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Occupational Mobility in India : 1961-1971

Introduction

THE "openness" or "closedness" of a society may be measured by the extent of social mobility possible in that society. Since social mobility is a multi-dimensional phenomenon, occupational mobility is usually considered as a first approximation to the former. Various studies on occupational mobility carried out in different industrialized countries are discussed and patterns elicited in Lipset and Bendix (1962). Some of the broad conclusions derived by Lipset and Bendix are as follows :

- (a) There is relatively little difference in rates of social mobility, as measured by the shift across the manual—non-manual line, in countries for which sample survey data exist ;
- (b) There is considerable national variation in the social origins of those in professional work, a fact which is related to the differences in available openings for university study in different countries ;
- (c) The similarities in rates of mass mobility (manual to non-manual) among countries with such diverse social structures, suggest that propensity for mobility cannot be correlated with national cultural patterns, since some cultures encourage and others discourage social mobility ;

- (d) Instead of supporting the assumption that value differences cause variations in mobility rates, the data support the hypothesis that mobility patterns in Western industrialized societies are determined by the occupational structure.

Miller (1960) presents an interesting typology of manual—non-manual occupational mobility. According to this 2 x 2 typology, nations are classified as high downward non-manual and high upward manual (++), high downward non-manual, and low upward manual (+ —), low downward non-manual and high upward manual (— +), and low downward non-manual and low upward manual (— —). A study on intergenerational occupational mobility carried out in Poona by Sovani and Pradhan (1955) has been employed by Miller to characterize Indian occupational mobility as of the + + type. The manual to non-manual mobility is estimated as 26.9 per cent and the non-manual to manual as 27.3 per cent.

Occupational mobility has been a neglected area of study by Indian sociologists. Davis (1963) clearly points out that the phenomenon of differential rates of natural increase in different caste groups prevents absolute immobility. Indian sociologists and others have shown too much interest in areas such as caste, Sanskritization (Mandelbaum, 1970; Srinivas, 1966). There is a dearth of studies on occupational mobility in India. The present writer, after a search on the writings in the last 10 years, could come up with only two or three studies (Kantowsky, 1971 and Ambannavar, 1969). A paper on occupational mobility was presented around 1968 in the Indian Science Congress. Swamy (1962) has, after an 'analysis of 1961 census data, observed that "there does seem to be a small but a definite shift from the primary to secondary and tertiary sectors." One main reason for a dearth of studies, according to this writer, is the lack of data on occupational history in the Indian Censuses. A retrospective question on occupational history in the census (in a special questionnaire to be administered to 1/1000 or 1/10,000 sample) would remedy the situation.

In the absence of a retrospective question in the census, the only way out is to conceive the occupational mobility process as a Markov process and estimate the parameters of the transition probability matrix (the indicators of occupational mobility) from the occupational distributions obtained from the

census. This paper presents such an attempt at estimating the transition probabilities employing (a) the linear programming technique and (b) cross-section (regional) and time series data for 1961 and 1971. The socio-economic implications of the occupational mobility patterns are also discussed.

Changing Definition of Working Population

Even though economic data on working status and occupations have been collected by the Indian Censuses since 1921, the definitions have been changed from one census to another. Thus as pointed out by Mitra (1961) the concept of participation has gradually changed from the "dependency approach" to the "work approach". The 1971 census divided the population of India into two main streams : (1) workers and (2) non-workers according to the type of main activity that the person returns himself as engaged in mostly. The census defines a worker as follows:

A 'worker' is a person whose main activity is participation in any economically productive work by his physical or mental activity. Work involves not only actual work but effective supervision and direction of work.

The reference period is taken as one week prior to the date of enumeration in the case of regular work in trade, profession, service, or business. Other details regarding the 1971 and the earlier census definitions of work-force and related matters can be found in Chandra Sekhar (1971).

The fact that the census data on workers and their classifications for 1961 and 1971 are not comparable is clear. This writer has access to only the provisional data on working population as available in Chandra Sekhar (1971). According to this source, the 1971 census data on working population distinguishes only three categories of workers : (a) cultivators; (b) agricultural labourers; and (c) other workers. Though strictly not comparable, the census data on workers for 1961 for these categories have been utilized to study the movement of workers from one category of occupation to another during the decennial period 1961-1971. The results derived should be thought of as only indicating some insights into the phenomenon of occupational mobility in India.

