	1.4271

Note: Figures in parenthesis are t-values.

** Significant at one per cent level.

* Significant at five per cent level.

RC = Regression Coefficient.

All the three equations are statistically significant at one per cent level. Among them, the second equation gives a better fit, its R^2 being the highest (0.3333). In the second equation, the size of the household and the labourforce participation ratio are the two independent variables. Both of them are statistically significant at one per cent level. As per the second equation, increase in the size of the family will reduce the per capita consumption expenditure by R.53. Increase in labourforce participation ratio by one unit will increase the per capita annual consumption expenditure by R.537. The other two equations were tried with different combination of independent variables. Out of these, the variables such as size of land holding and the number of casual laborers in the family also turned out to be significant determinants of per capita consumption expenditure. Hence irrespective of the set, the factors that influence the per capita consumption expenditure most significantly are: the size of the family, and the size of the land holding.

Though, strictly speaking, interchange of dependent and independent variables in a function is not proper, once the function has been specified, our specification here, particularly in respect of poverty unemployment and migration is however not very definite. Therefore, in order to get a better insight into the interrelationship between various variables, we have attempted further alternatives with unemployment and then with migration as independent variables.

Thus, as an alternative the average number of days unemployed in a year for the household (x_2) was considered as the dependent variable for the next set of regressions.

As earlier, three different combinations were formulated for the poor set. A combination with three independent variables was tried for the non-poor set. For the third set (all households), three combinations of independent variables were used. Each of those combinations for the three distinctive sets were representing a group of not significantly correlated independent variables. The combinations for each set are as follows :

Poor households

$x_2 = a - b_1x_1 + b_5x_5 - b_6x_6 - b_7x_7$ ...(1)

$x_2 = a - b_1x_1 - b_3x_3 + b_8x_8$ ...(2)

$x_2 = a - b_1x_1 - b_7x_7 + b_8x_8$ ...(3)

Non-poor households

$x_2 = a - b_4x_4 - b_6x_6 + b_7x_7$ ...(1)

All households

$x_2 = a + b_1x_1 - b_7x_7 + b_8x_8$ ...(1)

$x_2 = a + b_1x_1 + b_5x_5 - b_7x_7$ ...(2)

$x_2 = a + b_1x_1 - b_4x_4 + b_6x_6$ ...(3)

Multiple regression results for the poor households are shown in table 6.13. All the three equations with different combinations of independent variables are found with very small

Table 6.13

Multiple regression equation results for poor households-dependent variable: Number of days unemployed in a year per labourer

Independent variables		RC	Estimated values of regression coefficients of equations		
			I	II	III
1	2		3	4	5
Constant		a	144.0320	130.271	131.374
Annual per capita consumption expenditure on food	x_1	b_1	-0.0519 (0.8050)	-0.0709 (1.3087)	-0.0749 (1.3604)
Number of migrant in the household	x_3	b_3	-	-5.4593 (0.3289)	-
Number of persons in the household	x_5	b_5	1.3302 (0.3199)	-	-
Number of casual labourers in the household	x_6	b_6	-3.3663 (0.3350)	-	-
Size of land holding	x_7	b_7	-5.2379 (0.4451)	-	-3.9949 (0.3035)
Labourforce participation ratio	x_8	b_8	-	67.9241 (1.6761)	67.4739 (1.6532)
Coefficient of determination		R^2	0.0319	0.08151	0.0729
Adjusted coefficient of determination		$\bar{R}^2$	-0.0361	0.03432	0.0245
F-Ratio			0.4692	1.7225	1.5110
(Degree of freedom)			(4,57)	(3,58)	(3,58)
Durbin-Watson statistics			1.0472	1.9977	1.9454

Note: Figures in parentheses are t-values.

RC - Regression Coefficients.

R^2 values. This indicates that there is no significant association between the considered independent variables and the dependent variable i.e., unemployment. The first equation was considered with the following four independent variables. (i) annual per capita consumption expenditure, (ii) the size of the household, (iii) the number of casual labourers and (iv) the size of the land holding. In the second equation a combination of independent variables viz., annual per capita consumption expenditure and labourforce participation ratio was tried. The third equation was attempted with the combination of two independent variables i.e., annual per capita consumption expenditure and the size of the land holding. In each of these three equations a combination of 2 to 4 variables were considered. None of the equation is found to give statistically significant R^2. Moreover the independent variables considered in each equation were also not significant statistically. However the explanatory variable were as expected.

Table 6.14 shows the results of multiple regression analysis for non-poor households. A combination of three independent variables (i.e. number of persons in the family, number of casual labourers and the size of land holding) were considered in a single equation, the results of this equation was also not significant. Among the three independent variables, the size of the family and the number of casual labourers in the family appeared with negative signs.

Table 6.14

Multiple regression results for non-poor households-dependent variable: Number of days unemployed in a year per labourer.