Methodology

In the absence of a long comparable time series and panel data, we have to

start making use of cross-section data for the years 1961 and 1971. We approximate the occupational mobility process by means of a stationary final Markov chain. Let

$$P = \begin{matrix} & \begin{matrix} C & AL & O \end{matrix} \\ \begin{bmatrix} p_{11} & p_{12} & p_{13} \\ p_{21} & p_{22} & p_{23} \\ p_{31} & p_{32} & p_{33} \end{bmatrix} \end{matrix}$$

denote the transition probability matrix which characterizes the stationary occupational mobility process. p_{12} and p_{13} provide the proportions of movers who change from "cultivator" group to "agricultural laborer" and "other workers" category respectively. Similar interpretations can be attached to the other non-diagonal elements of the matrix. An overall index of mobility is given by the determinant of the matrix P . For more refined measures of mobility, reference may be made to Bartholomew (1973).

Our main problem is to find the estimates of the elements of P given that we have only marginal distributions. The usual least squares procedure leads to inadmissible estimators. So we impose the non-negativity condition $p_{ij} \geq 0$ and also the condition that $\sum_j p_{ij} = 1$ ($i = 1, 2, 3$) on the elements. This converts the problem into a linear programming problem, if the method of minimum absolute deviations is employed for estimation purposes. (Lee, Judge, and Zellner, 1970).

We have used the linear programming technique for this study. Since the APL language program had only a capacity of 30 variables, India was conceived of as divided into three regions.

Region 1—Gujarat, Haryana, Punjab, and Rajasthan;

Region 2—Assam, Bihar, Nagaland, Orissa, U.P., and West Bengal

Region 3—Andhra Pradesh, Kerala, Karnataka, Madhya Pradesh, and Tamil Nadu.

The other states and union territories were ignored for this exercise. The average of the occupational distributions of the constituent states comprising the regions was utilized for the linear programming treatment.

Data and Findings

Male Mobility Patterns

The occupational mobility matrices for males and females in India in 1961-1971 are shown in Table 1.

TABLE 1—OCCUPATIONAL MOBILITY TRANSITION MATRIX BY SEX,
INDIA 1961-71

<i>Males</i>	<i>C</i>	<i>AL</i>	<i>O</i>
	.798	0	.202
	.329	.671	0
	0	.298	.702
<i>Females</i>	<i>C</i>	<i>AL</i>	<i>O</i>
	.457	.021	.522
	.033	.967	0
	0	.776	.224

LEGEND: *C*—Cultivators, *AL*—Agricultural Laborers, *O*—Other Workers.
SOURCE: Estimated from 1961 and 1971 Census data.

It is clear from these estimates that, while 79.8 percent of the cultivators are stayers in their job category, 20.2 percent of them move to the "other workers" stratum. No cultivator gets to become an agricultural laborer. It is surprising that 32.9 percent of the agricultural laborers move to the rank of "cultivators" and none get to seek "other work". It does not come as a surprise that 70.2 percent of the "other workers" stratum stick to that group, for this category consists of all jobs in the industrial and the tertiary sectors. The turnover of 29.8 percent of this category to "agricultural laborer" group is also worthy of attention and some interpretation. That nobody from this "other workers" category moves to the cultivating class is understandable. Taken as a whole, the Indian males are marked by a high degree of overall occupational mobility (39.6 percent) during 1961-1971. Since the mobility to non-agricultural occupations is rather small, the motivation to reduce the family size is likely to be small too.

Female Mobility Patterns

A differential in male-female mobility patterns has been observed in most of the countries for which data on mobility have been analysed. The estimated transition matrix for female occupational mobility in India shows that the Indian females are much less mobile. The impact of this on fertility reduction is obvious. The overall degree of mobility has been estimated as 11.2 percent. While most of the female agricultural laborers (96.7 percent) do not change their occupation, the majority of the female cultivators move to the non-agricultural sector (52.2 percent). A majority of the females (almost 78 percent) who were in the "other workers" category have, in the decennial period, changed into the occupational category of agricultural workers.