Independent variable		RC	Estimated value of regression coefficients in equation I
1		2	3
Constant		a	159.155
Number of persons in the household	x_4	b_4	-5.2933 (1.9145)
Number of casual labourers	x_6	b_6	-5.4835 (0.3490)
Size of land holding	x_7	b_7	3.5977 (0.4160)
Coefficient of determination		R^2	0.0572
Adjusted coefficient of determination		$\bar{R}^2$	0.0232
F-Ratio			1.6797
Degree of Freedom			(3,83)
Durbin-Watson statistics			1.9674

note: Figures in parentheses are t-values.
RC: Regression coefficient.

The results of regression analysis for the third set (all households), is shown in table 6.15. All the three equations attempted did not give a significant R^2 value. None of the independent variables were also found to be significant. In conformity to our expectation the number of persons in the

Table 6.15

Multiple regression for all household-dependent variable: Number of days unemployed per labourer in a year

Independent variables		RC	Estimated values of regression coefficients in equations		
			I	II	III
1	2		3	4	5
Constant		a	101.621	104.237	133.484
Annual per capita expenditure	x_1	b_1	0.0362 (0.5948)	0.0204 (1.6525)	0.0110 (0.7712)
Number of persons in household	x_4	b_4	-	-	-2.8036 (1.2103)
Number of female labourers	x_5	b_5	5.2620 (0.8861)	-	-
Number of casual labourers	x_6	b_6	-	-	5.8039 (0.7537)
Land size	x_7	b_7	-2.2143 (0.3235)	-4.2067 (0.6255)	-
Labourforce participation ratio	x_8	b_8	31.9755 (1.4717)	-	-
Coefficient of determination		R^2	0.0324	0.0232	0.03467
Adjusted coefficient of determination		$\bar{R}^2$	0.0124	0.0030	0.0147
F-ratio			1.6174	1.1468	1.7361
(Degree of freedom)			(3,145)	(3,145)	(3,145)
Durbin-Watson statistics			1.8579	1.8421	1.8504

Note: Figures in parentheses are t-values.

RC : Regression coefficient

family, the number of casual labourers, and the size of land holding appeared with negative signs.

Similar to the earlier exercises, another regression model was set-up. The number of migrants in the household was taken as dependent variable (x_3), the other remaining nine variables were considered as independent variables. In accordance to earlier classification, for each set (i.e., poor, non-poor and all households) combination of two equations were tried. They are :

(a) Poor households

$$x_3 = -a + b_1x_1 + b_2x_2 + b_4x_4 - b_6x_6 + b_{10}x_{10} \quad \ldots(1)$$

$$x_3 = -a + b_1x_1 - b_5x_5 + b_6x_6 + b_7x_7 \quad \ldots(2)$$

(b) Non-poor households

$$x_3 = -a + b_5x_5 + b_9x_9 \quad \ldots(1)$$

$$x_3 = a + b_2x_2 + b_5x_5 + b_{10}x_{10} \quad \ldots(2)$$

(c) All households

$$x_3 = a - b_2x_2 + b_5x_5 - b_7x_7 \quad \ldots(1)$$

$$x_3 = -a + b_1x_1 + b_4x_4 + b_6x_6 \quad \ldots(2)$$

Table 6.16 shows the results of regression analysis for the poor set. R^2 value for both the equations were not significant. Among the combination of independent variables, the annual per capita consumption expenditure level and the number of persons in the family were significantly associated.

Table 6.16

Multiple regression results for poor household-dependent variable: Number of migrants in the household .

Independent variables		RC	Estimated values of regression coefficient in equations		
			I	II	III
1	2		3	4	5
Constant		a	-1.4954	-0.0693	
Annual per capita consumption expenditure on food	x_1	b_1	0.0022* (2.0146)	0.0011 (1.0462)	
Number of days unemployed per labourer in a year.	x_2	b_2	-0.0019 (0.7662)	-	
Number of persons in the household	x_4	b_4	0.1540** (2.0944)	-	
Number of female labourers in the household	x_5	b_5	-	-0.0971 (0.5690)	
Number of casual labourers	x_6	b_6	-0.1986 (1.1700)	0.0002 (0.0010)	
Size of land holding	x_7	b_7		0.2210 (0.9579)	
Literacy ratio	x_{10}	b_{10}	0.4462 (0.7846)	-	
Coefficient of determination		R^2	0.1414	0.0439	
Adjusted coefficient of determination		$\bar{R}^2$	0.0648	-0.0185	
F-Ratio			1.8451	0.7230	
(Degree of freedom)			(5,56)	(4,57)	
Durbin-watson statistics			2.2703	2.1998	

Note: Figures in parentheses are t-values.

** Significant at 1 per cent level
* Significant at 5 per cent level

RC - Regression Coefficient.

The independent variables viz., the number of days unemployed per labourer, number of casual labourers and the number of female labourers appeared with negative signs.

In the case of non-poor set, table 6.17 shows that between the two equations, the second equation gives a statistically significant value of R^2. But the absolute value of R^2 is small. This is indicative of the weak correlation between the variables considered. The incidence of unemployment is significantly associated with the incidence of migration for the non-poor household. Hence higher the incidence of unemployment, the greater would be the incidence of migration in the non-poor households.

Out of the two equations tried for 'all the households', the second equation turned out to be a better fit (Table 6.18). In this equation all the three independent variables are significantly associated with migration. The respective independent variables are: annual per capita consumption expenditure, number of persons in the household and the number of casual labourers in the household. To be more specific, increase in the number of persons in the household increases by one person, the number of migrants in the family will increase by 0.17 units. Similarly, when there is an increase of one casual labourer in the family, there will be an increase in the number of migrants by 0.22 units.

Table 6.17

Multiple regression results for non-poor households-dependent variable: Number of migrants in the household

Independent variable		RC	Estimated values of regression coefficient in equations	
			I	II
1		2	3	4
Constant		a	-0.6757	0.4345
Annual per capita consumption expenditure on food	x_1	b_1	0.0006 (1.7523)	-
Number of days unemployed per labourer in a year	x_2	b_2	-	0.0057** (2.8093)
Number of female labourers	x_5	b_5	0.3078 (1.3637)	0.2951 (1.9193)
Dependency ratio	x_9	b_9	0.1013 (0.9809)	
Literacy ratio	x_{10}	b_{10}	-	0.2611 (0.6989)
Coefficient of determination		R^2	0.0697	0.1243*
Adjusted coefficient of determination		$\bar{R}^2$	0.0349	0.0927*
F-ratio			2.0396	3.9270
(Degree of freedom)			(5,83)	(5,83)
Durbin-Watson statistics			1.5006	1.5136

Note: Figures in parentheses are t-values.

** Significant at 1 per cent level
* Significant at 5 per cent level

RC = Regression coefficient

Table 6.18

Multiple regression results for all households-dependent variable: Number of migrants in the household

Independent variables		RC	Estimated values of regression coefficient ~~of~~ in equations	
			I	II
1	2		3	4
Constant		a	1.0320	-0.9442
Annual per capita consumption expenditure on food	x_1	b_1	-	0.0003** (3.3211)
Number of days unemployed in a year per labourer	x_2	b_2	-0.0045** (2.9055)	-
Number of persons in household	x_4	b_4	-	0.1756** (4.0757)
Number of female labourers in household	x_5	b_5	0.1254 (1.1119)	-
Number of casual labourers in household	x_6	b_6	-	0.2205* (2.3603)
Size of land holding	x_7	b_7	-0.0547 (0.4462)	-
Coefficient of determination		R^2	0.0613*	0.1165**
Adjusted coefficient of determination		$\bar{R}^2$	0.0418*	0.0952**
F-ratio			3.1543	6.3741
(Degree of freedom)			(3,145)	(3,145)
Durbin-Watson Statistic			1.6482	1.7322)

Note: Figures in parentheses are t-values.

** Significant at 1 per cent level

* Significant at 5 per cent level

RC - Regression Coefficient.

From the foregoing analysis, it appears that irrespective of the set, i.e., 'poor' or 'non-poor', or 'all', level of consumption expenditure on food and the number of migrants in the family are influenced by the size of the family, number of casual labourers, labourforce participation ratio and the size of the land holding. However the incidence of unemployment for all the sets is not at all associated with any of the considered variables significantly. It may be due to non-inclusion of factors which are non-quantifiable such as climate, soil condition, irrigation potential, nature of primary occupation, etc.

6.4 Conclusions

From the foregoing analysis the following specific conclusions can be drawn:

(1) The incidences of poverty and unemployment do not reveal a specific pattern. In the first village, higher poverty incidence is accompanied by lower unemployment ratio. While in the second village it is vice-versa. So it cannot be generalised that poverty and unemployment are correlated.

(2) Though the incidence of migration in both the villages is not much different, its alleviating influence on unemployment is apparent.

(3) The lower incidence of unemployment in the first village may be attributed to predominance of long distance urban migration.

(4) With regard to incidence of poverty, unemployment and migration, village level factors like location, soil condition, irrigation facility, productivity of the soil etc., are of significance, though not exactly quantifiable here.

(5) The caste distinctions as such do not influence the incidence of poverty unemployment and migration.

(6) The level of educational attainments has marginal effect on poverty, but significant positive effect on employment and urban oriented migration.

(7) The economic status of population (or in other words the primary occupation and the land base) considerably influences the incidence of migration and unemployment and poverty.

(8) Levels of monthly per capita consumption expenditure do not reveal unique trend in relation to unemployment incidence.

(9) From the correlation coefficient matrices, it appears that irrespective of the set whether it is 'poor' or 'non-poor' or 'all households', the size of family, and the size of land-holding are significantly associated with consumption levels, unemployment and migration, and also with literacy rates and dependency ratios.

(10) Multiple regression analysis confirms that the size of the family, labourforce participation ratio and the size of the land holding are the significant factors which explain the consumption levels, unemployment and migration.

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