Rural-Urban Differential

Since the female mobility is rather small, we look at the male mobility only for the rural-urban differential. The transition matrices for the rural and the urban male workers are shown in Table 2.

TABLE 2 —MALE OCCUPATIONAL MOBILITY TRANSITION
(RURAL/URBAN) MATRIX, INDIA 1961-71

	<i>C</i>	<i>AL</i>	<i>O</i>
Urban	.463	.119	.418
	0	1	0
	.032	.025	.943
	<i>C</i>	<i>AL</i>	<i>O</i>
Rural	.915	.068	.017
	0	1	0
	0	.200	.800

LEGEND : *C* — Cultivators, *AL* — Agricultural Laborers, *O* — Other Workers.

SOURCE : Estimated from 1961 and 1971 Census data.

For both the rural and the urban sectors, the agricultural laborers are immobile (static). While the "other workers" category keeps 94.3 percent of the ur-

ban males to itself, for the rural area the "cultivators" category shows a similar behavior. In the urban sector, the tendency is to move mostly to the "other workers" category, or to remain there. In the rural sector, very little mobility is noticeable. Rural male workers are much less occupationally mobile as compared to their urban counterpart.

Discussion and Conclusion

As stated earlier, the results presented here have to be taken with great caution in view of the severe data constraints. The definitional changes between 1961 and 1971 have created more problems for comparative analysis. Normally one expects a high rate of movement from the "agricultural laborer" category to non-agricultural work, especially for a country going through the process of industrialization. Such a situation is not revealed here either for the rural-urban sector, or for the male-female workers. Perhaps the Markovian approximation suggested here may be unrealistic, or perhaps, the present census distributions are far from satisfactory for this kind of exercise. Since occupational mobility (and hence social mobility) has implications for fertility reduction programs, a probe into this area is called for with more refined data. It would be also helpful to have a retrospective question on occupational history in the future Indian Census questionnaire so that comprehensive research in this area could be undertaken.

References

1. Ambannavar, J. P., 1969, Upward occupational mobility through education and age, *Asian Economic Review*, 11, 290-299.
2. Bartholomew, D. J., 1973, *Stochastic Models for Social Processes*, New York : John Wiley and Sons (second edition).
3. Chandra Sekhar, A., 1971, *Census of India 1971 Provisional Population Totals, Paper 1 a/7977 — Supplement*, New Delhi : Office of the Registrar General and Census Commissioner.
4. Davis, K., 1965, *Human Society*, New York : Macmillan Co. (16th printing).
5. Kantaowsky, D., 1971, Aspects of social mobility in India, *International Asian Forum*, 2, 490-496.
6. Krishnamurthy, J., 1965, Secular changes in the occupational structure of the Indian Union, 1901-1961, *Indian Economic and Social History Review*, 2, 42-51.
7. Lee, T. C, Judge, O. G. and Zellner, A., 1970, *Estimating the Parameters of the Markov Probability Model from Aggregate Time Series Data*, Amsterdam : North Holland Publishing Company.

8. Lipset, S. M. and Bendix, R., 1962, *Social Mobility in Industrial Society*, Berkeley : University of California Press (3rd printing).
9. Mandelbaum, D. G., 1970, *Society in India: Change and Continuity. II*, Berkeley : University of California Press.
10. Miller, S. M., 1960, Comparative social mobility : A trend report and bibliography, *Current Sociology*, 9 (1) : 1-89.
11. Mitra, A., 1961, *Census of India 1961 — General Economic Tables*, Vol. I, Part II—B(i), New Delhi: Office of the Registrar General and Census Commissioner.
12. Sovani, N.V. and Pradban, K., 1955, Occupational mobility in Poona City between three generations, *Indian Economic Review*, 2, 23-36.
13. Srinivas, M. N., 1966, A note on Sanskritization and Westernization, In : R. Bendix and S. M. Lipset (eds.), *Class, Status and Power*, New York : Free Press, pp. 552-560.
14. Swamy, 1962, *Census of India Paper No. 1*. New Delhi: Office of the Registrar General and Census Commissioner.